In [1]:

```python
# Load the Drive helper and mount
from google.colab import drive
drive.mount('/content/drive')
```

```
Go to this URL in a browser: https://accounts.google.com/o/oauth2/auth?
client_id=947318989803-6bn6qk8qdgf4n4g3pfee6491hc0brc4i.apps.googleuser
content.com&redirect_uri=urn%3Aietf%3Awg%3Aoauth%3A2.0%3Aoob&scope=emai
l%20https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fdocs.test%20https%3A%2F%2
Fwww.googleapis.com%2Fauth%2Fdrive%20https%3A%2F%2Fwww.googleapis.com%2
Fauth%2Fdrive.photos.readonly%20https%3A%2F%2Fwww.googleapis.com%2Faut
h%2Fpeopleapi.readonly&response_type=code

Enter your authorization code:
··········
Mounted at /content/drive
```

In [2]:

```
cd drive/My Drive
```

```
/content/drive/My Drive
```

In [3]:

```python
import sqlite3
import pandas as pd

con = sqlite3.connect('final.sqlite')
final = pd.read_sql_query(""" SELECT * FROM Reviews WHERE Score != 3
 """, con)
final.head()
```

Out[3]:

	index	Id	ProductId	UserId	ProfileName	HelpfulnessNumerator	Helpfuln

	index	Id	ProductId	UserId	ProfileName	HelpfulnessNumerator	Helpfuln
0	138706	150524	0006641040	ACITT7DI6IDDL	shari zychinski	0	
1	138688	150506	0006641040	A2IW4PEEKO2R0U	Tracy	1	
2	138689	150507	0006641040	A1S4A3IQ2MU7V4	sally sue "sally sue"	1	
3	138690	150508	0006641040	AZGXZ2UUK6X	Catherine Hallberg " (Kate)"	1	
4	138691	150509	0006641040	A3CMRKGE0P909G	Teresa	3	

In [4]:

```
final.shape
```

Out[4]:
```
(364171, 12)
```

In [5]:
```
import datetime as dt

# Drop index column
reviews_df = final.drop(columns=['index'])
reviews_df['Time'] = reviews_df[['Time']].applymap(lambda x: dt.datetime.fromtimestamp(x))


reviews_df=reviews_df.sample(50000)

# Sort the data on the basis of time.
reviews_df = reviews_df.sort_values(by=['Time'])
cleaned_text = reviews_df['CleanedText'].values

print("Dataset Shape : \n",cleaned_text.shape)
```

```
Dataset Shape :
 (50000,)
```

In [6]:
```
from collections import Counter
from itertools import islice

all_words=[]
for sentence in cleaned_text:
    words = sentence.split()
    all_words += words

print("Shape of the data : ",cleaned_text.shape)
print("Number of sentences present in complete dataset : ",len(all_words))

counts = Counter(all_words)
print("Number of unique words present in whole corpus: ",len(counts.most_common()))
vocab_size = len(counts.most_common()) + 1
top_words_count = 5000
sorted_words = counts.most_common(top_words_count)
```

```
word_index_lookup = dict()
i = 1
for word,frequency in sorted_words:
    word_index_lookup[word] = i
    i += 1

print()
print("Top 25 words with their frequencies:")
print(counts.most_common(25))
print()
print("Top 25 words with their index:")
print(list(islice(word_index_lookup.items(), 25)))
```

```
Shape of the data :  (50000,)
Number of sentences present in complete dataset :  1915849
Number of unique words present in whole corpus:  27416

Top 25 words with their frequencies:
[('like', 23669), ('tast', 22761), ('good', 17492), ('flavor', 17475),
('use', 16398), ('product', 16372), ('one', 16076), ('love', 15895),
('great', 15236), ('tri', 14402), ('tea', 13145), ('coffe', 13062), ('g
et', 11766), ('make', 11720), ('food', 10639), ('would', 10046), ('bu
y', 9378), ('time', 8872), ('realli', 8647), ('eat', 8432), ('order', 8
188), ('amazon', 8085), ('dont', 8041), ('much', 7858), ('price', 764
1)]

Top 25 words with their index:
[('like', 1), ('tast', 2), ('good', 3), ('flavor', 4), ('use', 5), ('pr
oduct', 6), ('one', 7), ('love', 8), ('great', 9), ('tri', 10), ('tea',
11), ('coffe', 12), ('get', 13), ('make', 14), ('food', 15), ('would',
16), ('buy', 17), ('time', 18), ('realli', 19), ('eat', 20), ('order',
21), ('amazon', 22), ('dont', 23), ('much', 24), ('price', 25)]
```

In [7]:

```
def apply_text_index(row):
    holder = []
    for word in row['CleanedText'].split():
        if word in word_index_lookup:
            holder.append(word_index_lookup[word])
        else:
            holder.append(0)
    return holder


reviews_df['CleanedText_Index'] = reviews_df.apply(lambda row: apply_te
xt_index(row),axis=1)
reviews_df.head(5)
```

Out[7]:

	Id	ProductId	UserId	ProfileName	HelpfulnessNumerator	HelpfulnessDe
242	1244	B00002Z754	A3B8RCEI0FXFI6	B G Chase	10	
837	149770	B00004S1C5	A1KXONFPU2XQ5K	Stephanie Manley	8	
868	149789	B00004S1C6	A1KXONFPU2XQ5K	Stephanie Manley	26	
296	374408	B00004CI84	A1GB1Q193DNFGR	Bruce Lee Pullen	5	
1113	149697	B00006L2ZT	A2RSOEBCK1K70S	G. Preston	19	

In [0]:

```
from sklearn.model_selection import train_test_split

x_train, x_test, y_train, y_test = train_test_split(reviews_df['Cleaned
Text_Index'].values,
                                                            reviews_df[
'Score'],
                                                            test_size=
0.3,
                                                            shuffle=Fal
se,
                                                            random_stat
e=0)
```

In [9]:

```
print("Total number words present in first review:\n",len(x_train[1]))
print()
print("List of word indexes present in first review:\n", x_train[1])
print()
```

```
Total number words present in first review:
 23

List of word indexes present in first review:
 [24, 660, 5, 0, 369, 290, 290, 2816, 4182, 1061, 1, 290, 668, 5, 14, 7
47, 715, 26, 46, 309, 335, 1777, 433]
```

In [10]:

```
from keras.models import Sequential
from keras.preprocessing import sequence

max_review_length = 500
x_train = sequence.pad_sequences(x_train, maxlen=max_review_length)
x_test = sequence.pad_sequences(x_test, maxlen=max_review_length)

print("Total number words present in first review after padding:\n",len
(x_train[1]))
print()
print("List of word indexes present in first review padding:\n", x_trai
n[1])
print()
```

```
Using TensorFlow backend.
```

```
Total number words present in first review after padding:
 500

List of word indexes present in first review padding:
 [   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    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    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    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    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    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    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    0    0    0    0    0    0    0
    0    0    0    0    0    0    0    0    0    0    0    0    0    0
    0   24  660    5    0  369  290  290 2816 4182 1061    1  290  668
    5   14  747  715   26   46  309  335 1777  433]
```

In [0]:

```
# this function is used draw Binary Crossentropy Loss VS No. of epochs plot
%matplotlib inline
import matplotlib.pyplot as plt
import numpy as np
import time
from keras.regularizers import L1L2


# Bias regularizer value - we will use elasticnet
reg = L1L2(0.01, 0.01)


def plt_dynamic(x, vy, ty):
  plt.figure(figsize=(10,5))
  plt.plot(x, vy, 'b', label="Validation Loss")
  plt.plot(x, ty, 'r', label="Train Loss")
  plt.xlabel('Epochs')
  plt.ylabel('Binary Crossentropy Loss')
  plt.title('\nBinary Crossentropy Loss VS Epochs')
  plt.legend()
  plt.grid()
  plt.show()
```

M1:1LSTM-LAYER

In [12]:

```
from keras.models import Sequential
from keras.layers import Dense
from keras.layers import LSTM
from keras.layers.embeddings import Embedding
from keras.preprocessing import sequence
from keras.initializers import he_normal
from keras.layers import BatchNormalization,Dropout


embedding_vecor_length = 32

model1 = Sequential()
model1.add(Embedding(vocab_size, embedding_vecor_length, input_length=m
ax_review_length))
model1.add(BatchNormalization())
model1.add(Dropout(0.2))
model1.add(LSTM(100))
model1.add(Dropout(0.2))
model1.add(Dense(1, activation='sigmoid'))

print(model1.summary())

model1.compile(loss='binary_crossentropy', optimizer='adam', metrics=[
'accuracy'])
history1 = model1.fit(x_train, y_train, nb_epoch=9, batch_size=512 ,ver
bose=1,validation_data=(x_test, y_test))
```

```
WARNING:tensorflow:From /usr/local/lib/python3.6/dist-packages/tensorfl
ow/python/framework/op_def_library.py:263: colocate_with (from tensorfl
ow.python.framework.ops) is deprecated and will be removed in a future
version.
Instructions for updating:
Colocations handled automatically by placer.
WARNING:tensorflow:From /usr/local/lib/python3.6/dist-packages/keras/ba
ckend/tensorflow_backend.py:3445: calling dropout (from tensorflow.pyth
on.ops.nn_ops) with keep_prob is deprecated and will be removed in a fu
ture version.
Instructions for updating:
Please use `rate` instead of `keep_prob`. Rate should be set to `rate =
1 - keep_prob`.

_________________________________________________________________
Layer (type)                 Output Shape              Param #   
=================================================================
embedding_1 (Embedding)      (None, 500, 32)           877344    
```

```
_________________________________________________________________
batch_normalization_1 (Batch (None, 500, 32)           128
_________________________________________________________________
dropout_1 (Dropout)          (None, 500, 32)           0
_________________________________________________________________
lstm_1 (LSTM)                (None, 100)               53200
_________________________________________________________________
dropout_2 (Dropout)          (None, 100)               0
_________________________________________________________________
dense_1 (Dense)              (None, 1)                 101
=================================================================
Total params: 930,773
Trainable params: 930,709
Non-trainable params: 64
_________________________________________________________________
None
WARNING:tensorflow:From /usr/local/lib/python3.6/dist-packages/tensorfl
ow/python/ops/math_ops.py:3066: to_int32 (from tensorflow.python.ops.ma
th_ops) is deprecated and will be removed in a future version.
Instructions for updating:
Use tf.cast instead.
```

```
/usr/local/lib/python3.6/dist-packages/ipykernel_launcher.py:23: UserWa
rning: The `nb_epoch` argument in `fit` has been renamed `epochs`.
```

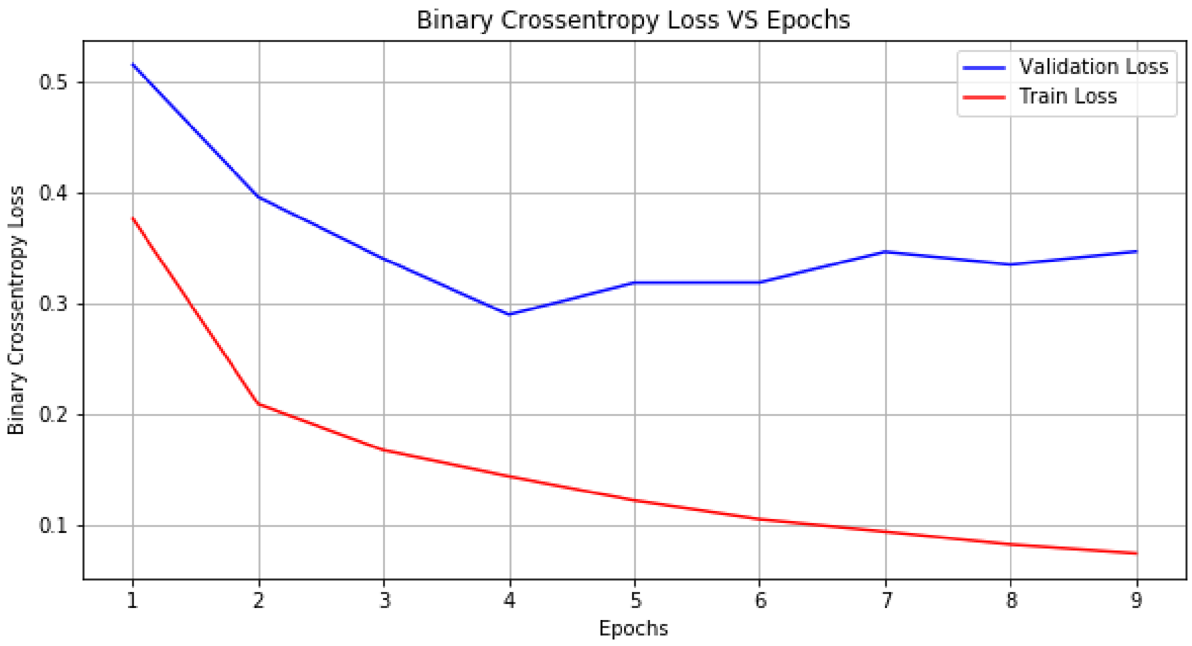
```
Train on 35000 samples, validate on 15000 samples
Epoch 1/9
35000/35000 [==============================] - 59s 2ms/step - loss: 0.3
758 - acc: 0.8579 - val_loss: 0.5147 - val_acc: 0.8357
Epoch 2/9
35000/35000 [==============================] - 55s 2ms/step - loss: 0.2
085 - acc: 0.9159 - val_loss: 0.3953 - val_acc: 0.8717
Epoch 3/9
35000/35000 [==============================] - 56s 2ms/step - loss: 0.1
670 - acc: 0.9347 - val_loss: 0.3396 - val_acc: 0.8909
Epoch 4/9
35000/35000 [==============================] - 56s 2ms/step - loss: 0.1
435 - acc: 0.9447 - val_loss: 0.2892 - val_acc: 0.9037
Epoch 5/9
35000/35000 [==============================] - 54s 2ms/step - loss: 0.1
```

```
217 - acc: 0.9538 - val_loss: 0.3180 - val_acc: 0.9035
Epoch 6/9
35000/35000 [==============================] - 55s 2ms/step - loss: 0.1
048 - acc: 0.9615 - val_loss: 0.3182 - val_acc: 0.9038
Epoch 7/9
35000/35000 [==============================] - 55s 2ms/step - loss: 0.0
936 - acc: 0.9653 - val_loss: 0.3460 - val_acc: 0.9027
Epoch 8/9
35000/35000 [==============================] - 54s 2ms/step - loss: 0.0
820 - acc: 0.9697 - val_loss: 0.3343 - val_acc: 0.9009
Epoch 9/9
35000/35000 [==============================] - 56s 2ms/step - loss: 0.0
739 - acc: 0.9728 - val_loss: 0.3463 - val_acc: 0.8917
```

In [17]:

```
# Final evaluation of the model
scores = model1.evaluate(x_test, y_test, verbose=0)
print("Accuracy: %.2f%%" % (scores[1]*100))

# Test and train accuracy of the model
model1test = scores[1]
model1train = max(history1.history['acc'])

# Plotting Train and Test Loss VS no. of epochs
# list of epoch numbers
x = list(range(1,10))

# Validation loss
vy = history1.history['val_loss']
# Training loss
ty = history1.history['loss']

# Calling the function to draw the plot
plt_dynamic(x, vy, ty)
```

```
Accuracy: 89.17%
```



M2: 2LSTM-LAYERS

In [18]:

```
model2 = Sequential()
model2.add(Embedding(vocab_size, embedding_vecor_length, input_length=max_review_length))
model2.add(LSTM(100,return_sequences=True, dropout=0.4, recurrent_dropout=0.4))
model2.add(LSTM(100, dropout=0.4, recurrent_dropout=0.4))
model2.add(Dense(1, activation='sigmoid'))

print(model2.summary())

model2.compile(loss='binary_crossentropy', optimizer='adam', metrics=['accuracy'])
```

```
history2 = model2.fit(x_train, y_train, nb_epoch=10, batch_size=512 ,ve
rbose=1,validation_data=(x_test, y_test))
```

```
_________________________________________________________________
Layer (type)                 Output Shape              Param #   
=================================================================
embedding_2 (Embedding)      (None, 500, 32)           877344    
_________________________________________________________________
lstm_2 (LSTM)                (None, 500, 100)          53200     
_________________________________________________________________
lstm_3 (LSTM)                (None, 100)               80400     
_________________________________________________________________
dense_2 (Dense)              (None, 1)                 101       
=================================================================
Total params: 1,011,045
Trainable params: 1,011,045
Non-trainable params: 0
_________________________________________________________________
None
```

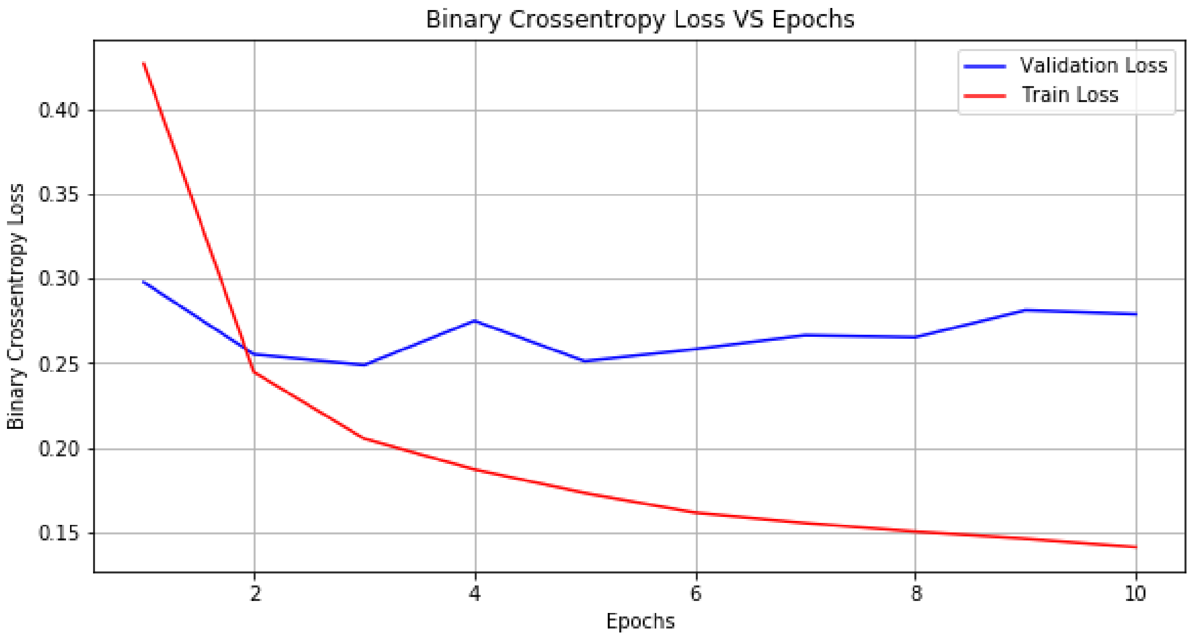
```
/usr/local/lib/python3.6/dist-packages/ipykernel_launcher.py:10: UserWa
rning: The `nb_epoch` argument in `fit` has been renamed `epochs`.
  # Remove the CWD from sys.path while we load stuff.
```

```
Train on 35000 samples, validate on 15000 samples
Epoch 1/10
35000/35000 [==============================] - 126s 4ms/step - loss: 0.
4270 - acc: 0.8465 - val_loss: 0.2978 - val_acc: 0.8731
Epoch 2/10
35000/35000 [==============================] - 124s 4ms/step - loss: 0.
2445 - acc: 0.9024 - val_loss: 0.2552 - val_acc: 0.8949
Epoch 3/10
35000/35000 [==============================] - 123s 4ms/step - loss: 0.
2053 - acc: 0.9213 - val_loss: 0.2489 - val_acc: 0.9017
Epoch 4/10
35000/35000 [==============================] - 123s 4ms/step - loss: 0.
1871 - acc: 0.9289 - val_loss: 0.2749 - val_acc: 0.9033
Epoch 5/10
35000/35000 [==============================] - 122s 3ms/step - loss: 0.
1732 - acc: 0.9345 - val_loss: 0.2511 - val_acc: 0.9050
Epoch 6/10
Epoch 6/10
35000/35000 [==============================] - 124s 4ms/step - loss: 0.
1616 - acc: 0.9413 - val_loss: 0.2582 - val_acc: 0.9040
Epoch 7/10
35000/35000 [==============================] - 121s 3ms/step - loss: 0.
1555 - acc: 0.9412 - val_loss: 0.2664 - val_acc: 0.9060
Epoch 8/10
35000/35000 [==============================] - 123s 4ms/step - loss: 0.
1504 - acc: 0.9447 - val_loss: 0.2653 - val_acc: 0.9025
Epoch 9/10
35000/35000 [==============================] - 122s 3ms/step - loss: 0.
1462 - acc: 0.9469 - val_loss: 0.2811 - val_acc: 0.9025
Epoch 10/10
35000/35000 [==============================] - 123s 4ms/step - loss: 0.
1413 - acc: 0.9481 - val_loss: 0.2789 - val_acc: 0.9012
```

In [19]:

```python
# Final evaluation of the model
scores = model2.evaluate(x_test, y_test, verbose=0)
print("Accuracy: %.2f%%" % (scores[1]*100))

# Test and train accuracy of the model
model2test = scores[1]
model2train = max(history2.history['acc'])

# Plotting Train and Test Loss VS no. of epochs
# list of epoch numbers
x = list(range(1,11))

# Validation loss
vy = history2.history['val_loss']
# Training loss
ty = history2.history['loss']

# Calling the function to draw the plot
plt_dynamic(x, vy, ty)
```

```
Accuracy: 90.12%
```



M3: 5LSTM-LAYERS

In [20]:

```
from keras.models import Sequential
from keras.layers import Dense
from keras.layers import LSTM
from keras.layers.embeddings import Embedding
from keras.preprocessing import sequence
from keras.initializers import he_normal
from keras.layers import BatchNormalization,Dropout






embedding_vecor_length = 32
```

```
model3 = Sequential()
model3.add(Embedding(vocab_size, embedding_vecor_length, input_length=m
ax_review_length))
model3.add(BatchNormalization())
model3.add(Dropout(0.20))
model3.add(LSTM(100,return_sequences=True,bias_regularizer=reg))
model3.add(Dropout(0.20))
model3.add(LSTM(80,return_sequences=True,bias_regularizer=reg))
model3.add(Dropout(0.20))
model3.add(LSTM(60,return_sequences=True,bias_regularizer=reg))
model3.add(Dropout(0.30))
model3.add(LSTM(40,return_sequences=True,bias_regularizer=reg))
model3.add(BatchNormalization())
model3.add(Dropout(0.40))
model3.add(LSTM(20))
model3.add(Dropout(0.50))
model3.add(Dense(1, activation='sigmoid'))

print("Model Summary: \n")
model3.summary()
print()
print()


model3.compile(loss='binary_crossentropy', optimizer='adam', metrics=[
'accuracy'])


history3 = model3.fit(x_train, y_train, batch_size = 512, epochs = 7, v
erbose=1, validation_data=(x_test, y_test))
```

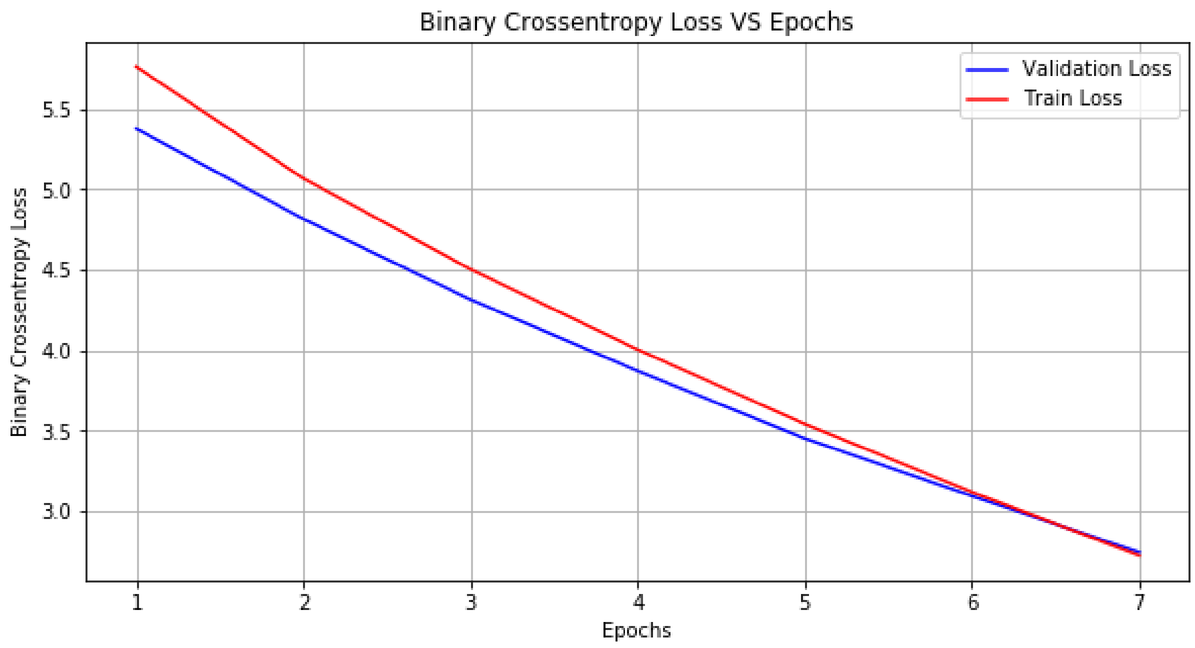
```
Model Summary:


_________________________________________________________________
Layer (type)                 Output Shape              Param #   
=================================================================
embedding_3 (Embedding)      (None, 500, 32)           877344    
_________________________________________________________________
batch_normalization_2 (Batch (None, 500, 32)           128       
_________________________________________________________________
dropout_3 (Dropout)          (None, 500, 32)           0
_________________________________________________________________
lstm_4 (LSTM)                (None, 500, 100)          53200
_________________________________________________________________
dropout_4 (Dropout)          (None, 500, 100)          0
_________________________________________________________________
lstm_5 (LSTM)                (None, 500, 80)           57920
_________________________________________________________________
dropout_5 (Dropout)          (None, 500, 80)           0
_________________________________________________________________
lstm_6 (LSTM)                (None, 500, 60)           33840
_________________________________________________________________
dropout_6 (Dropout)          (None, 500, 60)           0
_________________________________________________________________
lstm_7 (LSTM)                (None, 500, 40)           16160
_________________________________________________________________
batch_normalization_3 (Batch (None, 500, 40)           160
_________________________________________________________________
dropout_7 (Dropout)          (None, 500, 40)           0
_________________________________________________________________
lstm_8 (LSTM)                (None, 20)                4880
_________________________________________________________________
dropout_8 (Dropout)          (None, 20)                0
_________________________________________________________________
dense_3 (Dense)              (None, 1)                 21
=================================================================
Total params: 1,043,653
Trainable params: 1,043,509
Non-trainable params: 144

_________________________________________________________________


Train on 35000 samples, validate on 15000 samples
Epoch 1/7
35000/35000 [==============================] - 270s 8ms/step - loss: 5.
7623 - acc: 0.8400 - val_loss: 5.3775 - val_acc: 0.8585
Epoch 2/7
35000/35000 [==============================] - 265s 8ms/step - loss: 5.
```

```
0687 - acc: 0.8877 - val_loss: 4.8164 - val_acc: 0.8867
Epoch 3/7
35000/35000 [==============================] - 264s 8ms/step - loss: 4.
5043 - acc: 0.9156 - val_loss: 4.3156 - val_acc: 0.8970
Epoch 4/7
35000/35000 [==============================] - 263s 8ms/step - loss: 4.
0049 - acc: 0.9294 - val_loss: 3.8724 - val_acc: 0.8984
Epoch 5/7
35000/35000 [==============================] - 266s 8ms/step - loss: 3.
5427 - acc: 0.9397 - val_loss: 3.4530 - val_acc: 0.9009
Epoch 6/7
35000/35000 [==============================] - 262s 7ms/step - loss: 3.
1200 - acc: 0.9478 - val_loss: 3.0959 - val_acc: 0.8959
Epoch 7/7
35000/35000 [==============================] - 263s 8ms/step - loss: 2.
7257 - acc: 0.9565 - val_loss: 2.7458 - val_acc: 0.8998
```

In [22]:

```
# Final evaluation of the model
scores = model3.evaluate(x_test, y_test, verbose=0)
print("Accuracy: %.2f%%" % (scores[1]*100))

# Test and train accuracy of the model
model3test = scores[1]
model3train = max(history3.history['acc'])

# Plotting Train and Test Loss VS no. of epochs
# list of epoch numbers
x = list(range(1,8))

# Validation loss
vy = history3.history['val_loss']
# Training loss
ty = history3.history['loss']

# Calling the function to draw the plot
plt_dynamic(x, vy, ty)
```

```
Accuracy: 89.98%
```



In [23]:

```
# Creating table using PrettyTable library
from prettytable import PrettyTable

# Names of models
names = ['RNN With 1 LSTM Layer','RNN With 2 LSTM Layers','RNN With 5 LSTM Layers']

# Training accuracies
train_acc = [model1train,model2train,model3train]

# Test accuracies
test_acc = [model1test,model2test,model3test]

numbering = [1,2,3]

# Initializing prettytable
ptable = PrettyTable()
```

```python
# Adding columns
ptable.add_column("S.NO.",numbering)
ptable.add_column("MODEL",names)
ptable.add_column("Training Accuracy",train_acc)
ptable.add_column("Test Accuracy",test_acc)

# Printing the Table
print(ptable)
```

```
+-------+------------------------+--------------------+----------------
----+
| S.NO. |         MODEL          | Training Accuracy  |   Test Accuracy
    |
+-------+------------------------+--------------------+----------------
----+
|   1   | RNN With 1 LSTM Layer  | 0.9727714285986764 | 0.8916666666348
775 |
|   2   | RNN With 2 LSTM Layers | 0.9481142856052943 | 0.9012000000317
891 |
|   3   | RNN With 5 LSTM Layers |  0.95648571434021  | 0.8997999999682
108 |
+-------+------------------------+--------------------+----------------
----+
```