### ▼ TEXT SUMMARISATION PROJECT

### Can be of two types

- 1. Extractive Summarisation: Selects passages from the source text and then arranges to form a summary. (Just like a highlighter)
- 2. Abstractive Summarisation: (Understand the intent and writes the summary on its own words)

# We have used Encoder Decoder Networks And Attention mechanism

#### Encoder

- 1. The Encoder basically consists of LSTM
- 2. Encoder takes the input sequence and encapsulates the information as the internal state vectors
- 3. outputs of the encoder are used as the Decoder.
- 4. Here, input is a collection of words.

#### Intermediate Vectors

- 1. Final hidden state produced by the enocder.
- 2. Aims to encpasulate the information for all the inputs.
- 3. Acts as the hidden state of the decoder model.

#### Decoder

- 1. Stack of recurrent units where each predicts an ouput y\_t at time step t.
- 2. Each recurrent unit accepts a hidden state from the previous unit and produces an output as well as its own hidden state.
- 3. In summarisation problem, the output sequence is a collection of all words from the summarized text.

#### Global Attention

1. All the hidden states of the encoder are considered for deriving the attended context vector.

```
1 !pip uninstall
```

2 !pip install keras==2.2.4

# Importing libraries

```
1 #!pip install tensorflow-gpu==1.15
 2 #import keras==2.2.4
 3 import numpy as np
 4 import pandas as pd
 5 import re
 6 import os
 7 from bs4 import BeautifulSoup
 8 from keras.preprocessing.text import Tokenizer
9 from keras.preprocessing.sequence import pad sequences
10 from nltk.corpus import stopwords
11 from tensorflow.keras.layers import Input, LSTM, Embedding, Dense, Concatenate,
12 from tensorflow.keras.models import Model
13 from tensorflow.keras.callbacks import EarlyStopping
14 import warnings
15 pd.set option("display.max colwidth", 200)
16 warnings.filterwarnings("ignore")
17 !pip install wget
18 import wget
19 import nltk
20
    Using TensorFlow backend.
    Collecting wget
       Downloading <a href="https://files.pythonhosted.org/packages/47/6a/62e288da7bcda82b9">https://files.pythonhosted.org/packages/47/6a/62e288da7bcda82b9</a>
    Building wheels for collected packages: wget
       Building wheel for wget (setup.py) ... done
       Created wheel for wget: filename=wget-3.2-cp36-none-any.whl size=9682 sha25
       Stored in directory: /root/.cache/pip/wheels/40/15/30/7d8f7cea2902b4db79e3f
    Successfully built wget
    Installing collected packages: wget
    Successfully installed wget-3.2
```

# Downloading the amazon finefoods dataset

1 !wget https://github.com/praneeth1795/amazon-finefood-reviews/raw/master/Reviews

 $\Box$ 

```
--2020-09-17 00:51:05-- <a href="https://github.com/praneeth1795/amazon-finefood-revi">https://github.com/praneeth1795/amazon-finefood-revi</a>
Resolving github.com (github.com)... 140.82.121.3
Connecting to github.com (github.com)|140.82.121.3|:443... connected.
HTTP request sent, awaiting response... 302 Found
```

# Visualising the dataset

```
1 data=pd.read_csv("Reviews.csv",nrows=100000)
2 data[['Text','Summary']].sample(5)
```

	Text	Summary
12762	Walkers treacle toffees are the best treacle with most desirable chewing consistency and taste. This package was well priced and delivery was prompt.  I wish there was a larger per pack amount avai	Treacle lovers dream!
8359	I really enjoy this one and I've tried many! In my top 5. A little pricey but will order again sometime in the future.	Good coffee for strong coffee lovers!
2354	Its hard to find this stuff locally. Usually my parents have to bring it to me when they visit. Was pleased to find it on Amazon. TASTY dhall. We eat a lot of it, so its ni	YUMMY Indian DHALL
	My first purchase of this was my first foray into home roasting and it was some	

# Clear the data

- 1. Converting everything to lower case
- 2. Removing HTML tags
- 3. Contraction Mappings
- 4. Remove('s)
- 5. Remove any text inside the paranthesis
- 6. Elimination of punctuations and special charactes
- 7. Remove stopwords
- 8. Remove short words.

```
1 data.drop_duplicates(subset=['Text'],inplace=True) #dropping duplicates
2 data.dropna(axis=0,inplace=True)
```

```
17/09/2020
                                     text summarisation.ipynb - Colaboratory
   9
                                  "1'd've": "1 would nave", "1'll": "1 w1ll", "1'll've
   10
                                  "it'd've": "it would have", "it'll": "it will", "it'
   11
   12
   13
                                  "mayn't": "may not", "might've": "might have", "might"
   14
   15
                                  "mustn't": "must not", "mustn't've": "must not have"
   16
                                  "oughtn't": "ought not", "oughtn't've": "ought not ha
   17
   18
                                  "she'd": "she would", "she'd've": "she would have",
   19
   20
                                  "should've": "should have", "shouldn't": "should not
   21
   22
                                  "this's": "this is", "that'd": "that would", "that'd'
   23
   24
   25
                                  "there'd've": "there would have", "there's": "there :
   26
   27
                                  "they'll": "they will", "they'll've": "they will have
   28
                                  "wasn't": "was not", "we'd": "we would", "we'd've":
   29
   30
                                  "we've": "we have", "weren't": "were not", "what'll"
   31
   32
                                  "what's": "what is", "what've": "what have", "when's
   33
   34
   35
                                  "where've": "where have", "who'll": "who will", "who
   36
                                  "why's": "why is", "why've": "why have", "will've":
   37
   38
                                  "would've": "would have", "wouldn't": "would not", "\
   39
   40
                                  "y'all'd": "you all would", "y'all'd've": "you all wou
   41
   42
                                  "you'd": "you would", "you'd've": "you would have",
   43
   44
```

#### 1 data['Text'][:10]

45

```
I have bought several of the Vitality canned dog food products and have
   0
C→
   1
                  Product arrived labeled as Jumbo Salted Peanuts...the peanuts w
   2
        This is a confection that has been around a few centuries. It is a ligh
   3
        If you are looking for the secret ingredient in Robitussin I believe I h
   4
                                                                    Great taffy a
        I got a wild hair for taffy and ordered this five pound bag. The taffy w
   5
   6
        This saltwater taffy had great flavors and was very soft and chewy. Eac
   7
                                                                    This taffy is
   8
                                                                              Righ
   9
                                                                        This is a
   Name: Text, dtype: object
```

"you're": "you are", "you've": "you have"}

```
1 nltk.download('stopwords')
2 stop words = set(stopwords.words('english'))
```

```
text summarisation.ipynb - Colaboratory
 3 def text_cleaner(text):
       newString = text.lower()
4
 5
       newString = BeautifulSoup(newString, "lxml").text
       newString = re.sub(r'\([^)]*\)', '', newString)
 6
7
       newString = re.sub('"','', newString)
       newString = ' '.join([contraction_mapping[t] if t in contraction_mapping el:
8
       newString = re.sub(r"'s\b","",newString)
9
       newString = re.sub("[^a-zA-Z]", " ", newString)
10
       tokens = [w for w in newString.split() if not w in stop words]
11
       long words=[]
12
13
       for i in tokens:
14
           if len(i) >= 3:
                                           #removing short word
15
               long words.append(i)
16
       return (" ".join(long_words)).strip()
17
18 cleaned text = []
19 for t in data['Text']:
       cleaned text.append(text_cleaner(t))
    [nltk data] Downloading package stopwords to /root/nltk data...
Гэ
    [nltk_data] Unzipping corpora/stopwords.zip.
 1 data['Summary'][:10]
```

```
Good Quality Dog Food
  0
Гэ
   1
                                      Not as Advertised
   2
                                  "Delight" says it all
   3
                                         Cough Medicine
   4
                                            Great taffy
   5
                                             Nice Taffy
   6
         Great! Just as good as the expensive brands!
   7
                                Wonderful, tasty taffy
   8
                                             Yay Barley
   9
                                       Healthy Dog Food
   Name: Summary, dtype: object
```

```
1
 2 def summary cleaner(text):
       newString = re.sub('"','', text)
 3
       newString = ' '.join([contraction mapping[t] if t in contraction mapping els
4
 5
       newString = re.sub(r"'s\b","",newString)
       newString = re.sub("[^a-zA-Z]", " ", newString)
 6
7
       newString = newString.lower()
       tokens=newString.split()
8
9
      newString=''
10
      for i in tokens:
11
           if len(i)>1:
12
               newString=newString+i+' '
13
       return newString
14
15 #Call the above function
16 cleaned summary = []
17 for t in data['Summary']:
18
       cleaned_summary.append(summary_cleaner(t))
19
```

```
20 data['cleaned_text']=cleaned_text
21 data['cleaned_summary']=cleaned_summary
22 data['cleaned_summary'].replace('', np.nan, inplace=True)
23 data.dropna(axis=0,inplace=True)

1 data['cleaned_summary'] = data['cleaned_summary'].apply(lambda x : '_START_ '+ x)

1 for i in range(5):
2     print("Review:",data['cleaned_text'][i])
3     print("Summary:",data['cleaned_summary'][i])
4     print("\n")
```

Review: bought several vitality canned dog food products found good quality p Summary: \_START\_ good quality dog food \_END\_

Review: product arrived labeled jumbo salted peanuts peanuts actually small s Summary: \_START\_ not as advertised \_END\_

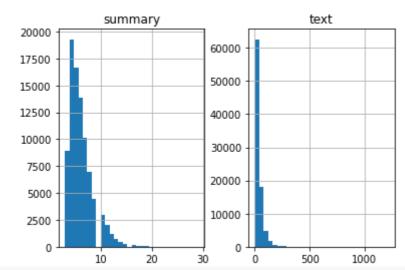
Review: confection around centuries light pillowy citrus gelatin nuts case fi Summary: START delight says it all END

Review: looking secret ingredient robitussin believe found got addition root Summary: \_START\_ cough medicine \_END\_

Review: great taffy great price wide assortment yummy taffy delivery quick ta Summary: START great taffy END

### Data distribution Visualisation

 $\Box$ 



```
1 max_len_text=80
2 max_len_summary=10
3 from sklearn.model_selection import train_test_split
4 x_tr,x_val,y_tr,y_val=train_test_split(data['cleaned_text'],data['cleaned_summa
```

### ▼ TOKENISATION OF THE DATA

```
1 #prepare a tokenizer for reviews on training data
2 x_tokenizer = Tokenizer()
3 x_tokenizer.fit_on_texts(list(x_tr))
4
5 #convert text sequences into integer sequences
6 x_tr = x_tokenizer.texts_to_sequences(x_tr)
7 x_val = x_tokenizer.texts_to_sequences(x_val)
8
9 #padding zero upto maximum length
10 x_tr = pad_sequences(x_tr, maxlen=max_len_text, padding='post')
11 x_val = pad_sequences(x_val, maxlen=max_len_text, padding='post')
12
13 x_voc_size = len(x_tokenizer.word_index) +1
```

```
1 #preparing a tokenizer for summary on training data
2 y_tokenizer = Tokenizer()
3 y_tokenizer.fit_on_texts(list(y_tr))
4
5 #convert summary sequences into integer sequences
6 y_tr = y_tokenizer.texts_to_sequences(y_tr)
7 y_val = y_tokenizer.texts_to_sequences(y_val)
8
9 #padding zero upto maximum length
10 y_tr = pad_sequences(y_tr, maxlen=max_len_summary, padding='post')
11 y_val = pad_sequences(y_val, maxlen=max_len_summary, padding='post')
12
13 y_voc_size = len(y_tokenizer.word_index) +1
```

### **→ MODEL BUILDING**

- 1. Return Sequences = True (LSTM produces the hidden state and cell state for every timestep)
- 2. Return steps = True (LSTM produces the hidden state and cell state of the last timestep only)
- 3. Initial state: Initialise the internal state of LSTM
- 4. Stacked LSTM: Multiple layes of LSTM stacked on top of each other. This leads to better representation of sequence.

```
1 import tensorflow as tf
 2 import os
 3 from tensorflow.python.keras.layers import Layer
 4 from tensorflow.python.keras import backend as K
 5
 6
 7 class AttentionLayer(Layer):
9
       def __init__(self, **kwargs):
           super(AttentionLayer, self). init (**kwargs)
10
11
12
      def build(self, input shape):
           assert isinstance(input shape, list)
13
14
           # Create a trainable weight variable for this layer.
15
16
           self.W a = self.add weight(name='W a',
17
                                       shape=tf.TensorShape((input shape[0][2], inpu
18
                                       initializer='uniform',
19
                                       trainable=True)
20
           self.U a = self.add weight(name='U a',
21
                                       shape=tf.TensorShape((input_shape[1][2], inpu
22
                                       initializer='uniform',
23
                                       trainable=True)
24
           self.V a = self.add weight(name='V a',
25
                                       shape=tf.TensorShape((input_shape[0][2], 1))
26
                                       initializer='uniform',
27
                                       trainable=True)
28
29
           super(AttentionLayer, self).build(input_shape) # Be sure to call this a
30
31
       def call(self, inputs, verbose=False):
32
33
           inputs: [encoder output sequence, decoder output sequence]
34
           assert type(inputs) == list
35
36
           encoder_out_seq, decoder_out_seq = inputs
37
           if verbose:
38
               print('encoder_out_seq>', encoder_out_seq.shape)
39
               print('decoder out seq>', decoder out seq.shape)
40
```

```
def energy_step(inputs, states):
41
               """ Step function for computing energy for a single decoder state "
42
43
44
               assert_msg = "States must be a list. However states {} is of type {}
               assert isinstance(states, list) or isinstance(states, tuple), asser
45
46
47
               """ Some parameters required for shaping tensors"""
48
               en seq len, en hidden = encoder out seq.shape[1], encoder out seq.sl
49
               de hidden = inputs.shape[-1]
50
               """ Computing S.Wa where S=[s0, s1, ..., si]"""
51
               # <= batch size*en seg len, latent dim
52
               reshaped enc outputs = K.reshape(encoder out seq, (-1, en hidden))
53
               # <= batch size*en seq len, latent dim
54
55
               W a dot s = K.reshape(K.dot(reshaped enc outputs, self.W a), (-1, e)
               if verbose:
56
57
                   print('wa.s>',W_a_dot_s.shape)
58
59
               """ Computing hj.Ua """
60
               U a dot h = K.expand dims(K.dot(inputs, self.U a), 1) # <= batch s:
61
               if verbose:
62
                   print('Ua.h>',U a dot h.shape)
63
               """ tanh(S.Wa + hj.Ua) """
64
65
               # <= batch size*en seg len, latent dim
               reshaped Ws plus Uh = K.tanh(K.reshape(W a dot s + U a dot h, (-1,
66
67
               if verbose:
68
                   print('Ws+Uh>', reshaped Ws plus Uh.shape)
69
70
               """ softmax(va.tanh(S.Wa + hj.Ua)) """
71
               # <= batch size, en seq len
72
               e i = K.reshape(K.dot(reshaped Ws plus Uh, self.V a), (-1, en seq le
73
               # <= batch size, en seq len
74
               e i = K.softmax(e i)
75
76
               if verbose:
                   print('ei>', e_i.shape)
77
78
79
               return e_i, [e_i]
80
           def context step(inputs, states):
81
               """ Step function for computing ci using ei """
82
83
               # <= batch size, hidden size
84
               c_i = K.sum(encoder_out_seq * K.expand_dims(inputs, -1), axis=1)
85
               if verbose:
86
                   print('ci>', c_i.shape)
87
               return c_i, [c_i]
88
           def create inital state(inputs, hidden size):
89
               # We are not using initial states, but need to pass something to K.
90
               fake state = K.zeros like(inputs) # <= (batch size, enc seq len, language)</pre>
91
               fake state = K.sum(fake_state, axis=[1, 2]) # <= (batch_size)</pre>
92
93
               fake_state = K.expand_dims(fake_state) # <= (batch_size, 1)</pre>
94
               fake_state = K.tile(fake_state, [1, hidden_size]) # <= (batch_size)</pre>
95
               return fake state
```

```
96
 97
            fake state c = create inital state(encoder out seq, encoder out seq.sha
            fake state e = create inital state(encoder out seq, encoder out seq.sha
 98
 99
            """ Computing energy outputs """
100
            # e outputs => (batch size, de seq len, en seq len)
101
            last_out, e_outputs, _ = K.rnn(
102
103
                energy_step, decoder_out_seq, [fake_state_e],
104
            )
105
            """ Computing context vectors """
106
            last out, c_outputs, _ = K.rnn(
107
                context step, e outputs, [fake state c],
108
109
            )
110
111
            return c outputs, e outputs
112
113
       def compute output shape(self, input shape):
            """ Outputs produced by the layer """
114
115
            return [
                tf.TensorShape((input_shape[1][0], input_shape[1][1], input_shape[1
116
                tf.TensorShape((input_shape[1][0], input_shape[1][1], input shape[0]
117
118
            ]
```

### ▼ ENCODER-DECODER ATTENTION ARCHITECTURE

- 1. Encoder
- 2. LSTM1
- 3. LSTM2
- 4. LSTM3
- 5. Decoder
- 6. Attention Layer
- 7. Concatination of Decoder output and Attention output
- 8. Dense Layer

```
1 from keras import backend as K
2 K.clear_session()
3 latent_dim = 500
4
5 # Encoder
6 encoder_inputs = Input(shape=(max_len_text,))
7 enc_emb = Embedding(x_voc_size, latent_dim,trainable=True)(encoder_inputs)
8
9 #LSTM 1
10 encoder_lstm1 = LSTM(latent_dim,return_sequences=True,return_state=True)
11 encoder_output1, state_h1, state_c1 = encoder_lstm1(enc_emb)
12
13 #LSTM 2
14 encoder_lstm2 = LSTM(latent_dim,return_sequences=True,return_state=True)
15 encoder_output2, state_h2, state_c2 = encoder_lstm2(encoder_output1)
15 encoder_output2, state_h2, state_c2 = encoder_lstm2(encoder_output1)
```

```
16
17 #LSTM 3
18 encoder_lstm3=LSTM(latent_dim, return_state=True, return_sequences=True)
19 encoder outputs, state h, state c= encoder lstm3(encoder output2)
20
21 # Set up the decoder.
22 decoder inputs = Input(shape=(None,))
23 dec emb layer = Embedding(y voc size, latent dim,trainable=True)
24 dec emb = dec emb layer(decoder inputs)
25
26 #LSTM using encoder states as initial state
27 decoder lstm = LSTM(latent dim, return sequences=True, return state=True)
28 decoder_outputs, decoder_fwd_state, decoder_back_state = decoder_lstm(dec_emb,in:
29
30 #Attention Layer
31 attn layer = AttentionLayer(name='attention layer')
32 attn out, attn states = attn layer([encoder outputs, decoder outputs])
34 # Concat attention output and decoder LSTM output
35 decoder concat input = Concatenate(axis=-1, name='concat layer')([decoder output
37 #Dense layer
38 decoder_dense = TimeDistributed(Dense(y_voc_size, activation='softmax'))
39 decoder outputs = decoder dense(decoder concat input)
40
41 # Define the model
42 model = Model([encoder_inputs, decoder_inputs], decoder_outputs)
43 model.summary()
```

**C**→

WARNING:tensorflow:From /usr/local/lib/python3.6/dist-packages/keras/backend/

WARNING:tensorflow:From /usr/local/lib/python3.6/dist-packages/keras/backend/

WARNING:tensorflow:From /usr/local/lib/python3.6/dist-packages/keras/backend/

WARNING:tensorflow:From /usr/local/lib/python3.6/dist-packages/tensorflow cor Instructions for updating:

Call initializer instance with the dtype argument instead of passing it to th WARNING:tensorflow:From /usr/local/lib/python3.6/dist-packages/tensorflow cor Instructions for updating:

If using Keras pass \* constraint arguments to layers.

WARNING:tensorflow:From /usr/local/lib/python3.6/dist-packages/tensorflow cor

Model: "model"

Layer (type)	Output Shape	Param #	Connected to				
input_1 (InputLayer)	[(None, 80)]	0	0				
embedding (Embedding)	(None, 80, 500)	25785500	input_1[0][0				

1 model.compile(optimizer='rmsprop', loss='sparse categorical crossentropy')

```
1 es = EarlyStopping(monitor='val loss', mode='min', verbose=1)
   LSUIL T (LSIM)
                                      ן (None, סט, סטט), (N ∠טט∠טטט
                                                                          LS LINTO][0]
1 \times tr
2 y tr[:,:-1]
3 y_tr.reshape(y_tr.shape[0],y_tr.shape[1], 1)[:,1:]
```

C→

```
array([[[ 13],
               14],
            ſ
            ſ
                2],
                0],
            [
                 0],
            [
                0]],
           [[ 34],
            [ 168],
            [
               46],
            [
                0],
            Γ
                 01.
            [
                 0]],
           [[4593],
            Γ
                 2],
            [
                 0],
                 0],
            [
                 0],
1)[:,1:] ,epochs=50,callbacks=[es],batch size=512, validation data=([x val,y val[
```

```
WARNING:tensorflow:From /usr/local/lib/python3.6/dist-packages/tensorflow cor
Instructions for updating:
Use tf.where in 2.0, which has the same broadcast rule as np.where
Train on 79516 samples, validate on 8836 samples
Epoch 1/50
Epoch 2/50
Epoch 3/50
Epoch 4/50
Epoch 5/50
Epoch 6/50
Epoch 7/50
Epoch 8/50
Epoch 9/50
Epoch 00009: early stopping
```

```
1 from matplotlib import pyplot
2 pyplot.plot(history.history['loss'], label='train')
3 pyplot.plot(history.history['val_loss'], label='test')
4 pyplot.legend()
5 pyplot.show()
```

 $\Box$ 

```
3.2 - train - test

3.0 - 2.8 - 2.4 - 2.2 - 2.0 - 1.8 - 0 - 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8
```

```
1 reverse_target_word_index=y_tokenizer.index_word
2 reverse_source_word_index=x_tokenizer.index_word
3 target_word_index=y_tokenizer.word_index
```

```
1 # encoder inference
  2 encoder model = Model(inputs=encoder inputs,outputs=[encoder outputs, state h, state inputs, 
  3
  4 # decoder inference
  5 # Below tensors will hold the states of the previous time step
  6 decoder state input h = Input(shape=(latent dim,))
  7 decoder state input c = Input(shape=(latent dim,))
  8 decoder hidden state input = Input(shape=(max len text, latent dim))
  9
10 # Get the embeddings of the decoder sequence
11 dec emb2= dec emb layer(decoder inputs)
12
13 # To predict the next word in the sequence, set the initial states to the state:
14 decoder outputs2, state h2, state c2 = decoder lstm(dec emb2, initial state=[decoder outputs2])
15
16 #attention inference
17 attn out inf, attn states inf = attn layer([decoder hidden state input, decoder
18 decoder_inf_concat = Concatenate(axis=-1, name='concat')([decoder_outputs2, atti
20 # A dense softmax layer to generate prob dist. over the target vocabulary
21 decoder_outputs2 = decoder_dense(decoder_inf_concat)
22
23 # Final decoder model
24 decoder model = Model(
25 [decoder inputs] + [decoder_hidden_state_input,decoder_state_input_h, decoder_s
26 [decoder_outputs2] + [state_h2, state_c2])
```

```
1 def decode sequence(input seq):
2
     # Encode the input as state vectors.
     e out, e h, e c = encoder model.predict(input seq)
3
     print('input seq: {}, e out: {} '.format(input seq,e out))
4
5
     # Generate empty target sequence of length 1.
     target_seq = np.zeros((1,1))
6
7
8
     # Chose the 'start' word as the first word of the target sequence
9
     target_seq[0, 0] = target_word_index['start']
```

```
Τ()
11
       stop condition = False
       decoded sentence = ''
12
      while not stop condition:
13
           output tokens, h, c = decoder model.predict([target seq] + [e out, e h,
14
15
16
           # Sample a token
           sampled token index = np.argmax(output tokens[0, -1, :])
17
18
           sampled token = reverse target word index[sampled token index]
           print("sampled_token:",sampled_token)
19
           if(sampled token!='end'):
20
               decoded sentence += ' '+sampled token
21
22
23
               # Exit condition: either hit max length or find stop word.
           if (sampled token == 'end' or len(decoded sentence.split()) >= (max len
24
25
                   stop condition = True
26
27
           # Update the target sequence (of length 1).
28
           target seq = np.zeros((1,1))
           target seg[0, 0] = sampled token index
29
          # stop condition = True
30
31
           # Update internal states
32
           e h, e c = h, c
33
34
       return decoded sentence
```

```
1 def seq2summary(input seq):
      newString=''
2
3
      for i in input seq:
        if((i!=0 and i!=target_word_index['start']) and i!=target_word_index['end
4
5
           newString=newString+reverse target word index[i]+' '
6
       return newString
7
8 def seq2text(input seq):
      newString=''
9
      for i in input_seq:
10
11
        if(i!=0):
12
           newString=newString+reverse source word index[i]+' '
13
       return newString
```

```
1 for i in range(len(x val)):
   print("Review:",seq2text(x_val[i]))
   print("Original summary:",seq2summary(y_val[i]))
   print("Predicted summary:",decode sequence(x val[i].reshape(1,max len text)))
5
   print("\n")
```

C→

#### Streaming output truncated to the last 5000 lines.

sampled\_token: good
sampled\_token: flavor
sampled token: end

Predicted summary:

Predicted summary: good flavor

```
Review: cheese good fit meal well expense shipping made one time purchase
Original summary: my view
input seq: [[ 208
                      2
                         798
                              237
                                     27 3124
                                              152
                                                     44
                                                           4
                                                               18
                                                                    175
                                                                           0
                                                                                0
                          0
                                                                          0
     0
          0
               0
                     0
                               0
                                          0
                                               0
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                                     0
                                          0
                                               0
                                                     0]], e out: [[[-7.06569403e
    2.75606066e-02 -8.61830190e-02]
  [-0.000000000e+00 -7.38541126e-01  1.49689302e-01 ... -1.61938876e-01
   -2.12566257e-01 -1.95980161e-01]
  [-0.00000000e+00 -8.35797429e-01
                                      1.15898706e-01 ... -0.00000000e+00
   -5.27184904e-01 -2.25661531e-01]
  . . .
  [-0.00000000e+00 7.54418969e-01 -4.92181822e-19 ...
                                                           0.00000000e+00
   -7.47757316e-01 9.93053734e-01]
  [-0.00000000e+00 7.54636288e-01 -2.41891496e-19 ...
                                                           0.00000000e+00
   -7.47757316e-01 9.93096948e-01]
                     7.54842639e-01 -1.18954957e-19 ... 0.00000000e+00
  [-0.0000000e+00
   -7.47757316e-01
                     9.93138492e-01]]]
sampled token: good
sampled_token: end
```

```
Review: love soda wish could find store live sells
Original summary: go big red
                                         29
input seq: [[
                 11
                      330
                            292
                                   37
                                               55
                                                    529 1183
                                                                  0
                                                                        0
                                                                              0
                                                                                    0
                                                                                          0
      0
           0
                 0
                       0
                             0
                                   0
                                         0
                                               0
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                                                                 0
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                                               0
                                                     0
                                                           0]], e_out: [[[-1.0335382e-
    2.0938370e-01
                     9.4334736e-02]
```

```
[ 9.1556802e-02 5.5124629e-02 0.0000000e+00 ... -5.4362804e-02
```

-0.0000000e+00 -5.7870355e-02]

good

 $[ \ \ 3.6955813e-01 \quad 0.0000000e+00 \quad 0.0000000e+00 \ \dots \ -5.6370944e-01$ 

-0.0000000e+00 -0.0000000e+00]

[-0.0000000e+00 7.5272423e-01 4.2480649e-19 ... 0.0000000e+00 9.8137665e-01 9.8862898e-01]

[-0.0000000e+00 7.5271916e-01 2.1147351e-19 ... 0.0000000e+00

 $[-0.00000000e+00 \quad 7.5271469e-01 \quad 1.0527355e-19 \quad \dots \quad 0.0000000e+00$ 

9.8863024e-01]

9.8137665e-01 9.8863143e-01]]]

9.8137665e-01

sampled\_token: love
sampled\_token: it
sampled token: end

```
Predicted summary:
                             love it
        Review: first found product year ago free mini bag giveaway malamute large do
        Original summary: hips
        input seq: [[
                                      7
                                          172
                                                 316
                                                            1084
                                                                     38 17924
                                                                                      22
                         34
                               41
                                                        50
                                                                               9911
          10614
                 3405
                        596
                                34
                                     925
                                           142
                                                2514
                                                        505
                                                              472
                                                                   2843
                                                                            78 10093
             34
                   18
                        172
                               310
                                     678
                                           250
                                                1984
                                                        250
                                                              110
                                                                     142
                                                                          2514
                                                                                 453
                              1070
           5885
                7209
                        388
                                      23
                                                               23 42795
                                                                                 596
                                           142 2514
                                                        19
                                                                           100
            191
                 1070
                         250
                               110
                                     142
                                          2514
                                                  956
                                                        179
                                                                1
                                                                     663
                                                                            94
                                                                                  98
              5
                   59
                               332
                                     433
                                          3854
                                                  403
                                                        157
                          7
                                                              596
                                                                     543
                                                                          1800
                                                                                   0
                                       0
              0
                    0
                           0
                                 0
                                                    0
                                                          0]], e out: [[[ 8.9793904e-03
                                             0
           -3.3703282e-02
                           3.0401871e-03]
          [ 1.9645076e-02 -4.1413750e-02 -1.4523652e-01 ...
                                                               3.2561488e-02
           -6.1633680e-02
                           3.0804945e-02]
          [1.4457826e-01 -5.6526285e-02 -1.8074439e-01 ... -7.7757694e-02]
           -1.2758271e-01 3.8009115e-02]
          [-0.0000000e+00 4.5549932e-01 -3.6728077e-02 ...
                                                               5.4382679e-07
            1.0000000e+00 9.4710302e-01]
          [-0.0000000e+00 6.5296352e-01 -1.5902488e-02 ...
                                                               1.3065485e-08
            1.0000000e+00 9.5843458e-01]
          [-0.0000000e+00 6.9378024e-01 -6.5874867e-03 ...
                                                               2.9970532e-10
            1.0000000e+00 9.6269518e-01]]]
        sampled token: my
        sampled token: dog
        sampled token: loves
        sampled token: these
        sampled token: end
        Predicted summary: my dog loves these
        Review: given one one neighbor child neighbor kids usually absolutely deserve
        Original summary: the swedish chef would be proud
        input seq: [[ 519
                                4
                                      4
                                         3228 1101 3228
                                                             258
                                                                    212
                                                                          275 4438
                                                                                      13
            621
                 1270
                                           143
                                                5411
                                                                   4559
                                                                                 748
                               967
                                     260
                                                         80
                                                             1345
                                                                           247
            143
                  149 5133
                             1469
                                      56
                                             4
                                                 8656
                                                         92
                                                             1827
                                                                   6122
                                                                          2186
                                                                                  18
           1827
                7618 9977 19888 19048
                                                        688
                                                              526 11024 10219
                                                                                 533
                                          1910
                                                  285
            212 18449
                        298
                                76 51339
                                          8861
                                                 1287
                                                         93
                                                               64
                                                                     565 10824 10357
            194
                 1473
                       5464
                                    3104
                                          2207 41941
                                                       8354 24114 1105
                               114
                                                                          2162
                                                                               1187
            804
                  512
                         387
                                11
                                    1473
                                            21
                                                   11
                                                       1018]], e_out: [[[-0.04834938 -0
            0.023740361
          [-0.08008475 -0.15028334 -0.03534965 ... -0.0730432
           -0.0176823 ]
          [-0.10908663 -0.19410492 -0.13394214 ...
                                                      0.08524233 -0.08633871
           -0.087781031
          . . .
          [-0.
                        -0.6468846
                                    -0.26187494 ... -0.09695553
                                                                  0.26857144
           -0.31946087]
          [-0.
                                    -0.29373294 ...
                                                      0.06167005
                        -0.8380164
                                                                   0.34595323
           -0.4058543 1
                        -0.83001465 -0.34297246 ...
                                                      0.06024646
          [-0.
                                                                  0.36285335
https://colab.research.google.com/drive/1COjjfgR0oJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 17/100
```

```
-0.36864132]]]
sampled_token: great
sampled_token: for
sampled_token: kids
sampled_token: with
sampled_token: allergies
sampled token: end
```

Predicted summary: great for kids with allergies

```
Review: received mine several weeks ago without dents tasty product would nic
Original summary:
input seq: [[ 209
                        216
                              457
                                    316
                                          78 3172
                                                    137
                                                            7
                                                                 5
                                                                     61
                                                                          64
                                                                               150
                    571
             926 2212
  1031
        262
                         52
                              126
                                    37 1031
                                                0
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                                                     0]], e_out: [[[ 2.6106820e-
    6.1230503e-02 5.2930456e-021
  [-1.1589267e-02 -1.1030030e-01 -1.9043247e-01 ... -1.7855901e-01
                   3.7652954e-02]
    2.2050418e-01
  [-8.2733400e-02 \quad 2.4267675e-01 \quad -3.3305651e-01 \quad ... \quad -3.7017133e-02
    4.0484864e-01 -6.6288173e-02]
  [-0.0000000e+00 6.6544300e-01 -1.2325200e-23 ...
                                                        0.000000e+00
    4.4122256e-02 9.8952544e-01]
  [-0.0000000e+00 6.6498971e-01 -3.9178520e-24 ...
                                                        0.0000000e+00
    4.4122256e-02 9.8954362e-01]
  [-0.0000000e+00 6.6453135e-01 -1.2449553e-24 ...
                                                        0.0000000e+00
    4.4122256e-02 9.8956251e-01]]]
sampled token: great
sampled token: product
sampled token: end
```

Predicted summary: great product

```
Review: seller prompt respond returned items could use fragrance strong right
Original summary: not hypoallergenic
input_seq: [[ 653 2404 4829 1635
                                          37
                                   601
                                               20 2239
                                                         109
                                                               82
                                                                   479
                                                                        334
                                                                                0
     0
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                                          0
                                               0
                                                    0]], e out: [[[-8.1017554e-
    1.7711158e-01
                   1.0455084e-01]
  [-1.2656605e-01 -3.3669928e-01  4.7843107e-03  ... -4.5035157e-01
    9.3036324e-02 -1.0736986e-01]
  [-3.5258418e-01 -5.4956216e-01 -1.5498106e-01 ... -7.3084062e-01
    9.8249596e-03 -4.3609235e-01]
  [-4.6424926e-03 7.7916145e-01 -7.6383506e-21 ...
                                                        0.000000e+00
    8.0784601e-01 9.9248940e-01]
  [-4.6432070e-03 7.7915877e-01 -3.4158872e-21 ...
                                                       0.0000000e+00
    8.0784601e-01 9.9249190e-011
                    7.7915692e-01 -1.5275713e-21 ...
  [-4.6442542e-03
                                                       0.0000000e+00
    8.0784601e-01
                    9.9249434e-01]]]
sampled token: not
sampled token: as
```

```
sampled_token: advertised
```

sampled\_token: end

Predicted summary: not as advertised

```
Review: purchased friend searching flavor instant coffee could find brewing a
Original summary: southern pecan coffee
input seq: [[ 180
                   524 1438
                                           9
                                                    29
                                                         837
                                                              458
                                8
                                   616
                                               37
                                                                   169
                                                                           3
                                                                                6
     0
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                                    0
                                          0
                                               0
                                                    0]], e out: [[[ 1.3316658e-
   -5.9908524e-02
                   2.4889732e-02]
  [ 1.1157328e-01 -8.7558448e-02 -5.1708370e-02 ... -2.7041015e-01
   -9.7733274e-02
                    3.0097896e-02]
  [ 1.3095906e-01 -7.3820233e-02 -1.5124258e-01 ... -3.0919105e-01
   -1.7806049e-01 -5.9075255e-02]
  [-2.0291310e-02 5.7638043e-01 -1.2394265e-15 ...
                                                       0.0000000e+00
   -9.7996002e-01 9.8735839e-01]
  [-2.0290790e-02 5.7637519e-01 -6.4053738e-16 ...
                                                       0.000000e+00
   -9.7996002e-01 9.8735923e-01]
  [-2.0290418e-02
                    5.7637054e-01 -3.3102918e-16 ...
                                                       0.0000000e+00
   -9.7996002e-01 9.8736000e-01]]]
sampled token: great
sampled token: coffee
sampled token: end
Predicted summary: great coffee
```

Review: coffee maker husband wanted got great good features comes coffee make Original summary: it just ok input seq: [[ 2 4501 14 4209 9 2562 1553 0]], e\_out: [[[ 7.1154499e--0.0000000e+00 -6.5003490e-01] 5.0760794e-02 -3.0743206e-01 ... [ 9.5626527e-01 0.0000000e+00 -0.0000000e+00 -8.7000215e-01] [ 9.9314463e-01 7.9895228e-02 -8.9354980e-01 ... 0.0000000e+00 -0.0000000e+00 -2.8438905e-01] [-1.9941565e-02 6.2351203e-01 -7.4829554e-18 ... 0.0000000e+00 -9.9825412e-01 9.7885442e-01] [-1.9876156e-02 6.2443966e-01 -3.2213711e-18 ... 0.000000e+00 -9.9825412e-01 9.7894996e-011 [-1.9806547e-02 6.2496161e-01 -1.3876310e-18 ... 0.0000000e+00

Review: bit hesitant ordering mixed reviews however good seemed outweigh bad https://colab.research.google.com/drive/1COjjfgROoJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 19/100

-9.9825412e-01 9.7901642e-01]]]

good coffee

sampled\_token: good
sampled\_token: coffee
sampled\_token: end
Predicted summary: good

```
Original summary: my mom was thrilled
input seq: [[ 53 2083
                         336
                              366
                                    224
                                          93
                                                    537 9363
                                                              107
                                                                    451
                                                                                69
                                                   845
                                                          5
                                                               26
                                                                    18
                                                                        971
          1 101
                   105
                        101
                             933
                                    56
                                        101 7343
        115 4654
                   569
                        143
                             231
                                   873
                                         18
                                             933
                                                    56
                                                        825
                                                             651
                                                                   652 4196
    30
  1557 1071
                                                             203
                                             200
                                                    97
             567
                   130
                        408 5422
                                   107
                                        224
                                                        843
                                                                     0
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                                     0
                                          0
                                                0
     0
                                                     0]], e out: [[[-6.6807419e-
   -4.2964585e-02
                   2.7433742e-02]
  [-1.4706691e-01 -4.7304802e-02 -3.4328806e-01 ...
                                                        1.8677303e-01
   -1.7062511e-03
                   1.8184091e-01]
  [-1.6690207e-01 -1.6808355e-01 -5.0009632e-01 ...
                                                        2.2932436e-01
    1.1843389e-01 2.8143871e-01]
  [-0.0000000e+00 6.0890168e-01 -5.0340998e-09 ...
                                                        0.000000e+00
    8.9566000e-02 9.8250765e-01]
  [-0.0000000e+00 6.0614645e-01 -1.6358483e-09 ...
                                                        0.0000000e+00
    8.9566000e-02 9.8244113e-01]
  [-0.0000000e+00 6.0368419e-01 -5.3254129e-10 ...
                                                        0.0000000e+00
    8.9566000e-02
                    9.8249120e-01]]]
sampled token: not
sampled token: bad
sampled token: end
Predicted summary:
                     not bad
Review: bought cinnamon oil specifically improve flavor tea busy steep tea pu
Original summary: fantastic for ice tea
input seq: [[
                 46
                      495
                            139
                                  2334 2354
                                                  8
                                                           1116 1527
                                                       10
                                                                          10
                                                                                11
     10
         1174
                  10
                      1467
                             841
                                     40
                                          679
                                                 111
                                                      5895
                                                             276
                                                                    533
                                                                         4797
                                                               39
    153
         1467
                  74
                       754
                              49
                                   1429
                                          495
                                                 139
                                                       176
                                                                          679
                                                                     40
    504
         7609
               5277
                         3
                                   6252
                                          181
                                               2108
                                                      2482
                                                            3626 51183
                                                                          755
                               10
     10
          495
                 168
                         2
                             252
                                     32
                                          982
                                                  51
                                                      1429 13247
                                                                    286
                                                                          210
    495
          139
                2132
                      5329
                            6722
                                    176
                                           39
                                                  35
                                                        10 1425
                                                                     48
                                                                         2354
    254
            0
                   0
                         0
                                      0
                                            0
                                                   0]], e out: [[[-3.4551639e-02
    2.7833385e-02 6.2093455e-02]
  [-6.7477793e-02
                   1.7731726e-01 -1.1004794e-02 ...
                                                        4.0115891e-03
   -1.2720317e-01 -2.1451613e-01]
  [-1.1455941e-01
                   5.9542585e-02 1.4938577e-01 ... -2.5341731e-02
   -1.7915110e-01 -3.6077432e-02]
  [-1.2653086e-01 -5.9984084e-02 -2.5927049e-01 ... -1.3619372e-05]
   -2.1082957e-01 9.6395433e-011
  [-5.0938465e-02 \quad 4.4186287e-02 \quad -1.6455001e-01 \quad \dots \quad -2.7831099e-06
   -2.1082957e-01 9.6504772e-01]
  [-6.2531402e-04 \quad 1.2872876e-01 \quad -8.5845575e-02 \quad \dots \quad -5.0800907e-07
   -2.1082957e-01 9.6374446e-01]]]
sampled token: great
sampled token: for
sampled_token: iced
sampled_token: tea
sampled token: end
Predicted summary: great for iced tea
Review: perfect gift tea coffee lovers cut removed valentine day sticker marc
Original summary: rific
input_seq: [[
               97
                    372
                          10
                                 9 1567
                                         422 2255 5899
                                                          56 4821 3390
                                                                         428
                                                                                 0
                0
                     0
                          0
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```

```
text summarisation.ipynb - Colaboratory
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                                                     0]], e_out: [[[-1.37660995e
    2.57361263e-01
                     1.70644939e-01]
  [-1.29447386e-01 -4.46968019e-01 -1.70093492e-01 ... -2.80413747e-01
    4.78638589e-01
                     6.39405847e-02]
  [ 1.17965475e-01 -2.63443328e-02 0.00000000e+00 ... -2.88221240e-01
   -0.00000000e+00 -4.92833644e-01]
  [-0.00000000e+00 7.42061615e-01 -2.39822803e-21 ...
                                                           0.0000000e+00
    9.98102188e-01 9.80804861e-01]
  [-0.0000000e+00
                     7.41974235e-01 -1.09006784e-21 ...
                                                           0.0000000e+00
    9.98102188e-01 9.80811894e-01]
  [-0.0000000e+00
                     7.41889119e-01 -4.95473058e-22 ...
                                                           0.00000000e+00
    9.98102188e-01
                     9.80818748e-01]]]
sampled token: great
sampled token: product
sampled token: end
Predicted summary:
                     great product
```

Review: flavor okay though taste bit sweet much similar products crystal ligh

```
Original summary: ok but other brands are better
                       683
                                            53
                                                              436
                                                                     106
                                                                          1714
                                                                                  24
input seq: [[
                  8
                             115
                                      3
                                                  42
                                                         15
    214
            87
                 419
                       2663
                              413
                                    1020
                                            987
                                                  325
                                                        1639
                                                               382
                                                                       40
                                                                             940
    149
            53
                 329
                        378
                               58
                                           3430
                                                  325
                                                        4191
                                                                35
                                                                       73
                                                                             219
                                      88
   2987
           106
                 413
                        864
                             7745
                                      21
                                              7
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      0
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                                 0
                                       0
                                              0
   -1.28807187e-01 -1.14374585e-01]
  [ 5.92423379e-01
                     0.00000000e+00
                                       1.63683761e-02 ... -3.47855091e-01
   -6.57178909e-02 -0.00000000e+00]
                                       8.23225826e-02 ... -5.68929911e-01
  [ 9.70529377e-01
                     0.00000000e+00
   -0.00000000e+00 -0.0000000e+00]
  . . .
                     5.97096086e-01 -4.39487754e-14 ...
  [-0.0000000e+00
                                                             0.0000000e+00
                    9.79910254e-011
   -5.60664296e-01
```

[-0.0000000e+00 5.96527457e-01 -1.55215975e-14 ... 0.00000000e+00 -5.60664296e-01 9.79897141e-01]

[-0.0000000e+00 5.95993876e-01 -5.48181428e-15 ... 0.0000000e+00

-5.60664296e-01 9.79879916e-01]]]

sampled token: not sampled\_token: bad sampled token: end

Predicted summary: not bad

Review: ran kitchen soon opened mix little dry dog food devours suprised firs Original summary: my loved this input\_seq: [[ 1316 1044 18753 

532]], e\_out: [[[-0.03543728 -0

https://colab.research.google.com/drive/1COjjfgR0oJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 21/100

0.29259396

-0.29510102 ... -0.1357536

0.1393918 J [-0.1897758

0.24457303]

-0.5343504

```
[-0.10682797 -0.8716429
                             -0.28321615 ... -0.22664082
                                                           0.42090508
   -0.257736121
  [-0.2784283 -0.5343159
                             0.02062809 ... -0.35940412
                                                           0.5889418
   -0.0998139 ]
                             -0.03643061 ... -0.3002018
  [-0.19033144 -0.7229147
                                                           0.54397
   -0.22073212]
                            -0.06699568 ... -0.00250747
  [-0.12476692 -0.6680675
                                                           0.486666
   -0.35974392]]]
sampled token: not
sampled token: impressed
sampled token: end
Predicted summary:
                    not impressed
Review: two fairly finicky cats ate first eat shopping grain free canned food
Original summary: cats will not eat it
input seq: [[ 49 771 1706
                              202
                                          34
                                                33 1341
                                                         510
                                                                50
                                                                    393
                                                                          12
                                                                              260
   292 598
             388 2156 3449
                                0
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                                                     0]], e out: [[[-4.5080524e-
    7.1313925e-02 8.5228816e-02]
  [-6.9689840e-02 -4.4700958e-02 -3.0864611e-01 ...
                                                        1.5095630e-01
    1.7495219e-02
                    9.4943732e-02]
  [-1.4841802e-01 -1.7677714e-01 -4.6896410e-01 ...
                                                        2.4528290e-01
                    1.9433707e-01]
   -5.1159147e-02
  [-0.0000000e+00
                    6.0998398e-01 -2.3351033e-22 ...
                                                        0.000000e+00
    9.9999690e-01
                    9.8138040e-011
  [-0.0000000e+00 6.1005276e-01 -9.8103758e-23 ...
                                                        0.000000e+00
    9.9999690e-01 9.8142499e-01]
  [-0.0000000e+00 6.1011583e-01 -4.1226843e-23 ...
                                                        0.0000000e+00
    9.9999690e-01 9.8146582e-01]]]
sampled_token: my
sampled token: cats
sampled_token: love
sampled token: it
sampled token: end
Predicted summary: my cats love it
Review: love product gluten free diet tasty allow stay diet
Original summary: larabar fruit and nut food bars
input_seq: [[
               11
                      7
                         186
                                50
                                    181
                                         137 1575
                                                    688
                                                         181
                                                                      0
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    2.0938370e-01
                    9.4334736e-02]
  [-2.3965186e-02 -1.2421138e-01 -1.9879983e-01 ...
                                                        3.8977776e-02
    3.2080376e-01
                    9.2129707e-02]
  [-1.4028953e-03 -5.8462328e-01 -3.2467562e-01 ... -2.0489214e-01
    7 40555660 01
                   1 01022500 011
```

```
/.4000000e-WI I.0192000E-WI]
  [-0.0000000e+00 6.8620479e-01 -3.4544158e-22 ...
                                                        0.000000e+00
    9.5259273e-01 9.9049073e-011
  [-0.0000000e+00 6.8623650e-01 -1.5179519e-22 ...
                                                        0.0000000e+00
    9.5259273e-01 9.9050122e-011
  [-0.00000000e+00 \quad 6.8626940e-01 \quad -6.6708060e-23 \quad \dots \quad 0.0000000e+00
    9.5259273e-01 9.9051172e-01]]]
sampled token: gluten
sampled token: free
sampled token: end
Predicted summary: gluten free
Review: decent product lot texture issues flavor light buttery sweet expected
Original summary: an aquired taste
                        7
                                                                   42
input seq: [[
               649
                             77
                                         596
                                                 8
                                                      247
                                                                               53
                                   158
                                                           1565
                                                                         461
   1137
          224
                      5944
                             578
                                      7
                                         1820
                                               1046
                                                       219
                                                             158
                                                                   596
                                                                          110
               5180
    530
         1692
                                  2084
                                               2063 11696
                299
                       585
                             563
                                          583
                                                              80
                                                                   620
                                                                           33
   1186
           25
               1046
                       844
                            5979
                                     58
                                           13
                                               3662 11696
                                                               7
                                                                    17 13006
   4876
        1223
                 120
                       639
                             586
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                                            0
                                                  0]], e out: [[[ 1.05182946e-0
            0
                         0
   -1.16516553e-01 -2.23006513e-02]
  [ 3.04618657e-01 -3.41661796e-02 -1.11166932e-01 ... -1.94728717e-01
   -2.39116162e-01 3.20712477e-021
  [ 4.25192505e-01 -6.90403655e-02 -2.70871103e-01 ... -1.51050061e-01
   -3.20577800e-01 8.52910131e-02]
  [-0.00000000e+00 4.86329764e-01 -2.58003197e-09 ...
                                                           8.33381010e-26
    9.23565090e-01 9.53673124e-011
  [-0.00000000e+00 4.84104514e-01 -8.99846087e-10 ...
                                                           5.69363709e-27
    9.23565090e-01 9.53733683e-01]
  [-0.00000000e+00 4.82103139e-01 -3.14602150e-10 ... 3.98509885e-28
    9.23565090e-01 9.53792512e-01]]]
sampled token: great
sampled token: for
sampled token: those
sampled token: with
sampled token: soy
sampled token: end
Predicted summary: great for those with soy
Review: really good tender little sweet easy make whirley pop excellent chedd
Original summary: keep poppin
input seq: [[
               14
                      2 1428
                               19
                                     42
                                          96
                                               26 4910
                                                         534
                                                              177 1140
                                                                         499
                                                                              213
     0
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                                                     0]], e out: [[[-3.1940036e-
          0
    4.5668848e-02
                    5.3386271e-021
  [-2.0486318e-02
                   4.1238684e-02 -1.8602225e-01 ...
                                                       9.3635201e-02
   -6.0147814e-02
                    5.3945031e-02]
  [ 2.6681772e-02
                    7.7599697e-02 -4.2714858e-03 ... -3.1785309e-01
   -2.3499098e-01
                    1.9380463e-031
```

https://colab.research.google.com/drive/1COjjfgR0oJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 23/100

2 0760/07-1/

0

```
text summarisation.ipynb - Colaboratory
  1 - 0 • 0000000<del>c</del> + 00
                    0.43017076-07
                                    ∠.U/UU+U/C-1+ ...
   -9.9865174e-01 9.9093580e-011
  [-0.0000000e+00 6.4984733e-01
                                    1.0849944e-14 ...
                                                         0.0000000e+00
   -9.9865174e-01
                    9.9101871e-01]
  [-0.0000000e+00 6.5001422e-01 5.6754299e-15 ...
                                                         0.0000000e+00
   -9.9865174e-01
                    9.9109900e-01111
sampled token: good
sampled token: stuff
sampled token: end
Predicted summary: good stuff
Review: delicious arrive stale send back replaced fresh merchandise product r
Original summary: beg to differ with previous reviewer
input seq: [[ 63 1376
                         676 1018
                                     100 2179
                                                108 6131
                                                             7 1209 2168
                           0
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                                                      0]], e out: [[[-8.8702202e-
    1.9759287e-01 -1.9559221e-01]
```

232 2202

[-5.3583845e-02 2.9350117e-01 -2.6669803e-01 ... -3.2155061e-01 5.0628912e-01 -7.8470990e-02] [ 3.0938873e-02 2.6779208e-01 1.3559838e-02 ... -5.1130664e-01 -2.8783564e-02 -0.0000000e+00] [-0.0000000e+00 8.6450350e-01 6.1582206e-19 ... 0.00000000e+009.5782512e-01 9.8896670e-011

[-0.0000000e+00 8.6449361e-01 2.8913351e-19 ... 0.000000e+00 9.5782512e-01 9.8896736e-01] [-0.0000000e+00 8.6448479e-01 1.3574990e-19 ... 0.0000000e+00 9.5782512e-01 9.8896796e-01]]]

sampled token: melted sampled token: end

Predicted summary: melted

Review: lazy guinness river bought product specifically test claims made mark Original summary: color me input seq: [[ 2975 11010 4763 2052 30174 1447]], e\_out: [[[-0.00353598 0.03605036] [ 0.3065646 0.06296074 -0.10121404 ... 0.1451339 -0.04470012 -0.183871841 [ 0.91197705 -0.34131065 ... 0.23659475 -0.08783245 0. 0.05552774] [ 0.5022508 0.03591739 0. ... -0.4096242 -0.05432143 -0.11056185] [ 0.908058 0.0293221 0. ... -0.69038385 -0.09941721 -0. ] 0.17698535 ... -0.7947912 -0.11614135 [ 0.7730059 0.0069039 -0.01269613]]]

sampled token: not

```
sampled_token: so
sampled_token: good
sampled_token: end
```

sampled\_token: end
Predicted summary:

Predicted summary: not so good

```
Review: several years wife looked every candy store walk past find candy chil
Original summary: like the old days
input seq: [[ 216
                    94
                        437
                                    76
                                       232
                                              55 1975
                                                       483
                                                              29
                                                                  232 2168 1472
                       372 1623
                                  200
                                       160
                                            967 5608
    41
         46
              16
                  664
                                                       148
                                                            100 1587
                                                                      238
   462
         98 2720
                  232
                        473
                               0
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                                                   0]], e out: [[[-6.1122678e-
    3.6955636e-02
                  1.6961282e-02]
  [-1.5157692e-01
                  1.3491471e-01 -3.0809563e-01 ...
                                                       1.2977497e-01
    2.5191551e-01 1.5279487e-01]
  [-1.6951738e-01 2.6013902e-01 -4.9768528e-01 ...
                                                      1.8065412e-01
    5.1294571e-01 2.7874210e-01]
  [-0.0000000e+00 7.9798788e-01 1.1420000e-14 ...
                                                       0.0000000e+00
    9.3535537e-01
                   9.6719205e-01]
  [-0.0000000e+00 7.9773170e-01 4.6201052e-15 ...
                                                       0.0000000e+00
    9.3535537e-01
                   9.6720588e-01]
  [-0.0000000e+00
                   7.9751778e-01 1.8689018e-15 ...
                                                      0.0000000e+00
    9.3535537e-01
                   9.6721810e-01]]]
sampled token: the
sampled token: best
sampled token: end
Predicted summary: the best
```

```
Review: love product cherry soda without sugars chemicals present standard co
Original summary: delicious
input seq: [[
               11
                      7
                         435
                              330
                                     78 1138 1254 1549
                                                         865 1826
                                                                   214
                                                                        169
                                                                                8
  2721
          0
               0
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                                                    0]], e_out: [[[-1.0335382e-
    2.0938370e-01
                    9.4334736e-02]
  [-2.3965186e-02 -1.2421138e-01 -1.9879983e-01 ...
                                                       3.8977776e-02
    3.2080376e-01
                    9.2129707e-021
  [ 1.3118660e-01
                    2.4903392e-02
                                   0.0000000e+00 ... -3.5790825e-01
   -3.1108309e-02 -3.0496350e-02]
  [-0.0000000e+00 6.1980969e-01
                                   2.2418653e-17 ...
                                                       0.0000000e+00
   -6.7801344e-01 9.9227250e-01]
  [-0.0000000e+00 6.1980325e-01
                                   1.0583313e-17 ...
                                                       0.000000e+00
                    9.9227297e-01]
   -6.7801344e-01
  [-0.000000e+00
                    6.1979741e-01 4.9960865e-18 ...
                                                       0.0000000e+00
   -6.7801344e-01
                    9.9227345e-01]]]
sampled token: love
sampled_token: it
```

love it

```
text summarisation.ipynb - Colaboratory
Review: dental chews right size golden retrievers love chews arrived promptly
Original summary: good deal
input seq: [[1310
                    764
                               130 1321 6913
                                                11
                                                    764
                                                          231 1615
                                                                       2
                                                                          732
                                                                                 0
                          82
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                                                     0]], e out: [[[-2.2333644e-
    2.6010394e-01
                    3.8633034e-01]
  [-2.3822612e-01 -9.2599899e-01 -1.1948452e-01 ...
                                                         0.0000000e+00
    3.2881093e-01
                    8.6031914e-011
  [-1.9275257e-01 -9.8076224e-01 -6.9460265e-02 ...
                                                         0.000000e+00
    3.5739519e-02 9.7005957e-01]
  [-1.5672827e-02 7.9240137e-01 -5.3673884e-19 ...
                                                         0.00000000e+00
    1.0000000e+00 9.8510444e-011
  [-1.5668454e-02 7.9239225e-01 -2.7238763e-19 ...
                                                         0.000000e+00
    1.0000000e+00 9.8510456e-01]
  [-1.5664479e-02 7.9238403e-01 -1.3823278e-19 ...
                                                        0.0000000e+00
    1.0000000e+00 9.8510468e-01]]]
sampled token: greenies
sampled token: end
Predicted summary:
                     greenies
Review: wife food sensitives gluten eggs nuts dairy hard find really good foo
Original summary: perfect for finicky diets
                                                                    29
input seq: [[
                437
                       12 32306
                                   186
                                         899
                                                337
                                                     1074
                                                             118
                                                                           14
                                                          2
  23654
          552
                4145
                      4571
                              343
                                   1451
                                           181
                                                5313
                                                                5
                                                                     33
                                                                            30
   5313
           60
                 227
                        76
                              293
                                    250
                                           743
                                                 381
                                                         27
                                                               30
                                                                     64
                                                                          4571
```

```
4528
           95
                 12
                       63
                               0
                                           0
                                                 0
                                                                    0
                                     0
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            0
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                  0
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                                                 0]], e out: [[[-4.2299796e-02
            0
                        0
                               0
    1.2117722e-01 8.6883239e-02]
  [-2.2306746e-01 -3.4995750e-01 -3.5673985e-01 ...
                                                      5.1401462e-02
    2.8623191e-01 2.5927624e-01]
  [-2.9993862e-01 -5.6052673e-01 -2.6676285e-01 ...
                                                      1.4824791e-01
    1.3615051e-01 -1.2113907e-01]
  [-0.0000000e+00 4.8110363e-01 -1.5120832e-14 ...
                                                      0.0000000e+00
    9.7097927e-01 9.5092314e-01]
  [-0.0000000e+00 4.8781309e-01 -6.0104979e-15 ...
                                                      0.0000000e+00
    9.7097927e-01 9.5056820e-011
  [-0.000000e+00
                   4.9369395e-01 -2.3998595e-15 ...
                                                      0.0000000e+00
    9.7097927e-01 9.5018685e-01]]]
sampled_token: great
sampled_token: for
sampled token: kids
sampled token: with
sampled_token: allergies
sampled token: end
Predicted summary: great for kids with allergies
```

Review: great easy use product pasta steaks tried tomato truffle well good ex Original summary: great and easy to use truffles input seq: [[ 6 96 20 7 255 2237 25 1083 1811 27 2 432 27

```
399
        191
               6
                   863
                          3 1811
                                    78 1093
                                             114
                                                   22 2304
                                                                    0
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                                                    0]], e out: [[[-1.4182791e-
    2.1750179e-01
                   1.6637650e-01]
  [-1.0458583e-01 -3.3914721e-01 -3.3701998e-01 ...
                                                        2.0314717e-01
    4.9922910e-01
                   2.8341073e-01]
  [-1.0131658e-01 -5.3022826e-01 -4.4018701e-01 ...
                                                        4.2239916e-01
    6.5521276e-01 2.8523889e-01]
  [-0.0000000e+00 5.2578771e-01 -1.4160027e-24 ...
                                                        0.0000000e+00
   -4.0060496e-01 9.5963705e-01]
  [-0.0000000e+00 5.2586478e-01 -4.8836964e-25 ...
                                                        0.0000000e+00
   -4.0060496e-01 9.5952535e-01]
  [-0.0000000e+00 5.2593660e-01 -1.6896150e-25 ...
                                                        0.0000000e+00
   -4.0060496e-01 9.5941216e-01]]]
sampled token: great
sampled token: product
sampled token: end
```

Predicted summary: great product

```
Review: tried quite different brands styles seaweed snacks definitely best fl
Original summary: addictive deliciousness
input_seq: [[ 25
                   149
                         99
                             214 6049 2851 449
                                                         24
                                                               8
                                                   116
                                                                  271 160
                                                                             135
  1035 1994 379 1396 2113 2610 1552
                                         8
                                            347
                                                 219
                                                        19
                                                             47
                                                                 151 5727
  2851 4082
                  318
                        113
                                  276 1399
                                            582
              48
                              21
                                                   18
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   -3.2897286e-02 -4.3892384e-02]
  [ 6.3040473e-02 2.3070043e-02 -1.7593163e-01 ...
                                                       2.7142459e-01
   -1.3014059e-01 3.5147533e-02]
  [ 2.7704039e-01 3.9980612e-03 -3.3429092e-01 ...
                                                       3.9681703e-01
   -1.6174650e-01 7.1106426e-02]
  [-0.0000000e+00 6.5475243e-01 -1.8241164e-15 ...
                                                       0.0000000e+00
    9.9352562e-01 9.4947499e-01]
  [-0.0000000e+00 6.5451658e-01 -7.3689124e-16 ...
                                                       0.0000000e+00
    9.9352562e-01
                   9.4955915e-011
  [-0.0000000e+00 6.5432340e-01 -2.9771673e-16 ...
                                                       0.0000000e+00
    9.9352562e-01
                   9.4964236e-01]]]
sampled token: love
sampled token: these
```

sampled token: end Predicted summary: love these

Review: stuff great subscribe save hooks month butters devours fast poops lik Original summary: dog eats this ish for breakfast lunch and dinner

```
input_seq: [[
                                 513
                                         281 16515
                                                        338
                                                              5141
                                                                      5444
                                                                               318
                                                                                     5295
                   84
                            6
                  3008
                            44
                                                            0
       6
           1044
                                    84
                                             1
                                                2607
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                                                            0]], e out: [[[ 4.4539031e-02
```

1.3723071e-01

3.2879063e-01

-5.6369055e-02 -3.0408883e-02]

4.4104621e-02 5.6240276e-021

1.9349799e-01 1.5484823e-01]

Predicted summary:

[-1.4792947e-01 -2.8152419e-02 4.9517486e-02 ...

[-2.1119645e-01 5.0844350e-03 -1.3332398e-01 ...

```
[-0.0000000e+00 5.9653127e-01 -3.9175202e-23 ...
                                                      0.0000000e+00
    9.9988079e-01 9.5982617e-01]
  [-0.0000000e+00 5.9664232e-01 -1.5282340e-23 ...
                                                      0.000000e+00
    9.9988079e-01 9.5990038e-01]
  [-0.0000000e+00 5.9675354e-01 -5.9647915e-24 ...
                                                      0.000000e+00
    9.9988079e-01 9.5997506e-01]]]
sampled token: great
sampled token: for
sampled token: on
sampled token: the
sampled token: go
sampled token: end
Predicted summary: great for on the go
Review: instead taste like starbuck mochas make tasty coffee drink like choco
Original summary: very versatile
input seq: [[
               251
                       3
                                               26
                                                    137
                                                            9
                                                                 35
                                                                         1
                                                                            303
                             1
                               3732
                                      6233
      4
          999
                481
                       49
                           5094 11820
                                         841
                                               633
                                                     561
                                                            48
                                                                  39
                                                                         85
    418
           74
                357
                      103
                             71
                                         119
                                               500
                                                    1624
                                                           245
                                                                 104
                                                                        120
                                    1
  11820
          484
                 83
                      825
                             426
                                   440 4531
                                              1150
                                                       5
                                                           740
                                                                  254
                                                                         12
         1249
    542
                 91
                      171
                             135
                                   426
                                         440
                                               410
                                                     129
                                                           487
                                                                4455
                                                                       7161
     89
           52
               3903
                      566
                            752
                                         891
                                                36
                                                     391
                                                                1249
                                                                        275
                                  1835
                                                          1109
                     3544 11820
    545
        2846
                128
                                 1451
                                         898
                                               197]], e out: [[[ 0.05282496 -0
    0.04101075]
                            0.07746896 ... -0.23276958 -0.18257524
  [ 0.2533436 -0.081542
   -0.10124418]
                            0.01887075 ... -0.17427126 -0.2622775
  [ 0.508825
               -0.04811009
   -0.18235816]
                           -0.30940297 ...
  [-0.61249435 -0.682637
                                             0.22843854 - 0.00673482
   -0.728929 1
  [-0.60296834 -0.6591555
                           -0.30744216 ...
                                             0.346683
                                                        -0.00360911
   -0.7979817 ]
  [-0.3881239 -0.6952337 -0.45965582 ...
                                             0.3810147 -0.00475979
   -0.84330755111
sampled token: good
sampled_token: espresso
sampled token: but
sampled token: not
sampled_token: great
sampled_token: end
```

```
Original summary: tug jug gets my dog approval
                                                          79
                                                                    6068
                                                                            2790 4243
input sea: [[
                 46
                         4
                              172
                                      98
                                          5542
                                                   664
                                                                111
    144
           149
                         193
                                      516
                                           1309
                                                         3248
                                                                  13
                                                                         75
                   27
                              2648
                                                  1037
                                                                              217
    161
            70
                  516 13124
                               179
                                     1450
                                             662
                                                  2970
                                                          149
                                                                   0
                                                                          0
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      0
             0
                    0
                           0
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                                        0
                                               0
                                                      0
                                                             0
                                                                   0
                                                                          0
                                                                                 0
                           0
                                        0
                                               0
```

Review: bought one year old sheltie christmas loves put premier buddy berrys

good espresso but not great

```
text summarisation.ipynb - Colaboratory
      0
                                      0
                                            0
                         0
                                                                      0
                                                                            0
      0
                         0
                                      0
                                            0
                                                   0]], e_out: [[[-3.45516391e-0
    2.78333854e-02 6.20934553e-021
  [-4.33409140e-02 -1.14890456e-01 -1.34323433e-01 ... -3.11531574e-02
   -3.56250517e-02
                     1.28249135e-02]
  [-1.63016513e-01 -3.03247601e-01 -2.93134034e-01 ... 8.63848552e-02
    7.28929341e-02 1.63123310e-01]
  [-0.00000000e+00 5.99209011e-01 -1.64338130e-16 ...
                                                           0.0000000e+00
    1.00000000e+00 9.88417625e-01]
  [-0.00000000e+00 5.99711835e-01 -6.11128183e-17 ...
                                                           0.0000000e+00
    1.00000000e+00 9.88339663e-01]
  [-0.000000000e+00 \quad 6.00177407e-01 \quad -2.27494157e-17 \quad \dots \quad 0.00000000e+00
    1.00000000e+00 9.88273561e-01]]]
sampled token: not
sampled token: for
sampled token: chewers
sampled token: end
Predicted summary: not for chewers
Review: checked fine print ingredients saw sucralose honey granules might lar
Original summary: too sweet wish they left out the sucralose
input seq: [[ 1445
                      235 3128
                                    89
                                         472 1803
                                                      236 3161
                                                                   211
                                                                        2992
                                                                               42
      3
         3986
                       722
                                   4230
                                         3546
                                                   7
                 391
                             696
                                                        80
                                                            1291
                                                                    334
                                                                         2094
     25
         7981
                      1833
                             539
                                                   8 42996
                                                            3758
                  60
                                     27
                                          816
                                                                     58
                                                                           42
    107
           54
                   1
                      1576
                             839
                                   1779
                                            6
                                                  11
                                                        48
                                                              66
                                                                     19
                                                                          490
                  72
    762
           40
                       256
                            3660
                                    827
                                          271
                                                  48
                                                        42
                                                               4
                                                                    466
                                                                          578
    335
         1797
                1797
                         8
                             106
                                    228
                                            1
                                                 327
                                                         3
                                                              42
                                                                    539
                                                                         4159
    340
           66
                       724
                            1103
                                    189
                                            1
                                                   7]], e out: [[[ 0.06612391 -0
                 272
    0.02890417]
  [ 0.19944334 -0.15095763  0.07253454 ... -0.400697
                                                          -0.21907745
   -0.079226921
  [ \ 0.5058713 \ \ -0.26075473 \ \ -0.17651193 \ \dots \ \ -0.6395794 \ \ \ -0.39832434
   -0.14652489]
  [ 0.9291384 -0.01028804 -0.10804578 ...
                                              0.7277371
                                                          -0.
   -0.123168491
  [ 0.95877516 -0.
                            -0.4285475 ...
                                              0.6730167 -0.04608706
   -0.053741 ]
  [ 0.94204867 -0.
                            -0.81632894 ... 0.6188359 -0.26358408
   -0.03919363111
sampled token: not
sampled_token: bad
```

sampled\_token: end
Predicted summary: not bad

Review: portable simple use near caliber loose teas one product recommend kus Original summary: nice perhaps bit bland warning never order loose tea input seq: [[ 2719 875 11823 10 44412 10 18187 10 13218 10 18187 838 10535 593 18531 10 18187 1511]], e\_out: [[[-0.18144226 -0 0.29991844]

0.12696296

0.33792654

-0.22350799 ...

[-0.1430906 -0.618279

```
0.20066535]
  [-0.206245
                -0.6727602
                            -0.27749816 ...
                                              0.27631345
                                                           0.35234746
    0.053525721
  [-0.28390253 -0.0683209
                            -0.328191
                                         ... -0.10916793
                                                           0.7406056
    0.36270025]
  [-0.2307102
                 0.04743803 -0.32027054 ... -0.09282262
                                                           0.6101349
    0.32699025]
  [-0.2582469
                 0.02028505 -0.3357488
                                        ... -0.08080555
                                                           0.4189648
    0.2751697 ]]]
sampled token: not
sampled token: the
sampled token: same
sampled token: tea
sampled token: end
Predicted summary: not the same tea
Review: weeks pregnant worst case heartburn indigestion sick dawn till mom fo
Original summary: it works
                                                                                 4
input seq: [[
                     3283 1004
                                        2463
                                               4569
                                                      853
                                                           8507
                                                                  2006
                                                                         825
                457
                                   227
     34
           56
                1023
                       155 15608
                                   2349
                                               2724
                                                              56
                                                                   2463
                                                                         4569
                                           53
                                                       120
     56
           58
                 146
                       109
                             697
                                     31
                                          105
                                                 407
                                                      1971
                                                            3980
                                                                     10
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                                                   0]], e out: [[[-1.36144638e-0
    1.81920916e-01 2.01180011e-01]
  [-2.07442284e-01 -2.27142144e-02 -2.82800913e-01 ... 9.68774632e-02
    3.97463083e-01 1.21801846e-01]
  [ 1.93768278e-01  8.80691484e-02 -9.73008573e-02 ...
                                                           7.59458169e-02
    1.04717851e-01 -9.59213153e-02]
  [-0.00000000e+00 3.35633636e-01 -1.79602545e-14 ...
                                                           0.00000000e+00
    9.88160670e-01 9.79897738e-01]
  [-0.00000000e+00 3.35637212e-01 -6.83990836e-15 ...
                                                           0.00000000e+00
    9.88160670e-01 9.79900658e-011
                     3.35681766e-01 -2.60571581e-15 ...
  [-0.0000000e+00
                                                           0.00000000e+00
    9.88160670e-01 9.79902089e-01]]]
sampled_token: not
sampled token: bad
sampled token: end
Predicted summary:
                     not bad
Review: great couldnt stop eating lowest priced anywhere buy even next time c
Original summary: great buy
                              110 2998
                                                                     18 1598
input seq: [[
                 6 4587
                         627
                                         850
                                               759
                                                     21
                                                          30
                                                              277
                                                                               83
   579 1887
                   579
             888
                         17
                             407
                                          0
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                                    15
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                                                     0]], e_out: [[[-1.4182791e-
    2.1750179e-01
                    1.6637650e-01]
  [-3.8090680e-02
                    3.0048361e-01 -2.0146869e-01 ...
                                                        3.0976447e-01
    3.3190882e-01 -7.5130612e-02]
  [-1.9364480e-02
                    4.0635934e-01 -2.9130816e-01 ...
                                                        4.5867473e-01
```

```
5.01534820-01 -3.1/050400-02]
  [-0.0000000e+00 8.0796379e-01 -3.1776844e-19 ...
                                                        0.000000e+00
    9.8032647e-01
                    9.7695541e-01]
                    8.0794692e-01 -1.3850668e-19 ...
                                                        0.0000000e+00
  [-0.000000e+00
    9.8032647e-01
                    9.7696602e-01]
  [-0.0000000e+00 8.0793065e-01 -6.0375377e-20 ...
                                                        0.0000000e+00
    9.8032647e-01 9.7697556e-01]]]
sampled token: love
sampled token: these
sampled token: end
Predicted summary: love these
Review: month loves treats use training perfect size easy break smaller dogs
Original summary: my puppy loves these treats
input seq: [[338
                  79
                       75
                           20 769
                                   97 130
                                            96 603 388
                                                         65
                                                             43 125 287 194
   90
                 0
                     0
                         0
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                                  0]], e out: [[[-1.6403657e-01 -2.9526654e-01
    2.4395357e-01
                   2.2302096e-011
  [-1.1128706e-01 -8.8759547e-01 -2.4254997e-01 ...
                                                        4.9547788e-02
                    5.7445192e-01]
    5.1934469e-01
  [-3.5616878e-02 -9.7969162e-01 -1.2804233e-01 ...
                                                        6.1682728e-03
    6.4301497e-01 9.1139627e-01]
  [-0.000000e+00
                    6.7451549e-01 -1.7553134e-18 ...
                                                        0.000000e+00
    1.0000000e+00
                    9.6834296e-01]
                    6.7449731e-01 -8.3932445e-19 ...
  [-0.000000e+00
                                                        0.000000e+00
    1.0000000e+00 9.6834654e-01]
  [-0.0000000e+00 6.7448080e-01 -4.0132978e-19 ...
                                                        0.0000000e+00
    1.0000000e+00
                    9.6834981e-01]]]
sampled token: my
sampled token: dog
sampled token: loves
sampled token: these
sampled token: end
Predicted summary: my dog loves these
Review: received bar influenster summer beauty good little sweet worth purcha
Original summary: yum
input_seq: [[ 209
                    185 3241
                               766 2722
                                           2
                                               19
                                                     42
                                                         184
                                                              175
                                                                      0
                                                                           0
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    6.1230503e-02
                    5.2930456e-02]
                    1.4386596e-01 -2.4589624e-01 ... -3.2825238e-01
  [-6.4902827e-02
    2.4048893e-01 -3.6563769e-011
  [-0.00000000e+00 -1.7325345e-02 -5.8232886e-01 ... -2.1588041e-01
    5.4014003e-01 -6.1341202e-01]
```

https://colab.research.google.com/drive/1COjjfgR0oJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 31/100

6.8828082e-01 -4.1861368e-23 ...

0.000000e+00

0.000000e+00

[-0.0000000e+00 6.8825167e-01 -9.9051843e-23 ...

9.7854584e-01]

0 7055777 011

-4.2628819e-01 [-0.0000000e+00

4 2620010<sub>0</sub> 01

```
-4.2020019e-UI 9./000///e-UI]
```

[-0.0000000e+00 6.8831241e-01 -1.7692989e-23 ... 0.0000000e+00

-4.2628819e-01 9.7857040e-01]]]

sampled\_token: great
sampled\_token: tasting
sampled token: end

Predicted summary: great tasting

Review: still good remember even drip brewed coffee rather cafecito another r Original summary: lo que mi

```
9
input seq: [[
                    58
                             2
                                  675
                                           30
                                               1760
                                                        820
                                                                        319 37774
                                                                                       153
                                                                                               84
   8499
                    240
                              0
                                             0
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               8
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       0
               0
                      0
                              0
                                     0
```

-1.0736448e-02 5.3539913e-02]

[ 2.4032049e-02 2.3591723e-02 -1.2705991e-01 ... -7.9105288e-02

-1.4286320e-01 3.9674029e-02]

[-4.1128572e-02 1.0297065e-02 -1.8524635e-01 ... -2.1274403e-01

-1.8971889e-01 3.8649838e-021

. . .

[-0.0000000e+00 6.6017592e-01 -2.4016566e-23 ... 0.0000000e+00

-9.9954706e-01 9.8989391e-011

[-0.0000000e+00 6.6016096e-01 -9.5767698e-24 ... 0.0000000e+00

-9.9954706e-01 9.8989224e-01]

[-0.0000000e+00 6.6014743e-01 -3.8188350e-24 ... 0.0000000e+00

-9.9954706e-01 9.8989064e-01]]]

sampled\_token: good
sampled\_token: coffee
sampled token: end

Predicted summary: good coffee

Review: use lot various spices cooking wanted find source quality product rea Original summary: quality spices

<pre>input_seq: [[</pre>		20	77	993	719	399	309	29 8	335	86	7	76
4355	2369	19145	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0]],	e_ou	t: [[	[-1.039	6679e	-01
								_				

7.0808545e-02 9.4931006e-02]

[-2.2996938e-01 -8.0121532e-02 -8.1751525e-02 ... 1.1444801e-01

5.9815172e-02 9.5879361e-021

[-3.1722108e-01 6.6729173e-02 -2.3115301e-01 ... 2.7818772e-01

3.5431437e-02 -7.4371703e-02]

. . .

 $[-0.00000000e+00 \quad 6.3370574e-01 \quad 4.3339387e-25 \quad \dots \quad 0.0000000e+00$ 

8.8629127e-01 9.7301370e-011

 $[-0.00000000e+00 \quad 6.3378441e-01 \quad 1.6873385e-25 \quad \dots \quad 0.0000000e+00$ 

8.8629127e-01 9.7305918e-01]

 $[-0.00000000e+00 \quad 6.3385379e-01 \quad 6.5714123e-26 \dots \quad 0.00000000e+00$ 

8.8629127e-01 9.7310013e-01]]]

sampled\_token: great
sampled\_token: product

https://colab.research.google.com/drive/1COjjfgR0oJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 32/100

```
sampled_token: product
sampled token: end
```

Predicted summary: great product

Review: great product love flavor zero calories makes drink ideal energy drin Original summary: over priced input seq: [[ 8 1219 35 1998 48 1908 1189 1183 21 1528 473 3027 0]], e out: [[[-1.4182791e-2.1750179e-01 1.6637650e-01] [-9.5216691e-02 -1.0745322e-01 -2.6429343e-01 ... 1.3441594e-01 1.7110935e-01] 3.4236878e-01 [-9.1970131e-02 3.0898040e-02 -2.8715160e-01 ... 2.7940193e-01 4.5612666e-01 1.9528340e-01] [-0.0000000e+00 5.8157295e-01 -1.5972172e-21 ... 0.0000000e+00 -1.3697736e-01 9.7502685e-01] [-0.0000000e+00 5.8160871e-01 -5.4611243e-22 ... 0.0000000e+00 -1.3697736e-01 9.7495133e-011 [-0.0000000e+00 5.8163905e-01 -1.8673639e-22 ... 0.0000000e+00 -1.3697736e-01 9.7488075e-01]]] sampled token: tastes sampled token: like sampled token: medicine sampled token: end

Predicted summary: tastes like medicine

```
Review: learned love louisiana coffee college beginning stuck years additiona
Original summary: best dark roast with chicory
input_seq: [[1309
                    11 5201
                                9 2090 2455
                                              961
                                                    94 1323 2694
                                                                  363
                                                                         58
                                                                             239
   485
         20
             182
                    15
                        168 6153
                                   32
                                       359
                                              81
                                                    g
                                                       868 5201
                                                                 214
                                                                         0
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                                               0
                                                    0]], e out: [[[-1.5958348e-
                   1.5157524e-01]
    1.8013877e-01
  [-7.2843447e-02 -4.7414702e-01 -2.8748116e-01 ...
                                                       1.8879128e-01
                   1.5915407e-011
    4.1990772e-01
  [-8.9103617e-02 -8.1754434e-01 -4.3207014e-01 ...
                                                       3.6901587e-01
    7.0784801e-01 3.3232585e-011
  [-0.0000000e+00 6.1753809e-01 -3.4791692e-18 ...
                                                       0.0000000e+00
   -9.7646868e-01 9.6579903e-011
  [-0.0000000e+00 6.1743420e-01 -1.4669886e-18 ...
                                                       0.000000e+00
   -9.7646868e-01 9.6581274e-011
  [-0.0000000e+00 6.1733425e-01 -6.1860992e-19 ...
                                                       0.0000000e+00
   -9.7646868e-01 9.6582657e-01]]]
sampled token: great
sampled token: coffee
sampled token: end
Predicted summary:
                    great coffee
```

Review: like area area cakester and trv double stuff cakesters best side note https://colab.research.google.com/drive/1COjjfgROoJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 33/100

```
text summarisation.ipynb - Colaboratory
                         cancolo, got in,
Original summary: double the pleasure
input seq: [[
                  1
                     2506
                           2506 26965
                                           67
                                                 32
                                                       926
                                                              84
                                                                 7645
                                                                           24
                                                                                34
    152
         1909
                 265
                      4097
                               31
                                      0
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                                                                             0
                                                   0]], e out: [[[ 2.36688405e-0
      0
             0
                   0
                          0
                                0
                                      0
                                             0
   -1.05595030e-01 -6.27540499e-02]
  [ 2.84399986e-01  4.73464914e-02 -3.97380395e-03 ...  2.03959823e-01
   -1.14048511e-01 -1.09248929e-01]
  [8.19815457e-01 \quad 0.00000000e+00 \quad -1.04754746e-01 \quad ... \quad 5.92732489e-01
   -0.00000000e+00 -3.72328842e-03]
  [-0.00000000e+00 6.75743461e-01 -1.06390967e-21 ...
                                                            0.0000000e+00
   -9.78198647e-01 9.94545341e-01]
  [-0.00000000e+00 6.75729513e-01 -4.17223837e-22 ...
                                                            0.0000000e+00
   -9.78198647e-01 9.94543135e-011
  [-0.00000000e+00 6.75716043e-01 -1.63617602e-22 ... 0.00000000e+00
   -9.78198647e-01 9.94541109e-01]]]
sampled token: not
sampled token: as
sampled token: good
sampled token: as
sampled token: the
sampled token: others
sampled token: end
Predicted summary: not as good as the others
Review: lime taste pretty prevalent blends well enough like pure lime flavor
Original summary: lime with kick
input seq: [[
               929
                        3
                             129
                                 7204
                                        1060
                                                 27
                                                        90
                                                               1
                                                                   605
                                                                          929
      3
             1 49087
                       929
                              711
                                    694 13091
                                                 296
                                                        658
                                                                      26
                                                                          4805
                                                                8
     19
                 361
                                                   0
         1965
                       147
                              415
                                   1658
                                             0
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                                                   0]], e_out: [[[ 1.8275706e-01
   -1.2654188e-01 -6.9629230e-02]
  [ 5.1869333e-01
                    0.0000000e+00
                                    1.0941372e-01 ... -4.3451819e-01
   -1.5302198e-01 -2.2815766e-02]
  [ 9.3113786e-01
                    0.0000000e+00
                                    1.8974555e-01 ... -5.0715685e-01
   -1.0639020e-01 -0.0000000e+001
  [-0.000000e+00
                    5.5557191e-01 -7.7615972e-20 ...
                                                         0.000000e+00
   -8.7394702e-01
                    9.8987842e-01]
  [-0.0000000e+00 5.5719918e-01 -2.8030556e-20 ...
                                                         0.0000000e+00
   -8.7394702e-01
                    9.8999047e-01]
```

sampled\_token: bad
sampled\_token: end
Predicted summary: not bad

[-0.000000e+00

sampled token: not

-8.7394702e-01

5.5778724e-01 -1.0128572e-20 ...

9.9008375e-01]]]

0.0000000e+00

```
Original summary: pretty good peanuts
                                                                      93 4842
input seq: [[ 22
                    177
                           41 4842 5921
                                           81
                                                31
                                                     617
                                                           86
                                                                908
                                                                                908
        233 8793
                                           0
                                                0
                                                      0
                                                           0
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                                                                      0
                                                                           0
    31
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                                                      0]], e out: [[[ 1.46879181e
   -3.22605260e-02
                     1.17304385e-01]
  [ 2.46584788e-02 1.25188991e-01 -2.72283345e-01 ...
                                                            1.54745753e-03
    5.59276715e-02
                     3.17017883e-01]
  [-4.94704694e-02
                     3.37864369e-01 -3.21936101e-01 ... -1.35991955e-02
    6.52535027e-03 4.13805515e-01]
  [-0.00000000e+00 8.50459874e-01 -9.05506926e-20 ...
                                                            0.0000000e+00
    6.83196783e-01 9.89269018e-01]
  [-0.00000000e+00 8.50453854e-01 -4.20496133e-20 ...
                                                            0.00000000e+00
    6.83196783e-01 9.89306569e-01]
  [-0.000000000e+00 \ 8.50444674e-01 \ -1.95324888e-20 \ \dots \ 0.00000000e+00
    6.83196783e-01 9.89340842e-01]]]
sampled token: good
sampled token: peanuts
sampled token: end
Predicted summary: good peanuts
Review: enjoy starting day cup coffee upon time used instant decent quality t
Original summary: nice coffee to the day
input seq: [[ 117 1550
                           56
                                39
                                         887
                                                               649
                                                                      86
                                                                           25
                                                                                  9
                                                18
                                                      43
                                                          616
  3417
        100 616 2974
                        298
                               61
                                         197
                                              309
                                                    354
                                                           9
                                                              696 2503
                                                                         172
                                   616
    46
          4
                9
                   198
                        570
                              215
                                   129
                                         401
                                              137
                                                    430
                                                         101
                                                                16
                                                                    149
                                                                         401
   570
         39
                9
                   299
                           3 1681
                                    56
                                         898 3389
                                                     49
                                                           2
                                                               562
                                                                    354
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   696
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                                                      0]], e out: [[[-9.34852138e
    1.05396092e-01 -2.25040950e-02]
  [-9.30914655e-02 1.42349243e-01 -3.58761907e-01 ... 7.16439039e-02
    4.53726768e-01 1.93082631e-01]
  [-6.10423684e-02 4.25888926e-01 -4.92924184e-01 ...
                                                            1.10456355e-01
    7.73827791e-01 4.37781751e-01]
  [-0.000000000e+00 \ 4.17522371e-01 \ -5.64116868e-04 \ \dots \ -1.06801790e-37]
   -1.00000000e+00 9.73355114e-011
  [-0.000000000e+00 \ 4.19642478e-01 \ -2.66563846e-04 \ \dots \ -0.00000000e+00
   -1.00000000e+00 9.73050654e-01]
  [-0.000000000e+00 \quad 4.21783715e-01 \quad -1.25607985e-04 \quad \dots \quad 0.00000000e+00
   -1.00000000e+00 9.72847879e-01]]]
sampled token: great
sampled_token: coffee
sampled token: end
Predicted summary:
                     great coffee
Review: bought son loves great snack little something long lunch
Original summary: stonewall jerquee spicy chicken
input seq: [[ 46 358
                       79
                             6 102
                                    19
                                         69 119 612
                                                                    0
                                                                        0
                                                                             0
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    0
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        0
                                  0
                                  0]], e out: [[[-3.4551639e-02 -9.6917868e-02
                 0
                     0
                              0
             0
                          0
```

2.7833385e-02 6.2093455e-02]

```
[-1.7044261e-01 -5.2464038e-01 -2.6465333e-01 ... -9.8950565e-02
    2.6768664e-01 3.0430502e-01]
  [-9.5494010e-02 -9.5015353e-01 -2.0427722e-01 \dots 2.5695650e-02
    5.4355794e-01 6.4955330e-01]
  [-0.0000000e+00 6.7848629e-01 -6.6513857e-19 ...
                                                       0.0000000e+00
    9.9997652e-01 9.6752495e-01]
  [-0.0000000e+00 6.7848325e-01 -3.2558842e-19 ...
                                                       0.0000000e+00
    9.9997652e-01 9.6752697e-01]
  [-0.00000000e+00 \quad 6.7848057e-01 \quad -1.5937622e-19 \quad \dots \quad 0.0000000e+00
    9.9997652e-01 9.6752876e-01]]]
sampled token: great
sampled token: snack
sampled token: end
Predicted summary: great snack
Review: used dilmah tea leaves wonderful taste one tastes like cheap imitatio
Original summary: doesn taste like dilmah tea at all
input seq: [[ 43 5997
                          10 567
                                           3
                                                    54
                                                             593 5031
                                                                         34
                                                                               1
                                   169
                                                          1
   842 1080 690
                    10
                       954 5250
                                  567 4176
                                            458
                                                   10
                                                       528
                                                              54
                                                                    1
                                                                        98
   622 9276
                   521 1106
                                   15
                                       128
                                             360
                                                  566
                                                              54
                                                                        31
              46
                             280
                                                        10
                                                                   15
    21 276
             653
                     0
                          0
                               0
                                    0
                                          0
                                               0
                                                    0
                                                         0
                                                               0
                                                                    0
                                                                         0
     0
          0
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                                    0
                                          0
                                               0
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                                                               0
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               0
     0
          0
               0
                          0
                                          0
                                               0
                                                    0]], e out: [[[-2.64701881e
                     0
                               0
                                    0
   -4.02161432e-03 3.22958604e-02]
  [-4.94771600e-02 4.07439619e-02 -1.61083553e-05 ... 7.63410926e-02
   -1.09782726e-01 2.47364342e-02]
  [ 6.92498505e-01  0.00000000e+00  0.00000000e+00 ... 1.14423715e-01
   -0.00000000e+00 -3.39939147e-01]
  [-0.00000000e+00 5.00664830e-01 -7.16470015e-13 ...
                                                          3.28237490e-38
   -7.44132161e-01 9.90455270e-01]
  [-0.00000000e+00 5.00287354e-01 -2.44564189e-13 ...
                                                          0.00000000e+00
   -7.44132161e-01 9.90461290e-011
  [-0.000000000e+00 \quad 4.99957860e-01 \quad -8.34444682e-14 \quad \dots \quad 0.00000000e+00
   -7.44132161e-01 9.90463555e-01]]]
sampled_token: not
sampled token: bad
sampled token: end
Predicted summary:
                    not bad
Review: really like taste black cherry juice tastes better cheaper kind bough
Original summary: tastes great
                        3 226 435 192
                                      54 31 315 233
                                                                     55
input seq: [[ 14
                    1
                                                        46 138 196
                                                                          0
                                                                              0
    0
        0
                         0
                                          0
                                              0
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                                              0
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                0
                    0
                         0
                             0
                                 0]], e_out: [[[-3.1940036e-02 -2.4749298e-02
                   5.3386271e-02]
    4.5668848e-02
                   5.2917462e-02 -1.5063509e-01 ... 1.4195870e-01
  [ 2.2435965e-02
   -7.6162867e-02 -8.7366374e-03]
                   2.3869645e-02 -1.4306210e-01 ...
  [ 2.5282398e-01
                                                       2.2314446e-01
   -2.0218168e-01 -5.1664440e-03]
  [-0.0000000e+00 6.6468126e-01 1.0443866e-19 ...
                                                       0.0000000e+00
```

```
text summarisation.ipynb - Colaboratory
    3.3155119e-01
                    9.9058712e-01]
                    6.6471291e-01 4.7135818e-20 ...
                                                       0.0000000e+00
  [-0.000000e+00
    3.3155119e-01
                    9.9059308e-011
  [-0.0000000e+00 6.6474080e-01 2.1274796e-20 ...
                                                       0.0000000e+00
    3.3155119e-01
                   9.9059838e-01]]]
sampled token: good
sampled token: flavor
sampled token: end
Predicted summary: good flavor
Review: love sugar free calorie fat free syrups coffee even put raspberry van
Original summary: delicious
input seq: [[ 11
                     36
                          50
                              494
                                   165
                                          50 1877
                                                     9
                                                          30
                                                              111
                                                                   997
   330 413
              57
                   244
                         58
                              53
                                  201
                                        345
                                               5
                                                   14
                                                          1 1930
                                                                  266
  3214
                                        515 1217
         72
               11
                   266
                        151
                             315
                                   121
                                                  148
                                                         13
                                                               0
                                                                    0
     0
          0
               0
                     0
                          0
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                                          0
                                               0
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                                          0
                                               0
                                                    0]], e out: [[[-1.0335382e-
    2.0938370e-01 9.4334736e-021
  [ 9.1481179e-02 2.4216417e-02
                                   0.0000000e+00 ... -2.4350537e-01
```

[-0.0000000e+00 5.0336879e-01 -2.5320459e-16 ... 0.000000e+00

0.0000000e+00 1.3145400e-02 ... -5.1486313e-01

-9.3920535e-01 9.5159370e-01]

-4.8982851e-02 -1.9625975e-02]

-8.9039192e-02 0.0000000e+00]

[-0.0000000e+00 5.0463897e-01 -9.7983507e-17 ... 0.0000000e+00

-9.3920535e-01 9.5165479e-01]

[-0.0000000e+00 5.0641203e-01 -3.8109905e-17 ... 0.0000000e+00

-9.3920535e-01 9.5183873e-01]]]

sampled token: delicious

[ 3.4712079e-01

sampled token: end

sampled token: great

Predicted summary: delicious

```
Review: bought gyro meat several times good since greek deli almost miles goo
Original summary: very good but there is no break on shipping
                                  216
                                                2
                                                     51 2473
input seq: [[
                46 9679
                           326
                                        280
                                                                3820
                                                                       163
                                                                            282
     13
          219
                152
                      520
                             277
                                    56
                                         861
                                               235
                                                       5
                                                             21 15875
                                                                          5
                                                       2
   2556
          152 2412
                      152
                              64
                                   306
                                          15
                                              1018
                                                            326
                                                                  594
                                                                       1841
    380
         1841
                717
                      717
                              54
                                   274
                                          11
                                               285
                                                      21
                                                           2886 16087
                                                                       1437
    297
          273
                 48
                         2
                           2075
                                   425
                                        2920
                                               493
                                                      22
                                                            152
                                                                 1331
                                                                       5013
    152
         1258
                 14
                              74
                                   243
                                        1063
                                              1192
                                                       0
                                                              0
                      113
                                                                    0
                  0
                                     0
                                           0
                                                 0]], e out: [[[-3.45516391e-0
      0
                         0
                               0
            0
    2.78333854e-02 6.20934553e-02]
  [ 1.14862897e-01 -1.79638088e-01 8.20045546e-03 ... -3.15453380e-01
   -1.25363082e-01 -4.69117193e-03]
  [ 2.70956010e-01 -1.48581713e-01
                                     7.57647976e-02 ... -4.97131318e-01
   -2.85739064e-01 -1.22549616e-011
  [-0.00000000e+00 6.35481119e-01 -2.91940203e-04 ...
                                                          0.00000000e+00
   -1.70470513e-02 9.52019632e-01]
  [-0.00000000e+00 6.27135336e-01 -1.00424812e-04 ...
                                                         0.00000000e+00
   -1.70470513e-02 9.53726709e-01]
  [-0.0000000e+00
                    6.22096837e-01 -3.41659870e-05 ...
                                                         0.00000000e+00
   -1.70470513e-02 9.54342961e-01]]]
```

```
sampled_token: product
sampled_token: but
sampled token: end
```

Predicted summary: great product but

```
Review: really love product exactly claims use morning get going side effect
Original summary: great product
input seq: [[ 14
                     11
                              434 1677
                                          20
                                              230
                                                    13
                                                         146
                                                              345 1077
                                                                          11
                                                                               36
                           7
    13
        816
               54
                               0
                                          0
                                               0
                                                    0
                                                          0
                                                                          0
                     6
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                                          0
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     0
          0
               0
                     0
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                                          0
                                               0
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                               0
                                          0
                                     0
                                                    0]], e out: [[[-3.1940036e-
                    5.3386271e-02]
    4.5668848e-02
  [-9.0858601e-02 -7.6100133e-02 -2.4958369e-01 ...
                                                        1.3558684e-01
    2.4631019e-01
                    1.5891296e-01]
  [ 5.3310543e-03 -9.8729998e-02 -2.5181976e-01 ...
                                                        1.8222466e-01
    3.1704590e-01 1.2344348e-01]
  [-0.0000000e+00 7.1040177e-01
                                    1.0965033e-17 ...
                                                        0.000000e+00
    7.1769476e-01 9.8605728e-01]
  [-0.0000000e+00 7.1049744e-01 5.1297982e-18 ...
                                                        0.000000e+00
    7.1769476e-01 9.8604590e-01]
  [-0.000000e+00
                   7.1058464e-01 2.3998147e-18 ...
                                                       0.0000000e+00
    7.1769476e-01 9.8603541e-01]]]
sampled token: great
sampled token: product
sampled token: end
Predicted summary: great product
```

```
Review: looking forward fresh full bodied coffee instead got stale old bland
Original summary: stale and tasteless
                                       1182
input seq: [[
                                                 9
                                                     251
                                                             67
                                                                         98
                                                                               68
               136
                      794
                            108
                                  188
                                                                  676
    375
           38
                108
                         9
                             751
                                   458
                                          304
                                                550
                                                      362
                                                            3663
                                                                   389
                                                                           30
   1141
          389
                123
                             215
                                   211
                                        1470
                                               2196
                                                      304
                                                             820
                                                                   575
                                                                        1972
                       265
                                                        9
      9
          765
                174
                       252
                                   252
                                          348
                                                 98
                                                              29 34370
                                                                          775
                               1
     73
          175
                577
                                  7597
                                           91
                                                               0
                                                                           0
                       527
                             279
                                               1856
                                                      184
                                                                     0
      0
            0
                   0
                         0
                               0
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                                            0
                                                         0
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                                                                     0
                                                                           0
      0
                   0
                         0
                               0
                                      0
                                            0
                                                  0]], e_out: [[[ 1.14496864e-0
            0
   -6.39577284e-02 -6.01844070e-031
  [ 1.27955034e-01
                     2.06217002e-02
                                     7.42919818e-02 ... -1.77721500e-01
   -8.73541236e-02 -2.44425219e-02]
                                     6.04191981e-02 ... -3.68752986e-01
  [ 7.69869471e-03 6.10011071e-02
   -9.53863338e-02 -4.03025821e-021
  . . .
                     5.67482293e-01 -4.25492850e-08 ...
  [-0.0000000e+00
                                                           1.81892910e-25
   -3.91283333e-01 9.82680678e-01]
  [-0.00000000e+00 5.65350831e-01 -1.40378269e-08 ...
                                                          8.38961122e-27
   -3.91283333e-01 9.82799053e-011
  [-0.0000000e+00
                     5.63050568e-01 -4.63380623e-09 ...
                                                          4.01303760e-28
   -3.91283333e-01
                    9.82938230e-01]]]
sampled token: not
sampled_token: bad
```

not bad

sampled token: end Predicted summary:

```
Review: love drinking hot tea favorites lots lemon figuring ginger would inte
Original summary: not for me
input seq: [[ 11
                  252
                         71
                               10 854 546 335 4067
                                                       242
                                                               5 1090
                                                                       648
                                                                            123
    57
                                                                        3
         32
              35 3350
                       550
                            166 1048
                                       444
                                            242
                                                   8
                                                        48 2246
                                                                  37
   335
                                                  10
         43
              40
                  109 1931
                             238 8727
                                       242
                                            263
                                                        30
                                                            71
                                                                   3
                                                                      695
  1582
          4
               0
                    0
                         0
                               0
                                    0
                                         0
                                              0
                                                   0
                                                        0
                                                              0
                                                                   0
                                                                        0
     0
          0
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                    0
                         0
                               0
                                    0
                                         0
                                              0
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                                                         0
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                                                                   0
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     0
          0
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                                    0
                                         0
                                              0
                                                   0]], e out: [[[-1.03353821e
    2.09383696e-01 9.43347365e-02]
  [-2.33807489e-02 8.63371417e-02 -1.97968587e-01 ... 1.34600639e-01
    2.98933625e-01 5.19171208e-02]
  [ 1.26346529e-01 6.55326843e-02 -0.00000000e+00 ...
                                                         3.95193040e-01
    1.60067156e-02 -1.85169205e-01]
  [-0.00000000e+00 3.58899295e-01
                                     1.44613332e-09 ...
                                                         1.13945515e-24
   -9.99998808e-01 9.68334556e-01]
  [-0.00000000e+00 3.60085249e-01
                                     5.61412195e-10 ...
                                                         1.01987426e-25
   -9.99998808e-01 9.68410850e-01]
  [-0.00000000e+00 3.61118197e-01 2.17775187e-10 ... 9.10631216e-27
   -9.99998808e-01 9.68451798e-01111
sampled token: strong
sampled_token: and
sampled token: strong
sampled token: end
Predicted summary:
                    strong and strong
```

```
Review: like others said consistency stage combo thin could thickened oatmeal
Original summary: baby loved it convenient pouch
input seq: [[
                 1
                     274
                           200
                                  604
                                       2383 2150
                                                    717
                                                            37 7655
                                                                       468
                                                                             20
     98
          203
                  8 25548
                           2815
                                   328
                                                                        195
                                         173
                                                 1
                                                     465
                                                          2087
                                                                 1536
   2248
        1880
                 53
                         5
                              20
                                   960
                                         218
                                               721
                                                    3207
                                                            176
                                                                  788
                                                                       1461
                                         438
        1236
                113
                        69
                              96
                                   397
                                               328
                                                      25
                                                          5665
                                                                        788
    702
                                                                 1261
                              43
                                              1070
    340
         1047
                  1
                        45
                                  1159
                                        1186
                                                     328
                                                             37
                                                                 1848
                                                                         33
     29
           78
               1186
                         6
                             702
                                     0
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                                     0
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                                                 0]], e out: [[[ 2.3668841e-02
   -1.0559503e-01 -6.2754050e-021
  [ 1.7787659e-01 6.4003728e-02 -1.2699707e-01 ... 1.5122615e-01
   -1.9388889e-01 -3.4674795e-05]
  [ 4.6788397e-01  4.7464096e-03 -3.7766722e-01 ...
                                                      2.1422066e-01
   -2.4311607e-01 5.9363097e-021
  [-0.0000000e+00 5.8675164e-01 -4.1789386e-07 ...
                                                      4.7766822e-09
    9.9998492e-01 9.4524610e-01]
  [-0.0000000e+00 5.6489336e-01 -1.5912022e-07 ...
                                                      4.4336795e-10
    9.9998492e-01 9.4278347e-011
  [-0.0000000e+00 5.4450011e-01 -5.9768119e-08 ...
                                                      3.5870671e-11
    9.9998492e-01 9.3986261e-01]]]
sampled token: great
sampled token: for
sampled token: baby
sampled_token: end
Predicted summary: great for baby
```

```
Review: love stuff makes great bread bread maker great someone like also dair Original summary: amazing bread mix
```

```
input_seq: [[
                                                                     1/ 10/4
                TT
                     84
                          80
                                 б
                                    302
                                         302
                                              696
                                                      б
                                                         4/9
                                                                 Τ
                                                                              6/0
    17
         25
             716 1440
                        417
                              147
                                   246
                                         30
                                               31
                                                   385 5517
                                                             160
                                                                   483
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                                          0
                                                0
                                                     0]], e out: [[[-1.03353821e
    2.09383696e-01
                     9.43347365e-02]
                     5.23760173e-06 -1.30760118e-01 ...
  [-4.74564284e-02
                                                           1.87309682e-01
    2.40269795e-01
                     1.63694881e-02]
                     9.43378545e-03 -1.22242324e-01 ...
  [-7.66606033e-02
                                                           3.25269938e-01
    2.40741104e-01
                     5.42705357e-02]
  [-0.00000000e+00 5.79692721e-01 -2.53757877e-24 ...
                                                           0.0000000e+00
    9.15505230e-01 9.60385501e-01]
  [-0.00000000e+00 5.79504430e-01 -8.46741109e-25 ...
                                                           0.00000000e+00
    9.15505230e-01 9.60173249e-01]
  [-0.0000000e+00
                     5.79371750e-01 -2.83575946e-25 ...
                                                           0.00000000e+00
    9.15505230e-01 9.59927380e-01]]]
sampled token: best
sampled token: bread
sampled token: ever
sampled token: end
Predicted summary:
                     best bread ever
Review: smooth rewarding decaff bite taste buds simply enjoyable coffee
Original summary: for you
input seq: [[ 299 6037 6126
                               450
                                      3 1065
                                              455 1315
                                                           9
                                                                      0
                                                                           0
                                                                                 0
     0
                0
                     0
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                                                0
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                                                          0
                                                                0
                                                                     0
                                                                          0
                                                     0]], e_out: [[[ 1.5344380e-
                     0
                          0
                                          0
                                                0
   -7.5955726e-02 -3.6089513e-01]
  [-2.7963579e-01
                   7.9156987e-02 -5.7884943e-01 ...
                                                        2.6499549e-01
   -6.7928113e-02
                    5.3955417e-02]
  [-4.9676076e-01 1.6392666e-01 -9.1712809e-01 ...
                                                        4.7456017e-01
    2.2379388e-01 4.4116199e-011
  [-1.8376904e-02
                    5.8552831e-01 -5.3028997e-15 ...
                                                        0.000000e+00
   -9.9486166e-01 9.8904037e-01]
  [-1.8376902e-02 5.8552432e-01 -2.8781862e-15 ...
                                                        0.0000000e+00
   -9.9486166e-01
                    9.8904079e-01]
  [-1.8377077e-02
                    5.8552086e-01 -1.5621485e-15 ...
                                                        0.0000000e+00
   -9.9486166e-01 9.8904121e-01]]]
sampled_token: love
sampled token: this
sampled token: stuff
sampled_token: end
Predicted summary: love this stuff
Review: love ordering amazon orders arrive fast well packed however smokehous
Original summary: very unhappy
input_seq: [[
                 11
                      336
                             16
                                  1828
                                        1376
                                                318
                                                       27
                                                            636
                                                                    93
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   1795
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                 792
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                            1203
                                    888
                                         1805
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                                                             880
                       692
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                                          694
                                                  73 12932
                                                             785 10146
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          260
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                             960
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                       792
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    2.0938370e-01
                   9.4334736e-02]
  [-6.8916835e-02 -1.6409281e-01 -2.6898044e-01 ...
                                                        4.7080446e-02
    4.6513408e-01
                    1.4707242e-01]
  [-4.0803064e-02
                    8.1378944e-02 -3.0584097e-01 ...
                                                        1.3219939e-01
    7.0433348e-01
                    2.1297786e-01]
  [-0.000000e+00
                    6.3709468e-01 -1.7046597e-12 ...
                                                        0.000000e+00
    9.9475199e-01
                    9.8527449e-01]
                    6.3729411e-01 -5.6936422e-13 ...
                                                        0.0000000e+00
  [-0.0000000e+00
    9.9475199e-01
                    9.8533434e-01]
                    6.3834685e-01 -1.9106030e-13 ...
                                                        0.0000000e+00
  [-0.000000e+00
    9.9475199e-01
                    9.8549235e-01]]]
sampled token: not
sampled token: bad
sampled token: end
Predicted summary:
                     not bad
Review: took get used chips pretty good healthy sure eaten family friends
Original summary: pretty good tasting chip
input seq: [[310
                   13
                       43 132 129
                                     2
                                        95 104 547 197 381
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             0
                         0
                              0
    7.4399427e-02
                   7.8811869e-02]
  [-1.9250672e-02 -1.8403929e-01 -2.4738546e-01 ...
                                                        4.3267235e-02
    1.5017565e-01
                   6.3999951e-021
  [-8.5759573e-02 -1.6857389e-01 -2.7899325e-01 ...
                                                        1.0335951e-01
    1.3535693e-01 -7.0853405e-02]
  [-0.000000e+00
                    6.7838860e-01 -4.5429442e-21 ...
                                                        0.00000000e+00
    7.8271121e-01
                    9.6691358e-011
                   6.7838907e-01 -2.0792285e-21 ...
                                                        0.0000000e+00
  [-0.0000000e+00
                    9.6691763e-011
    7.8271121e-01
  [-0.000000e+00
                    6.7838955e-01 -9.5165191e-22 ...
                                                        0.0000000e+00
    7.8271121e-01
                    9.6692127e-01]]]
sampled_token: great
sampled_token: chips
sampled token: end
Predicted summary:
                     great chips
Review: works quite well month old yorkie responds well knows treat may comin
Original summary: training
input seq: [[ 290
                    149
                          27
                               338
                                     98 3257 8832
                                                     27 1288
                                                               112
                                                                    157
                                                                         872
                                                                               392
    11
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    8.6506419e-02
                    9.2701800e-02]
  [ 1.9433911e-01 -1.7118594e-01 -1.0232347e-01 ...
                                                        2.1285993e-01
    1.0622015e-02 -7.5364575e-02]
  [ 5.1841896e-02 -1.5642673e-01 -2.1484733e-01 ...
                                                        3.7782088e-01
   _/ 6/30500a_02 _3 5016637a_011
```

```
text summarisation.ipynb - Colaboratory
   -4'04707326-07 -7'70T00716-0T]
  [-0.0000000e+00 5.8112890e-01 -4.9810583e-21 ...
                                                      0.0000000e+00
    9.9999994e-01
                   9.7806698e-01]
  [-0.000000e+00
                   5.8115822e-01 -2.2456473e-21 ...
                                                      0.0000000e+00
    9.9999994e-01 9.7806460e-011
  [-0.0000000e+00 5.8118677e-01 -1.0123922e-21 ...
                                                      0.0000000e+00
    9.9999994e-01 9.7806251e-01]]]
sampled token: great
sampled token: for
sampled token: my
sampled token: baby
sampled token: end
Predicted summary: great for my baby
```

```
Review: concerned best quality vitamins supplements pets lot online research
Original summary: best quality pet vitamin could find
input seq: [[1038
                              891 2475 1468
                    24
                          86
                                               77
                                                   400
                                                        922
                                                              41
                                                                  134
                                                                         65
                                                                             924
  2248 1256 322 1265
                          3
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          0
    4.0068403e-02 3.1170972e-02]
  [-1.7187393e-01 1.5699378e-01 -3.7279326e-01 ...
                                                       2.1374391e-01
    2.6857635e-01 1.9133748e-01]
  [-1.8486956e-01 2.4414901e-01 -4.7919655e-01 ...
                                                       4.0670499e-01
    3.4129691e-01 1.8363743e-01]
  [-0.0000000e+00 5.5122715e-01 -1.7847833e-19 ...
                                                       0.0000000e+00
    1.0000000e+00 9.7134215e-01]
  [-0.0000000e+00 5.5122089e-01 -7.7659193e-20 ...
                                                       0.000000e+00
    1.0000000e+00 9.7135025e-01]
  [-0.0000000e+00 5.5121672e-01 -3.3789944e-20 ...
                                                       0.0000000e+00
    1.0000000e+00 9.7135776e-01]]]
sampled token: great
sampled_token: food
sampled token: end
```

Predicted summary: great food

```
Review: purchased kurig one first cups bought still use decaf would better ra
Original summary: good
input_seq: [[ 180 9292
                                34
                                    155
                                           46
                                                58
                                                          551
                                                                 5
                                                                      31 1052
                           4
                                                      20
                                                                               564
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   -5.9908524e-02
                   2.4889732e-02]
  [ 3.9284998e-01
                    1.1013707e-01
                                    2.2442309e-02 ...
                                                         5.5486674e-04
   -1.8902881e-01 -1.8505126e-011
                    0.0000000e+00 -2.0182420e-01 ...
  [ 8.3844703e-01
                                                         2.3424201e-01
   -2.8152767e-01
                   1.2899564e-03]
                    5.9279472e-01 -3.8391036e-20 ...
                                                         0.0000000e+00
  [-9.3335444e-03
   -9.6339536e-01
                    9.8694837e-011
  [-9.3566058e-03
                    5.9273368e-01 -1.7072129e-20 ...
                                                         0.00000000+00
```

 $[-9.3784062e-03 \quad 5.9267706e-01 \quad -7.5918087e-21 \quad \dots \quad 0.0000000e+00$ 

3.32,33000 01

-9.6339536e-01 9.8695272e-011

-9.6339536e-01 9.8695678e-01]]]

[ 3:35000500 05

```
sampled token: not
sampled token: worth
sampled_token: the
sampled token: money
sampled token: end
Predicted summary: not worth the money
Review: meal whole ground brown rice whole ground barley oatmeal etc etc chef
Original summary: read the ingredients
input seq: [[ 237 122 477
                             389
                                       122 477 1555 468 408 408 1091 1591
                                       366 1988
  3097
        237
             459
                  538 1166
                             165 4181
                                                 159
                                                      459
                                                            225 1452
                                                                      408
   408
        126
             145
                  383
                         12
                             464
                                  649 1675
                                            389
                                                   84
                                                       464
                                                              1
                                                                 326
                                                                      780
  1048
        389
            134
                  118 2910
                              23
                                  189
                                        33
                                              5
                                                   83 1247
                                                            279 1528
                                                                       13
    38
         69
              31
                   55
                      485
                              38
                                   45
                                       888
                                            485
                                                   38
                                                        69
                                                             19
                                                                 553
                                                                      492
   404
       433 2157 321 1200
                              45
                                   24
                                       447 7162 2790]], e out: [[[-0.1802489
    0.07617188]
  [-0.08163238 - 0.6422893 - 0.11598174 \dots -0.33780378 - 0.09740356]
   -0.05566761]
  [-0.04996829 \ -0.8159797 \ -0.23817876 \ \dots \ -0.35943314 \ -0.25931853
   -0.23125686]
  . . .
                             0.24305251 ... -0.00488216 0.8387323
  [-0.02009562 0.628121
    0.24847247]
  [-0.01471761 0.06178707
                            0.500862 ... -0.06336483 0.99992853
   -0.02023147]
  [-0.11015405 -0.4412732
                             0.716071
                                       ... -0.06825287 0.9999618
   -0.05907206]]]
sampled token: my
sampled token: dog
sampled token: loves
sampled token: it
sampled token: end
Predicted summary: my dog loves it
Review: girls give chew bone backward glance fact daughter two dogs neither i
Original summary: very disappointing
                                                                  49
input seq: [[ 2574
                      57
                            398 1156 48380
                                             6234
                                                     263
                                                           412
                                                                        65
                                                                            130
    273
         1223
               1682
                     3127
                             111
                                   618
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    4.5353081e-02 9.1972530e-02]
  [-2.0725706e-01 -6.4740771e-01 -1.7422675e-01 ... -2.3792997e-01
    1.1239614e-01 6.4012110e-02]
  [-2.4252681e-01 -9.5312935e-01 -2.8177124e-01 ... -3.7631173e-02
    1.9341648e-01 -1.3269256e-01]
  [-0.0000000e+00 6.2607419e-01 -5.2958561e-23 ...
                                                      0.0000000e+00
    1.0000000e+00 9.8991024e-01]
                                                      0.0000000e+00
  [-0.000000e+00
                   6.2601507e-01 -1.9437217e-23 ...
    1.0000000e+00
                   9.8990327e-011
```

6.2596303e-01 -7.1355403e-24 ... 0.0000000e+00

[-0.000000e+00

[ 0.97140455

0.3872258

1.0000000e+00 9.8989630e-01]]]

```
sampled token: not
sampled_token: for
sampled token: small
sampled_token: dogs
sampled token: end
Predicted summary: not for small dogs
Review: new cup world variety good introduction flavors however husband uses
Original summary: good for variety
                     39 635
input seq: [[ 161
                              266
                                      2 6118
                                               72
                                                    93
                                                        270
                                                              797
                                                                   752
                                                                        109
                                                                               72
  2077
        298 1469 1304 1580
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    2.5813080e-02 -1.6717093e-02]
                   1.2172164e-01 -1.7011924e-01 ...
  [ 4.3439174e-01
                                                       6.0211360e-02
   -3.7313521e-02 -4.7260723e-01]
  [ 8.1463295e-01
                   1.4653127e-02 -6.7393726e-01 ...
                                                       3.0180186e-02
   -2.1170436e-01 8.5178584e-02]
  [-0.0000000e+00 6.2703180e-01 -1.3900811e-22 ...
                                                       0.000000e+00
   -6.0162282e-01 9.8419642e-01]
  [-0.0000000e+00 6.2702113e-01 -5.5083166e-23 ...
                                                       0.000000e+00
   -6.0162282e-01 9.8421776e-01]
  [-0.0000000e+00 6.2700790e-01 -2.1830501e-23 ...
                                                       0.0000000e+00
   -6.0162282e-01 9.8423678e-01]]]
sampled token: good
sampled token: but
sampled token: not
sampled token: great
sampled token: end
Predicted summary: good but not great
Review: anyway blends tad mild flavor individual tastes believe supposed bold
Original summary: fair
input seq: [[ 621
                     1060 2043
                                  487
                                           8
                                               867
                                                      54
                                                            396
                                                                  792
                                                                        401
                                                                             281
    892
                                  7414
                                          502
                                                        9
                                                             176
                                                                  2813
                                                                           93
          367
                166
                       300
                             401
                                                 45
    679
         2813
                462 10389
                            2451
                                   283
                                           15
                                                  9
                                                      322
                                                             321
                                                                   247
                                                                          300
     27
          472
                224
                      1055
                             401
                                         1442
                                                      220
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                                   392
                                               3213
                                                                   166
          895
    311
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                                                            1712
                                                                   408
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    135
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                803
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                            1743
                                   122
                                           77
                                                      963
                                                            1060
                                                                          984
                                                  8
                                                                   868
                984 34690 14017
   6898
           45
                                   135
                                          685
                                                179]], e_out: [[[ 0.1651609
                                                                                0
   -0.076723431
  [ 0.66508245
                            -0.07862125 ...
                                              0.26658845 -0.07496328
   -0.07165439]
                                              0.41662672 -0.02836996
  [ 0.94654197 0.
                            -0.50043386 ...
    0.06556404]
  [ 0.91533124
                0.6441911
                           -0.4079233
                                              0.8596171
                                                          -0.2583049
   -0.9972933 ]
  [ 0.9496777
                0.5188888
                            -0.16809668 ...
                                              0.9649226
                                                          -0.13623305
   -0.9995289 ]
```

0.9904723

-0.17795761

```
-0.9999044 ]]]
sampled_token: strong
sampled_token: but
sampled_token: not
sampled_token: bitter
sampled token: end
```

sampled token: end

Predicted summary: strong but not bitter

```
Review: looking fairly healthy snack good bet quite tasty crunchy mention pre
Original summary: these are amazingly tasty
                                      2 2282
                                                                            2
                                                                                27
input seq: [[ 136
                   771
                          95
                               102
                                               149
                                                   137
                                                         368 1028
                                                                    129
     4
        473
             509
                   263
                        149
                              201 1693
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   -6.39577284e-02 -6.01844070e-03]
  [ 2.07914978e-01 1.10463183e-02 -5.83134629e-02 ...
                                                           1.50498658e-01
   -1.47437915e-01 1.83762871e-02]
  [-1.69328660e-01 -7.51723275e-02 -3.36535335e-01 ...
                                                           3.18430364e-01
   -1.40384749e-01 2.19087988e-01]
  [-0.00000000e+00 6.54902637e-01 -1.17559632e-21 ...
                                                            0.0000000e+00
    3.38500798e-01 9.66551363e-01]
  [-0.00000000e+00 6.54881895e-01 -4.43153026e-22 ...
                                                           0.00000000e+00
    3.38500798e-01 9.66543317e-01]
  [-0.000000000e+00 \quad 6.54864013e-01 \quad -1.67059232e-22 \quad \dots \quad 0.00000000e+00
    3.38500798e-01 9.66537058e-01]]]
sampled token: great
sampled token: snack
sampled token: end
Predicted summary: great snack
```

```
Review: love pill pockets makes giving dog pills easy since give dog pills tw
Original summary: perfect idea
input_seq: [[ 11 1463 2553
                                 409
                                       23 1676
                                                96
                                                               23 1676
                             80
                                                     51
                                                          57
                                                                       686
    77
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                                                0]], e_out: [[[-1.0335382e-
    2.0938370e-01 9.4334736e-02]
  7.4012023e-03
                  5.3517916e-031
  [ 1.4423943e-01 -4.3098826e-02
                                1.8237101e-01 ... -5.1418632e-01
  -1.5644990e-02 4.3274853e-02]
  [-0.0000000e+00 6.7364496e-01 -5.1244904e-22 ...
                                                   0.000000e+00
    9.9999988e-01 9.9254841e-011
  [-0.0000000e+00 6.7369813e-01 -2.2131494e-22 ...
                                                   0.0000000e+00
    9.9999988e-01 9.9259222e-011
  [-0.0000000e+00 6.7375141e-01 -9.5627278e-23 ...
                                                   0.0000000e+00
    9.9999988e-01
                  9.9263448e-01]]]
sampled_token: pill
sampled token: pockets
```

Predicted summary: pill pockets

```
Review: toffe light coating chocolate chopped cashews heavenly little chocola
Original summary: definitely delightful and enjoyable beautifully presented
input seq: [[32125
                     247
                          1112
                                   28
                                      1699
                                              979 2765
                                                                  28
                                                                             17
    344
         1282
                776
                       28
                             14
                                     2
                                           8 24167
                                                    2668
                                                           737
                                                                 3133
                                                                       1870
   2750
          247
                 58
                     9581
                             264
                                 9326
                                               194
                                                     178
                                                           455
                                                                 1565
                                                                         42
                                          42
         3039
                     9856 3634 12902
                                                97
      2
                 28
                                         311
                                                    3224
                                                            39
                                                                  331
                                                                       6020
    346
        4166
                 70
                      243 17073 10919
                                       3277
                                               889
                                                      51
                                                           359
                                                                  344
                                                                       1396
   2498
                      178 1217
                                                     169
                                                                 1471
         717
                501
                                   914
                                           5
                                                97
                                                           372
                                                                         10
        2077
                        2
                             344
      9
                 11
                                  1839
                                         557
                                              3417]], e out: [[[ 0.21117625
   -0.03643427]
                            0.12963001 ...
                                             0.05581241 -0.1181554
  [ 0.50340927
                0.00951084
   -0.10834469]
                            0.15789877 ... -0.1568119 -0.21160203
  [ 0.74790925 0.
   -0.00547381]
               -0.12637459
                            0.226095
                                        ... -0.13413912 0.79967153
  [-0.
   -0.663535831
                            0.34957382 ... -0.09328891
               -0.7885617
                                                         0.8165879
   -0.43405178]
  [-0.
               -0.823834
                            0.08388489 ... -0.02505231 0.8628814
   -0.7220166 ]]]
sampled token: delicious
sampled token: end
Predicted summary: delicious
```

Review: dog likes treats keep laundry room everytime laundry buries head box Original summary: dog likes them input seq: [[ 5970 21625 0]], e\_out: [[[-3.1693596e-01 1.8253089e-01 3.0719218e-01] [-4.8383766e-01 -9.2896551e-01 -1.0747399e-01 ... 0.0000000e+00 3.8869224e-02 7.3603284e-011 [-3.2100815e-01 -9.8601395e-01 -7.6831579e-02 ... 0.000000e+00 0.0000000e+00 9.2826366e-01] [-0.0000000e+00 5.6284302e-01 -5.0432779e-20 ... 0.000000e+00 1.0000000e+00 9.6983188e-011 [-0.0000000e+00 5.6280071e-01 -2.0168983e-20 ... 0.000000e+00 1.0000000e+00 9.6984273e-011 [-0.000000e+00 5.6276333e-01 -8.0656758e-21 ... 0.0000000e+00 1.0000000e+00 9.6985251e-01]]] sampled token: my sampled\_token: dog sampled token: loves sampled token: these sampled token: end

Predicted summary: my dog loves these

```
Review: completely satisfied purchase individual packs almond nuts ate bags e
Original summary: perfect to go snacks
input seq: [[ 550
                   836
                         175
                              867 521
                                                   448
                                                         154
                                         673
                                             337
                                                              352
                                                                    63
                                                                        107
                                                                             337
                        291
    45
        171
             107
                   122
                              38 1735
                                         97
                                             237
                                                  102
                                                         14
                                                              95
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                                                    0]], e out: [[[ 1.60514832e
   -9.81282815e-02 -2.19985172e-02]
  [ 2.10927293e-01 -5.32606840e-02
                                      2.00587049e-01 ... -2.67486751e-01
   -8.98758397e-02 1.67157426e-02]
                                     2.37537026e-01 ... -3.90773416e-01
  [ 1.80548102e-01 -8.57096910e-02
   -1.18853614e-01 -6.85424879e-02]
  [-0.00000000e+00 6.45839155e-01
                                     6.28536881e-16 ...
                                                           0.0000000e+00
    9.82377887e-01 9.56034601e-01]
                                                          0.0000000e+00
  [-0.00000000e+00 6.45796299e-01
                                     2.70288134e-16 ...
    9.82377887e-01 9.56045151e-01]
  [-0.00000000e+00 6.45758688e-01 1.16228564e-16 ...
                                                          0.00000000e+00
    9.82377887e-01 9.56054568e-01]]]
sampled token: great
sampled token: snack
sampled token: end
Predicted summary: great snack
Review: airedale loves taste beef freeze dried dog treats use training really
Original summary: dog lover
input seq: [[21471
                              3
                                  349
                                         972
                                               362
                                                      23
                                                             75
                                                                   20
                                                                        769
                                                                                1
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            0
                         0
                               0
                                      0
                                            0
                   5.9497438e-02]
    1.1789482e-01
  [-4.0958870e-02 -8.3265924e-01 -2.5000983e-01 ... -1.3304789e-01
    4.5584923e-01
                    2.8862476e-011
  [-0.00000000e+00 -9.4501895e-01 -2.2964668e-01 ... -5.2442676e-03
    6.3517082e-01 4.3385956e-02]
  [-5.1902309e-03
                    7.3786098e-01 -2.1328013e-18 ...
                                                       0.0000000e+00
                    9.8981774e-01]
    9.9999994e-01
                    7.3800385e-01 -1.0634891e-18 ...
  [-5.2019758e-03
                                                       0.000000e+00
    9.9999994e-01 9.8985738e-01]
                   7.3814273e-01 -5.3048034e-19 ...
                                                       0.0000000e+00
  [-5.2128378e-03
    9.9999994e-01
                    9.8989558e-01]]]
sampled token: my
sampled_token: dog
sampled_token: loves
sampled token: these
sampled token: end
Predicted summary: my dog loves these
Review: husband new favorite tea huge hibiscus taste good sure buying
Original summary: new favorite
                                   474 1876
                                                     2
                                                         104
input_seq: [[ 270
                    161
                          70
                               10
                                                3
                                                              121
                                                                                0
```

```
text summarisation.ipynb - Colaboratory
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    1.2446778e-01
                    1.6883044e-02]
                    7.6942332e-02 -2.1855058e-01 ...
                                                         1.0928144e-01
  [-3.7578256e-03
    2.2407703e-01
                    1.3847905e-03]
                    1.3084449e-01 -3.3124742e-01 ...
                                                         1.2916294e-01
  [-6.3214796e-03
    3.8926896e-01
                    1.4615457e-01]
                    4.9143082e-01 2.4250938e-21 ...
                                                         0.0000000e+00
  [-0.000000e+00
    7.1149182e-01
                    9.8440760e-01]
                                                         0.0000000e+00
  [-0.0000000e+00 4.9141574e-01 1.1715295e-21 ...
    7.1149182e-01
                    9.8445982e-01]
                                                         0.000000e+00
  [-0.000000e+00
                   4.9139410e-01 5.6614126e-22 ...
    7.1149182e-01
                    9.8450810e-01]]]
sampled token: love
sampled token: this
sampled token: tea
sampled token: end
Predicted summary:
                     love this tea
Review: taste shakes awesome especially compared brands absolutely fill keep
Original summary: excellent taste but not filling
                 3 1792
                         423
                               267
                                    462
                                          214
                                                    841
                                                          103
                                                               188
                                                                     614
                                                                          102
                                                                                52
input seq: [[
                                               275
     0
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   -1.4907151e-01 -6.4619035e-02]
                    1.4859484e-02 -1.0979200e-01 ...
  [ 4.4029939e-01
                                                         1.1884561e-01
   -1.8416207e-01 -6.4749107e-02]
  [ 2.4016002e-01
                    0.0000000e+00 -5.2288413e-01 ...
                                                         2.5973895e-01
   -1.5925050e-01 1.4194670e-01]
                    6.6464853e-01 -9.1711558e-18 ...
                                                         0.0000000e+00
  [-0.0000000e+00
                    9.7844160e-01]
    9.9935937e-01
  [-0.000000e+00
                    6.6463405e-01 -4.4191429e-18 ...
                                                         0.0000000e+00
    9.9935937e-01
                    9.7844398e-011
  [-0.000000e+00
                    6.6462088e-01 -2.1293531e-18 ...
                                                         0.0000000e+00
    9.9935937e-01
                    9.7844613e-01]]]
sampled_token: love
sampled token: it
sampled_token: end
Predicted summary:
                     love it
Review: much coffee drinker purchased flavor husband normally bold taste coff
```

```
Original summary: great coffee
input_seq: [[
                15
                        9 846
                                  180
                                          8
                                              270
                                                    632
                                                         401
                                                                  3
                                                                        9
                                                                           846
                                                                                 369
                                                                                        70
                                                  846 2130 2256
   109
         654
                61
                     590
                          215
                                       401
                                               9
                                                                    103
                                                                          187
                                                                                 13
                                   8
               622
    35
         401
                     369 2271
                                  27
                                       464
                                               1
                                                  336
                                                          15
                                                              161
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                                                                                563
                                                                     70
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                                                           0]], e_out: [[[ 9.8866045e-
```

-1.1/14348e-01 -4.1609/98e-02]

```
[ 8.3091182e-01
                   5.3455211e-02 -0.0000000e+00 ... -3.1879917e-02
   -0.0000000e+00 -5.9047651e-01]
  [ 9.7524458e-01 0.0000000e+00 -2.8996557e-01 ... -1.7715687e-02
   -0.0000000e+00 -8.8044924e-01]
  [-0.0000000e+00 3.7586492e-01 -1.0184567e-09 ...
                                                        0.0000000e+00
   -1.0000000e+00 9.7667390e-01]
  [-0.0000000e+00 3.7597036e-01 -4.6505377e-10 ...
                                                        0.0000000e+00
   -1.0000000e+00 9.7665775e-01]
  [-0.00000000e+00 \quad 3.7605399e-01 \quad -2.1232005e-10 \quad \dots \quad 0.0000000e+00
   -1.0000000e+00 9.7664618e-01]]]
sampled token: good
sampled token: coffee
sampled_token: end
Predicted summary:
                    good coffee
Review: used product previously mostly due hypoglycemia also good tasting swe
Original summary: mmmm
                                         493 12711
input seq: [[
                43
                        7
                           1566
                                   752
                                                       17
                                                              2
                                                                  174
                                                                        2468
      0
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                                      0
                                                  0]], e out: [[[-2.6470188e-02
   -4.0216143e-03
                   3.2295860e-02]
  [ 2.3968522e-02 -1.0368526e-01 1.0211184e-01 ... -2.3213658e-01
   -4.0588170e-02 3.4073271e-021
  [ 1.5345149e-01 2.5890307e-03
                                    1.8420950e-01 ... -4.8349899e-01
   -1.5634701e-01 -1.6602714e-01]
                                    2.0535532e-21 ...
                                                        0.0000000e+00
  [-0.0000000e+00 6.9034493e-01
   -4.8191801e-01 9.9930859e-01]
                                   9.1094143e-22 ...
                                                        0.0000000e+00
  [-0.0000000e+00 6.9052398e-01
   -4.8191801e-01 9.9931568e-01]
  [-0.0000000e+00 6.9069469e-01 4.0431608e-22 ...
                                                        0.0000000e+00
   -4.8191801e-01 9.9932247e-01]]]
sampled token: good
sampled token: product
sampled_token: end
Predicted summary: good product
Review: love product order much less buying local grocery store
Original summary: yummy
input seq: [[ 11
                    7
                       60
                           15
                               87 121 138 196
                                                55
                                                      0
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                                  0]], e out: [[[-1.0335382e-01 -7.0465475e-02
                    9.4334736e-02]
    2.0938370e-01
  [-2.3965186e-02 -1.2421138e-01 -1.9879983e-01 ... 3.8977776e-02
    3.2080376e-01
                    9.2129707e-021
  [ 1.0445409e-02 -8.6209051e-02 -1.9434933e-01 ... -1.7047258e-01
    2.9545650e-01
                   7.6249979e-021
```

0.0000000...00

1 0 00000000100 9 60054000 01 7 04160450 10

```
טט+9טטטטטטטט+טטטטט+
                   0.0003409e-01 -/.0410943e-19 ...
                                                     ט.טטטטטטטe+טט
    9.9291313e-01
                   9.9352241e-01]
  [-0.0000000e+00 8.6082709e-01 -3.5782815e-19 ...
                                                     0.0000000e+00
    9.9291313e-01
                   9.9352396e-011
  [-0.000000e+00
                   8.6080062e-01 -1.8183352e-19 ...
                                                     0.0000000e+00
    9.9291313e-01
                   9.9352539e-01]]]
sampled token: great
sampled token: product
sampled token: end
Predicted summary:
                    great product
```

Review: course know delicious ghirardelli chocolate unfortunately purchased t Original summary: great chocolate

```
input seq: [[ 469
                     64
                          63 3667
                                     28
                                         491
                                               180
                                                     49
                                                         372
                                                               154
                                                                    400
                                                                          41
                                                                              138
   182
         22 3640 1309
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                                                     0]], e out: [[[ 4.37393188e
   -7.97368661e-02 -6.58766776e-02]
                     2.57655624e-02 -2.47173205e-01 ...
                                                           1.01097338e-01
  [ 1.55694932e-01
   -1.81084692e-01
                     3.81527580e-02]
  [-6.12736121e-02 -3.11961095e-03 -4.15331244e-01 ...
                                                           1.75091878e-01
   -4.91975471e-02 7.28149191e-02]
  [-0.00000000e+00 6.83917642e-01 -1.21051085e-23 ...
                                                           0.0000000e+00
    3.82906705e-01 9.82725263e-01]
  [-0.00000000e+00 6.83919668e-01 -4.67594146e-24 ...
                                                           0.0000000e+00
    3.82906705e-01 9.82723176e-01]
  [-0.00000000e+00 6.83924854e-01 -1.80647609e-24 ...
                                                           0.00000000e+00
```

sampled token: chocolate sampled token: covered sampled token: end

[-0.000000e+00

2 566/62/<sub>0</sub>\_01

Predicted summary: chocolate covered

3.82906705e-01 9.82723236e-01]]]

Review: case holds lot still fold well great function looks nice magnet works Original summary: great function and looks great too 61 1742 input seq: [[ 1236 11272 0]], e out: [[[-1.1686562e-01 1.3493158e-01 1.3262974e-011 [-1.5279591e-01 -3.4047815e-01 -3.2490662e-01 ... 2.2719009e-02 1.9249864e-01] 2.4431214e-01 [-2.3454291e-01 -1.4767991e-01 -3.8070333e-01 ... 1.6712983e-01 1.8161893e-01 6.7412384e-021 [-0.000000e+00 6.2689364e-01 -9.9398733e-23 ... 0.000000e+00 8.5664624e-01 9.7688991e-01] [-0.000000e+00 6.2715203e-01 -3.6248493e-23 ... 0.0000000e+00 8.5664624e-01 9.7692633e-01]

6.2741232e-01 -1.3228250e-23 ...

0 7607026-01111

0.000000e+00

```
0.7004074C-0T
               2.1021070C-01]]]
```

sampled token: great sampled token: product sampled\_token: end

Predicted summary: great product

Review: bag bag misleading product thought buying bags happy gone local dolla Original summary: not oz this is oz bag input seq: [[ 38 2094 138 1068 0]], e\_out: [[[-8.2791820e--2.3636397e-02 -3.2165870e-02]  $[-8.0895036e-02 \ 2.5657043e-01 \ -1.5561166e-01 \ \dots \ -3.5023507e-01$ -7.5997479e-02 2.1163179e-02] [ 1.8914627e-02 3.2658455e-01 -1.6681178e-01 ... -4.8802513e-01 -3.4268564e-01 2.7985634e-02] [-0.0000000e+00 8.0560088e-01 -4.6373341e-21 ... 0.0000000e+00 9.9799722e-01 9.9187887e-011 [-0.0000000e+00 8.0560470e-01 -2.1248428e-21 ... 0.000000e+00 9.9799722e-01 9.9188215e-01] [-0.0000000e+00 8.0561215e-01 -9.7367327e-22 ... 0.0000000e+00 9.9799722e-01 9.9188590e-01]]] sampled token: good

sampled token: but sampled token: not sampled token: great sampled token: end

Predicted summary: good but not great

Review: border collie husky years old love dearly sweet disposition keep zuke Original summary: zukes

```
input seq: [[ 3317 3578
                             3813
                                      94
                                             98
                                                    11 11274
                                                                  42 19398
                                                                               103
                                                                                    228
                               920 46365
   1471 15212
                  920 1105
                                            3819
                                                   1681
                                                          3664
                                                                  763
                                                                          13
                                                                                  4
     75
            79 14063 18213
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                                                      0]], e out: [[[-9.02780667e-0
    1.82416663e-01 2.26024300e-011
```

[-2.87543833e-01 -4.40395594e-01 -3.26823056e-01 ... 1.04080215e-02

3.46278399e-01 5.52944183e-01]

[-4.48625267e-01 -9.20541346e-01 -2.92378724e-01 ... 0.00000000e+00

2.87809491e-01 8.68190169e-011

[-0.00000000e+00 6.78312838e-01 -2.05325931e-17 ... 0.00000000e+00

1.00000000e+00 9.63582754e-011

[-0.00000000e+00 6.78332984e-01 -8.95277677e-18 ... 0.0000000e+00

1.00000000e+00 9.63646472e-011

[-0.0000000e+00 6.78354502e-01 -3.90405137e-18 ... 0.00000000e+00

1.00000000e+00 9.63707089e-01]]]

sampled token: my sampled token: dogs sampled token: love

```
sampled_token: these
sampled_token: end
```

sampled\_token: great
sampled token: end

Predicted summary: my dogs love these

Review: gold kili ginger lemon beverage mix quite strong entire packet used n Original summary: strong ginger flavor recommended served hot input seq: [[ 1054 2761 307 10734 0]], e\_out: [[[ 2.37025440e-0 -1.15534298e-01 -4.74453755e-02] 0.00000000e+00 ... -1.23329557e-01 [ 7.69168496e-01 3.21270665e-03 -0.00000000e+00 -2.96791762e-01] [ 8.24181736e-01 0.00000000e+00 0.00000000e+00 ... 5.70386231e-01 -0.00000000e+00 -0.0000000e+00] . . . [-3.14925015e-02 -4.86939885e-02 2.97687966e-02 ... 3.70224575e-06 -6.41952232e-02 9.80238259e-01] [-0.00000000e+00 1.57256871e-01 1.33302100e-02 ... 4.99410930e-07 -6.41952232e-02 9.79663372e-01] [-0.0000000e+00 2.69358814e-01 5.74652245e-03 ... 6.48351275e-08 -6.41952232e-02 9.78192449e-01]]] sampled token: not sampled token: for sampled token: me sampled token: end Predicted summary: not for me

Review: way expensive many options even expensive buy purity products bad cha Original summary:

```
input seq: [[
               48
                    201
                          66 1258
                                     30
                                         201
                                               21 7383
                                                         106
                                                              107 2056
                                                                          15
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   -2.2335438e-02
                   4.7234312e-02]
  [ 3.7706055e-02
                    8.4764976e-03 -2.7785942e-01 ...
                                                        1.0366373e-01
   -3.7679940e-02
                    2.0261635e-011
  [-6.5379970e-02
                    8.0057345e-02 -3.9399341e-01 ...
                                                        1.4336269e-01
   -2.7537921e-02
                   3.4608674e-01]
                   7.4158674e-01 -3.6142668e-22 ...
                                                        0.0000000e+00
  [-0.000000e+00
   -7.9429424e-01
                    9.9174577e-01]
                   7.4156886e-01 -1.5582770e-22 ...
  [-0.000000e+00
                                                        0.000000e+00
   -7.9429424e-01
                    9.9174321e-01]
  [-0.000000e+00
                   7.4155205e-01 -6.7185125e-23 ...
                                                        0.0000000e+00
   -7.9429424e-01
                    9.9174088e-01]]]
sampled token: good
sampled_token: but
sampled token: not
```

Predicted summary: good but not great

```
Review: pop corn good every kernel popped good taste would like see pound bag
Original summary: good corn
input seq: [[ 534
                    268
                               76 3570 1229
                                                2
                                                      3
                                                           5
                                                                 1
                                                                         485
                                                                               38
                                                                    126
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    3.2299463e-02 -3.6455625e-01]
  [-1.4847533e-01
                   5.0264442e-01 -4.5887652e-01 ...
                                                        6.9077730e-01
    1.0218434e-01 -1.6273350e-01]
                    5.4729706e-01 -8.2868499e-01 ...
  [-2.0999730e-01
                                                        9.6259922e-01
   -7.3444127e-04 4.3684974e-02]
  [-0.0000000e+00 5.8396637e-01 -2.1246897e-22 ...
                                                        0.000000e+00
   -9.5956516e-01 9.8450184e-01]
  [-0.0000000e+00 5.8422250e-01 -8.9866933e-23 ...
                                                        0.0000000e+00
   -9.5956516e-01 9.8456752e-01]
  [-0.0000000e+00 5.8448178e-01 -3.8042069e-23 ...
                                                        0.0000000e+00
   -9.5956516e-01 9.8463446e-01]]]
sampled token: yummy
sampled token: end
Predicted summary:
                     yummy
```

```
Review: great buy never item bought circus party twins everyone loved good sw
Original summary: yummy
input seq: [[
                     21
                          73
                               243
                                     46 8874 1088 4269
                                                         352
                                                               203
                                                                      2
                                                                           42
                                                                                97
                 6
   318
        152
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    2.1750179e-01
                    1.6637650e-01]
                    7.4970610e-02 -2.9426157e-01 ...
                                                        2.7038538e-01
  [-1.1158449e-01
                    2.0069109e-01]
    4.0354708e-01
  [-8.6235702e-02
                    2.4804065e-01 -3.3646163e-01 ...
                                                        4.5386270e-01
    5.4165733e-01
                    2.6135996e-01]
  [-0.000000e+00
                    7.8014314e-01 -2.2105982e-20 ...
                                                        0.0000000e+00
                    9.7952622e-011
    9.9948984e-01
  [-0.0000000e+00
                    7.8013104e-01 -1.0149456e-20 ...
                                                        0.0000000e+00
    9.9948984e-01
                    9.7952831e-01]
  [-0.000000e+00
                    7.8012025e-01 -4.6598602e-21 ...
                                                        0.000000e+00
    9.9948984e-01
                    9.7953016e-01111
sampled token: great
sampled token: product
sampled token: end
Predicted summary: great product
```

```
Review: joys coconut cream filled eggs around easter time expecting real coco
Original summary: refreshing and more beneficial than regular water
input seq: [[12777
                      206
                             294
                                   991
                                          899
                                                179
                                                     4281
                                                              18
                                                                   742
                                                                          167
                                                                                20
     42
         4439
                   3
                              301
                                   1489
                                            11
                                                 206
                                                       139
                                                              206
                                                                   1198
                                                                           206
                        14
```

```
40
         1938
                 206
                       222
                              523
                                    130
                                           286
                                                 206
                                                        214
                                                               17
                                                                       3
                                                                           108
    462
         8479
                 305
                       167
                              206
                                    252
                                            40
                                                 809
                                                         17
                                                              544
                                                                     216
                                                                           280
    292
          106
                      7788
                                5
                                            57
                                                 244
                                                             1006
                                                                     259
                                                                             7
                  44
                                   1789
                                                         17
     83
           58
                  77
                        31
                              303
                                     59
                                                1766
                                                                            16
                                          1938
                                                        206
                                                              214
                                                                   5456
     80
         2341
                 179
                        35
                             2294
                                   2679
                                           668
                                                 205]], e out: [[[-0.10379436
   -0.059713511
  [ 0.13250585
                 0.01859752
                                          ... -0.14101201 -0.06248298
                              0.
   -0.02265821]
  [ 0.6576344
                 0.
                              0.07924496 ... -0.62890977 -0.00571616
   -0.
               ]
  [ 0.88472277  0.16294381  -0.6124477
                                               0.21753469
                                                            0.20108674
                                          . . .
   -0.9988053 ]
  [ 0.25260735 -0.02922566 -0.64754677 ...
                                               0.06884433
                                                            0.44669273
   -0.99238706]
  [-0.41911545 -0.28530866 -0.57723033 ... 0.04209302
                                                            0.6315796
   -0.9788575 ]]]
sampled token: great
sampled token: tasting
sampled token: product
sampled_token: end
```

Predicted summary: great tasting product

```
Review: reviewer must bad mood feeling bit fine meal keeps going hungry conve
Original summary: and tasty simple meal easy to prepare and serve
input seq: [[
               842
                     321
                            107
                                2181
                                        697
                                                53
                                                     235
                                                           237
                                                                        146
                                                                             109
                                                                 662
   6226
                            2484
                                  4177
                                                 33
                                                       82
          272
                 82
                      405
                                         248
                                                            405
                                                                 1186
                                                                         662
    293
           94
                920
                     1464
                             108
                                  7535
                                         305
                                                520
                                                      465
                                                             77
                                                                  131
                                                                         145
    291
          430
                 41
                              77
                                         276 21015
                                                     6754
                                                                  254
                      110
                                   131
                                                            610
                                                                           1
   7805
          235
                  8
                       158
                             465
                                   238
                                        1344
                                                398
                                                       27
                                                           4649
                                                                 6754
                                                                       1520
    864
         1096
                350
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                                                  0]], e out: [[[-1.42850488e-0
    2.18494460e-01
                    1.86847955e-01]
  [-9.58659425e-02 -3.70082438e-01 -2.55755931e-01 ...
                                                          4.81220707e-03
    3.93825024e-01
                    1.04325481e-011
  [ 2.29874328e-02 -7.63459131e-02 -8.74254033e-02 ... -1.51799440e-01
    3.47551797e-03 -1.00080445e-01]
  [-0.0000000e+00
                    5.39737225e-01 -4.80820563e-06 ...
                                                          0.0000000e+00
    7.46605337e-01 9.79975998e-011
  [-0.00000000e+00 5.38661838e-01 -1.51188760e-06 ...
                                                          0.00000000e+00
    7.46605337e-01 9.79655802e-01]
  [-0.00000000e+00 5.37960649e-01 -4.75114803e-07 ...
                                                          0.0000000e+00
    7.46605337e-01 9.79489982e-01]]]
sampled token: not
sampled token: for
sampled_token: me
sampled token: end
Predicted summary:
                   not for me
```

```
Review: dog issues bowel movements fed rice chicken yogurt nothing helping re
Original summary: thank goodness for pumpkin
                    596 3343 4820 1159
input seq: [[ 23
                                          159
                                                125
                                                     708
                                                           238 1845 1242 1079 4820
   611
         84
              290
                      6
                         104
                              434
                                     80
                                           7 2334
                                                     65
                                                          290
                                                               905
                                                                     293 1710
    12
         56
               14 1050
                          17
                                13 3721
                                         153
                                                91
                                                    611
                                                            7
                                                               285
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```

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0
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                                                    0]], e out: [[[-3.1693596e-
    1.8253089e-01
                  3.0719218e-01]
  [-5.0791574e-01 -9.2792124e-01 -1.0612678e-01 ...
                                                      0.0000000e+00
    1.9540427e-02
                   7.4033689e-01]
                                                      0.0000000e+00
  [-6.6458839e-01 -9.6856403e-01 -5.6095701e-02 ...
    0.0000000e+00 8.8395804e-01]
  [-0.0000000e+00 4.7236481e-01 -7.5441833e-18 ...
                                                       0.000000e+00
    9.9498695e-01 9.8894012e-01]
  [-0.0000000e+00 4.7226062e-01 -2.1198455e-18 ...
                                                       0.000000e+00
    9.9498695e-01 9.8891211e-01]
  [-0.0000000e+00 4.7217426e-01 -5.9564428e-19 ...
                                                      0.0000000e+00
    9.9498695e-01 9.8888391e-01]]]
sampled token: great
sampled token: food
sampled token: end
Predicted summary: great food
Review: decided give try little nervous flavor normally chocolate oatmeal rai
Original summary: good flavor
input seq: [[ 288
                                                       468 1832
                    57
                          32
                               19 2979
                                          8
                                             632
                                                    28
                                                                    6
                                                                       233 1157
    45
         97 2288
                   18
                       295
                                             33 3151
                                                       932
                                                              0
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                              68
                                   69 1253
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   -1.3003704e-01
                  1.9614494e-03]
  [ 2.5906041e-01 -5.0025575e-02 -1.3474908e-01 ...
                                                      8.5802361e-02
                  1.5011524e-01]
   -1.0834404e-01
  [ 1.1398917e-01 -1.2664117e-01 -2.4517900e-01 ...
                                                      1.2166390e-01
   -9.2874654e-02 1.1073795e-02]
  [-0.0000000e+00 5.9035665e-01 -5.7521321e-15 ...
                                                       6.2096655e-34
    9.9938065e-01 9.7842199e-01]
  [-0.0000000e+00 5.9044629e-01 -2.7522095e-15 ...
                                                       1.1532277e-34
    9.9938065e-01 9.7839922e-011
                                                      2.1419954e-35
  [-0.000000e+00
                   5.9051877e-01 -1.3170128e-15 ...
    9.9938065e-01
                   9.7837943e-01]]]
sampled token: yummy
sampled_token: end
Predicted summary:
                    yummy
Review: baby spit alot since day one trying couple different kinds formula ev
Original summary: it really works
input seq: [[ 328 2187 1184
                               51
                                    56
                                          4
                                             187
                                                  293
                                                         99
                                                             992
                                                                  505
                                                                        30
                                                                            271
   459
         50 9422 5355
                       301
                             938
                                   82
                                       199 1462
                                                   30
                                                      113 9000 5763
                                                                       76
  1443
             100 2758
                       126
                             328 1342 2327
                                             76
                                                   18 1681 6223
                                                                 100
                                                                       81
         32
   159 2200
             290
                    2
                        201
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    2.7212581e-01
                  2.9064482e-011
  [-3.0580264e-01 -9.3526459e-01 -3.6915931e-01 ... -1.2921908e-01
    4.6384797e-01
                   5.1862383e-01]
  [-2.8336197e-01 -9.8453248e-01 -3.6522207e-01 ... -8.2124233e-02
    4.4046429e-01 -2.9116958e-011
```

```
[-0.0000000e+00 5.3791678e-01 -4.0658835e-15 ...
                                                        0.0000000e+00
    6.1094874e-01 9.5673984e-011
  [-0.0000000e+00 5.3754246e-01 -1.3201897e-15 ...
                                                        0.0000000e+00
    6.1094874e-01 9.5676732e-01]
  [-0.00000000e+00 \quad 5.3722727e-01 \quad -4.2890276e-16 \quad \dots \quad 0.0000000e+00
    6.1094874e-01 9.5682055e-01]]]
sampled token: great
sampled token: for
sampled token: babies
sampled token: with
sampled token: allergies
sampled token: end
Predicted summary: great for babies with allergies
Review: took one sip promptly dumped sink would rather heartburn without drin
Original summary: yuck
input seq: [[ 310
                      4 1103 1615 3456 3393
                                                5
                                                    319 2463
                                                               78
                                                                    35
                                                                         257
                                                                                9
  1099
               2
                   147 837
                                     3 1932
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                             548
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                                                                          0
     0
          0
               0
                     0
                          0
                                     0
                                          0
                                               0
                                                     0]], e out: [[[ 3.8511992e-
    7.4399427e-02 7.8811869e-02]
  [ 4.5905504e-02 -1.3147604e-01 -2.1990390e-01 ...
                                                        7.6311849e-02
    5.6255668e-02 2.8150868e-02]
  [ 3.3114627e-01 8.0774426e-02 -4.2661473e-02 ...
                                                        1.5418266e-01
   -6.6839047e-02 -3.6772731e-011
  [-0.0000000e+00 5.9458232e-01 -1.2844303e-18 ...
                                                        0.000000e+00
   -9.9999988e-01 9.8870337e-01]
  [-0.0000000e+00 5.9639603e-01 -4.7110841e-19 ...
                                                        0.0000000e+00
   -9.9999988e-01 9.8878324e-01]
  [-0.00000000e+00 \quad 5.9748471e-01 \quad -1.7271856e-19 \quad \dots \quad 0.0000000e+00
   -9.9999988e-01 9.8883694e-01]]]
sampled token: not
sampled token: for
sampled token: me
sampled_token: end
Predicted summary:
                     not for me
Review: want start review stating perfect balance juice carbonated drink ever
Original summary: great surprise
input seq: [[
                68
                      454
                                          97
                                               756
                                                            826
                                                                   35
                                                                         105
                                                                               20
                            249 3927
                                                      192
      2
          384
                  11
                       826
                             327
                                      1
                                           89
                                                506
                                                      5544
                                                            3363
                                                                  1814
                                                                          168
   1982
           82
               2025
                       395
                            1559
                                          192
                                                826
                                                        78
                                                                         1072
                                    264
                                                             183
                                                                    36
    268
          269
                456
                      1643
                             133
                                    13
                                           78
                                                 64
                                                       252
                                                             167
                                                                   395
                                                                          192
     17
         2695
                330
                       191
                              15
                                    657
                                            5
                                               3549
                                                      2108
                                                             671
                                                                    87
                                                                          165
                              50
                                                419
   2562
         1609
                  7 12551
                                    53
                                          913
                                                      2858 4027
                                                                  9222
                                                                           97
     35
            4
                 373
                     1027
                             642
                                    767
                                            0
                                                  0]], e_out: [[[ 0.00937138
   -0.0435223 ]
  0.22457854
                0.06099077 -0.15927438 ...
                                              0.17894292 -0.08084212
    0.009922851
  [ 0.5144142
                0.
                            -0.4028917
                                              0.23175338 -0.07614239
    0.1242324 ]
```

https://colab.research.google.com/drive/1COjjfgR0oJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 56/100

. . .

0.02377777 -0.40411875

0.00776321 -0.46058902

[-0.21684676 -0.16314252 -0.5528714

[-0.32278553 -0.3275984 -0.5360156

-0.3878937 ]

-0.466035721

```
[-0.3974161 \quad -0.44152915 \quad -0.5400808 \quad \dots \quad 0.00285856 \quad -0.58307594
           -0.57918394]]]
        sampled token: tastes
        sampled token: like
        sampled token: carbonated
        sampled token: juice
        sampled token: end
        Predicted summary: tastes like carbonated juice
        Review: say golden cocker love treats great dogs like cocker allergy issues n
        Original summary: great dog treat quality and condition when received questio
                                                                                 113
        input seq: [[ 83 1321 3768
                                        11
                                             75
                                                    6
                                                        65
                                                               1 3768 1351
                                                                            596
            12
                  46 2240
                            23
                                  55
                                       75
                                           283 1079
                                                      271
                                                             67
                                                                  16
                                                                      661
                                                                             75 1718
                                                             75 2601
                                                                           240
            66 8406
                     526
                            30 5838
                                      263
                                           182
                                                  38
                                                       66
                                                                      629
                                                                                 483
          2905
                  86
                            75
                                  65 2032 1669
                                                   0
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                        6
             0
                   0
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                                                                              0
             0
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                        0
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                                   0
                                        0
                                             0
                                                   0
                                                        0
                                                              0]], e out: [[[-2.3335822e-
            3.5968732e-02 4.4831853e-02]
          [-1.7988113e-01 -3.1974527e-01 -3.0316845e-01 ...
                                                                 3.8243487e-02
                           2.9409614e-01]
            2.7304393e-01
          [-3.2054809e-01 -9.0199733e-01 -2.4414794e-01 ...
                                                                0.0000000e+00
            3.0690935e-01 5.9334153e-01]
          [-0.0000000e+00 6.4342445e-01 -1.5858016e-10 ...
                                                                 0.0000000e+00
            1.0000000e+00 9.6022528e-01]
          [-0.0000000e+00 6.4310819e-01 -6.9132561e-11 ...
                                                                 0.000000e+00
            1.0000000e+00 9.6051371e-01]
          [-0.0000000e+00 6.4478505e-01 -3.0198583e-11 ...
                                                                 0.0000000e+00
            1.0000000e+00 9.6069062e-01]]]
        sampled_token: my
        sampled_token: dog
        sampled token: loves
        sampled_token: these
        sampled token: end
        Predicted summary: my dog loves these
        Review: newman favorite brand try products however one failure bar bland gues
        Original summary: not up to newman standards
        input_seq: [[ 570
                             70
                                   81
                                        32
                                            106
                                                   93
                                                         4 3328
                                                                 185
                                                                       685
                                                                            415
                                                                                  371
                                                                                        90
            28
                164 1205 2564
                                       29 1205
                                 118
                                                  28
                                                     185
                                                             68
                                                                 650
                                                                        5
                                                                             24
                                                                                  13
           476
                  68
                       28
                           650
                                  30
                                      541 8109
                                                 185 3543
                                                             90
                                                                 103
                                                                      136
                                                                              0
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             0
                   0
                        0
                             0
                                        0
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                                   0
                                             0
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                                                        0
                                                             0]], e out: [[[ 1.0513112e-
                   0
            1.9638294e-02
                            9.8019749e-021
                            1.6818762e-01 -3.3051553e-01 ... 7.9029553e-02
          [ 4.5760244e-02
            1.6803659e-01
                            3.0413127e-011
          [ 2.9247874e-01 4.2730112e-02 -4.2109966e-01 ...
                                                                 8.2904600e-02
            1.8282308e-01 3.9833847e-01]
                            5.0576192e-01 -5.0101425e-12 ...
          [-0.0000000e+00
                                                                 3.1092951e-27
           -9.7767556e-01
                            9.7399485e-011
                            F 0747FF0
                                       0.1
https://colab.research.google.com/drive/1COjjfgR0oJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 57/100
```

```
[-U.UUUUUUUE+UU 5.U/4/55UE-UI -Z.U85814ZE-IZ ...
                                                    4.00/2850e-28
  -9.7767556e-01 9.7383457e-011
  [-0.0000000e+00 5.0831407e-01 -8.6863400e-13 ... 7.0142712e-29
   -9.7767556e-01 9.7374833e-01]]]
sampled token: chocolate
sampled token: bar
```

chocolate bar

Review: tastes really bad strong chemical taste zero grams sugar still produc

```
Original summary: really tastes bad
input seq: [[
                        14
                 54
                                    109
                                          1009
                                                    3
                                                       1219
                                                               573
                                                                       36
                                                                              58
                                                                                   10
     42
         1529
                                                                293
                1254 4133
                               450
                                    2510
                                            460 42295
                                                         697
                                                                      1282
                                                                                4
   2231
                                                                       830
            17
                 307 13228
                               110
                                       12
                                           5527
                                                    51
                                                          16
                                                               3412
                                                                              196
    601
          1950
                   7
                          0
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             0
                          0
                                 0
                                        0
                                                     0]], e out: [[[ 2.25623533e-0
                    0
                                              0
   -1.15278125e-01 -6.11421615e-02]
  [ 4.75362480e-01 -7.94926658e-03
                                       6.50887340e-02 ...
                                                              1.30349219e-01
   -1.42766967e-01 -2.33958624e-02]
```

[ 7.50298321e-01 -0.00000000e+00 7.71896690e-02 ... 3.07751726e-02

-1.13329768e-01 -1.95350330e-02]

[-0.00000000e+00 5.72462082e-01 -1.75686756e-15 ... 0.0000000e+00 9.95043874e-01 9.87875998e-01]

[-0.00000000e+00 5.72423041e-01 -5.90620033e-16 ... 0.00000000e+00

9.95043874e-01 9.87735987e-01]

 $[-0.000000000e+00 \quad 5.72263420e-01 \quad -1.98522632e-16 \quad \dots \quad 0.00000000e+00$ 

9.95043874e-01 9.87632453e-01]]]

sampled token: tastes sampled token: like sampled token: medicine sampled token: end

campled takens not

sampled token: end Predicted summary:

Predicted summary: tastes like medicine

```
Review: earth best supposed one best baby foods apparently son palate food ma
Original summary: not look appetizing and baby would not eat it
                                    24
input seq: [[ 976
                    24 792
                               4
                                        328
                                             173 1265
                                                                               1
                                                        358 2000
                                                                    12
                                                                        265
    84
        632
             638
                  171 6611
                              12 2953 1279
                                            293 1282
                                                         0
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                                                    0]], e out: [[[-2.2977932e-
          0
               0
                          0
                               0
    2.0667751e-01
                  2.2553521e-011
  [-1.4927365e-01 -8.8607413e-01 -2.7652723e-01 ...
                                                       2.7701551e-02
                   1.4321743e-01]
    3.0761960e-01
  [-1.2821007e-01 -8.9812076e-01 -2.0078024e-01 ...
                                                       1.6286466e-01
    1.7525630e-02 -3.0957782e-011
  [-0.0000000e+00 5.5403668e-01 -3.1063998e-23 ...
                                                       0.0000000e+00
    5.6929314e-01 9.7721386e-01]
  [-0.0000000e+00 5.5387253e-01 -1.1147729e-23 ...
                                                       0.0000000e+00
    5.6929314e-01 9.7722101e-011
  [-0.0000000e+00 5.5372739e-01 -4.0012993e-24 ...
                                                       0.0000000e+00
                   9.7722727e-01]]]
    5.6929314e-01
```

https://colab.research.google.com/drive/1COjjfgR0oJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 58/100

```
sampled_token: not
sampled_token: for
sampled_token: baby
sampled_token: end
```

Predicted summary: not for baby

Review: beneful product even real meat products stuff leftover actual meat ha Original summary: false advertising terrible dog food input seq: [[ 4123 84 2596 2643 10802 1232]], e out: [[[ 0.1116885 - 0 0.05992528] [ 0.26134112 -0.32704458 -0.07753726 ... -0.24748835 0.08253683 -0.11444956] [0.5921757 -0.36066937 -0.19005086 ... -0.21140283 -0.08597424-0.53505105] [-0.14473996 0.51235545 -0.01964502 ... 0.315622 0. -0.9873611 ] [-0.07603654 0.72990113 0.09410053 ... 0.37492004 0.15782814 -0.817529261 [-0.12191062 -0.17259242 0.3453002 0.25664112 0.76669276 -0.44803083]]] sampled token: not sampled token: impressed sampled token: end Predicted summary: not impressed Review: care natural fried taste odd texture like packing material Original summary: naturally nasty input seq: [[ 443 3 1228 1 1655 2279 133 1383 

```
0
                                                                    0
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                     0
                                          0
                                                    0]], e_out: [[[ 2.77711358e
    4.08805273e-02
                    8.92916471e-021
  [ 2.18124017e-01 -2.44030040e-02
                                      4.43303846e-02 ... -1.48253860e-02
   -8.93541500e-02 -1.13786936e-01]
                                      1.05946913e-01 ... -3.38169962e-01
  [ 5.85050955e-02 -2.59155110e-02
   -1.43427297e-01 -1.84475705e-01]
  [-0.00000000e+00 7.09916532e-01
                                      2.59602149e-23 ...
                                                           0.0000000e+00
   -8.03349376e-01 9.95551407e-01]
  [-0.00000000e+00 7.09914923e-01
                                      1.07514113e-23 ...
                                                           0.0000000e+00
   -8.03349376e-01 9.95551288e-011
  [-0.0000000e+00
                    7.09913552e-01 4.45265793e-24 ...
                                                           0.00000000e+00
   -8.03349376e-01 9.95551288e-01]]]
sampled_token: not
sampled token: bad
sampled_token: end
Predicted summary:
                     not bad
```

```
Review: love french vanilla coffee gives day great start easy use one cup tim
Original summary: delicious
input seq: [[ 11 429 331
                                        6 454
                                               96
                            9 536
                                   56
                                                    20
                                                            39
                                                                18 618
                                                                              0
        0
            0
                0
                    0
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                                         0
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                                                 0
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                0
                    0
                                 0]], e out: [[[-1.0335382e-01 -7.0465475e-02
    0
        0
            0
                         0
                             0
    2.0938370e-01 9.4334736e-02]
                   1.8614410e-01 -1.8010819e-01 ...
  [ 2.9725198e-02
                                                       9.0294123e-02
    2.1654241e-01 -1.8570358e-01]
  [ 4.9452218e-01
                  1.1667845e-02 -3.9069316e-01 ... 7.9535149e-02
    8.3226338e-02 7.6443419e-021
  [-0.0000000e+00 5.6804001e-01 -2.5461518e-20 ...
                                                       0.0000000e+00
   -7.2941148e-01 9.7477013e-01]
  [-0.0000000e+00 5.6789821e-01 -1.1343660e-20 ...
                                                       0.0000000e+00
   -7.2941148e-01 9.7478199e-01]
  [-0.0000000e+00 5.6775844e-01 -5.0539172e-21 ...
                                                       0.0000000e+00
   -7.2941148e-01 9.7479361e-01]]]
sampled token: great
sampled token: coffee
sampled token: end
Predicted summary: great coffee
Review: tase good bold prefer love strong coffee reason cannot give stars thr
Original summary: wish had reviews having problems with this
```

```
input seq: [[14361
                        2
                             401
                                   285
                                           11
                                                109
                                                             413
                                                                    52
                                                                           57
                                                                                24
    280
          837
                       214
                               49
                                    280
                                             9
                                                 284
                                                       837
                                                              361
                                                                    809
                                                                           999
                 219
     39
          630
                 531
                              824
                                                  39
                                                      7729
                                                             1211
                                                                    373
                                                                            39
                       216
                                     39
                                           618
     46
         1977
                 653
                      1291
                              403
                                     66 11654
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                                                   0]], e out: [[[-1.32193640e-0
      O
             0
                   0
                                             0
    1.20353371e-01 1.35317877e-01]
  [-1.43764868e-01 -3.55363309e-01 -1.79936290e-01 ... -1.37473002e-01
    4.95641259e-03 -3.67063582e-021
  [ 9.68004297e-03 2.34710395e-01 -1.14338435e-01 ... -4.48160172e-02
   -1.61447674e-01 -6.56946719e-011
  [-0.00000000e+00 6.02684140e-01 -8.25601414e-13 ... -3.36017413e-35
   -9.99998569e-01 9.65859354e-011
  [-0.00000000e+00 6.04898989e-01 -3.15873060e-13 ... -3.19174231e-36
   -9.99998569e-01 9.65590715e-011
  [-0.000000000e+00 \quad 6.06134415e-01 \quad -1.20687599e-13 \quad \dots \quad -3.07867829e-37
   -9.99998569e-01 9.65407968e-01]]]
sampled token: great
sampled_token: cup
sampled token: of
sampled token: coffee
sampled token: end
Predicted summary: great cup of coffee
```

```
Review: great dog food year old lab healthier weight year also wanna get grap Original summary: good but why is it going up in price input sea: [[ 6 23 12 172 98 1086 553 355 172 17 588 https://colab.research.google.com/drive/1COjjfgROoJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 60/100
```

```
JUNE LL
  11564
         4576
               3947
                      5308
                              31
                                    196
                                           55
                                                       43
                                                              57
                                                                           22
                                                 12
                                                                   146
    121
               1063
                            1495
                                  4734
                                         3390
                                               3666
                                                             211
                                                                   454
                                                                          121
           16
                       306
                                                       536
   3967
         5510
                 55
                      1932
                             338
                                    184
                                           23
                                                 12
                                                       661
                                                             804
                                                                   129
                                                                          423
      0
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                                                  0]], e out: [[[-1.4182791e-01
    2.1750179e-01
                   1.6637650e-01]
  [-3.0336744e-01 -6.9329309e-01 -1.9860332e-01 ...
                                                        1.7165763e-02
    3.5890323e-01
                   4.3723005e-01]
  [-5.2975780e-01 -9.5598823e-01 -2.1742332e-01 ...
                                                        0.000000e+00
    1.3538024e-01
                   7.0980763e-01]
  [-0.0000000e+00 5.7275140e-01 -1.0771095e-13 ...
                                                        0.0000000e+00
    9.9973917e-01 9.7635514e-011
  [-0.0000000e+00 5.6941396e-01 -3.4379973e-14 ...
                                                        0.000000e+00
    9.9973917e-01 9.7633308e-01]
  [-0.0000000e+00
                   5.6814611e-01 -1.0977173e-14 ...
                                                       0.0000000e+00
    9.9973917e-01 9.7633034e-01]]]
sampled token: my
sampled token: dog
sampled token: loves
sampled token: it
sampled token: end
Predicted summary:
                    my dog loves it
```

Review: although orange pekoe refers grade tea size broken leaf particles nor

```
Original summary: alas not good
input seq: [[
               320
                                 7414
                                       1029
                                                            629
                                                                  954
                                                                       4781
                      395 7344
                                                10
                                                     130
                                                                             326
    970
          123
               5895
                       445
                             395
                                   445
                                           10
                                               1108 10780
                                                              10
                                                                    10
                                                                         321
     14
         7206
                311
                       395
                             445
                                  1554
                                        5796
                                                314
                                                     3192
                                                              19
                                                                  1022
                                                                          73
          964
    500
                 10
                      3655
                             314
                                  1660
                                          822
                                               1012
                                                     8656
                                                              25
                                                                  4008
                                                                        4008
   7449
           30
               4966
                      3118
                              40
                                   238
                                         1050
                                               3655
                                                      314
                                                             160
                                                                   717
                                                                        3750
               7206
                                     3
    415
          127
                       107
                            2116
                                            2
                                                104
                                                       13
                                                              77
                                                                    10
                                                                         641
     35
          188
                 39
                        49
                             272
                                     1
                                            3
                                               8656]], e out: [[[ 1.4940428e-02
   -2.4866301e-03 4.4414099e-02]
  [ 2.7181873e-01
                   7.6367356e-02
                                   1.3867748e-02 ...
                                                       9.3160287e-02
   -5.8124024e-02 -2.5369930e-01]
  [ 8.9993095e-01 0.0000000e+00 9.1974407e-02 ...
                                                       3.7355906e-01
   -0.0000000e+00 -1.0131843e-01]
  [-4.4458386e-01 -1.0937804e-01 -7.6293892e-01 ...
                                                       1.7574450e-04
   -3.8284320e-01 5.6099808e-01]
  [-3.5342103e-01 -1.3128592e-01 -5.1194686e-01 ...
                                                       8.0253347e-05
                   1.3413230e-01]
   -3.1626502e-01
  [-3.2436666e-01 -1.7185208e-01 -4.3344566e-01 ...
                                                       6.8147699e-03
   -3.5118511e-01 -6.6987038e-02]]]
sampled token: not
sampled token: bad
sampled_token: end
```

```
Review: coffee tastes right cannot taste chocolate guess hoping mocha flavor Original summary: no chocolate taste
```

```
input seq: [[
                     9
                          54
                                 82
                                        52
                                                3
                                                     28
                                                          415
                                                                 763 1796
                                                                                 8
                                                                                        0
                                                                                               0
                                                                                                     0
      0
                   0
                          0
                                 0
                                        0
                                                     0
                                                            0
                                                                                0
                                                                                       0
                                                                                             0
             0
                                              0
                                                                  0
                                                                         0
                                 0
             0
                    0
                          0
                                        0
                                              0
                                                     0
                                                            0
                                                                  0
                                                                         0
                                                                                0
```

Predicted summary:

not bad

```
0
                     0
                          0
                                          0
                                               0
                                                    0]], e_out: [[[ 7.1154499e-
   -0.0000000e+00 -6.5003490e-01]
                    1.8133996e-02 -2.8381422e-01 ...
                                                       0.000000e+00
  [ 9.5641524e-01
   -0.0000000e+00 -9.2962062e-011
  [ 9.9338633e-01
                    2.5272680e-02 -9.3018913e-01 ...
                                                       0.000000e+00
   -0.0000000e+00 -5.3684354e-01]
                    5.2248460e-01 -3.0041818e-23 ...
                                                       0.00000000e+00
  [-0.0000000e+00
   -9.9995923e-01 9.8930323e-01]
  [-0.0000000e+00 5.2248943e-01 -1.1938012e-23 ...
                                                       0.000000e+00
   -9.9995923e-01 9.8930681e-01]
  [-0.0000000e+00 5.2249414e-01 -4.7436687e-24 ...
                                                       0.0000000e+00
   -9.9995923e-01 9.8931044e-01]]]
sampled token: not
sampled token: bad
sampled token: end
Predicted summary:
                     not bad
Review: great results recent cook organic extra virgin olive oil cold pressed
Original summary: the complete set
                                          91
                                                           525
input seq: [[
                      680
                           1601
                                  402
                                               279
                                                    2433
                                                                  139
                                                                        341
                                                                             257
                 6
   2144
         6892
                487
                      4780
                             126
                                   249
                                         5020
                                               4363
                                                       16
                                                            607
                                                                    91
                                                                        6892
   4780
         6737
                196
                      9756 10542 18008
                                          288
                                               4710
                                                     1323
                                                             106
                                                                   399
                                                                         135
   2054
          143
                301
                       136
                            3517
                                   893
                                         2603
                                               6406
                                                       37
                                                              20
                                                                   106
                                                                         116
     59
                   0
                         0
                               0
                                     0
                                            0
                                                  0
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                                                               0
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            0
                         0
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      0
            0
                   0
                                     0
                                            0
                                                  0
                                                        0
                                                               0
                                                                     0
                                                                           0
      0
            0
                         0
                               0
                                     0
                                            0
                                                  0]], e_out: [[[-1.4182791e-01
                   1.6637650e-011
    2.1750179e-01
  [-1.8946993e-01 -2.7687758e-01 -3.6798054e-01 ...
                                                       1.9469060e-01
                   2.7023298e-01]
    4.3675303e-01
  [-2.4796709e-01 -7.7867508e-01 -4.4955981e-01 ...
                                                       2.2437964e-01
    4.9879605e-01 3.5031271e-01]
                    5.0069833e-01 -1.6371468e-12 ...
                                                       0.000000e+00
  [-0.000000e+00
   -2.5117403e-01 9.6301591e-01]
  [-0.0000000e+00 5.0022835e-01 -5.4409759e-13 ...
                                                       0.0000000e+00
   -2.5117403e-01
                    9.6306664e-011
  [-0.0000000e+00 5.0011879e-01 -1.8090089e-13 ...
                                                       0.0000000e+00
   -2.5117403e-01 9.6308720e-01]]]
sampled_token: great
sampled token: tasting
sampled token: olive
sampled_token: oil
sampled_token: end
Predicted summary: great tasting olive oil
Review: favorite mustard past years simply nothing like product outstanding h
Original summary:
               70 1267 483
                               94
                                   455
                                        238
                                                1
                                                     7 1459 5460 2237 1621
input seq: [[
                                                                             669
                                                        15 1762 2020
   497 5035
            737 1267 1694
                             215
                                  588 3518
                                              26 1267
                                                                       746
          1 1032 7829
                        455 1629
                                   14
                                         61 1355
                                                   11
                                                         7
                                                             292
                                                                  198
                                                                        15
     8
   523 1026
                                                         0
                                                               0
                                                                    0
                                                                         0
               0
                     0
                          0
                               0
                                    0
                                          0
                                               0
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     0
          0
               0
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                               0
                                    0
                                          0
                                               0
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                                                               0
                                                                    0
                                                                         0
                               0
                                          0
                                               0
     0
          0
               0
                     0
                          0
                                    0
                                                    0]], e out: [[[-9.5655002e-
```

4.2556795e-01

1.4913952e-01 -6.7552969e-02]

3.3142036e-01 6.7565449e-021

[-1.8613949e-01 2.6739484e-01 -2.2336996e-01 ...

[-4.1605988e-01 3.0907065e-01 -1.4871672e-01 ... 8.3685410e-01

```
4.1470969e-01 1.0618718e-01]
  [-0.0000000e+00 6.5145385e-01 8.9248253e-12 ...
                                                       0.0000000e+00
    9.9796587e-01 9.5643312e-01]
  [-0.0000000e+00 6.5211141e-01
                                  3.5625116e-12 ...
                                                       0.0000000e+00
    9.9796587e-01 9.5690590e-01]
  [-0.00000000e+00 \quad 6.5387988e-01 \quad 1.4314659e-12 \dots \quad 0.00000000e+00
    9.9796587e-01 9.5749104e-01]]]
sampled token: best
sampled token: mustard
sampled token: ever
sampled token: end
Predicted summary: best mustard ever
Review: fantastic product keeps fresh months bag desk opened packet resealed
Original summary: check out grandpa po products
input seq: [[ 572
                      7 662 108 250
                                         38 1911 375
                                                        475 9356
                                                                     7
                                                                         58
                                                                             108
   457
             308
                   71
                          8
                             373
                                  122
                                       197 1372
                                                            733
                                                                 156
                                                                      439
          7
                                                  118
                                                        18
   156 494
             449 5608
                                                         3
                        106
                             156
                                  439
                                       156
                                            494
                                                   17
                                                              6
                                                                    5
                                                                       170
    59
          0
               0
                    0
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     0
          0
               0
                     0
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                                    0
                                         0
                                               0
                                                    0]], e out: [[[-1.00985564e
    2.23649874e-01 -5.72045380e-03]
  [-8.57857168e-02 -4.68377993e-02 -3.88801331e-03 ... -4.00134325e-01
    4.01037961e-01 1.09628607e-02]
  [-1.95672140e-01 -8.73087198e-02 -2.23739147e-01 ... -2.94323564e-01
    5.70122540e-01 2.15263456e-01]
  [-0.00000000e+00 6.72359526e-01
                                     1.04278683e-08 ...
                                                          4.53840188e-36
    5.88158369e-01 9.46838140e-01]
  [-0.00000000e+00 6.74409330e-01 4.74856865e-09 ...
                                                          4.75479940e-37
    5.88158369e-01 9.47046697e-01]
  [-0.00000000e+00 6.75832808e-01 2.16530904e-09 ... 5.06511549e-38
    5.88158369e-01 9.47202325e-01]]]
sampled token: great
sampled token: for
sampled token: the
sampled token: price
sampled token: end
Predicted summary: great for the price
Review: love cocoa ones like little better sugar sucralose makes much better
Original summary: love these
input seq: [[ 11
                   371
                                    19
                                         31
                                               36 1803
                                                         80
                                                              15
                                                                    31
                                                                          4
                                                                              24
                         271
                                1
         33 1356
                  703 1303
   220
                               0
                                    0
                                         0
                                               0
                                                    0
                                                         0
                                                              0
                                                                    0
                                                                         0
     0
          0
               0
                    0
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                    0
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                                         0
                                                    0]], e_out: [[[-1.0335382e-
    2.0938370e-01 9.4334736e-02]
  [-2.5932509e-02
                   4.1482538e-01 -0.0000000e+00 ...
                                                       3.4914854e-01
   -3.4738243e-02 -4.3873483e-01]
```

```
[-2.2059578e-01 4.1263649e-01 -1.4842199e-01 ...
                                                       8.7562537e-01
   -3.0589038e-01 -5.4704374e-01]
  [-0.0000000e+00 4.0625930e-01 8.1602634e-20 ...
                                                       0.000000e+00
   -9.0813637e-01 9.5966798e-01]
  [-0.0000000e+00 4.0641466e-01 3.4339014e-20 ...
                                                       0.0000000e+00
   -9.0813637e-01 9.5975590e-011
  [-0.0000000e+00 4.0657967e-01 1.4458631e-20 ...
                                                       0.0000000e+00
   -9.0813637e-01 9.5984924e-01]]]
sampled_token: great
sampled token: tasting
sampled token: cocoa
sampled token: end
Predicted summary: great tasting cocoa
Review: big fan blue diamond brand almonds really like bold flavors habanero
Original summary: great flavor
input seq: [[ 145
                  333
                         609 1703
                                        471
                                               14
                                                     1 401
                                                              72 2664 1024
                                                                             929
                                    81
    73 668 2185 4052
                          8
                             138
                                 196
                                        55
                                            472
                                                   16
                                                      288
                                                             21
                                                                 453
                                                                        83
                             497 2185
   261
         82
              70
                   72
                         90
                                         8
                                              19
                                                   53 2086
                                                            163
                                                                  15
                                                                      497
             107
                  127
                             308
  2664
          8
                          1
                                    5 7916
                                              59
                                                       401
                                                            404
                                                                 609 1703
                                                    1
   471
          0
               0
                          0
                               0
                    0
                                    0
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                                               0
                                                    0
                                                         0
                                                              0
                                                                    0
     0
          0
               0
                    0
                          0
                                    0
                                         0
                               0
                                               0
                                                    0]], e out: [[[-4.6319108e-
    1.2696499e-01 9.1565311e-02]
  [-6.5826643e-03 7.5759843e-02 -1.8444933e-01 ...
                                                       6.8054855e-02
    8.2077943e-02 -9.3203545e-02]
  [-4.8320610e-02 1.5791403e-02 -3.0154020e-01 ...
                                                       1.5156925e-01
    2.3905368e-01 5.1158637e-02]
  [-0.0000000e+00 3.6297658e-01 8.4569911e-04 ...
                                                       3.8846382e-20
   -9.9999779e-01 9.6977723e-01]
  [-0.0000000e+00 3.5954165e-01 3.5295915e-04 ...
                                                       3.2775115e-21
   -9.9999779e-01 9.7024155e-01]
  [-0.0000000e+00 3.5727504e-01 1.4566907e-04 ...
                                                       2.7830043e-22
   -9.9999779e-01 9.7070587e-01]]]
sampled token: great
sampled token: flavor
sampled token: end
Predicted summary: great flavor
Review: shortbread cookies delicious bought london summer hard find expensive
Original summary: shortbread cookies
input seq: [[2471
                   178
                          63
                               46 4187
                                        766
                                              118
                                                    29
                                                        201 1203
                                                                     0
                                                                          0
                                                                               0
     0
          0
               0
                    0
                          0
                               0
                                    0
                                         0
                                               0
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                                                         0
                                                              0
                                                                    0
                                                                         0
     0
               0
                    0
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                                                    0
                                                         0
                                                              0
                                                                    0
                                                                         0
                                         0
                                               0
               0
                     0
                          0
                                                    0]], e out: [[[ 2.60409210e
    3.39345746e-02 -1.00868866e-01]
  [-0.000000000e+00 -5.32856323e-02 -1.36462182e-01 ... -2.64276743e-01
    1.79432824e-01 -1.50801182e-01]
  [-0.000000000e+00 -5.57089448e-01 -3.14361691e-01 ... -2.57027596e-01]
    4.81932312e-01 -1.38834283e-01]
  [-0.000000000e+00 \quad 7.96491742e-01 \quad -1.07718762e-19 \quad \dots \quad 0.00000000e+00
```

9.31962132e-01 9.76887763e-011

```
text summarisation.ipynb - Colaboratory
  [-0.00000000e+00 7.96521306e-01 -5.31413266e-20 ...
                                                             0.0000000e+00
    9.31962132e-01
                     9.76883888e-01]
  [-0.0000000e+00
                     7.96553671e-01 -2.62210535e-20 ...
                                                             0.00000000e+00
    9.31962132e-01
                     9.76879776e-01111
sampled token: best
sampled token: cookies
sampled token: ever
sampled token: end
Predicted summary:
                     best cookies ever
Review: running sources apricot syrup discovered one really good syrup contin
Original summary: apricot syrup
input seq: [[ 956 2363 3580
                                     700
                                            4
                                                 14
                                                       2
                                                           269
                                                                577
                                                                       60
                                                                            47
     6
                0
                      0
                                                 0
                                                            0
                                                                 0
                                                                       0
                                                                            0
           8
                           0
                                0
                                      0
                                           0
                                                      0
     0
           0
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     0
           0
                0
                      0
                           0
                                0
                                      0
                                           0
                                                      0]], e out: [[[-2.56040096e
    9.09865871e-02
                     1.20515980e-01]
```

[-4.96122688e-02 1.43181756e-01 -3.94840777e-01 ... 1.09165944e-01 2.82800168e-01 3.52313429e-01]

[ 1.53350577e-01 1.25796527e-01 -1.84518665e-01 ... 9.67149436e-02

1.01287872e-01 1.83566242e-01]

[-0.00000000e+00 7.30466485e-01 1.95166939e-16 ... 0.0000000e+00

9.76183712e-01 9.76262271e-01]

[-0.00000000e+00 7.30458319e-01 9.67527487e-17 ... 0.0000000e+00

9.76183712e-01 9.76263583e-011

 $[-0.000000000e+00 \quad 7.30451226e-01 \quad 4.79641075e-17 \dots \quad 0.00000000e+00$ 

9.76183712e-01 9.76264775e-01]]]

sampled token: great sampled token: product sampled token: end

Predicted summary: great product

```
Review: good made quicker meal family really liked good strong peanut flavor
Original summary: great meal starter
                                                      2
input_seq: [[
                 2
                     44 4008
                               237
                                    197
                                          14
                                               246
                                                         109
                                                               287
                                                                      8
                                                                         239 2026
     0
                0
                     0
                          0
                                0
                                     0
          0
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                                                                0
                                                                     0
                                                                          0
     0
          0
                0
                     0
                          0
                                     0
                                          0
                                                0
                                                     0]], e out: [[[-2.6852868e-
   -9.4500564e-02
                    8.6194044e-041
  [-7.3583588e-02
                    1.5532937e-02 -4.1237518e-02 ... -2.8347108e-01
   -2.0073965e-01
                    4.3571848e-02]
  [-1.9824529e-02
                    1.9588701e-01
                                    1.1417874e-02 ... -1.0314631e-01
   -1.9961739e-01 -5.8324464e-021
  [-0.0000000e+00
                    5.5221033e-01 -4.9800677e-16 ...
                                                        0.000000e+00
   -9.9280006e-01
                    9.9175459e-01]
  [-0.000000e+00
                    5.5222267e-01 -2.5737311e-16 ...
                                                        0.0000000e+00
   -9.9280006e-01
                    9.9176389e-011
  [-0.000000e+00
                    5.5223197e-01 -1.3301984e-16 ...
                                                        0.000000e+00
   -9.9280006e-01
                    9.9177206e-01]]]
sampled token: good
```

```
sampled_token: flavor
sampled_token: end
```

sampled\_token: great
sampled\_token: end
Predicted summary:

Predicted summary: good flavor

```
Review: truely enjoyed ive always enjoyed atomic bomb candy closest thing say
Original summary: amazing
input seq: [[ 7507
                      373
                           2679
                                   92
                                         373 11309
                                                    4344
                                                           232
                                                                 2046
                                                                        127
                                                                               8
                                                                        2962
         4760
                                          542
                                                     2696
                                                                  4926
      1
                 53
                       145
                             291
                                    14
                                                103
                                                           1023
                                                533
    911
         7393
               6158
                      7938
                             122
                                    77
                                          238
                                                      860
                                                           2696
                                                                   631
                                                                          18
   8778
            0
                  0
                         0
                               0
                                     0
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                                                              0
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      0
            0
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                                                  0]], e out: [[[ 1.91489592e-0
   -1.09868854e-01
                    1.45740127e-02]
                                     1.79229468e-01 ... -2.59014070e-01
  [ 3.22514951e-01
                    5.71534112e-02
   -2.18609378e-01 -6.80046901e-02]
  [ 4.81699944e-01
                    2.85710972e-02 -6.50400817e-02 ... -1.89096841e-03
   -2.35654846e-01 4.92493063e-02]
  [-0.00000000e+00 4.90202546e-01 -7.05962956e-15 ...
                                                          4.15865479e-35
    8.27380657e-01 9.69538212e-01]
  [-0.00000000e+00 4.97672945e-01 -2.77114537e-15 ...
                                                          6.27531245e-36
    8.27380657e-01 9.69231725e-01]
                    5.03915846e-01 -1.09271041e-15 ... 9.50187799e-37
  [-0.0000000e+00
    8.27380657e-01 9.68918145e-01]]]
sampled token: very
sampled token: good
sampled token: end
Predicted summary:
                    very good
```

```
Review: flavor good like fact sugar free box says giant smallest freezer pops
Original summary: giant
input seq: [[
                8
                           1
                              263
                                    36
                                          50
                                               47
                                                   369 2528 2807 1273 1334
                                                                             105
   182
        130
            610 1334
                          5
                               1
                                   60
                                         48
                                             201
                                                   13
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   -1.28807187e-01 -1.14374585e-01]
  [ 4.56071854e-01 0.00000000e+00
                                     1.58247247e-01 ... -2.45211214e-01
   -1.47124857e-01 -6.73383707e-031
                                     1.91700116e-01 ... -3.55323315e-01
  [ 7.54803479e-01 0.00000000e+00
   -2.23077219e-02 0.00000000e+00]
  [-0.00000000e+00 6.05300605e-01 -1.57609512e-21 ...
                                                          0.00000000e+00
   -7.88981616e-01 9.85765576e-011
  [-0.00000000e+00 6.05280697e-01 -6.00160328e-22 ...
                                                          0.00000000e+00
   -7.88981616e-01 9.85763550e-01]
  [-0.0000000e+00
                    6.05264425e-01 -2.28540476e-22 ...
                                                          0.00000000e+00
                    9.85762000e-01]]]
   -7.88981616e-01
sampled_token: good
sampled token: but
sampled token: not
```

https://colab.research.google.com/drive/1C0jjfgR0oJqcVq-MP4ueg6PHIzTAvIuR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 66/100

good but not great

```
Review: control without use second product perfume like smell many shampoos l
Original summary: simple shampoo that works well
               915
input seq: [[
                       78
                              20
                                   351
                                            7
                                               4333
                                                         1
                                                             193
                                                                    66
                                                                         3015
                      3646
    123
                                         3419
                                                        19
                                                                    410
             5
                 544
                              365
                                    779
                                                 193
                                                                7
                                                                           119
     48
         5057
                 190
                      1411
                            3857
                                    380
                                            81
                                                  20
                                                      2080
                                                              426 10932
                                                                          3443
    112
                 451
                        89
                                                                          1707
         2115
                              674
                                     17
                                         1349
                                                   4
                                                       369
                                                             2115
                                                                    674
   1918
                 369
                       858
                                7
                                     43
                                           686
                                                       210
                                                                     20
                                                                           480
            16
                                                 348
                                                              369
     43
          480
                 135
                       453
                                            49
                                                       281
                                                              245
                                                                     27
                               20
                                    251
                                                3015
                                                                             1
     53
           31
                 190
                      1411
                            3857
                                    380
                                            81
                                                 235]], e out: [[[-0.10227184
                                                                                 0
    0.02669836]
                                               0.19306716
  [-0.1362811]
                 0.0937177
                             -0.4257061
                                          . . .
                                                           0.37480012
    0.2912447 ]
  [-0.12576692
                 0.02225769 -0.61726123 ...
                                               0.2833323
                                                            0.5042131
    0.3484682 ]
  [ 0.61425066 -0.20711932
                                               0.25767067
                                                            0.00114422
   -0.37966117]
  [ 0.85451794 -0.17426153
                              0.05728281 ...
                                               0.671817
                                                           -0.00574342
   -0.4824036 ]
  [ 0.87716293 -0.16532722  0.12285253 ...
                                               0.81295216 -0.01085434
   -0.5898569 ]]]
sampled token: works
sampled token: well
sampled token: end
Predicted summary: works well
Review: tea okay hoped seems though low quality tea leaves used definite lack
Original summary: not what had hoped for
input seq: [[ 10
                   683 2057
                               222
                                    115
                                          156
                                                86
                                                     10
                                                         567
                                                                43 2388 1331 2779
   394 1527
               15
                   342
                         18
                              610
                                     8 8656
                                              214
                                                     5
                                                          14
                                                               59
                                                                    81
                                                                          11
   359
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   -0.0000000e+00 -3.3973825e-011
  [ 9.5807594e-01
                    0.0000000e+00 0.0000000e+00 ...
                                                        2.9640697e-02
   -0.0000000e+00 -3.6024916e-011
  [ 9.9418765e-01
                    0.0000000e+00
                                    0.0000000e+00 ...
                                                        1.9494501e-01
   -0.0000000e+00 -1.2650900e-01]
  [-0.000000e+00
                    3.8835442e-01 -2.3630524e-17 ...
                                                        0.000000e+00
   -9.9981773e-01
                    9.8057908e-011
                    3.8890818e-01 -8.9706919e-18 ...
  [-0.000000e+00
                                                        0.0000000e+00
   -9.9981773e-01
                    9.8053664e-011
  [-0.000000e+00
                    3.8943121e-01 -3.4082124e-18 ...
                                                        0.0000000e+00
```

```
Review: gross like chomping chunk salt regret wasting money purchase future Original summary: gross
```

9.8048687e-01111

not for me

-9.9981773e-01

sampled\_token: not
sampled\_token: for
sampled\_token: me
sampled\_token: end
Predicted summary:

```
THPUL Seq: [[1338
                      I 0294
                             Z914
                                    131 2022 3314
                                                         1/3
                                                               101
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                                                                           ט
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                                                     0]], e out: [[[ 3.06655765e
   -1.67513505e-01 -3.39639932e-02]
                                      1.22650445e-01 ... -5.36337614e-01
  [ 6.41969979e-01 -1.65613790e-04
   -2.85371780e-01 -7.03324005e-021
  [ 9.50097859e-01 -6.36116974e-03
                                      2.77381212e-01 ... -5.51270664e-01
   -3.72407913e-01 9.50493664e-03]
  [-0.00000000e+00 7.44673193e-01
                                      6.30435663e-21 ...
                                                           0.0000000e+00
   -2.44044438e-01 9.98460948e-01]
  [-0.00000000e+00 7.44635105e-01
                                      2.81968968e-21 ...
                                                           0.0000000e+00
   -2.44044438e-01 9.98461246e-01]
  [-0.00000000e+00 7.44598567e-01 1.26108279e-21 ...
                                                           0.00000000e+00
   -2.44044438e-01 9.98461545e-01]]]
sampled_token: not
sampled token: what
sampled token: expected
sampled token: end
Predicted summary:
                     not what expected
```

Review: chips natural feel somewhat unique taste good bad first comment packa Original summary: interesting chip but maybe not the best for salsa input seq: [[ 1511]], e out: [[[-0.00000000e+0 -1.74159631e-01 -3.74646306e-01] [-0.00000000e+00 7.12038934e-01 6.76613301e-02 ... -7.68141747e-01 -5.29097259e-01 -2.28975147e-01] [-0.00000000e+00 8.96505296e-01 3.90696496e-01 ... -9.73257422e-01 -7.77565360e-01 -8.32326934e-021 [-5.38859330e-02 9.99969721e-01 9.99387145e-01 ... -7.34304190e-01 -4.23064947e-01 -9.84991789e-02] 9.99650776e-01 ... -3.75671893e-01 [-7.00889379e-02 9.99920189e-01 -4.05086130e-01 -8.19970518e-021 [-1.02247134e-01 9.98926699e-01 9.99731779e-01 ... -1.28815621e-01 -3.98448378e-01 -1.14770032e-01]]] sampled token: the sampled token: best sampled token: chips sampled\_token: have sampled token: ever sampled\_token: had sampled token: end

```
Review: love product wish available stores near found buffalo fire kind like Original summary: wish they were closer input sea: [[ 11 7 202 256 205 875 /1 1333 30/0 233 1 /1 03/0 https://colab.research.google.com/drive/1COjjfgROoJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 68/100
```

Predicted summary: the best chips have ever had

```
TIIhar sed. [[
               11
                         434
   329 2006
             415
                   577
                        175
                                          0
                                               0
                                                          0
                                                               0
                                                                    0
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                                                    0]], e out: [[[-1.0335382e-
    2.0938370e-01
                    9.4334736e-02]
  [-2.3965186e-02 -1.2421138e-01 -1.9879983e-01 ...
                                                       3.8977776e-02
    3.2080376e-01
                    9.2129707e-02]
  [-4.5053777e-03 -5.1529709e-02 -1.5469138e-01 ... -2.6464391e-02
    2.6444295e-01
                    1.3492280e-02]
  [-0.000000e+00
                   7.8483677e-01 5.1248521e-15 ...
                                                       0.000000e+00
   -9.1028601e-01 9.7882795e-01]
  [-0.0000000e+00 7.8496552e-01 2.5526894e-15 ...
                                                       0.000000e+00
   -9.1028601e-01 9.7887617e-01]
  [-0.0000000e+00 7.8510332e-01 1.2719875e-15 ...
                                                       0.0000000e+00
   -9.1028601e-01 9.7892642e-01]]]
sampled token: great
sampled token: jerky
sampled token: end
Predicted summary: great jerky
```

Review: coffee make point drinking gourmet coffee either coffee claims answer Original summary: be god sent or depending on who you are input seq: [[ 3960 16500 149 11965 345 10080 7]], e out: [[[ 0.711545 -0.6500349 ] [ 0.9562137 0.05129093 -0.33950636 ... 0. -0. -0.88835233] [ 0.9931096 0.06938183 -0.91318774 ... 0. -0. -0.336478681 . . . [-0.12633605 0.50176877 -0.76272494 ... 0. -0.99996287 0.90911466] [-0.6236785 0.3250897 -0.8000591 0. -0.99996287 0.948293 ] [-0.43592846 0.21795657 -0.48719832 ... 0. -0.9999141 0.86891204111 sampled token: good sampled\_token: coffee sampled token: but sampled token: not sampled\_token: bad sampled token: end Predicted summary: good coffee but not bad

```
Review: wow popcorn delicious purchased large popcorn machine game room famil
Original summary: perfect movie night popcorn
input seq: [[ 710
                    213
                               180
                                    229
                                         213
                                                         920
                                                                                34
                          63
                                              406 2443
                                                               197 1426 2782
                                   261
   309
         32
             646
                    46 4462
                               55
                                        799 1229 1390
                                                          3
                                                                6 2393
                                                                         213
   231
        646
             813
                     8 1695
                               20
                                   582
                                          96
                                               20
                                                          54
```

```
text summarisation.ipynb - Colaboratory
                                                         31 3657
   182
        131
             840
                   376
                        383
                              86
                                     3
                                        358
                                             369
                                                    54
                                                                   126 1426
   103
        213
               38 6884
                        432
                             218
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                                                     0]], e_out: [[[-5.15573956e
    9.30784792e-02 -7.84853324e-02]
  [-9.00153257e-03 4.86274093e-01 -1.71890840e-01 ...
                                                           1.23611175e-01
    2.27049097e-01 -6.32650971e-01]
  [-8.73121805e-03 7.17230141e-01 -6.38042927e-01 ...
                                                           5.37435770e-01
    3.00365150e-01 -9.45142388e-01]
  [-0.00000000e+00 5.13765335e-01 -1.18081085e-03 ...
                                                           0.0000000e+00
    1.18579455e-01 9.66368973e-01]
  [-0.00000000e+00 5.13176560e-01 -4.45636659e-04 ...
                                                           0.0000000e+00
    1.18579455e-01 9.66105461e-01]
  [-0.00000000e+00 5.12662768e-01 -1.66732440e-04 ...
                                                           0.00000000e+00
    1.18579455e-01 9.65982974e-01]]]
sampled token: great
sampled token: popcorn
sampled token: end
Predicted summary:
                     great popcorn
Review: first glance thought great deal read reviews looked little closer cla
Original summary: bait and switch
input seq: [[ 34 6234
                         123
                                    291
                                         323
                                              224
                                                    451
                                                          19 2118 1677
                                                                         128
                                                                              440
   485
         38
               57
                   603 1107
                                     0
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                               16
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   -3.3703282e-02
                   3.0401871e-03]
  [-9.5758170e-02 -1.0727715e-01 -2.4091473e-01 ...
                                                        7.6752275e-02
                    1.4787112e-01]
    1.1755995e-01
  [ 3.2590427e-02 -9.5719501e-02 -2.2839729e-01 ...
                                                        6.2531680e-02
    1.1570809e-02 5.1643476e-02]
  [-0.0000000e+00 7.8092927e-01 -8.5598088e-22 ...
                                                        0.000000e+00
```

9.9716508e-01 9.8771268e-01]

[-0.0000000e+00 7.8120708e-01 -3.4055193e-22 ... 0.0000000e+00

9.9716508e-01 9.8777592e-01]

[-0.0000000e+00 7.8147930e-01 -1.3561487e-22 ... 0.0000000e+00

9.9716508e-01 9.8783886e-01]]]

sampled\_token: good
sampled\_token: price
sampled\_token: end

Predicted summary: good price

```
Review: cannot say enough frontier products always great fresh continue fill
Original summary: quality and quantity
input seq: [[ 52
                           90 4355
                                            92
                                                   6
                                                      108
                                                            577
                                                                  841
                                                                       499 2622 4355
                      83
                                      106
    88 2176 1026
                   712
                           20
                               972
                                     561
                                            0
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    6.5204836e-02
                     2.9665072e-02]
  [-1.2702406e-02 -6.6499330e-02 -1.8459950e-01 ...
                                                           3.2322250e-02
```

1.1316102e-01 3.7701920e-02]

```
[-4.4472136e-02 -6.2228482e-02 -2.7676076e-01 ...
                                                      1.2012035e-01
    1.7568389e-01 2.5211342e-021
  [-0.0000000e+00 8.5202509e-01 -3.6704928e-18 ...
                                                       0.000000e+00
    9.9540615e-01 9.8687285e-01]
  [-0.0000000e+00 8.5198790e-01 -1.6803602e-18 ...
                                                      0.0000000e+00
    9.9540615e-01 9.8687017e-01]
  [-0.00000000e+00 \ 8.5195422e-01 \ -7.6927926e-19 \ \dots \ 0.0000000e+00
    9.9540615e-01 9.8686773e-01]]]
sampled token: great
sampled token: end
Predicted summary: great
Review: often found kind japanese style curry lunch box young really grew kok
Original summary: good curry
input seq: [[
               390
                                                     612
                                                                1548
                                                                            120
                      41
                            233
                                 1819
                                        737
                                             1252
                                                            47
                                                                        14
   1448
           87
                 42
                     3081
                           1252
                                        1252
                                                      598
                                                            298
                                                                          2
                                   233
                                                17
                                                                  173
    426
          237
                     1252
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                311
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                                                 0]], e out: [[[-1.23771526e-0
    2.23218560e-01 9.41185057e-02]
  [-4.74318750e-02 -2.94687331e-01 -2.71591306e-01 ... -1.38501106e-02
    4.47662562e-01 4.81538437e-02]
  [-8.22518952e-03 -1.47700563e-01 -3.01312447e-01 ... -1.15232848e-01
    4.23569530e-01 1.89394113e-02]
  [-0.00000000e+00 4.78071153e-01 4.59817765e-15 ...
                                                          0.00000000e+00
   -8.94557416e-01 9.69700575e-01]
  [-0.00000000e+00 4.78066534e-01 1.87374170e-15 ...
                                                          0.00000000e+00
   -8.94557416e-01 9.69657898e-01]
  [-0.000000000e+00 \ 4.78073955e-01 \ 7.64283916e-16 \dots \ 0.00000000e+00
   -8.94557416e-01 9.69603002e-01]]]
sampled token: great
sampled token: for
sampled_token: the
sampled token: price
sampled token: end
Predicted summary: great for the price
Review: coffee drink surprisingly much better expected considering reviews re
Original summary: not too bad for espresso on the go
input seq: [[
                    35 1599
                               15
                                    31 461
                                             996 224
                                                        323
                                                             341
                                                                            887
                9
                                                                  481
                                                                        35
   961
        939
             293 223 4365
                            310
                                 375 1560
                                            633
                                                 311
                                                        9
                                                              8
                                                                  78 1012
              42 1073
                              45 9705
  2976
        760
                       679
                                       671
                                            113
                                                 679
                                                        45 2289
                                                                  19 2391
        104
               2
                  341
                         0
                               0
                                    0
                                         0
                                                   0
                                                                        0
    26
                                              0
                                                         0
                                                              0
                                                                   0
     0
          0
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                    0
                         0
                               0
                                    0
                                         0
                                              0
                                                    0
                                                         0
                                                              0
                                                                   0
                                                                        0
                    0
                         0
     0
          0
               0
                               0
                                    0
                                         0
                                              0
                                                   0]], e_out: [[[ 7.1154499e-
   -0.0000000e+00 -6.5003490e-01]
  [9.5648694e-01 0.0000000e+00 -1.6262776e-01 ... 0.0000000e+00
   -0.0000000e+00 -9.5388305e-011
  [ 9.9390525e-01  0.0000000e+00 -9.5620316e-01 ...
                                                      0.0000000e+00
   -0.0000000e+00 -7.3887134e-01]
```

0.0000000e+00

[-0.0000000e+00 4.1225204e-01 -1.2253082e-12 ...

0.0000000e+00

-9.8441386e-01 9.7129840e-01]

-9.8441386e-01 9.7130233e-01]

[-0.0000000e+00 4.1198561e-01 -4.4403592e-13 ...

 $[-0.00000000e+00 \quad 4.1175172e-01 \quad -1.6074677e-13 \quad \dots \quad 0.0000000e+00$ 

```
-9.8441386e-01 9.7129744e-01]]]
sampled token: good
sampled token: but
sampled token: not
sampled token: great
sampled token: end
Predicted summary: good but not great
Review: one best cup coffees ever nice aroma smooth rich cup coffee love morn
Original summary: good cuppa coffee
input seq: [[
               4 24 39 562 105
                                   61 458 299 311
                                                    39
                                                          9
                                                            11 230
                                                                              0
    0
        0
            0
                0
                     0
                         0
                             0
                                 0
                                     0
                                          0
                                              0
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                                                      0
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                0
                     0
                         0
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                                 0
                                     0
                                          0
                                              0
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                                                      0
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    0
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        0
            0
                0
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                         0
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                                          0
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                                                  0
                                                      0
                                                           0
                                                                   0
                                                                       0
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    0
                0
                     0
                         0
                                 0]], e out: [[[ 4.63153748e-03 -2.45943805e-0
        0
            0
                             0
   -1.04862684e-02
                     3.33152898e-02]
  [-1.15014076e-01 -2.88871713e-02 -1.96258828e-01 ...
                                                          1.66316554e-01
    1.34105802e-01 7.57363141e-02]
  [-9.05177146e-02 2.30695307e-01 -2.17824563e-01 ...
                                                          1.07969172e-01
    1.60113662e-01 -4.53177392e-01]
  [-1.43152913e-02 5.52718937e-01 -1.86075859e-14 ...
                                                          0.0000000e+00
   -9.99943197e-01 9.84256625e-01]
  [-1.43149542e-02 5.52714467e-01 -9.75480920e-15 ...
                                                          0.00000000e+00
   -9.99943197e-01 9.84257281e-01]
  [-1.43148396e-02 5.52710652e-01 -5.11382293e-15 ... 0.00000000e+00
   -9.99943197e-01 9.84257936e-01]]]
sampled token: love
sampled token: this
sampled token: coffee
sampled token: end
Predicted summary: love this coffee
Review: pretzels nice crunch lot nutritional value flavor bland bland hint ci
Original summary: nutritious but not so delicious
input_seq: [[ 1641
                            599
                                         782
                                               363
                                                            685
                                                                  685
                                                                        669
                                                                              49
                       61
                                   77
                                                       8
      5
           25
                                           38
                                                 47
                                                      256
                                                                   224
                                                                         537
                490
                        38
                             121
                                   631
                                                             205
        1218
    771
                                   697 10329
              1858
                       345
                             559
                                                188
                                                     2221
                                                             141
                                                                   307
                                                                         181
     12 22776
                424
                       715
                            6354
                                   225
                                        1783
                                               1656
                                                      319
                                                               8
                                                                     0
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                         0
                                     0
                                            0
                                                  0]], e_out: [[[-5.7652641e-02
            0
                   0
   -1.3341826e-01 -1.7609170e-01]
  [-7.0839681e-02 2.6224324e-01 1.8082429e-01 ... -5.2959961e-01
   -3.1556928e-01 -1.8203648e-02]
  [-0.00000000e+00 \quad 4.6403846e-01 \quad 1.5336773e-01 \quad ... \quad -3.7725744e-01
   -4.0499490e-01 -1.7362969e-02]
  [-0.0000000e+00 4.1600266e-01 -4.4329351e-13 ...
                                                       0.0000000e+00
   -1.0706418e-01 9.6453339e-011
  [-0.0000000e+00 4.1598523e-01 -1.5231185e-13 ...
                                                       0.0000000e+00
   -1.0706418e-01
                    9.6456474e-01]
```

 $[-0.00000000e+00 \quad 4.1591850e-01 \quad -5.2298633e-14 \quad \dots \quad 0.0000000e+00$ 

-1.0706418e-01 9.6459520e-01]]]

sampled token: good sampled\_token: but sampled\_token: not

```
sampled token: great
sampled token: end
Predicted summary: good but not great
Review: chocolate true treat eat perfect texture almond toffee mix goes toget
Original summary: supreme chocolate
input seq: [[ 28
                    578
                               33
                         112
                                    97
                                         158
                                              673 2044
                                                         62
                                                              410
                                                                   588
                                                                        707
                                                                             259
  1682
        170
             307
                    0
                          0
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                                          0
                                               0
                                                    0]], e out: [[[ 6.20064475e
   -8.92249495e-02 -3.45990866e-01]
  [-1.94823548e-01 8.18422586e-02 1.18604116e-01 ... 8.28723907e-01
   -2.70140320e-01 -2.00936690e-01]
                    3.22078243e-02 -4.50453997e-01 ... 9.47458386e-01
  [-7.94541895e-01
   -2.51624227e-01 -6.70548156e-02]
  [-0.00000000e+00 6.91055655e-01 -1.58306924e-19 ...
                                                          0.000000000e+00
    9.99918759e-01 9.56276715e-01]
  [-0.00000000e+00 6.91126704e-01 -7.03975485e-20 ...
                                                          0.00000000e+00
    9.99918759e-01 9.56267059e-011
  [-0.000000000e+00 \quad 6.91193044e-01 \quad -3.13044144e-20 \quad \dots \quad 0.00000000e+00
    9.99918759e-01 9.56258118e-01]]]
sampled token: yummy
sampled token: end
Predicted summary: yummy
Review: absolutely love fruit pockets well sticks quick snack satisfies sweet
Original summary: addicted to florida naturals fruit products
input seq: [[ 275
                     11
                        195 2553
                                    27
                                        904
                                              312
                                                   102 2789
                                                              42 1245
                                                                          6
                                                                              48
    19
        711 956
                       221
                             113
                                  279
                                         19 2828
                  156
                                                    0
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          0
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                                          0
                                               0
                                                    0]], e_out: [[[-9.46606025e
    1.10963196e-01 -1.11781051e-02]
  [-9.62292254e-02 -1.16806574e-01 -1.76418275e-01 ... 1.21106304e-01
    3.29186082e-01 4.43130732e-021
  [-8.03834666e-03 1.11905180e-01 -2.63055086e-01 ... 3.38781208e-01
    4.87659663e-01 6.00877032e-03]
  [-0.00000000e+00 6.50045574e-01
                                     2.43207353e-20 ...
                                                          0.0000000e+00
    9.84809518e-01 9.62728679e-01]
  [-0.00000000e+00 6.50267363e-01
                                     1.01345385e-20 ...
                                                          0.00000000e+00
    9.84809518e-01 9.62849557e-01]
  [-0.00000000e+00 6.50476575e-01 4.22524988e-21 ...
                                                          0.00000000e+00
    9.84809518e-01 9.62965429e-01]]]
sampled token: love
sampled_token: these
sampled token: end
```

Predicted summary: love these

```
Review: ordered four bags seller total one occasion would give four half star
Original summary: great peas at reasonable price
input_seq: [[ 101 447
                        154
                             653
                                   786
                                           4 2152
                                                      5
                                                          57
                                                             447
                                                                  182
                                                                        473
                                                                              249
   455
              38 1246
                        149
                             118 1246
                                        526
                                             154 1989
                                                        177
                                                             749
                                                                  214
                                                                         25
        351
               27 2113
                                  767
                                         92
                                             136
                                                        214
                                                              32
                                                                   59
                                                                        559
        108
                        619
                             653
                                                  161
  2729 2045
             653
                     7
                          0
                               0
                                     0
                                          0
                                               0
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     0
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                     0
                          0
                               0
                                     0
                                          0
                                               0
                                                    0]], e out: [[[ 5.5844147e-
   -1.7111618e-02 3.3271786e-02]
  [ 6.6368170e-02 -5.9999753e-02 -2.4949603e-02 ... -3.2264197e-01
   -1.0758663e-01 -3.1619553e-02]
  [ 4.0163610e-02
                   1.6343333e-01 -2.3346402e-01 ... -3.9287525e-01
   -2.9016033e-01 -6.4410046e-02]
  [-0.0000000e+00 6.5419835e-01 -1.3729214e-13 ...
                                                        0.0000000e+00
    9.6266216e-01 9.7506040e-01]
  [-0.0000000e+00 6.5358424e-01 -4.6290899e-14 ...
                                                        0.0000000e+00
    9.6266216e-01 9.7541189e-01]
  [-0.00000000e+00 \quad 6.5252727e-01 \quad -1.5622967e-14 \quad \dots \quad 0.0000000e+00
    9.6266216e-01 9.7563475e-01]]]
sampled token: great
sampled token: product
sampled token: end
Predicted summary: great product
```

Review: quite ford qum years ago good nonetheless tub received full gum fresh Original summary: great

```
input seq: [[
                149 18776
                             608
                                    94
                                          316
                                                  2
                                                      3288
                                                            2590
                                                                    209
                                                                          188
                                                                                 60
     11
          360
                 292
                              387
                                      2
                                          1079
                                                 175
                                                          0
                                                                       0
                                                                             0
                        77
                                                                0
      0
            0
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                                                                       0
                                             0
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            0
                   0
                          0
                                0
                                      0
                                             0
                                                   0]], e out: [[[-6.9900621e-03
   -8.5126996e-02 -6.3617942e-03]
  [-1.1977455e-01 9.6632550e-03 -6.5764472e-02 ...
                                                         2.7663263e-02
   -1.2390293e-01 5.2071095e-021
  [ 2.3566264e-01 9.3572412e-04 0.0000000e+00 ... -4.8473457e-01
   -0.0000000e+00 -4.4886547e-05]
  [-0.0000000e+00 6.6233712e-01 1.2348779e-17 ...
                                                         0.0000000e+00
    9.3056500e-01 9.7795129e-011
  [-0.0000000e+00 6.6231877e-01 5.5728713e-18 ...
                                                         0.0000000e+00
    9.3056500e-01
                    9.7795445e-01]
  [-0.00000000e+00 \quad 6.6230243e-01 \quad 2.5149465e-18 \dots \quad 0.00000000e+00
    9.3056500e-01 9.7795731e-01]]]
sampled token: great
```

sampled token: gum sampled token: end

Predicted summary: great gum

Review: product amazing know people little ones use love super easy clean use Original summary: love the fresh food feeder

```
input seq: [[
                7
                    347
                          64
                               150
                                     19
                                         271
                                                20
                                                     11
                                                         367
                                                                96
                                                                    420
                                                                          20
                                                                               336
                     4
   176
        147 3129
                        176
                                0
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                                                0
                                                     0]], e out: [[[ 1.0778018e-
                    4.5598142e-02]
   -1.6709847e-02
  [-8.3111487e-02
                    1.1080869e-01
                                    2.3158522e-04 ... -7.9160733e-03
    7.1077988e-02 -2.6807976e-01]
  [-2.0794493e-01
                    1.6320115e-01 -7.0199538e-03 ...
                                                        2.0760450e-01
    2.0956194e-01 -2.7311906e-01]
  [-0.0000000e+00 7.7983618e-01 -1.1792264e-21 ...
                                                        0.000000e+00
    9.9931800e-01 9.7117925e-01]
  [-0.0000000e+00 7.8003901e-01 -4.8904242e-22 ...
                                                        0.000000e+00
    9.9931800e-01 9.7128850e-01]
  [-0.0000000e+00 7.8024662e-01 -2.0298070e-22 ...
                                                        0.0000000e+00
    9.9931800e-01 9.7139794e-01]]]
sampled token: great
sampled token: product
sampled token: end
Predicted summary: great product
```

```
Review: first time trying coconut water happened good friend stomach flu need
Original summary: good hydration for stomach flu
                              206
                                    40 1271
                                                        460 4593
input seq: [[
              34
                     18
                         187
                                                2
                                                   524
                                                                  113 1495 3857
   138
          9 775 1715
                        327
                             397
                                  566 1297
                                            177 2991
                                                        35
                                                            384 3857
                                                                       970
    25
        682
             160
                    6
                         51
                              25 1281
                                       214 1240
                                                   24
                                                       174
                                                             77
                                                                         0
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                                                                   0
                                                                         0
                    0
                                               0
     0
          0
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                          0
                               0
                                    0
                                         0
                                                    0]], e out: [[[ 8.9793904e-
   -3.3703282e-02
                   3.0401871e-03]
  [-4.8725072e-02 -9.1189295e-02 -1.8639481e-01 ...
                                                       1.1652762e-02
    2.2349926e-02
                   7.6477759e-02]
  [-3.8191743e-02 -1.0989883e-01 -2.4780031e-01 ...
                                                       3.6370657e-02
    1.1802886e-02 2.8617897e-03]
  [-0.0000000e+00 4.6196246e-01 1.1236605e-14 ...
                                                       0.0000000e+00
   -1.9967093e-01 9.6890181e-01]
  [-0.0000000e+00 4.6204373e-01
                                   4.0500271e-15 ...
                                                       0.0000000e+00
   -1.9967093e-01
                   9.6886873e-011
                   4.6217230e-01 1.4594533e-15 ...
  [-0.000000e+00
                                                       0.000000e+00
   -1.9967093e-01
                   9.6882844e-01]]]
sampled_token: tastes
sampled token: like
sampled token: medicine
sampled token: end
```

Predicted summary: tastes like medicine

```
Review: snagged bag fresh market absolutely hooked first bite even funny popc
Original summary: best premade popcorn have had
                                                                450
input seq: [[14073
                        38
                              108
                                     370
                                            275
                                                          34
                                                                            1504
                                                                                    21
                                                  813
                                                                        30
                                 2
                                                                        379
   3554
          2019
                   44
                         73
                                      293
                                             533
                                                   213
                                                         1478
                                                                  78
                                                                                90
     42
           784
                   62
                        340
                               101
                                      227
                                             227
                                                   208
                                                           55
                                                                2432
                                                                        197
                                                                              1426
   2782
           154
                                52
                                      627
                                            8625
                                                            0
                  146
                          26
                                                      0
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```

```
text summarisation.ipynb - Colaboratory
                               O
      (-)
                                     (·)
                                           (•)
                                     0
                                           0
                                                 0]], e_out: [[[-1.3376574e-01
    1.0595056e-01
                  6.0228404e-02]
  [-8.6398222e-02 -1.9045870e-01 5.6595453e-03 ... -3.3792365e-01
    8.1056684e-02 -1.3351928e-01]
                  2.8603220e-01 -5.0241663e-03 ... -4.5658025e-01
  [-4.8730943e-02
   -9.8662309e-02 -2.6322398e-01]
                   6.4097542e-01 -1.1178979e-11 ...
                                                      0.0000000e+00
  [-0.000000e+00
   -4.9685860e-01 9.4835877e-01]
  [-0.0000000e+00 6.4303756e-01 -4.7843218e-12 ...
                                                      0.000000e+00
   -4.9685860e-01 9.4881088e-01]
  [-0.0000000e+00 6.4727676e-01 -2.0616948e-12 ...
                                                      0.000000e+00
   -4.9685860e-01 9.4921768e-01]]]
sampled token: great
sampled token: for
sampled token: popcorn
sampled token: end
Predicted summary: great for popcorn
Review: good stuff may bit expensive relation local products love sugar added
```

Original summary: decent but found better local options input seq: [[ 201 13468 0]], e out: [[[-2.6852868e-02 -9.4500564e-02 8.6194044e-04] [ 6.6942751e-02 6.4514533e-02 4.0088922e-02 ... -1.5706334e-01 -1.7798023e-01 1.9097319e-02] 4.7702260e-02 7.5467564e-02 ... -2.6976082e-01 [ 8.8445306e-02 -2.1172914e-01 6.5140046e-02] [-0.0000000e+00 6.4913440e-01 1.5722797e-20 ... 0.000000e+00 9.8434627e-011 8.2210433e-01 [-0.000000e+00 6.4916152e-01 6.6905728e-21 ... 0.000000e+00 8.2210433e-01 9.8433936e-011 [-0.000000e+00 6.4918351e-01 2.8470371e-21 ... 0.0000000e+00 8.2210433e-01 9.8433340e-01]]] sampled token: great sampled\_token: product sampled token: end

Predicted summary: great product

```
Review: looked around decent price stuff best could find arrived quickly expe
Original summary: it is what it is
input_seq: [[451 179 649
                            22
                                 84
                                     24
                                          37
                                              29 231 314 461
                                                                 0
                                                                      0
                                                                               0
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                                   0]], e_out: [[[ 6.9161125e-02 -8.1347570e-02
    4.3631662e-02
                     4.7714286e-021
  [-9.3957745e-02 -2.5767142e-01 -1.5775476e-01 ... -9.6179292e-02
    1.6319929e-01
                     7.2687186e-02]
  [ 1 77207520 01
                     2 70652526 01
                                      2 64015760 01
                                                           1 50401520 02
```

1.394913ZE-UZ

[-1.//20/55e-01 -2./005552e-01 -2.04015/0e-01 ...

```
9.4150424e-02 -2.1724914e-01]
  [-0.0000000e+00 9.3147957e-01 -1.3085575e-19 ...
                                                       0.0000000e+00
    9.8867375e-01 9.9648249e-011
  [-0.0000000e+00 9.3148524e-01 -6.3592993e-20 ...
                                                       0.000000e+00
    9.8867375e-01 9.9648893e-01]
                                                      0.0000000e+00
  [-0.0000000e+00 9.3148929e-01 -3.0908489e-20 ...
    9.8867375e-01 9.9649471e-01111
sampled token: great
sampled token: product
sampled token: end
Predicted summary:
                    great product
Review: due health issues husband newly required eat gluten free diet acted d
Original summary: gluten free is not always taste free
input seq: [[ 493
                     254
                            596
                                  270
                                       5541 2198
                                                      33
                                                           186
                                                                  50
                                                                       181 697
   4432
          733
                      339 6345
                                    26
                                         923
                                                      195
                  7
                                               108
                                                            168 21084 16851
     17
         3228
               7719
                      436 17014
                                  1581
                                           4
                                               278
                                                      333
                                                           2296
                                                                 1574
                                                                        615
     62
          186
                 50
                      286
                             278
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                                                 0]], e out: [[[ 1.06012903e-0
    9.08090919e-03 4.16037887e-021
  [ 2.07636610e-01  2.59949826e-02 -8.08464214e-02 ...  1.14064135e-01
   -5.03377654e-02 -1.48736183e-02]
  [ 2.29382575e-01 -1.11706117e-02 -2.27324113e-01 ... 1.72200501e-01
    9.04847682e-03 1.12305373e-01]
  [-0.00000000e+00 5.75729072e-01 -1.08777228e-17 ...
                                                         0.00000000e+00
    1.35428682e-01 9.45082963e-01]
  [-0.00000000e+00 5.75779378e-01 -3.67767644e-18 ...
                                                         0.00000000e+00
    1.35428682e-01 9.44696724e-01]
  [-0.000000000e+00 \quad 5.75884759e-01 \quad -1.24893519e-18 \quad \dots \quad 0.00000000e+00
    1.35428682e-01 9.44282055e-01]]]
sampled token: great
sampled token: for
sampled token: diabetics
sampled token: end
Predicted summary: great for diabetics
Review: older cat constantly getting crystals urinary blockage expensive trip
Original summary: the best cat food
input seq: [[ 1070
                     124 2259
                                  191 2545
                                             4144 10786
                                                           201
                                                                1925
                                                                       518
                                                                               9
   2685
        3710
                518
                      200 3710
                                    33
                                          69
                                             1070
                                                     124
                                                            124
                                                                 2002
                                                                         64
                                                            234
    734
        1556
              1820
                       33
                                   546 25319
                                                41
                                                    3618
                                                                  202
                              12
                                                                        110
     12
           94
                415
                     3446
                             596
                                   453
                                          12
                                                95
                                                      142
                                                            202
                                                                   73
                                                                        175
    171
          334
                202
                      211
                              45
                                   157
                                          19
                                               201
                                                      148
                                                            202
                                                                  518
                                                                        184
     76
        2202 1624
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                                                 0]], e_out: [[[-5.10076471e-0
            0
                         0
    2.00965568e-01 1.45646244e-011
  [-1.42567545e-01 -6.77705228e-01 -4.83953267e-01 ... 3.89068052e-02
    3.48185420e-01 2.99748510e-01]
  [-3.24115336e-01 -9.46967006e-01 -6.42193079e-01 ...
                                                         3.79964441e-01
    1.64653674e-01 5.17211854e-01]
```

[\_0 0000000000000000 6 275362070\_01 \_3 238783300\_05

**∪.**∪∪∪∪∪∪<del>∟</del>⊤∪∪

0.00000000e+00

0.717707216-01 -7.770107726-07 ""

 $[-0.000000000e+00 \quad 6.20662987e-01 \quad -5.47799436e-06 \quad \dots \quad 0.00000000e+00$ 

[-0.00000000e+00 6.23860657e-01 -1.33077492e-05 ...

1-0.0000000<del>c</del>+00

1.00000000e+00 9.77572083e-011

1.00000000e+00 9.77469623e-01]

```
1.00000000e+00
                             9.77487981e-01]]]
        sampled token: cat
        sampled token: food
        sampled token: end
        Predicted summary:
                             cat food
        Review: able sleep dog gets hooked dental chews one enough dog drive crazy ge
        Original summary: dog gone good
        input seq: [[ 253 1360
                                   23
                                       392
                                             813 1310
                                                        764
                                                               4
                                                                    90
                                                                         23 1860
                                                                                   744
                                                                                         13
           425
                  48
                      454
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            1.06662579e-01 8.84131491e-02]
          [ 1.39862925e-01 -1.39895111e-01 -5.33678569e-02 ... 1.03991508e-01
            7.91478902e-02 -3.94673869e-021
           [-3.62893552e-01 -4.19765800e-01 -1.69936374e-01 ... 1.56443529e-02
            9.43469629e-02 3.51268232e-01]
          [-0.00000000e+00 6.74277425e-01 -4.81450814e-17 ...
                                                                    0.000000000e+00
            1.00000000e+00 9.91319776e-011
          [-0.00000000e+00 6.74143493e-01 -2.41390907e-17 ...
                                                                    0.00000000e+00
             1.00000000e+00 9.91326451e-01]
          [-0.000000000e+00 \quad 6.74013734e-01 \quad -1.21031065e-17 \quad \dots \quad 0.00000000e+00
            1.00000000e+00 9.91332889e-01]]]
        sampled token: my
        sampled token: dog
        sampled token: loves
        sampled token: these
        sampled token: end
        Predicted summary: my dog loves these
        Review: particularly happy storage drawer made wire cups sit flat
        Original summary: cup storage drawer and twinings english breakfast tea cups
                             142 1687 2225
                                              44 4767
                                                        155
                                                            995 1332
        input_seq: [[1047
                                                                          0
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                                                              0]], e out: [[[-9.4757669e-
            1.2161032e-01
                            1.2578183e-01]
           [-1.8377575e-01 -6.3456267e-01 -2.9486495e-01 ... -1.8635657e-01
            2.6738706e-01
                            1.5274926e-01]
          [-2.4437535e-01 -9.3871248e-01 -3.2057491e-01 ... -1.5227401e-01
            4.6281523e-01 -5.9310738e-02]
           [-0.0000000e+00 6.7360997e-01 -2.8166460e-24 ...
                                                                 0.000000e+00
            9.9897361e-01 9.9239606e-01]
          [-0.0000000e+00 6.7350513e-01 -1.1584312e-24 ...
                                                                 0.0000000e+00
            9.9897361e-01
                             9.9239975e-01]
           [-0.00000000+00
                             6.7340636e-01 -4.7644576e-25 ...
                                                                 0.00000000+00
https://colab.research.google.com/drive/1COjjfgR0oJqcVq-MP4ueg6PHlzTAvluR#scrollTo=LbwpHhMukHo1&uniqifier=1&print... 78/100
```

0.00000000.00

0.70.00000 01

9.9897361e-01 9.9240327e-01]]]

```
sampled token: not
sampled_token: for
sampled token: me
sampled token: end
Predicted summary: not for me
Review: bit disappointed figs price good doubt product highest quality figs d
Original summary: dried out
input seq: [[ 53 261 4754
                                     2 1243
                               22
                                                7 2151
                                                         86 4754
                                                                   362 5188
                                                                             180
  1145 6386
              55 1353
                         11
                              19 6060
                                        63
                                              48
                                                  201
                                                       146 2482
                                                                   45
                                                                       184
   115
         19
             112 1443 1002 4754
                                  175
                                        55
                                            277
                                                   18
                                                       527
                                                             19
                                                                  279
                                                                         0
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                                                    0]], e out: [[[-6.68074191e
   -4.29645851e-02 2.74337418e-02]
  [ 1.79361045e-01 -4.04363945e-02 -1.17182605e-01 ... -1.66849390e-01
   -2.39507139e-01 6.63054641e-03]
  [ 4.01818931e-01 2.41262987e-02 -5.87852784e-02 ... -1.06159620e-01
   -2.38996953e-01 -7.83054009e-02]
  [-0.000000000e+00 \quad 6.62641764e-01 \quad -4.53840877e-13 \quad \dots \quad 0.00000000e+00
    9.99999642e-01 9.52641070e-01]
  [-0.00000000e+00 6.62835062e-01 -1.94658932e-13 ... 0.00000000e+00
    9.99999642e-01 9.52739894e-01]
  [-0.000000000e+00 \quad 6.63059235e-01 \quad -8.35470541e-14 \quad \dots \quad 0.00000000e+00
    9.99999642e-01 9.52841759e-01]]]
sampled token: love
sampled token: these
sampled token: end
Predicted summary: love these
Review: daughter loves yogurt melts banana mango two favorite flavors melts s
Original summary: my daughter loves these
input seq: [[ 412
                   79 708 2030
                                   772
                                               49
                                                    70
                                        944
                                                         72 2030 388
                                                                        130 2548
    61 2231 1498
                   92 2178 2548 2030
                                       297
                                              67
                                                   19 1413 2030
                                                                  137
                                                                        91
    77 1815
                              25
             142
                  328
                        106
                                  170
                                         59
                                              0
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    2.6664865e-01 2.5716057e-011
  [-8.9801006e-02 -9.1662967e-01 -1.7578600e-01 ... 4.4426229e-02
                   5.8969378e-01]
    5.2735400e-01
  [-2.5849137e-02 -9.6749449e-01 -8.6600162e-02 ... 1.1182292e-01
    7.3914963e-01 4.0765595e-01]
  [-0.0000000e+00 6.1892599e-01 -5.9012554e-17 ...
                                                       1.4387280e-36
    1.0000000e+00 9.5613879e-01]
  [-0.0000000e+00 6.1884063e-01 -2.3174775e-17 ... 1.3100902e-37
    1.0000000e+00 9.5605183e-011
  [-0.0000000e+00 6.1876160e-01 -9.0977915e-18 ... 1.1906620e-38
    1.0000000e+00 9.5598108e-01]]]
sampled_token: great
sampled token: for
sampled_token: kids
sampled token: end
```

Predicted summary: great for kids

```
Review: feel compelled buy get whole foods waste money buying pack buyer bewa
Original summary: this is really bad sponge like when
input seq: [[
               168 5526
                             21
                                   13
                                         122
                                                     618
                                                           245
                                                                  121
                                                                        151
                                                                             230
     52
          830
                  66
                        12
                             601
                                   158 12264
                                                  1
                                                     8402
                                                           5848
                                                                   321
                                                                        2055
   2009
         3596
               2793
                              26
                                        2009
                      1925
                                    21
                                                838
                                                      278
                                                           4111
                                                                   345
                                                                          11
     66
         4042
                106
                       618
                             245
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                                                  0]], e_out: [[[ 7.0458919e-02
                                            0
   -3.2342089e-04 -5.7683285e-02]
                   7.9881124e-02 -2.2367784e-01 ...
                                                       2.6723459e-01
  [ 2.7900746e-01
   -1.3634767e-01 -4.4813331e-02]
  [ 5.8521599e-01
                    0.0000000e+00 -4.7545603e-01 ...
                                                       3.9045307e-01
   -3.0466419e-01 5.7649449e-02]
  [-0.0000000e+00 5.9664345e-01 -2.8463162e-15 ...
                                                       0.0000000e+00
    4.4214833e-01 9.9265879e-01]
  [-0.0000000e+00 5.9643549e-01 -9.0915223e-16 ...
                                                       0.000000e+00
    4.4214833e-01 9.9269116e-01]
  [-0.0000000e+00 5.9621662e-01 -2.9040371e-16 ...
                                                       0.0000000e+00
                    9.9270821e-01]]]
    4.4214833e-01
sampled token: not
sampled_token: bad
sampled token: end
Predicted summary:
                    not bad
```

Review: discovered rub shopping napa saleswoman tyler florence along flavored Original summary: use this on everything input seq: [[ 1341 9019 34873 12605 16850 7135 30650 0]], e out: [[[-7.9402678e-02 9.7392857e-02 -7.3508233e-021 [-2.2622328e-02 1.3343641e-01 5.8157332e-03 ... -3.4222144e-01 -6.3805440e-03 -7.7949271e-02] [-2.5735542e-02 1.3908230e-01 1.8670574e-02 ... -2.7968547e-01 -1.9127238e-01 -6.4195055e-031 [-0.0000000e+00 5.8446240e-01 5.2023581e-14 ... 0.0000000e+00 9.9999940e-01 9.6168995e-01] [-0.0000000e+00 5.8671004e-01 1.8735659e-14 ... 0.0000000e+00 9.9999940e-01 9.6239340e-011 [-0.000000e+00 5.8932114e-01 6.7815042e-15 ... 0.0000000e+00 9.9999940e-01 9.6311212e-01]]] sampled token: best sampled\_token: rub sampled token: ever

best rub ever

sampled token: end Predicted summary:

```
Review: dont waste money gevalia repackaging brand tea sample forget green te
Original summary: utterly flavorless
input seq: [[
                      618
                            245 2947 18576
                                                      10
                                                           790
                                                                1571
                                                                        134
                                                                               1
               895
                                                81
   6231
           71
                            1745
                                   134
                                               2963
                                                     3292
                                                            120
               3723
                        40
                                           10
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                                     0
                                           0
   -1.2583128e-01 -8.0902562e-02]
  [ 6.4462644e-01
                   1.5640908e-03 8.3419688e-02 ... -1.1132203e-01
   -1.7194374e-01 -6.3420055e-03]
  [ 9.7016454e-01 0.0000000e+00
                                   1.0359815e-01 ... -3.7707314e-01
   -2.0657937e-01 2.2660021e-02]
  [-0.0000000e+00 4.6320826e-01 -2.5270542e-20 ...
                                                       0.0000000e+00
   -3.1896096e-01 9.8382020e-01]
  [-0.0000000e+00 4.6319860e-01 -1.0039040e-20 ...
                                                       0.0000000e+00
   -3.1896096e-01 9.8382384e-01]
  [-0.0000000e+00 4.6318769e-01 -3.9880530e-21 ...
                                                       0.0000000e+00
   -3.1896096e-01 9.8382765e-01]]]
sampled token: tastes
sampled token: like
sampled_token: medicine
sampled token: end
Predicted summary: tastes like medicine
```

```
Review: pretty good tastes good microwave food take long make fairly healthy
Original summary: good healthy easy
input seq: [[ 129
                     2
                         54
                                2 591
                                         12 148
                                                  119
                                                        26
                                                           771
                                                                  95 1011 1148
  4600 620
              29
                   96
                        26 6337
                                 173
                                         1 2121
                                                 131
                                                        4
                                                           107
                                                                141
                                                                     786
                       165 1417
                                  439 1507
                                                                      225
   165 2322 165 1531
                                            786
                                                 703 2105
                                                           386
                                                                  36
   693 1562 1536
                    0
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                                              0
                                                   0]], e out: [[[ 1.32627487e
   -1.47771627e-01 -7.40435049e-02]
  [ 3.42028230e-01 1.23718008e-02 -1.12528384e-01 ... 1.70834824e-01
   -2.25261271e-01 3.39150913e-02]
  [ 6.88607395e-01  0.00000000e+00 -1.75603226e-01 ...
                                                         2.15482056e-01
   -1.18349262e-01 3.48158665e-02]
                                                         0.0000000e+00
  [-0.00000000e+00 4.98196185e-01
                                     3.23718171e-14 ...
   -9.99734700e-01 9.70693052e-01]
  [-0.00000000e+00 4.97250438e-01
                                     1.08164202e-14 ...
                                                         0.00000000e+00
   -9.99734700e-01
                    9.70846117e-011
  [-0.00000000e+00 4.96361494e-01 3.60953392e-15 ...
                                                         0.00000000e+00
   -9.99734700e-01
                    9.70992208e-01]]]
sampled token: good
sampled token: but
sampled_token: not
sampled token: great
sampled token: end
Predicted summary:
                    good but not great
```

Review: love pirate booty stuff addictive since cannot find town order bulk g Original summary: love booty

```
input seq: [[ 11 5107 4372
                               84 1395
                                          51
                                               52
                                                     29 1505
                                                                    554
                                                                         415
                                                               60
                                                                              736
   554
        247
             522 1311
                          8 3957
                                    15
                                        208
                                              19
                                                    82
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                                                     0]], e out: [[[-1.0335382e-
    2.0938370e-01
                    9.4334736e-02]
                   7.7452876e-02 -2.9623026e-01 ...
  [-8.2302004e-02
                                                        1.9152187e-01
    4.5142296e-01
                    1.5944254e-01]
  [-4.1440617e-02
                   1.7983210e-01 -4.5484576e-01 ...
                                                        3.8060084e-01
    7.3315620e-01 3.3758283e-011
  [-0.0000000e+00 7.5450528e-01
                                   1.1982308e-16 ...
                                                        0.000000e+00
    8.6247540e-01 9.6748596e-01]
  [-0.000000e+00
                   7.5448823e-01
                                   5.2497736e-17 ...
                                                        0.0000000e+00
    8.6247540e-01 9.6750122e-01]
  [-0.000000e+00
                    7.5447208e-01 2.3001310e-17 ...
                                                        0.0000000e+00
    8.6247540e-01 9.6751463e-01]]]
sampled token: love
sampled token: these
sampled token: end
```

Predicted summary: love these

```
Review: admit scrutinize full product description study picture bag purchasin
Original summary: misleading product description note that this is blend
input seq: [[ 1057 33472
                            188
                                    7
                                         713
                                              3256
                                                     900
                                                             38
                                                                  619
                                                                          7
                                                                               18
    753
         6390
                      2824
                                  1842 10739
                                                             240
                   9
                               7
                                                 83
                                                      215
                                                                    38
                                                                         323
  40022
          713
                        13 20515
                                    30
                                           20
                                               1275
                                                     2177
                                                            713
                                                                    99
                                                                        2855
                  60
   1275
          215
                921
                      8337
                            2606
                                  3382
                                            9
                                                504
                                                       60
                                                             26
                                                                  1609
                                                                        1902
   1590
            9
                865
                      1060
                             276
                                   552
                                         5076
                                               1590
                                                       60
                                                            651
                                                                  1590
                                                                         215
          119
               6390
                               7
    227
                         9
                                  4678
                                         4671
                                                740
                                                     6390
                                                             215
                                                                    16
                                                                          26
  11149
            0
                   0
                         0
                               0
                                     0
                                            0
                                                  0]], e out: [[[ 1.1863542e-01
   -8.8898420e-02 -7.9404555e-02]
  [ 3.5333413e-01
                   1.9645099e-02 6.5103568e-02 ... -2.8018352e-01
   -1.3632719e-01 -6.1700493e-02]
                    0.0000000e+00 1.3321225e-01 ... -2.6364648e-01
  [ 6.7110312e-01
   -8.5815236e-02 -1.1145852e-031
  [-2.6523620e-01 -1.1069525e-01 -5.8305836e-01 ...
                                                       1.3643948e-04
   -9.9687308e-01 9.7313470e-011
  [-1.6166081e-01 8.5233273e-03 -4.2098123e-01 ...
                                                       1.1803713e-05
   -9.9687308e-01 9.8021334e-01]
  [-8.5306421e-02
                   1.8488210e-01 -2.5169340e-01 ...
                                                       9.0463203e-07
   -9.9687308e-01 9.8254931e-01]]]
sampled token: not
sampled_token: bad
sampled_token: end
Predicted summary:
                     not bad
```

Review: spread serve cheese platter goes well soft cheeses like goat brie spr Original summary: the best fig spread on the market

```
208 10075
input seq: [[ 1299
                                                        27
                                                                               1
                                                                                   2265
                         762
                                               410
                                                              317
                                                                    3753
                                                                                          771
          2099 13969
                          455
                                   63
                                                  76
                                                       2202
                                                               158
                                                                               42
                                                                                     170
   1016
                                         184
                                                                        97
     59
              7
                                    0
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0
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   -1.25372663e-01 -1.24984443e-01]
                                     1.19641058e-01 ... -1.08426034e-01
  [ 3.92250806e-01 6.69210218e-03
   -1.37165025e-01 -1.69130601e-02]
                                     1.25432760e-01 ... -4.54722792e-01
  [ 1.17761843e-01 0.00000000e+00
   -1.52832091e-01 1.34988851e-03]
  [-0.00000000e+00 6.57145321e-01
                                     3.68147492e-16 ...
                                                          0.0000000e+00
    9.93614137e-01 9.57429826e-01]
  [-0.00000000e+00 6.57132387e-01
                                     1.60725852e-16 ...
                                                          0.0000000e+00
    9.93614137e-01 9.57440734e-011
  [-0.0000000e+00
                    6.57120526e-01
                                     7.01676932e-17 ...
                                                          0.00000000e+00
    9.93614137e-01
                    9.57450747e-01]]]
sampled token: love
sampled token: these
sampled token: end
Predicted summary: love these
Review: really like superfood amazing grass product tried dissolve really wel
Original summary: my first amazing grass product
input seq: [[ 14
                      1 6308 347 1283
                                           7
                                               25 1639
                                                         14
                                                               27
                                                                    53
                                                                         42
                                                                             700
    14
         27
             459
                   85
                       673
                             206
                                   85
                                         17
                                              11
                                                   48
                                                        80
                                                            168 2713
                                                                        32
    72
         17
                  347 1283
                             106
                                                              0
               4
                                   91
                                          4
                                               0
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                                                    0]], e out: [[[-3.19400355e
    4.56688479e-02
                    5.33862710e-021
                    5.29174618e-02 -1.50635093e-01 ... 1.41958699e-01
  [ 2.24359650e-02
   -7.61628672e-02 -8.73663742e-03]
  [-1.86104715e-01 -1.71728492e-01 -3.70781600e-01 ...
                                                          1.38894722e-01
    1.59670889e-01 1.95473939e-01]
  [-0.0000000e+00
                    5.21298647e-01 -1.02252810e-19 ...
                                                          0.0000000e+00
    7.05838323e-01 9.57395852e-01]
                    5.21601021e-01 -3.59481773e-20 ...
                                                          0.00000000e+00
  [-0.0000000e+00
    7.05838323e-01
                    9.57438588e-011
  [-0.0000000e+00
                     5.21901071e-01 -1.26399636e-20 ...
                                                          0.0000000e+00
    7.05838323e-01 9.57473040e-01]]]
sampled token: great
sampled token: for
sampled token: on
sampled_token: the
sampled_token: go
sampled token: end
Predicted summary:
                   great for on the go
Review: item came described rather quickly pleased cannot complain purchase
Original summary: crystal light white grape
input seq: [[ 243
                    198 1393
                              319
                                   314
                                         453
                                               52 2032
                                                        175
                                                                0
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                                                    0]], e_out: [[[ 9.2485793e-
   -5.4746062e-02
                   3.2979093e-02]
```

[ 9.9661257e-03 -2.9121426e-01 -1.4727405e-01 ... -5.5957216e-01

1.1245633e-01 ... -4.2486781e-01

[ 1.1886488e-01 -1.2677352e-01 -1.5551682e-01 -1.8780466e-02]

```
-2.2395854e-01 -4.7629189e-021
  [-0.0000000e+00 8.2304382e-01 -9.1675926e-21 ...
                                                       0.0000000e+00
    9.9582732e-01 9.9318910e-01]
  [-0.0000000e+00 8.2302189e-01 -4.4158581e-21 ...
                                                       0.0000000e+00
    9.9582732e-01 9.9319059e-011
  [-0.0000000e+00 8.2300115e-01 -2.1270517e-21 ... 0.0000000e+00
    9.9582732e-01 9.9319190e-01]]]
sampled token: great
sampled token: product
sampled token: end
Predicted summary: great product
Review: ingredients deep river snacks website potatoes sunflower oil corn oil
Original summary: the manufacturer own website these have no olive oil
                89
                     1141
                           4763
                                  449
                                         778
                                               948
                                                    1666
                                                            139
input seq: [[
                                                                  268
                                                                         139
    131
        1124
                325
                        36
                             773
                                    325 36603
                                               1670
                                                       362
                                                            4100
                                                                  2375
                                                                         139
   3097
          139
               3084
                      1030
                             133
                                     72
                                         3684
                                                 15
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                                      0
                                            0
                                                  0]], e out: [[[-5.57753481e-0
   -3.29152085e-02 3.77724282e-02]
  [-9.14498568e-02 -3.28254014e-01 -1.43136039e-01 ... -1.37710690e-01
   -2.49134097e-02 -2.15700641e-03]
  [-3.57489176e-02 -4.40329045e-01 -2.22308904e-01 ... -1.18423924e-01
   -7.48702437e-02 -1.60351638e-02]
  [-0.00000000e+00 5.94063461e-01
                                      2.46098858e-16 ... -2.58752093e-37
   -5.28666437e-01 9.90315735e-01]
  [-0.000000000e+00 5.93891978e-01 8.92314071e-17 ... -3.09821766e-38]
   -5.28666437e-01 9.90303338e-01]
  [-0.000000000e+00 \quad 5.93737721e-01 \quad 3.23537072e-17 \dots \quad 0.00000000e+00
   -5.28666437e-01 9.90290701e-01]]]
sampled token: good
sampled token: but
sampled_token: not
sampled token: great
sampled token: end
Predicted summary: good but not great
Review: bought toy definetly something dog loves interested good period time
Original summary: good idea one major design flaw for us
                      516 5435
input seq: [[
                                                79
                46
                                    69
                                          23
                                                    1238
                                                              2
                                                                1698
                                                                          18
                                                                               31
    272
                      1173
                                    351
                                          380
                                               1173
        1042
                398
                              37
                                                        44
                                                            2589
                                                                  2655 15876
      5
           15
                  31
                         0
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                         0
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                                                  0]], e out: [[[-3.4551639e-02
            0
    2.7833385e-02 6.2093455e-02]
  [-2.0181812e-01 -5.5890489e-01 -2.2628093e-01 ... -1.8849726e-03
    2.4957298e-01
                    3.3373719e-011
                    4 7405207 01
```

[-1./U15/15e-U1 -4./49529/e-U1 -8.89050U2e-U2 ... -U.UUUUUUUUH+UU

0.0000000e+00 -2.4722371e-01]

```
[-0.0000000e+00 5.7978487e-01 -3.9191355e-20 ...
                                                       0.0000000e+00
    1.0000000e+00 9.8694623e-011
                   5.7981789e-01 -1.4241930e-20 ...
                                                       0.0000000e+00
  [-0.0000000e+00
    1.0000000e+00 9.8691714e-01]
  [-0.0000000e+00 5.7980895e-01 -5.1749239e-21 ...
                                                       0.0000000e+00
    1.0000000e+00 9.8689681e-01]]]
sampled token: not
sampled token: for
sampled token: small
sampled token: dogs
sampled token: end
Predicted summary:
                    not for small dogs
Review: stove microwave microwave tinkyada baked bag tinkyada spaghetti sauce
Original summary: you can microwave this too
input seq: [[ 2145
                      591
                            591 3083
                                         659
                                                38
                                                    3083
                                                          1572
                                                                  140
                                                                         39
                                                                             179
    130
         6484
                      5559
                            2689
                                   988
                                        2689
                                                182
                                                       38
                                                           5327
                                                                 6484
                                                                         586
                586
   1466
          255
                631
                       580
                             255
                                   140
                                           74
                                                  4
                                                       39
                                                             40
                                                                    62
                                                                          27
   1466
        6484
                586 14509
                           1790
                                  1839
                                        1701
                                                 88
                                                     2653
                                                           8174 11621
                                                                         777
                                   199 13098
                                                                   633 10506
    591
          500
                272
                      1569
                            1975
                                                635
                                                     2969
                                                             61
    272
          148
               6484
                       586
                             591
                                  1547
                                        2689
                                                988
                                                     2689
                                                              0
                                                                     0
      0
                         0
                               0
                                                  0]], e_out: [[[-1.3964757e-01
            0
                  0
                                     0
                                           0
    2.0399283e-01
                   1.9307813e-01]
  [-6.1250471e-02 -3.8625506e-01 -3.2763112e-01 ...
                                                       1.9408110e-01
    4.1434982e-01
                   1.5569453e-01]
  [-0.00000000e+00 -7.0953655e-01 -3.8716260e-01 ... -2.5426468e-01
                  1.3343268e-03]
    5.1839268e-01
  [-0.0000000e+00 4.8830315e-01
                                   2.3129464e-03 ...
                                                       0.000000e+00
    8.2650888e-01 9.4606078e-011
  [-0.0000000e+00 5.1435059e-01 1.0027708e-03 ...
                                                       0.000000e+00
    8.2650888e-01 9.5808327e-01]
  [-0.0000000e+00 5.2209365e-01 4.1894417e-04 ...
                                                       0.0000000e+00
    8.2650888e-01 9.6155190e-01]]]
sampled_token: great
sampled token: gluten
sampled token: free
sampled token: pasta
sampled token: end
Predicted summary: great gluten free pasta
Review: got kefir quickly good quality would recommend site others looking st
Original summary: kefir
                                               59 1008
input_seq: [[ 67 2442
                                2
                                    86
                                           5
                                                        274
                                                             136
                                                                   454 2442 9087
                         314
     0
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                                                    0]], e_out: [[[ 2.9029723e-
   -3.1655405e-02
                   7.0888377e-03]
  [ 2.5532103e-01 -8.0883719e-02 -3.4086791e-01 ... -3.0251451e-02
                   1.2442175e-01]
    1.6310771e-01
  [ 3.2785577e-01 -5.3006041e-01 -5.3425753e-01 ... -2.6475389e-02
    2 25024550 01
                   2 1220022 011
```

```
Z.Z303433E-UI 3.13ZUU3ZE-UI]
                    6.4645511e-01 -3.4589196e-26 ...
                                                       0.0000000e+00
  [-0.0000000e+00
    6.0991871e-01
                    9.9084646e-011
                    6.4645815e-01 -1.2484317e-26 ...
  [-0.000000e+00
                                                       0.000000e+00
    6.0991871e-01
                    9.9083996e-011
                    6.4646083e-01 -4.5062824e-27 ...
  [-0.000000e+00
                                                       0.0000000e+00
    6.0991871e-01
                    9.9083441e-01]]]
sampled token: not
sampled token: worth
sampled token: it
sampled token: end
Predicted summary:
                    not worth it
Review: tried every brand one favorites price realistic drink alot coffee can
Original summary: best coffee best price
input seq: [[
              25
                     76
                          81
                                4
                                   854
                                          22 5770
                                                    35 1184
                                                                9
                                                                    52
                                                                        795
                                                                             839
        170
  2432
              59
                     9
                        511
                             947
                                    16
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                                                    0]], e out: [[[-9.3390234e-
   -3.2897286e-02 -4.3892384e-02]
  [-1.1044625e-01
                   4.0300969e-02 -2.6862806e-01 ...
                                                       2.6910678e-01
    3.0105885e-02 8.7212577e-021
                    2.8615871e-02 -4.8846927e-01 ...
  [-2.1473521e-02
                                                       4.3036166e-01
                   1.3914202e-01]
    1.2463102e-02
  [-0.000000e+00
                    6.5816230e-01 -5.9955626e-17 ...
                                                       0.0000000e+00
   -9.3549037e-01 9.7952855e-011
  [-0.0000000e+00 6.5814424e-01 -2.7919890e-17 ...
                                                       0.000000e+00
   -9.3549037e-01 9.7953075e-01]
  [-0.0000000e+00
                    6.5812790e-01 -1.3001661e-17 ...
                                                       0.0000000e+00
   -9.3549037e-01 9.7953272e-01111
sampled token: great
sampled token: coffee
sampled token: end
Predicted summary:
                    great coffee
Review: tried several different flavors point flat best good coffee taste str
Original summary: just good cup of coffee
input_seq: [[ 25
                               72
                                   576 1332
                    216
                          99
                                               24
                                                     2
                                                           9
                                                                3
                                                                   109
                                                                        487
                                                                               13
    49
         19 429
                  331 3318
                              36
                                  352
                                        932
                                             353 1034 2377 1801
                                                                    4
                                                                         18
   643
         45 1757 1586
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                                                    0]], e out: [[[-9.3390234e-
   -3.2897286e-02 -4.3892384e-02]
  [-1.1621385e-02
                   4.7663044e-02 -2.7202639e-01 ...
                                                       2.6442713e-01
   -5.7570107e-02
                   7.4190930e-021
  [ 1.8240599e-01 2.6183445e-02 -5.0588208e-01 ...
                                                       3.7480101e-01
   -1.6740040e-01
                    1.5801099e-01]
  [-0.000000e+00
                    5.4523265e-01 -1.1389224e-17 ...
                                                       0.000000e+00
```

5.4525024e-01 -4.4012618e-18 ...

0.000000e+00

9.8211938e-01]

0 8211336<sub>-</sub>811

-9.9998939e-01 [-0.000000e+00

\_0 0008030p\_N1

```
text summarisation.ipynb - Colaboratory
   - 2 • 22202726 - 01
                    2.05TTJJ06.0T]
                    5.4535031e-01 -1.7014882e-18 ... 0.0000000e+00
  [-0.000000e+00
   -9.9998939e-01
                    9.8211420e-01]]]
sampled_token: not
sampled token: good
sampled token: end
Predicted summary:
                     not good
Review: primo soda mix tastes like coke zero diet coke good thing big fan asp
Original summary: zero made at home no mess and landfill waste
input seq: [[12161
                      330
                              62
                                    54
                                            1 2108
                                                     1219
                                                             181
                                                                  2108
    333
         2065
                                    234
                                          4409
                                                              269
                 419
                       181
                             2108
                                                 181
                                                       1914
                                                                     536
    512
         4013
                      7956
                              341
                                          6064
                                                2353
                                                        388
                                                             3263
                  81
                                     40
                                                                      31
      6
          702
                1233
                       197
                              181
                                   2108
                                          2482
                                                3398
                                                        306
                                                                0
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                                             0
                                                   0]], e out: [[[ 2.8156620e-01
   -8.9759469e-02 -1.7968416e-01]
  [ 7.2454655e-01 0.0000000e+00
                                    0.0000000e+00 ... -1.6814174e-02
   -0.0000000e+00 -0.0000000e+00]
```

[ 9.8712522e-01 0.0000000e+00 0.0000000e+00 ... -6.9352281e-01 -0.0000000e+00 -0.0000000e+001

[-0.0000000e+00 4.0869719e-01 -4.1440169e-13 ... 0.0000000e+00 1.5327011e-01 9.5856416e-01] [-0.0000000e+00 4.0873218e-01 -1.5261059e-13 ... 0.00000000e+00

1.5327011e-01 9.5861572e-01] [-0.0000000e+00 4.0879712e-01 -5.6183970e-14 ... 0.0000000e+00 1.5327011e-01 9.5866716e-01]]]

sampled token: great sampled token: tasting sampled\_token: carbonated sampled token: juice sampled token: end

Predicted summary: great tasting carbonated juice

Review: product introduced daughter addicted know healthy great tasting produ Original summary: best snack have had 7 1384 input seq: [[ 412 1158 0]], e out: [[[ 1.0778018e--1.6709847e-02 4.5598142e-02] [ 8.6385809e-02 1.1902840e-01 3.5931975e-02 ... -2.8251499e-02 -9.8899670e-02 -2.5074828e-011 [-1.9913000e-01 -3.0600309e-02 -1.8632400e-01 ... 1.4028321e-01 1.1917899e-01 3.4294628e-02] [-0.0000000e+00 7.9029518e-01 -3.1861707e-18 ... 0.0000000e+00 9.8709100e-01 9.8569077e-01] [-0.000000e+00 7.9029000e-01 -1.5679333e-18 ... 0.000000e+00 9.8709100e-01 9.8569137e-01] [-0.000000e+00 7.9028547e-01 -7.7158725e-19 ... 0.0000000e+00 9.8709100e-01 9.8569191e-01]]]

sampled token: vummv

```
Jampeda_conciii yanniy
sampled token: end
```

Predicted summary: yummy

```
Review: makes tasty low calorie soup often add extra vegetables even noodles
Original summary: hot sour egg flower soup mix
input seq: [[ 80 137 156 494 343 390 74 279 844
                                                     30 296
                                                             11
                                                                   7
                                                                       0
                                                                           0
                                                                               0
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                                  0]], e out: [[[-1.18053377e-01 -7.56699145e-0
    7.53116906e-02 2.93852836e-02]
  [-1.22202635e-01 4.65343753e-03 -9.95183438e-02 ... -2.75217975e-03
    6.50983825e-02 -1.40808046e-011
  [-7.32816532e-02 5.43011576e-02 -1.62252128e-01 ... -2.98470885e-01
   -1.55015454e-01 -1.10233635e-01]
  [-0.00000000e+00 7.01814413e-01 6.55044133e-20 ...
                                                           0.000000000e+00
   -9.78899956e-01 9.79574978e-011
  [-0.00000000e+00 7.01806486e-01 2.87290393e-20 ...
                                                           0.0000000e+00
   -9.78899956e-01 9.79576945e-01]
  [-0.000000000e+00 \quad 7.01799333e-01 \quad 1.25999414e-20 \dots \quad 0.00000000e+00
   -9.78899956e-01 9.79578853e-01]]]
sampled token: great
sampled token: soup
sampled token: end
```

Predicted summary: great soup

```
Review: love dark chocolate vastly prefer overly sweet milk chocolate saw org
Original summary: less bitter than most dark chocolate earthy and delicious
                                               800
                                                      42
                                                            85
                                                                  28
input seq: [[
                11
                      166
                             28
                                7609
                                        285
                                                                        472
                                                                               9
     28
          845
                 32
                       63
                            1057
                                     1
                                         166
                                                 28
                                                      721
                                                            257
                                                                 2674
                                                                         257
     48 12200
                 93
                      963
                             721
                                  2425
                                           3
                                                448
                                                      950
                                                            185
                                                                  234
                                                                          99
                                           9
                                                257
  15084
           60 9352
                         3
                             234
                                  1214
                                                       39
                                                              9
                                                                   28
                                                                        8628
     63
          851
                 12
                      773
                             84
                                  8628
                                          63
                                                28
                                                      357
                                                            294
                                                                  166
                                                                          28
     87
        1241
                  3
                      537
                             257
                                   383
                                          14
                                                647
                                                     1453
                                                            387
                                                                         187
                                                                  116
     14
                 84
                         0
                               0
                                     0
                                           0
                                                  0]], e_out: [[[-0.10335382 -0
            2
    0.094334741
  [-0.05942035  0.31504008  -0.21563776  ...
                                             0.13241261 0.28777274
   -0.300491031
  [-0.02477416
                0.21529827 -0.19132711 ... 0.54865617 -0.02999874
   -0.411230981
                                             0.17255747 -0.88251317
  [-0.3587649 -0.2773602 -0.68553895 ...
   -0.14674376]
                                             0.06121957 -0.9996313
  [-0.29058486 -0.3268057 -0.66553384 ...
    0.629569051
  [-0.19467098 - 0.2962246 - 0.56504065 \dots 0.01236007 - 0.9996313
    0.88840014]]]
sampled_token: good
sampled token: but
sampled token: not
sampled token: great
sampled_token: end
Predicted summary: good but not great
```

```
Review: right amount spice tangy bleu cheese flavor plus lovely crinkle cut c
Original summary: delicious good thing the bags are not any bigger
                            499 1430 7185
input seq: [[
                82
                      204
                                               208
                                                       8
                                                           322
                                                                1300 11038
                                                                              42
   3205
          154
                523
                              29
                                  1556
                                                     1128
                        51
                                          627
                                                110
                                                            631
                                                                    38
                                                                         135
     46
         1333
               7185
                       131
                             746
                                    72
                                          177
                                                 86
                                                      132
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                                                  0]], e out: [[[-1.2703764e-01
    1.7322706e-01
                   1.1880373e-01]
  [-5.7525504e-02 -2.1179515e-01 -2.1651354e-01 ...
                                                       5.0805353e-02
    2.7344769e-01 -4.1538443e-02]
  [-8.2803341e-03
                   1.0227568e-01 -4.3452505e-02 ... -1.6772228e-01
   -3.8277183e-02 -1.1717541e-01]
  [-0.0000000e+00 7.0733476e-01 6.5781963e-11 ...
                                                       0.000000e+00
   -9.9706835e-01 9.8114872e-01]
                  7.0720655e-01
                                   2.9869458e-11 ...
                                                       0.0000000e+00
  [-0.0000000e+00
   -9.9706835e-01 9.8117948e-01]
  [-0.0000000e+00 7.0710135e-01 1.3565043e-11 ... 0.0000000e+00
   -9.9706835e-01 9.8120821e-01]]]
sampled token: love
sampled token: these
sampled token: chips
sampled token: end
Predicted summary: love these chips
Review: ever heard stories people try heroine first time even worse get givin
Original summary: river street
input seq: [[ 105
                      909 5490
                                  150
                                          32 20407
                                                      34
                                                            18
                                                                       1069
                                                                               1
                                                                   30
    199
           50
               2409
                     1975
                             804
                                  2300
                                        1853
                                                336
                                                      220
                                                             15
                                                                   201
                                                                           5
    105
          527
               2191
                       310
                              50
                                   790
                                        4171
                                               5049
                                                      277
                                                            127
                                                                   845
                                                                        9076
   9704
          191
               1145
                       507
                             252
                                    85
                                        2122
                                                415
                                                       95
                                                            345
                                                                  1077
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                                                  0]], e out: [[[-6.69665262e-0
    2.68287417e-02 -1.18814379e-01]
                                     2.43505374e-01 ... -3.44547838e-01
  [-1.22620232e-01 1.37919888e-01
    3.90344043e-03 -9.28490609e-021
  [-9.28800330e-02
                    7.42330030e-02
                                     3.08448076e-01 ... -5.42361081e-01
   -1.85230836e-01 -1.63787929e-03]
  . . .
  [-0.00000000e+00 4.90098029e-01 -4.36807234e-14 ...
                                                          0.0000000e+00
    9.79431033e-01 9.80643928e-011
  [-0.00000000e+00 4.89678949e-01 -1.26283947e-14 ...
                                                          0.0000000e+00
    9.79431033e-01 9.80729938e-01]
  [-0.00000000e+00 4.89353091e-01 -3.65048712e-15 ...
                                                          0.00000000e+00
    9.79431033e-01 9.80794370e-01]]]
sampled token: not
```

sampled\_token: worth sampled token: the sampled\_token: money sampled token: end

Predicted summary: not worth the money

```
Original summary: great price and delicious popcorn
input seq: [[1104
                     47
                         213
                              103
                                    872
                                         100
                                              206
                                                          82
                                                              204
                                                                    131 1390 1229
                                                    139
     0
          0
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                                                     0]], e out: [[[ 1.6201983e-
   -8.8604368e-02 -5.2467571e-03]
  [ 2.3605572e-01 -1.3110191e-01 -9.1011703e-02 ... -8.1023775e-02
   -1.0948233e-01
                   7.0462577e-02]
  [-1.7019136e-01 3.6308253e-01 -2.0702440e-01 ...
                                                        1.4059801e-01
   -1.8705399e-01 -6.4195532e-01]
  [-0.0000000e+00 6.4553756e-01 -5.8109297e-22 ...
                                                        0.0000000e+00
   -8.4987414e-01 9.8798740e-01]
  [-0.0000000e+00 6.4549810e-01 -2.3868071e-22 ...
                                                        0.000000e+00
   -8.4987414e-01 9.8799479e-01]
  [-0.0000000e+00 6.4546275e-01 -9.8036175e-23 ...
                                                        0.0000000e+00
   -8.4987414e-01 9.8800176e-01111
sampled token: great
sampled token: popcorn
sampled token: end
Predicted summary: great popcorn
```

```
Review: product gift staff going costa rica fun gift taste good well great va
Original summary: taste good
                    372 5067
                              146 3565 5037
                                              666
                                                   372
                                                           3
                                                                2
input seq: [[
                7
                                                                    27
                                                                          6
                                                                             363
   579 1506
            515
                  235
                          0
                               0
                                    0
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                                               0
                                                    0]], e out: [[[ 1.0778018e-
   -1.6709847e-02
                   4.5598142e-02]
  [ 3.8289361e-02 -2.2660977e-01
                                   1.1285209e-01 ... -3.8087642e-01
   -2.8699622e-02 -1.5233271e-021
  [-1.2167022e-02
                    2.1372801e-02 1.0571307e-01 ... -6.1649477e-01
   -1.9739568e-01 -3.7119699e-01]
  [-0.000000e+00
                   7.7874887e-01
                                   4.3642246e-20 ...
                                                       0.0000000e+00
    8.8420284e-01 9.9038440e-011
  [-0.0000000e+00 7.7874720e-01
                                  1.8684159e-20 ...
                                                       0.000000e+00
    8.8420284e-01
                    9.9038392e-01]
  [-0.000000e+00
                   7.7875257e-01 7.9983696e-21 ...
                                                       0.0000000e+00
    8.8420284e-01
                    9.9038351e-01]]]
sampled_token: gift
sampled token: basket
sampled_token: end
Predicted summary:
                    gift basket
```

```
Review: first glanced item first thought nehi orange type soft drink however
Original summary: not soft drink more like carbonated orange juice
                                                                      317
input seq: [[
                 34 27660
                              243
                                      34
                                           123 21610
                                                         395
                                                               359
                                                                              35
                                                                                     9
           192
    195
                                54
                                             42
                1160
                        183
                                       48
                                                     3
                                                         1065
                                                                  15
                                                                       128
                                                                              263
                       2439
                                               3
                                                                              999
    394
           419
                  340
                               350
                                       82
                                                  2614
                                                          877
                                                               1046
                                                                       561
   2986
            44
                    6 12303
                               711
                                                            0
                                                                   0
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                                     1160
                                               0
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```

```
0
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                               0
                                     0
                                            0
                                                  0]], e out: [[[ 8.9793904e-03
   -3.3703282e-02
                   3.0401871e-031
  [-2.2051761e-02 -9.2437945e-02 -2.0572531e-01 ...
                                                       6.1220817e-02
   -1.8987801e-02
                   8.2308918e-02]
  [ 4.5313843e-02 -1.6385967e-01 -2.6377544e-01 ... -8.8266149e-02
   -9.0181045e-02 6.1566923e-02]
  [-0.000000e+00
                    5.0199395e-01
                                   1.2394956e-11 ...
                                                       4.0172987e-28
   -9.6532816e-01 9.8575687e-01]
                                                       4.5699700e-29
  [-0.0000000e+00 5.0174981e-01
                                   4.8256338e-12 ...
   -9.6532816e-01
                    9.8579854e-011
  [-0.0000000e+00 5.0155967e-01 1.8756407e-12 ...
                                                       5.2260470e-30
   -9.6532816e-01
                    9.8582828e-01]]]
sampled token: not
sampled token: bad
sampled token: end
Predicted summary:
                     not bad
Review: love kona try order least pkgs thanks got hooked kona sister statione
Original summary: sweet deal
input seq: [[ 11 1590
                                   276 9618
                                              428
                                                        813 1590 1388 6895 3019
                          32
                               60
                                                    67
   653
          0
                               0
                                    0
                                          0
                                               0
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                                                    0]], e out: [[[-1.0335382e-
    2.0938370e-01
                    9.4334736e-02]
  [ 3.1132847e-01
                    2.3815358e-01 -0.0000000e+00 ...
                                                       6.4483404e-02
   -0.0000000e+00 -5.5367088e-01]
                                                       3.4911904e-02
  [ 9.0834433e-01
                    6.8201594e-02 -2.9617539e-01 ...
   -0.0000000e+00 -8.7801152e-01]
  [-0.0000000e+00 7.9924792e-01 -8.8040762e-19 ...
                                                       0.000000e+00
    9.9792200e-01 9.7409284e-01]
  [-0.0000000e+00 7.9923511e-01 -4.1694078e-19 ...
                                                       0.000000e+00
    9.9792200e-01
                    9.7409463e-011
  [-0.0000000e+00
                    7.9922348e-01 -1.9745211e-19 ...
                                                       0.0000000e+00
    9.9792200e-01
                    9.7409630e-01]]]
sampled token: great
sampled_token: coffee
sampled token: end
Predicted summary:
                    great coffee
Review: illy issimo coffee drink slightly sweetened sugar contains caffeine t
Original summary: not so delicious
                                                                3
                                                                   487
input seg: [[1180 2034
                           9
                               35
                                   377
                                         827
                                               36
                                                   465
                                                        456
                                                                         19
                                                                             458
  1480
       783
              35
                    54
                          1
                               9 2322
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                                                    0]], e out: [[[ 3.1812978e-
   -2.4170596e-02 -1.6478167e-01]
                    0.0000000e+00
                                   0.0000000e+00 ...
  [ 8.3135337e-01
                                                       5.7810283e-01
   -0.0000000e+00 -0.0000000e+00]
  [ 9.8993212e-01
                    0.0000000e+00 -0.0000000e+00 ...
                                                       6.2724274e-01
```

```
-0.0000000e+00 -1.0302886e-01]
  . . .
  [-0.0000000e+00 4.5761019e-01 -7.0691351e-19 ...
                                                        0.0000000e+00
   -1.0000000e+00 9.7938383e-011
  [-0.0000000e+00 4.5886296e-01 -2.7630469e-19 ...
                                                        0.0000000e+00
   -1.0000000e+00 9.7943217e-01]
  [-0.0000000e+00 4.6075058e-01 -1.0842079e-19 ...
                                                        0.0000000e+00
   -1.0000000e+00
                    9.7953206e-01]]]
sampled token: not
sampled token: bad
sampled token: end
Predicted summary: not bad
Review: long loved zhena gypsy tea since discovered green festival favorite a
Original summary: happy to enjoy zhena again
                      203 9504 10629
                                                      700
                                                                          70
                                                                                9
input seq: [[
               119
                                                51
                                                            134 6579
   1318
          413
                 205
                       875
                             283
                                    644
                                            8
                                                761
                                                        34
                                                              19
                                                                   111
                                                                           22
     51
           26
                 77
                        10
                             690
                                     10
                                          251
                                                154
                                                        14
                                                               2
                                                                    291
                                                                         1840
     38
          592
                 103
                         2
                             843
                                                               0
                                      0
                                            0
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                                                  0]], e_out: [[[-5.04831038e-0
    2.75927298e-02 -3.80000733e-02]
  [-1.23823665e-01 -6.94456175e-02 -1.58774644e-01 ... -1.19921587e-01
    2.43080452e-01 8.92412663e-02]
  [-8.82602856e-02 -1.93249822e-01 -1.57280833e-01 ... -2.73149282e-01
    3.18691641e-01 9.57697630e-02]
  [-0.00000000e+00 4.97366488e-01 -7.73526496e-15 ...
                                                           0.00000000e+00
    8.82552788e-02 9.58979547e-01]
  [-0.00000000e+00 5.03084362e-01 -3.01044022e-15 ...
                                                           0.00000000e+00
    8.82552788e-02 9.58368897e-011
  [-0.000000000e+00 \quad 5.05989909e-01 \quad -1.17677165e-15 \quad \dots \quad 0.00000000e+00
    8.82552788e-02 9.57923293e-01]]]
sampled token: great
sampled token: tasting
sampled token: tea
sampled_token: end
Predicted summary: great tasting tea
Review: bought aunt christmas drinks coffee different varities hard find
Original summary: peggy
input seq: [[
               46 3678
                         664
                              327
                                      9
                                          99 7313
                                                    118
                                                          29
                                                                0
                                                                      0
                                                                           0
                                                                                0
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                                                     0]], e out: [[[-3.4551639e-
     0
          0
                          0
                               0
    2.7833385e-02 6.2093455e-021
  [-2.2814516e-02
                   2.1964714e-01 -1.2668373e-01 ... 6.9754928e-02
   -3.3862416e-02 -2.4169406e-01]
  [-7.1264231e-03
                    1.8500376e-01 -2.7721742e-01 ...
                                                        2.5262195e-01
   -4.6913024e-02 -9.6637666e-02]
                    6.7484260e-01 -1.6019026e-17 ...
                                                        0.000000e+00
  [-4.6945505e-02
```

9.8668838e-01]

-9.4057631e-01

6.7483377e-01 -4.3731000e-18 ...

0.0000000e+00

0.0000000e+00

[-4.6944343e-02 6.7483789e-01 -8.3697658e-18 ...

9.8668927e-01]

9.8669004e-01111

-9.4057631e-01

[-4.6943456e-02

-9.4057631e-01

sampled token: love

```
sampled token: this
sampled token: coffee
sampled token: end
Predicted summary: love this coffee
Review: doctors confirm ibs started looking natural products could help sympt
Original summary: best tea for ibs
input seq: [[ 5379 5691
                                                                                6
                           5576
                                   301
                                         136
                                                133
                                                      106
                                                             37
                                                                  339
                                                                        2349
    960
            5
               2245
                         7
                             169
                                     35
                                          633
                                                       563
                                                             460
                                                                  1681
                                                 10
                                                                          191
   4345
                272 12461
                              39
                                          168
          613
                                     10
                                                 31
                                                        25 23520
                                                                    214
                                                                         3053
    144
                  19 46190
                              27
                                    184
                                          245
          157
                                                         0
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                                                   0]], e out: [[[ 6.74358085e-0
    1.61500320e-01 1.00670986e-011
  [ 2.63044029e-01 -4.00045104e-02
                                      9.61120240e-03 ...
                                                           2.78340075e-02
    7.12396391e-03 -2.15431318e-01]
  [ 1.89717352e-01 -1.24732748e-01 -1.14127271e-01 ...
                                                           1.74724802e-01
    7.16326013e-02 5.48340194e-02]
  [-0.00000000e+00 5.16075015e-01 -2.92225668e-15 ...
                                                           0.0000000e+00
    6.57991290e-01 9.89778399e-01]
  [-0.00000000e+00 5.15644014e-01 -9.58883754e-16 ...
                                                           0.00000000e+00
    6.57991290e-01 9.89781201e-01]
  [-0.00000000e+00 5.15271544e-01 -3.14669616e-16 ...
                                                           0.00000000e+00
    6.57991290e-01 9.89779830e-01]]]
sampled token: works
sampled token: well
sampled token: end
Predicted summary:
                     works well
Review: wonderful stuff cook like rice rice cooker make rice porridge wonderf
Original summary: deliciously toothsome
                                         159
input seq: [[
              169
                       84
                            402
                                     1
                                                159
                                                     3107
                                                             26
                                                                   159
                                                                       6105
                                                                               16
  14686
           20
                       159
                            2100
                                     85
                                           36
                                                 74
                                                        39
                                                             639
                                                                    510
                                                                         2586
                   1
                 594
                       259
                               4 14158
                                               2038 18423
                                                             442
    510
          302
                                         1118
                                                                     89 33275
               1195
                                  1342
                                          880
                                                 94
                                                      3130 20853 18452
                                                                         2473
   6496 16627
                        40
                            5508
  33275
                                                         0
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         1388
                   0
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                                                   0]], e_out: [[[-1.1382981e-01
    1.4961314e-01 -6.1776325e-021
  [-1.4826241e-01
                    1.2505692e-01 7.4814275e-02 ... -2.6010642e-02
    1.8733191e-01 -3.5768885e-02]
  [-3.2282776e-01
                   7.5044699e-02
                                   3.1917498e-01 ... -4.7568876e-01
    2.4960531e-01 1.4789831e-021
  [-0.00000000e+00 \quad 6.0151178e-01 \quad -8.0473741e-14 \quad \dots \quad -6.8383772e-24
    8.8272494e-01
                    9.7715646e-011
  [-0.000000e+00
                    6.0440844e-01 -2.2410032e-14 ... -8.0810936e-25
    8.8272494e-01
                    9.7744799e-01]
  [-0.000000e+00
                    6.0494107e-01 -6.2420784e-15 ... -9.4618350e-26
```

```
8.82/2494e-01 9.//5952/e-01]]]
```

sampled\_token: great sampled token: rice sampled token: end

Predicted summary: great rice

Review: take two ounces water mix daughter straw cups voila healthy smoothie Original summary: great for making smoothies

```
810
                                     40
                                                 412
                                                      3271
                                                              155
                                                                    3297
input seq: [[
                148
                        49
                                            62
                                                                             95
                                                                                 237
    112 19327
                 895
                        376
                                0
                                       0
                                              0
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                                                    0]], e out: [[[-5.46961054e-0
    9.03591141e-02 2.07746588e-02]
  [-7.19943792e-02 -1.09501667e-01 -2.85793662e-01 ...
                                                             1.43772364e-01
    2.13141903e-01
                     1.11632735e-01]
  [ 9.29540396e-02 -1.10816717e-01 -3.40869635e-01 ...
                                                             1.55834019e-01
    2.34435707e-01 1.05562031e-01]
  [-0.00000000e+00 6.15824044e-01 -2.08175818e-20 ...
                                                             0.0000000e+00
    9.99975204e-01 9.57593858e-01]
  [-0.00000000e+00 6.15813553e-01 -9.13020877e-21 ...
                                                             0.00000000e+00
    9.99975204e-01 9.57605183e-01]
  [-0.000000000e+00 \quad 6.15804434e-01 \quad -4.00441204e-21 \quad \dots \quad 0.00000000e+00
    9.99975204e-01 9.57615674e-01]]]
sampled token: love
```

sampled token: it sampled token: end

Predicted summary: love it

```
Review: lipton tea honey iced tea mix packets convenient way drink healthy bo
Original summary: refreshingly sweet taste
input seq: [[1056
                      10
                         236 478
                                      10
                                           62
                                                600
                                                     535
                                                            48
                                                                 35
                                                                       95
                                                                            47
                                                                                 465
   600
       805
              210
                    40
                         616
                              134
                                     10
                                         418
                                                 3
                                                     97
                                                           71
                                                               766
                                                                      56 2492
   687 2600
                   123
                          63 3304
                                     32
                                           72
                                                 1 1318 3580 2394
                                                                     957
                8
                                                                             1
    24
        625 2065
                      1
                           8
                              600
                                    370
                                         630
                                               141
                                                    176
                                                          313
                                                                  1
                                                                     827
                                                                          236
    44
        167
               10
                   567
                         167
                              195
                                     72
                                            0
                                                 0
                                                       0
                                                                  0
```

0]], e out: [[[-8.6242147e-

-4.2522404e-02 -1.0119883e-011

0.0000000e+00 0.0000000e+00 ... 3.0355921e-01 [ 6.0750681e-01

-0.0000000e+00 -2.4054530e-01]

[ 9.4732428e-01 0.0000000e+00 3.2557711e-01 0.0000000e+00 ...

-0.0000000e+00 -2.5215298e-011

2.3024230e-10 [-0.0000000e+00 3.5785145e-01 3.6009494e-04 ...

-5.4104435e-01 9.5571321e-01]

2.2471507e-11 [-0.000000e+00 3.6710513e-01 1.4948737e-04 ...

-5.4104435e-01 9.5579517e-011

3.7418714e-01 6.1996136e-05 ... [-0.000000e+00 2.2969467e-12

-5.4104435e-01 9.5589042e-01]]]

sampled token: delicious

sampled token: end

delicious Predicted summary:

```
Review: basically precooked noodles bags filled water actual quantity noodles
Original summary: expensive diet
input seq: [[
               986 8508
                            296
                                   154
                                         991
                                                 40
                                                      862
                                                           1076
                                                                   296
                                                                         265
                                                                                 8
    176
          811
                       296
                              158
                                         4649
                                                1216
                                                       737
                                                             989
                                                                    965
                                                                          887
                  38
                                     31
   1692
          886
                 147
                       116
                            5389
                                    503
                                                1129
                                                       765
                                                            3729
                                                                   1129
                                                                         3168
                                            1
    296
          639
                 503
                       343
                                    199
                                                3002 14623
                                                                           30
                            2823
                                          898
                                                              176
                                                                    856
    547
          360
                 255
                       140
                             913
                                     72
                                        3200
                                                  14
                                                       168
                                                             218
                                                                   1036
                                                                          296
      5
          168
                 218
                       241
                              156
                                    703
                                         1410
                                                 989
                                                       416
                                                               69
                                                                    436
                                                                          167
    413
          146
                  21
                       455
                               22
                                   4119
                                         1076
                                                  13]], e out: [[[ 0.18615031 -0
   -0.02439569]
  [ \ 0.05239576 \ -0.15582585 \ -0.08812328 \ \dots \ -0.27928188 \ -0.09970699
    0.08361395]
  [-0.05681626 -0.4859325
                             0.03009948 ... -0.2329745 -0.26324055
   -0.05091515]
  [-0.26847354 0.5943392
                            -0.4787223
                                                          -0.03300021
                                               0.
   -0.713291
              ]
  [-0.30522418 \quad 0.8263297 \quad -0.56589496 \quad \dots \quad -0.06612098 \quad -0.02027389
   -0.8032715 ]
  [-0.40279272 0.9073337
                            -0.5076832
                                        ... -0.12157714 -0.01221791
   -0.980152 ]]]
sampled token: great
sampled token: product
sampled token: end
Predicted summary: great product
Review: mom wheat allergy unable find progresso mushroom soup stores looked c
Original summary: mushroom soup for wheat allergy
                                     29 6423 3150
input sea: [[ 825
                   385 1351 1812
                                                    343
                                                         205
                                                               451
                                                                     37
                                                                          60
                                                                                50
                                   731
   209
        227
             223
                   136
                        794
                             399
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                                                     0]], e out: [[[-1.5943126e-
                   1.8733318e-01]
    2.2518025e-01
  [-1.4893777e-02 -8.1913692e-01 -3.2001367e-01 ... -2.4675156e-01
    6.0279989e-01 -1.4000647e-021
  [-0.0000000e+00 -9.7323793e-01 -4.9670017e-01 ... -4.0870816e-01
    7.8977305e-01 -3.0640811e-01]
  [-0.0000000e+00 7.5348330e-01
                                    1.4782861e-23 ...
                                                        0.0000000e+00
    9.2192662e-01 9.8823917e-011
  [-0.0000000e+00 7.5360870e-01 5.5747471e-24 ...
                                                        0.0000000e+00
    9.2192662e-01 9.8828387e-01]
  [-0.000000e+00
                   7.5373524e-01 2.1039893e-24 ...
                                                        0.0000000e+00
    9.2192662e-01 9.8832852e-01]]]
sampled token: great
sampled_token: product
```

```
Review: like convenience happy plastic cups also want mess filling cup came m
Original summary: good coffee and good for the
                                                                   198
input seq: [[
                1
                   839
                         142
                             303
                                   155
                                          17
                                                        540
                                                               39
                                                                        406
                                                                              25
                                               68
                                                   739
              16 1352 1825 1431 7712
                                                                        34
   214
        180
                                       231
                                             298 1304
                                                       462 7712
                                                                  214
```

sampled token: end

ろりろ

Predicted summary: great product

187 3711

JU

424 2170

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0
                                               0
     0
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                                                    0]], e_out: [[[ 2.3668841e-
          0
   -1.0559503e-01 -6.2754050e-02]
  [-2.5898648e-02 -1.6751999e-02 -1.6047299e-01 ... -8.7091170e-02
   -1.9806512e-01
                   4.7604240e-02]
  [-8.9456037e-02 -1.8110140e-01 -3.8218838e-01 ... -9.4000548e-02
   -6.5886170e-02
                   1.3069803e-01]
  [-0.0000000e+00 6.4400089e-01 -5.4328111e-09 ...
                                                       3.2057564e-33
   -6.9864321e-01 9.8097098e-01]
  [-0.0000000e+00 6.4130378e-01 -1.8709045e-09 ...
                                                       1.3486089e-34
   -6.9864321e-01 9.8112118e-01]
  [-0.000000e+00
                    6.3868153e-01 -6.4513672e-10 ...
                                                       5.8615548e-36
   -6.9864321e-01
                    9.8128808e-01]]]
sampled token: good
sampled token: coffee
sampled token: bad
sampled token: price
sampled token: end
Predicted summary: good coffee bad price
Review: dog quickly caught onto happening gave hot dogs vienna sausage cheese
Original summary: pill pockets are great
                23
                                       4547
                                                                 3467
input seq: [[
                      314
                           1960
                                 1501
                                               260
                                                      71
                                                            65
                                                                       1813
                                                                              20
    194
         1359
                765
                        18
                               4
                                   507
                                          187
                                                 57
                                                     2748
                                                           1970
                                                                   792
                                                                         148
          450 20475
    877
                                         1463
                                                                  7782
                                                                          52
                      1463
                              14
                                   257
                                                  4
                                                       66
                                                              65
   3301
           93
               1463
                      2553
                              73
                                   219
                                          263
                                                 13
                                                     1970
                                                           3819
                                                                  3975
                                                                        5779
    112
         1463
               2553
                      1624
                             427
                                   184
                                           22
                                               1226
                                                      858
                                                             100
                                                                   147
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      0
            0
                   0
                         0
                               0
                                     0
                                            0
    1.82530895e-01
                    3.07192177e-01]
  [-5.00922143e-01 -9.28512573e-01 -1.05399095e-01 ...
                                                          0.0000000e+00
    4.09178101e-02
                     7.39428282e-01]
  [-7.03801870e-01 -9.66556966e-01 -5.82604744e-02 ...
                                                          0.0000000e+00
    0.00000000e+00 9.09086108e-011
  [-0.00000000e+00 6.00289822e-01 -6.96317457e-08 ...
                                                          0.0000000e+00
    9.99999642e-01 9.82658565e-011
  [-0.00000000e+00 5.98019063e-01 -2.50550247e-08 ...
                                                          0.00000000e+00
    9.99999642e-01 9.82841611e-01]
  [-0.00000000e+00 5.94429493e-01 -9.03440434e-09 ...
                                                          0.0000000e+00
    9.99999642e-01 9.83084679e-01]]]
sampled token: not
sampled_token: for
sampled token: my
sampled_token: dog
sampled_token: end
Predicted summary:
                   not for my dog
Review: like strong taste coffee dark magic ordered box ordering
Original summary: great taste
                    109
                                9
                                   166 1588
                                              101
                                                    47
                                                        336
                                                                0
                                                                     0
                                                                          0
                                                                               0
input seq: [[
                1
                           3
     0
                     0
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                                    0
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   -1.0559503e-01 -6.2754050e-02]
  [ 4.2608985e-01
                    1.9569434e-02 -2.3989648e-02 ...
                                                        1.3600600e-01
   -2.2730766e-02 -1.9570492e-011
  [ 9.4302356e-01
                    0.0000000e+00 -2.2983219e-01 ...
                                                        3.2311112e-01
   -0.0000000e+00 -4.0602036e-02]
                    5.9828651e-01 -4.4321307e-21 ...
  [-2.0128662e-02
                                                        0.0000000e+00
                    9.9272412e-01]
   -9.9989104e-01
  [-2.0070292e-02 5.9854198e-01 -2.0743333e-21 ...
                                                        0.000000e+00
   -9.9989104e-01 9.9275237e-01]
  [-2.0012157e-02
                   5.9878325e-01 -9.7119819e-22 ...
                                                        0.0000000e+00
   -9.9989104e-01 9.9277776e-01111
sampled token: good
sampled token: coffee
sampled token: end
Predicted summary:
                     good coffee
Review: pounds gummi bears wow great deal shared mom like candy way try dissa
Original summary: freaking yummy
input_seq: [[ 883 1320 1021
                              710
                                      6
                                         291 1581
                                                    825
                                                            1
                                                               232
                                                                     48
                                                                           32 2803
  4212
         15
             245
                    11
                          8 4212
                                    15
                                        292
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    1.8089816e-01
                    9.1552883e-02]
                    2.6351528e-02 8.4194660e-02 ... -4.2226470e-01
  [-7.2864421e-02
   -5.4588996e-02
                    5.8807316e-03]
                                    8.0361016e-02 ... -2.6609284e-01
  [-1.5958105e-01
                    2.5906971e-01
   -1.9628066e-01 -7.7279778e-03]
                                    2.4998561e-13 ...
                                                        0.0000000e+00
  [-0.000000e+00
                    7.1084756e-01
    9.9988037e-01
                    9.9249506e-01]
  [-0.0000000e+00
                    7.1084934e-01
                                    1.2839034e-13 ...
                                                        0.0000000e+00
    9.9988037e-01
                    9.9249673e-01]
  [-0.000000e+00
                    7.1085912e-01 6.5938662e-14 ...
                                                        0.000000e+00
    9.9988037e-01
                    9.9249804e-01111
sampled token: best
sampled_token: gummi
sampled token: bears
sampled token: end
Predicted summary:
                     best gummi bears
Review: item healthy inexpensive treat whole family easily enjoyed driving wa
Original summary: healthy snack
input_seq: [[ 243
                     95 1729
                                         197
                                               382
                                                    373 3151 1356
                                                                    163
                                                                          171
                               112
                                    122
                                                                               131
  3954
        439 2518
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                                                     0]], e_out: [[[ 9.2485793e-
   -5.4746062e-02
                    3.2979093e-02]
```

[-1.3400462e-01 -2.3157857e-01 -1.2045075e-01 ... -2.4744217e-01

8.5453764e-031

-4.1937898e-03

```
[-2.3959751e-01 -6.1136651e-01 -3.4738427e-01 ... -3.3614531e-01
    1.5224388e-01
                  1.5787773e-011
  [-0.0000000e+00 6.7000502e-01 7.2204958e-19 ...
                                                       0.0000000e+00
    9.7632855e-01 9.8269773e-01]
  [-0.0000000e+00 6.6999704e-01 3.1994335e-19 ...
                                                       0.000000e+00
    9.7632855e-01 9.8270088e-01]
  [-0.0000000e+00 6.6998982e-01 1.4177046e-19 ...
                                                       0.0000000e+00
    9.7632855e-01
                   9.8270375e-01]]]
sampled token: yummy
sampled_token: end
Predicted summary:
                    yummy
Review: mini dachshund loves favorite toy last reasonable length time however
Original summary: great toy
input seq: [[1084 3840
                               70
                                   516
                                         162
                                              768 2226
                                                         18
                                                              93
                                                                     2
                                                                        523
                                                                              65
  4018
          0
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                                                    0]], e out: [[[-1.5746303e-
                  3.3808714e-01]
    2.8891492e-01
  [-1.2950906e-01 -9.2842197e-01 -1.4568526e-01 ...
                                                       0.000000e+00
    3.7909749e-01
                   7.4117249e-01]
  [-4.5169305e-02 -9.8486269e-01 -7.6340646e-02 ...
                                                       0.0000000e+00
    7.4180827e-02 9.0814066e-011
  [-0.0000000e+00 6.3518882e-01 -1.1555422e-18 ...
                                                       0.0000000e+00
    1.0000000e+00 9.8628098e-01]
  [-0.0000000e+00 6.3522017e-01 -5.5560274e-19 ...
                                                       0.0000000e+00
    1.0000000e+00 9.8630399e-011
  [-0.0000000e+00 6.3526195e-01 -2.6719816e-19 ...
                                                       0.0000000e+00
    1.0000000e+00 9.8632890e-01]]]
sampled token: my
sampled token: dog
sampled token: loves
sampled_token: these
sampled token: end
Predicted summary: my dog loves these
Review: item arrived sugar free shipped regular version caramel syrup small i
Original summary: wrong item
input seq: [[ 243
                   231
                          36
                               50
                                   579
                                         128
                                              380
                                                   784
                                                        269
                                                              88 6637 4821
                                                                             210
    36
         50
             320
                  228
                        566
                             210 1297
                                        128
                                             380
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                                               0
                                                    0]], e out: [[[ 9.2485793e-
   -5.4746062e-02
                  3.2979093e-02]
  [ 1.2097987e-01 -1.3697670e-01
                                   1.2169878e-01 ... -4.3859428e-01
   -1.2300425e-01
                  7.0339447e-041
  [ 4.7262642e-01 3.7316956e-02
                                   0.0000000e+00 ... -7.0984691e-01
   -1.9252805e-01 -1.4155436e-01]
```

6.4143601e-17 ...

0.0000000e+00

[-0.0000000e+00 6.5639031e-01

9.9151087e-011

-6.0443974e-01

138 848

```
[-0.0000000e+00 6.5636539e-01
                                 2.7154662e-17 ...
                                                     0.0000000e+00
   -6.0443974e-01 9.9150670e-011
  [-0.0000000e+00 6.5634197e-01 1.1495203e-17 ...
                                                     0.0000000e+00
   -6.0443974e-01
                   9.9150300e-01]]]
sampled token: not
sampled token: as
sampled token: good
sampled token: as
sampled token: the
sampled token: original
sampled token: end
Predicted summary: not as good as the original
```

```
Review: love love love salt pepper popchips order individual bags eat whole t
Original summary: yum
                                   356 1406
                                                        154
                                                                  122
input seq: [[ 11
                     11
                          11
                              131
                                               60
                                                   867
                                                              33
                                                                        127
                                                                             407
   937 915
              38 1648
                          0
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                                         0
                                               0
                                                    0]], e out: [[[-1.0335382e-
    2.0938370e-01 9.4334736e-02]
  [-5.1488299e-02 -7.6055549e-02 -2.6003465e-01 ...
                                                       1.6513781e-01
                  1.6598600e-01]
    4.5654327e-01
  [-4.4432823e-03 5.6482837e-02 -3.0981487e-01 ...
                                                       2.3960726e-01
    6.4731020e-01 2.6090899e-01]
  [-0.0000000e+00 7.2636843e-01 1.4973954e-16 ...
                                                       0.000000e+00
    9.9985367e-01 9.6745205e-01]
  [-0.0000000e+00 7.2636497e-01 6.9976198e-17 ...
                                                       0.000000e+00
    9.9985367e-01 9.6745324e-01]
  [-0.0000000e+00 7.2636253e-01 3.2700346e-17 ...
                                                       0.0000000e+00
    9.9985367e-01 9.6745420e-01]]]
sampled token: love
sampled token: these
sampled token: end
Predicted summary:
                    love these
```

```
Review: say getting coffee amazon bags came sealed well perfect condition bea
Original summary: item came as described
                                                                  304
                                                                       108
                                                                              44
input seq: [[ 83
                   191
                               16
                                   154
                                             838
                                                    27
                                                         97
                                                            732
                                        198
   174
                                  121 3330
          9 1163
                  136 1729
                              48
                                             81
                                                 315
                                                      251 1469
                                                                  21
                                                                        4
```

83 3330

```
80 179 9 1499 3659 14 382 20 429 1920 1604 1760 696 1270
```