In [144…
```
import pandas as pd
import numpy as np
```

1. Loading Data

In [77]:
```
emotions_df = pd.read_csv("./datasets/emotions/text.csv")
emotions_df.head()
```

Out[77]:

	Unnamed: 0	text	label
0	0	i just feel really helpless and heavy hearted	4
1	1	ive enjoyed being able to slouch about relax a...	0
2	2	i gave up my internship with the dmrg and am f...	4
3	3	i dont know i feel so lost	0
4	4	i am a kindergarten teacher and i am thoroughl...	4

In [78]:
```
violence_df = pd.read_csv("datasets/gender_violence/train.csv")
violence_df.head()
```

Out[78]:

	Tweet_ID	tweet	type
0	ID_0022DWKP	Had a dream i got raped last night. By a guy i...	sexual_violence
1	ID_00395QYM	he thought the word raped means sex and told m...	sexual_violence
2	ID_003EOSSF	She NOT TALKING TO ME I WAS RAPED BY 2 MEN 1 M...	sexual_violence
3	ID_004BBHOD	I was sexually abused for 3 years at age 4 to ...	sexual_violence
4	ID_004F7516	Chessy Prout can do better by telling the trut...	sexual_violence

In [79]:
```
hate_df = pd.read_csv("datasets/Hate_speech/labeled_data.csv")
hate_df.head()
```

Out[79]:

	Unnamed: 0	count	hate_speech	offensive_language	neither	class	tweet
0	0	3	0	0	3	2	!!! RT @mayasolovely: As a woman you shouldn't...
1	1	3	0	3	0	1	!!!!! RT @mleew17: boy dats cold...tyga dwn ba...
2	2	3	0	3	0	1	!!!!!!! RT @UrKindOfBrand Dawg!!!! RT @80sbaby...
3	3	3	0	2	1	1	!!!!!!!!! RT @C_G_Anderson: @viva_based she lo...
4	4	6	0	6	0	1	!!!!!!!!!!!! RT @ShenikaRoberts: The shit you...

2. Data Preprocessing

In [80]:
```
emotions_df.drop(columns='Unnamed: 0', inplace=True)
violence_df.drop(columns='Tweet_ID', inplace=True)
hate_df.drop(columns=['Unnamed: 0','count',     'hate_speech',  'offensive_language
```

In [81]:
```
emotions_df.head()
```

Out[81]:

	text	label
0	i just feel really helpless and heavy hearted	4
1	ive enjoyed being able to slouch about relax a...	0
2	i gave up my internship with the dmrg and am f...	4
3	i dont know i feel so lost	0
4	i am a kindergarten teacher and i am thoroughl...	4

In [82]:
```
violence_df.head()
```

Out[82]:

	tweet	type
0	Had a dream i got raped last night. By a guy i...	sexual_violence
1	he thought the word raped means sex and told m...	sexual_violence
2	She NOT TALKING TO ME I WAS RAPED BY 2 MEN 1 M...	sexual_violence
3	I was sexually abused for 3 years at age 4 to ...	sexual_violence
4	Chessy Prout can do better by telling the trut...	sexual_violence

In [83]:
```
hate_df.head()
```

Out[83]:

	class	tweet
0	2	!!! RT @mayasolovely: As a woman you shouldn't...
1	1	!!!!! RT @mleew17: boy dats cold...tyga dwn ba...
2	1	!!!!!!! RT @UrKindOfBrand Dawg!!!! RT @80sbaby...
3	1	!!!!!!!!! RT @C_G_Anderson: @viva_based she lo...
4	1	!!!!!!!!!!!!! RT @ShenikaRoberts: The shit you...

Renaming Columns

In [84]:
```
violence_df.rename(columns={'tweet':'text','type':'label'},inplace=True)
hate_df.rename(columns={'tweet':'text','class':'label'},inplace=True)
```

In [85]:
```
hate_df.columns, violence_df.columns,emotions_df.columns
```

Out[85]:
```
(Index(['label', 'text'], dtype='object'),
 Index(['text', 'label'], dtype='object'),
 Index(['text', 'label'], dtype='object'))
```

Checking Null Values

In [86]:
```
emotions_df.isna().sum()
```

Out[86]:
```
text     0
label    0
dtype: int64
```

In [87]:
```
violence_df.isna().sum()
```

Out[87]:
```
text     0
label    0
dtype: int64
```

In [88]:
```
hate_df.isna().sum()
```

Out[88]:
```
label    0
text     0
dtype: int64
```

In [89]:
```
emotions_df.shape, violence_df.shape,hate_df.shape
```

Out[89]:
```
((416809, 2), (39650, 2), (24783, 2))
```

In [90]:
```
emotions_df.groupby('label').count()
```

Out[90]:

label	text
0	121187
1	141067
2	34554
3	57317
4	47712
5	14972

In [91]:
```
emotions_df[emotions_df.label==0].sample(12000)
```

Out[91]:

	text	label
135871	i personally would prefer a shorter life fille...	0
145940	i feel it should be ignored totally	0
382603	i had the sensation of vomiting dizziness and ...	0
171636	i know that when i eat horribly i feel horrible	0
296149	i feel like i missed a big opportunity but at ...	0
...	...	...
187392	i feel disappointed disappointed in myself tha...	0
252361	i am frustrated because i feel so rotten and t...	0
42221	i was feeling so crappy on my birthday is that...	0
250581	ive decided that i have nothing to feel regret...	0
3367	i read anne sexton who makes me feel morose an...	0

12000 rows × 2 columns

Extract Sample from emotions Dataset

In [92]:
```
e_df = pd.DataFrame()
for i in range(0,6):
    sample_df = emotions_df[emotions_df.label==i].sample(n=2000,random_state=42)
    e_df = pd.concat([e_df,sample_df])
```

In [93]:
```
e_df.groupby('label').count()
```

Out[93]:

label	text
0	2000
1	2000
2	2000
3	2000
4	2000
5	2000

In [94]:
```
emotions_df = e_df.copy()
emotions_df.shape
```

Out[94]: (12000, 2)

In [95]:
```
violence_df.groupby('label').count()
```

Out[95]:

label	text
Harmful_Traditional_practice	188
Physical_violence	5946
economic_violence	217
emotional_violence	651
sexual_violence	32648

In [96]:
```
12000-violence_df[violence_df.label!='sexual_violence'].shape[0]
```

Out[96]: 4998

Extract Sample from violence Dataset

In [97]:
```
sexual_v = violence_df[violence_df.label=='sexual_violence'].sample(4998,random_sta
sample_v_df = violence_df[violence_df.label!='sexual_violence']
v_df = pd.concat([sample_v_df,sexual_v])
violence_df = v_df.copy()
violence_df.shape
```

Out[97]: (12000, 2)

In [98]:
```
violence_df.groupby('label').count()
```

Out[98]:

label	text
Harmful_Traditional_practice	188
Physical_violence	5946
economic_violence	217
emotional_violence	651
sexual_violence	4998

Extract Sample from hate Dataset

In [99]:
```
hate_df.groupby('label').count()
```

Out[99]:

label	text
0	1430
1	19190
2	4163

In [100…
```
12000-hate_df[hate_df.label!=1].shape[0]
```

Out[100… 6407

In [101…
```
zero_hDf = hate_df[hate_df.label==1].sample(6407,random_state=42)
sample_h_df = hate_df[hate_df.label!=1]
h_df = pd.concat([sample_h_df,zero_hDf])
hate_df = h_df.copy()
hate_df.shape
```

Out[101… (12000, 2)

In [105…
```
hate_df.groupby('label').count()
```

Out[105…

label	text
0	1430
1	6407
2	4163

In [106…
```
hate_df.shape, violence_df.shape,emotions_df.shape
```

Out[106…
```
((12000, 2), (12000, 2), (12000, 2))
```

In [108…
```
hate_df.sample(3)
```

Out[108…

	label	text
23054	1	Y'all weird on here. Fake hoes for attention
1986	2	★@★@★@★@★ GRAND ...
6292	1	@jqualley_ @_BeautifulKeezy bitch YESSSSS I ma...

In [109…
```
violence_df.sample(3)
```

Out[109…

	text	label
6928	From the person who told me. He says the fell...	sexual_violence
13773	Happy Birthday to my husband The most lovely ...	Physical_violence
11697	What are some things that make you really happ...	Physical_violence

In [110…
```
emotions_df.sample(3)
```

Out[110…

	text	label
166413	i said i feel resentful that my childhood was ...	3
180277	i have been busy but i feel that my loyal read...	2
377736	i do these cards once in a while is that i fee...	1

Replace Indexes

In [111…
```
hate_df.reset_index(drop=True,inplace=True)
emotions_df.reset_index(drop=True,inplace=True)
violence_df.reset_index(drop=True,inplace=True)
```

In [112…
```
hate_df.sample(3)
```

Out[112…

	label	text
8214	1	Another bad bitch fuck her for a hour another ...
1118	2	@SalaciousSully hopefully not back in da ghetto?
3925	0	RT @PacDaGoat: I really hate attention seeking...

In [113…

```
violence_df.sample(3)
```

Out[113…

	text	label
1867	My Wife Beats Me Too Much – Husband Cries Out ...	Physical_violence
1544	The day my husband beats me. The day he is rea...	Physical_violence
8735	us: He Broke Up with me ɪɴ: He Raped Me	sexual_violence

In [114…

```
emotions_df.sample(3)
```

Out[114…

	text	label
10754	i feel like i ve got some weird self inflicted...	5
9568	i feel more like i m an intruder or robber and...	4
9666	i have noticed that it is okay to feel unsure ...	4

3.Label Encoding

In [116…

```
from sklearn.preprocessing import LabelEncoder
```

In [117…

```
l_encoder = LabelEncoder()
violence_df['label']=l_encoder.fit_transform(violence_df['label'])
violence_df.head()
```

Out[117…

	text	label
0	My Husband Beats Me Frequently, Wife Tells Cou...	1
1	Best thing for me to do, is remain silent when...	1
2	My husband will never beat me, Bambam denies r...	1
3	theyre like, i just wanna be a baby maker with...	1
4	I was in England for a week, the longest I've ...	1

In [118…

```
violence_df.groupby('label').count()
```

Out[118…

label	text
0	188
1	5946
2	217
3	651
4	4998

4. Stopword Removal

In [119…
```
import spacy
```

In [120…
```
from spacy.lang.en.stop_words import STOP_WORDS
```

In [122…
```
len(STOP_WORDS)
```

Out[122… 326

In [123…
```
nlp = spacy.load("en_core_web_sm")
```

In [124…
```
def removeStop(sent):
    doc = nlp(sent)
    j = []
    for token in doc:
        if not token.is_stop:
            j.append(token.text)

    return " ".join(j);
```

In [128…
```
removeStop("We jUst open our wings")
```

Out[128… 'open wings'

In [130…
```
emotions_df['text']=emotions_df['text'].apply(removeStop)
violence_df['text']=violence_df['text'].apply(removeStop)
hate_df['text']=hate_df['text'].apply(removeStop)
```

In [132…
```
violence_df['text'].head()
```

Out[132…
```
0      Husband Beats Frequently , Wife Tells Court |
1    Best thing , remain silent return work today ....
2    husband beat , Bambam denies rumour TeddyA bea...
3    like , wanna baby maker zero sexual autonomy ,...
4    England week , longest away . husband said soo...
Name: text, dtype: object
```

5. Tokenization and Padding

In [133…
```
from tensorflow.keras.preprocessing.text import Tokenizer
from tensorflow.keras.preprocessing.sequence import pad_sequences
```

In [134…
```
tokenizer = Tokenizer()
tokenizer.fit_on_texts(pd.concat([emotions_df['text'],violence_df['text'],hate_df['
```

In [135…
```
emotion_sequence = tokenizer.texts_to_sequences(emotions_df['text'])
violence_sequence = tokenizer.texts_to_sequences(violence_df['text'])
hate_sequence = tokenizer.texts_to_sequences(hate_df['text'])
```

In [139…
```
emotions_df['text'].iloc[1]
```

Out[139…
```
'feel crappy upset situation nt help'
```

In [140…
```
emotion_sequence[1:2]
```

Out[140…
```
[[1, 1686, 827, 475, 11, 65]]
```

In [141…
```
max_padding = 50
emotion_padded = pad_sequences(emotion_sequence,maxlen=max_padding,padding='post')
violence_padded = pad_sequences(violence_sequence,maxlen=max_padding,padding='post'
hate_padded = pad_sequences(hate_sequence,maxlen=max_padding,padding='post')
```

In [142…
```
emotion_padded[2]
```

Out[142…
```
array([    1,     5,   257, 11753,  1098,   346,   990,   310,     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], dtype=int32)
```

In [143…
```
emotion_sequence[2]
```

Out[143…
```
[1, 5, 257, 11753, 1098, 346, 990, 310]
```

In [145…
```
emotion_labels = np.array(emotions_df['label'])
violence_labels = np.array(violence_df['label'])
hate_labels = np.array(hate_df['label'])
```

In [148…
```
hate_labels
```

Out[148…
```
array([2, 2, 2, ..., 1, 1, 1])
```

6. Model Building

In [149…
```
emotion_input = emotion_padded
hate_input = hate_padded
violence_input = violence_padded
```

In [151…
```
from tensorflow import keras
```

In [152…
```
# defining multiple input layers

emotion_df_input = keras.layers.Input(shape=(max_padding,),name='emotion_input')
violence_df_input = keras.layers.Input(shape=(max_padding,),name='violence_input')
hate_df_input = keras.layers.Input(shape=(max_padding,),name='hate_input')
```

In [153…
```
# Use a sgared embedding layer
embedding_layer = keras.layers.Embedding(input_dim=len(tokenizer.word_index)+1,outp
```

In [154…
```
#Apply the embedding layer to each input
emotion_embedding = embedding_layer(emotion_df_input)
hate_embedding = embedding_layer(hate_df_input)
violence_embedding = embedding_layer(violence_df_input)
```

In [155…
```
# shared LSTM layer
shared_lstm = keras.layers.LSTM(64,return_sequences=True)
```

In [156…
```
emotion_lstm = shared_lstm(emotion_embedding)
violence_lstm = shared_lstm(violence_embedding)
hate_lstm = shared_lstm(hate_embedding)
```

In [157…
```
# Shared global average pooling layer and dropout layer
shared_pooling = keras.layers.GlobalAveragePooling1D()
shared_dropout = keras.layers.Dropout(0.5)
```

In [158…
```
emotion_features = shared_dropout(shared_pooling(emotion_lstm))
hate_features = shared_dropout(shared_pooling(hate_lstm))
violence_features = shared_dropout(shared_pooling(violence_lstm))
```

In [160…
```
emotions_df['label'].unique(),hate_df['label'].unique(),violence_df['label'].unique
```

Out[160…
```
(array([0, 1, 2, 3, 4, 5]), array([2, 0, 1]), array([1, 3, 0, 2, 4]))
```

In [161…
```
#output layers
emotion_output = keras.layers.Dense(6, activation='softmax',name='emotion_output')(
hate_output = keras.layers.Dense(3,activation='softmax',name='hate_output')(hate_fe
violence_output = keras.layers.Dense(5,activation='softmax',name='violence_output')
```

In [163…
```
#Combine all the layers(build the model)
model = keras.models.Model(
    inputs=[emotion_df_input,violence_df_input,hate_df_input],
    outputs=[emotion_output,violence_output,hate_output]
)
```

In [168…
```
model.compile(optimizer='adam',
    loss={
```

```
    'emotion_output':'sparse_categorical_crossentropy',
    'violence_output':'sparse_categorical_crossentropy',
    'hate_output':'sparse_categorical_crossentropy'
    },
    metrics={
    'emotion_output':'accuracy',
    'violence_output':'accuracy',
    'hate_output':'accuracy'
    }

)
```

In [169…

```
model.summary()
```

Model: "functional"

Layer (type)	Output Shape	Param #	Connected to
emotion_input (InputLayer)	(None, 50)	0	-
violence_input (InputLayer)	(None, 50)	0	-
hate_input (InputLayer)	(None, 50)	0	-
embedding (Embedding)	(None, 50, 128)	5,228,672	emotion_input[0]… hate_input[0][0], violence_input[0…
lstm (LSTM)	(None, 50, 64)	49,408	embedding[0][0], embedding[2][0], embedding[1][0]
global_average_poo… (GlobalAveragePool…	(None, 64)	0	lstm[0][0], lstm[2][0], lstm[1][0]
dropout (Dropout)	(None, 64)	0	global_average_p… global_average_p… global_average_p…
emotion_output (Dense)	(None, 6)	390	dropout[0][0]
violence_output (Dense)	(None, 5)	325	dropout[2][0]
hate_output (Dense)	(None, 3)	195	dropout[1][0]

Total params: 5,278,990 (20.14 MB)

Trainable params: 5,278,990 (20.14 MB)

Non-trainable params: 0 (0.00 B)

In [170…

```
model.fit(x={
    'emotion_input':emotion_input,
    'violence_input':violence_input,
    'hate_input':hate_input,
},
        y={
    'emotion_output':emotion_labels,
    'violence_output':violence_labels,
    'hate_output':hate_labels,
        },
        epochs=10,
        batch_size=4)
```

```
Epoch 1/10
3000/3000 ━━━━━━━━━━━━━━━━━━━━ 122s 39ms/step - emotion_output_accuracy: 0.3939 - em
otion_output_loss: 1.4354 - hate_output_accuracy: 0.7619 - hate_output_loss: 0.6337
- loss: 2.3161 - violence_output_accuracy: 0.9212 - violence_output_loss: 0.2470
Epoch 2/10
3000/3000 ━━━━━━━━━━━━━━━━━━━━ 122s 41ms/step - emotion_output_accuracy: 0.8297 - em
otion_output_loss: 0.5307 - hate_output_accuracy: 0.8770 - hate_output_loss: 0.3745
- loss: 0.9536 - violence_output_accuracy: 0.9849 - violence_output_loss: 0.0484
Epoch 3/10
3000/3000 ━━━━━━━━━━━━━━━━━━━━ 121s 40ms/step - emotion_output_accuracy: 0.9351 - em
otion_output_loss: 0.2248 - hate_output_accuracy: 0.9303 - hate_output_loss: 0.2176
- loss: 0.4558 - violence_output_accuracy: 0.9967 - violence_output_loss: 0.0134
Epoch 4/10
3000/3000 ━━━━━━━━━━━━━━━━━━━━ 125s 42ms/step - emotion_output_accuracy: 0.9564 - em
otion_output_loss: 0.1359 - hate_output_accuracy: 0.9627 - hate_output_loss: 0.1146
- loss: 0.2588 - violence_output_accuracy: 0.9982 - violence_output_loss: 0.0083
Epoch 5/10
3000/3000 ━━━━━━━━━━━━━━━━━━━━ 123s 41ms/step - emotion_output_accuracy: 0.9685 - em
otion_output_loss: 0.0976 - hate_output_accuracy: 0.9795 - hate_output_loss: 0.0628
- loss: 0.1637 - violence_output_accuracy: 0.9993 - violence_output_loss: 0.0032
Epoch 6/10
3000/3000 ━━━━━━━━━━━━━━━━━━━━ 121s 40ms/step - emotion_output_accuracy: 0.9760 - em
otion_output_loss: 0.0747 - hate_output_accuracy: 0.9883 - hate_output_loss: 0.0401
- loss: 0.1183 - violence_output_accuracy: 0.9989 - violence_output_loss: 0.0035
Epoch 7/10
3000/3000 ━━━━━━━━━━━━━━━━━━━━ 119s 40ms/step - emotion_output_accuracy: 0.9809 - em
otion_output_loss: 0.0566 - hate_output_accuracy: 0.9904 - hate_output_loss: 0.0284
- loss: 0.0865 - violence_output_accuracy: 0.9998 - violence_output_loss: 0.0014
Epoch 8/10
3000/3000 ━━━━━━━━━━━━━━━━━━━━ 119s 40ms/step - emotion_output_accuracy: 0.9827 - em
otion_output_loss: 0.0507 - hate_output_accuracy: 0.9932 - hate_output_loss: 0.0214
- loss: 0.0744 - violence_output_accuracy: 0.9994 - violence_output_loss: 0.0023
Epoch 9/10
3000/3000 ━━━━━━━━━━━━━━━━━━━━ 119s 40ms/step - emotion_output_accuracy: 0.9861 - em
otion_output_loss: 0.0406 - hate_output_accuracy: 0.9952 - hate_output_loss: 0.0148
- loss: 0.0561 - violence_output_accuracy: 0.9998 - violence_output_loss: 8.0615e-04
Epoch 10/10
3000/3000 ━━━━━━━━━━━━━━━━━━━━ 130s 43ms/step - emotion_output_accuracy: 0.9862 - em
otion_output_loss: 0.0398 - hate_output_accuracy: 0.9956 - hate_output_loss: 0.0116
- loss: 0.0523 - violence_output_accuracy: 0.9996 - violence_output_loss: 8.0060e-04
```

Out[170… <keras.src.callbacks.history.History at 0x1a00c9af9e0>

7. Prediction and Evaluation

In [172…
```
prediction = model.predict({
    'emotion_input':emotion_input,
    'violence_input':violence_input,
    'hate_input':hate_input,
},)
```

```
375/375 ━━━━━━━━━━━━━━━━━━━━ 4s 8ms/step
```

In [181…
```
emotions_preds = np.argmax(prediction[0], axis=1)
violence_preds = np.argmax(prediction[1], axis=1)
hate_preds = np.argmax(prediction[2], axis=1)
```

In [183…
```
from sklearn.metrics import confusion_matrix
import seaborn as sns
import matplotlib.pyplot as plt
```

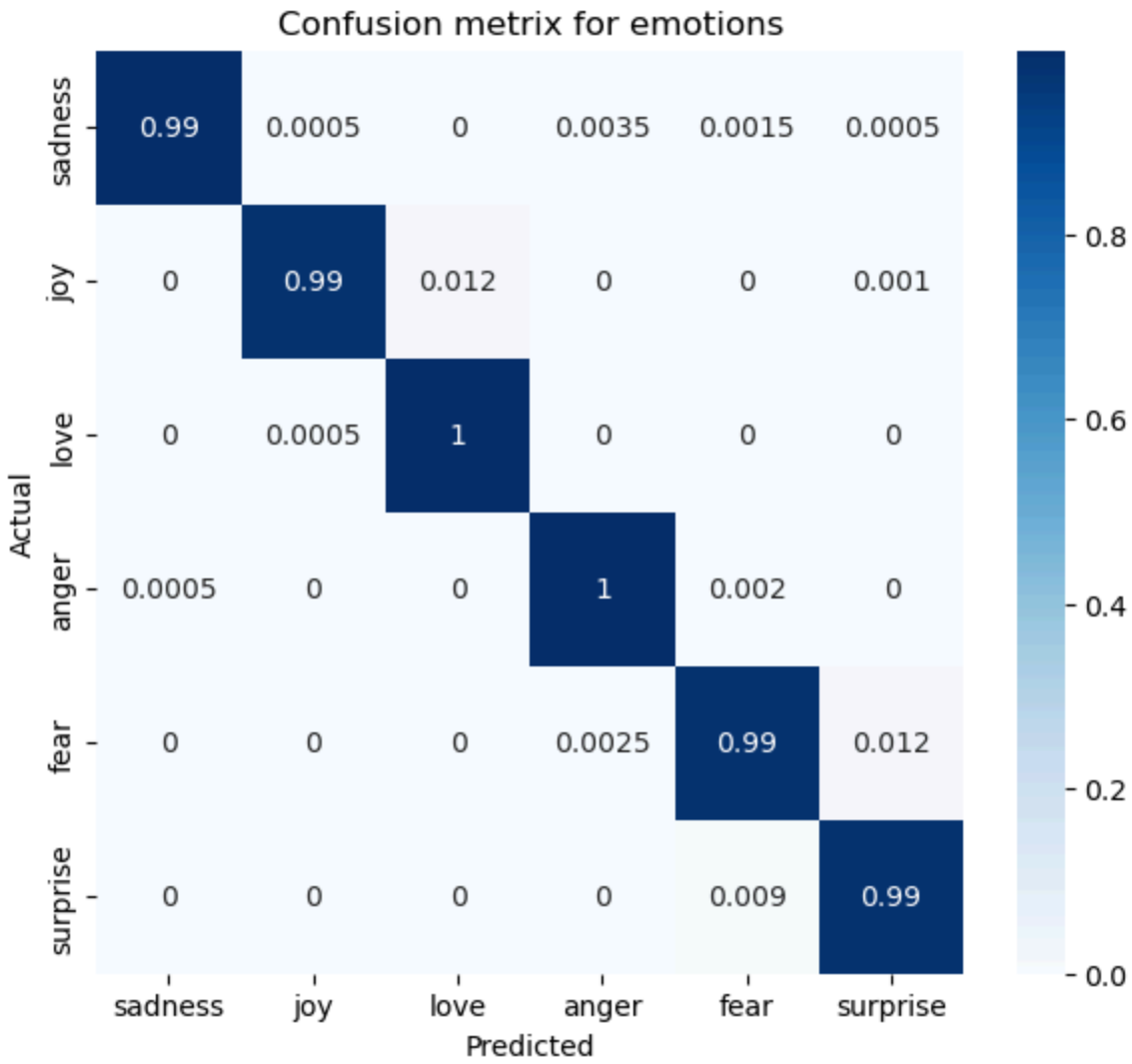
In [184…
```
violence_df['label'].unique()
```

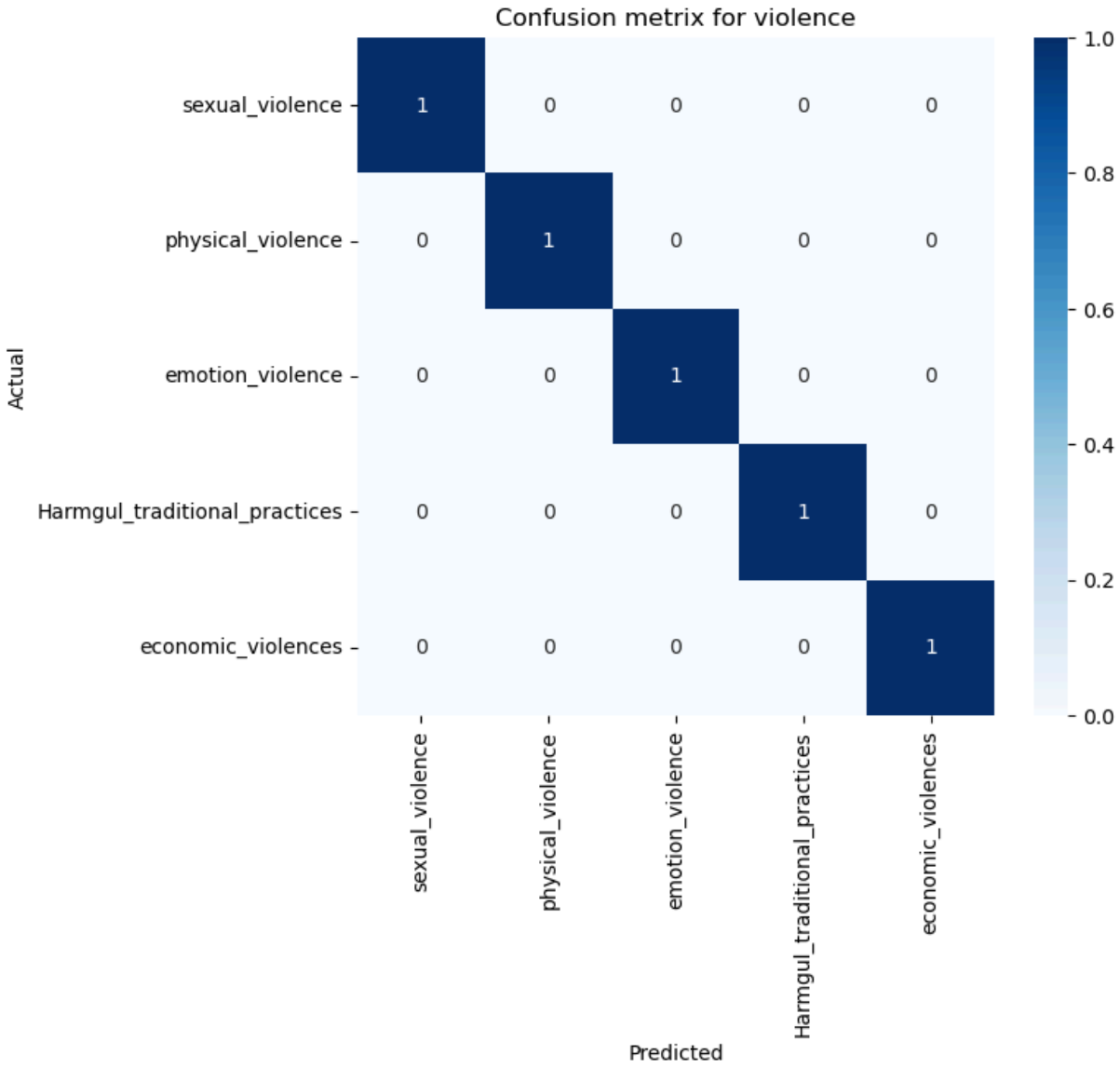
Out[184…
```
array([1, 3, 0, 2, 4])
```

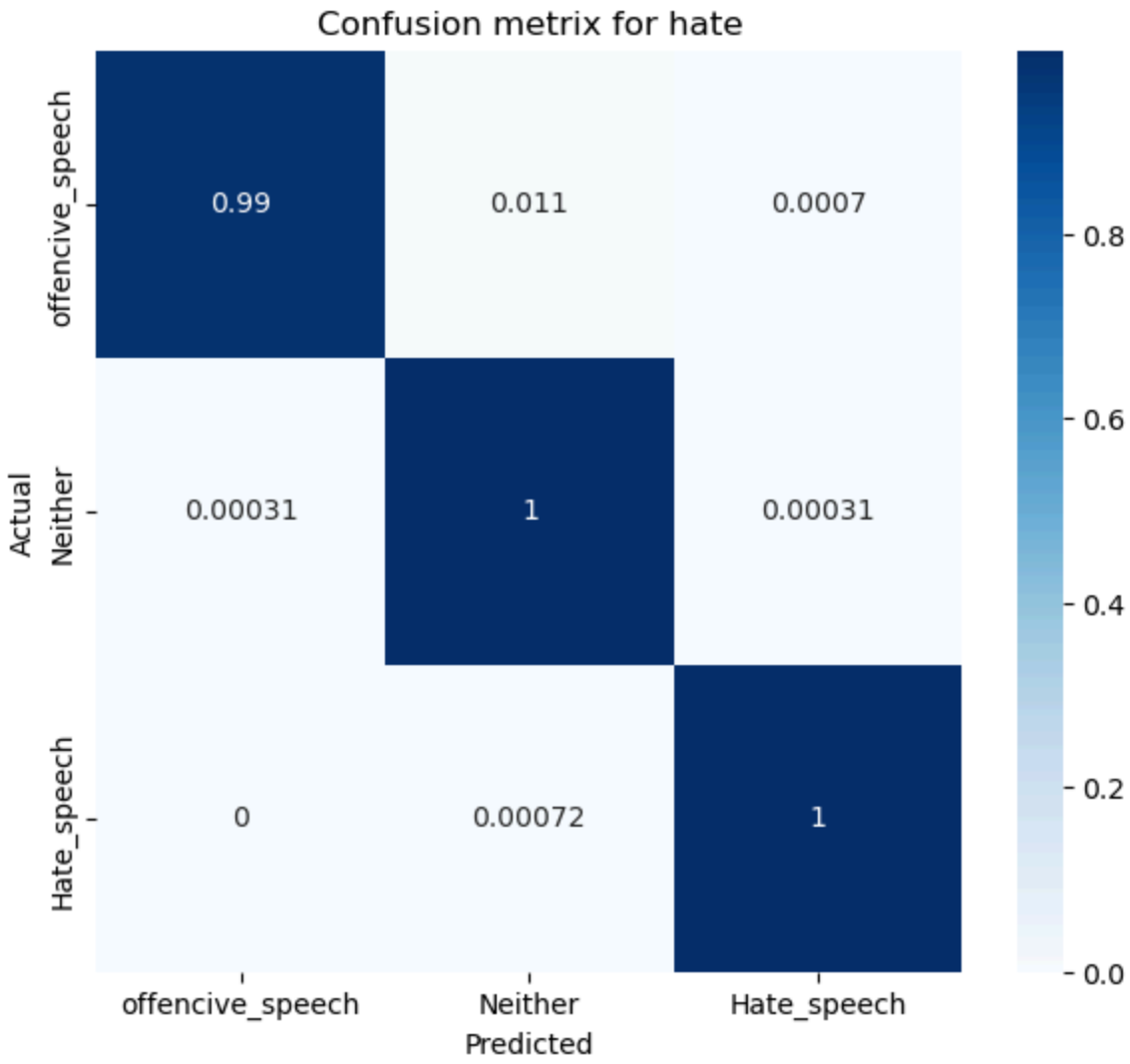
In [190…
```
 def plot_cm(true,pred,title,labels):
     cf = confusion_matrix(true, pred, normalize='true')
     plt.figure(figsize=(7,6))
     sns.heatmap(cf, annot=True, cmap='Blues', xticklabels=labels, yticklabels=labe
     plt.title(title)
     plt.ylabel('Actual')
     plt.xlabel('Predicted')

emotion_label_text = ['sadness','joy', 'love','anger','fear','surprise']
violence_label_text = ['sexual_violence','physical_violence','emotion_violence','Ha
hate_label_text = ['offencive_speech','Neither','Hate_speech']
```

In [192…
```
plot_cm(emotion_labels,emotions_preds,"Confusion metrix for emotions",emotion_label
plot_cm(violence_labels,violence_preds,"Confusion metrix for violence",violence_lab
plot_cm(hate_labels,hate_preds,"Confusion metrix for hate",hate_label_text)
```


Confusion metrix for emotions
sadness
joy
love
anger
fear
surprise
Actual
0.99 0.0005 0 0.0035 0.0015 0.0005
0 0.99 0.012 0 0 0.001
0 0.0005 1 0 0 0
0.0005 0 0 1 0.002 0
0 0 0 0.0025 0.99 0.012
0 0 0 0 0.009 0.99
sadness
joy
love
anger
fear
surprise
Predicted
0.8
0.6
0.4
0.2
0.0


Confusion metrix for violence
sexual_violence
physical_violence
emotion_violence
Harmgul_traditional_practices
economic_violences
Actual
Predicted
1 0 0 0 0
0 1 0 0 0
0 0 1 0 0
0 0 0 1 0
0 0 0 0 1
1.0
0.8
0.6
0.4
0.2
0.0



8. Manual Testing

In [194…

```
def classify_text(input_text):
    #pre processing
    input_text_cleaned = removeStop(input_text)
    input_tokenized = tokenizer.texts_to_sequences(input_text_cleaned)
    input_padded = pad_sequences(input_tokenized,maxlen=max_padding,padding='post')

    #Prediction
    input_prediction = model.predict({
    'emotion_input':input_padded,
    'violence_input':input_padded,
    'hate_input':input_padded,
        },)

    emotions_preds = np.argmax(input_prediction[0], axis=1)[0]
    violence_preds = np.argmax(input_prediction[1], axis=1)[0]
    hate_preds = np.argmax(input_prediction[2], axis=1)[0]

    #determine major label
```

```
    major_labels = ['Emotion','Violence','Hate']
    major_label_index = np.argmax([np.max(input_prediction[0]),np.max(input_predict
    major_labels_pred = major_labels[major_label_index]

    #determine sub- labels

    emotion_label_text = ['sadness','joy', 'love','anger','fear','surprise']
    violence_label_text = ['sexual_violence','physical_violence','emotion_violence'
    hate_label_text = ['offencive_speech','Neither','Hate_speech']

    if major_labels_pred == 'Emotion':
        sub_label = emotion_label_text[emotions_preds]

    elif major_labels_pred == 'Violence':
        sub_label = violence_label_text[violence_preds]
    else:
        sub_label = hate_label_text[hate_preds]

    return major_labels_pred, sub_label
```

In [197…

```
classify_text("I am Happy")
```

```
1/1 ━━━━━━━━━━━━━━━━━━━━ 0s 94ms/step
```

Out[197…

```
('Hate', 'Neither')
```

In [ ]: