# Assignment -4

SMS SPAM Classification

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| Assignment Date | 22 October 2022 |
| Student Name | RAGHAVI.S |
| Student Roll Number | 211419106210 |
| Maximum Marks | 2 Marks |

# Question-1:

Download the dataset

# Question-2:

Import required library

# Solution

import nltk

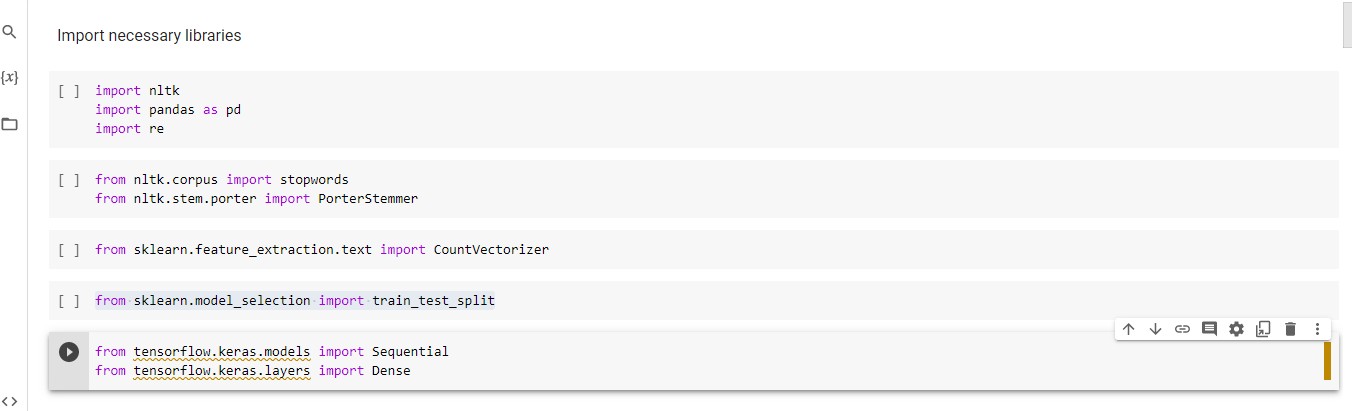
import pandas as pd import re

from nltk.corpus import stopwords

from nltk.stem.porter import PorterStemmer

from sklearn.feature\_extraction.text import CountVectorizer from sklearn.model\_selection import train\_test\_split

from tensorflow.keras.models import Sequential from tensorflow.keras.layers import Dense



# Question-3:

Read dataset and do pre-processing

# Solution

data=pd.read\_csv('/content/drive/MyDrive/assignment 4/spam.csv',encoding='latin')

nltk.download('stopwords') ps=PorterStemmer() input=[]

for i in range(0,5572):

review=data['v2'][i] review=re.sub('[^a-zA-Z]',' ',review) review=review.lower() review=review.split()

review=[ps.stem(word) for word in review if not word in set(stopwords.words('english'))] review=' '.join(review)

input.append(review) cv=CountVectorizer(max\_features=7000) x=cv.fit\_transform(input).toarray() y=data['v1'].values

x\_train,x\_test,y\_train,y\_test= train\_test\_split(x,y,test\_size=0.2)





# Question-4:

Create Model

# Solution

model=Sequential()

# Question-5:

Add Layers (LSTM, Dense-(Hidden Layers), Output) **Solution** model.add(Dense(units=6221,activation='relu')) model.add(Dense(units=7000,activation='relu')) model.add(Dense(units=1,activation='sigmoid'))

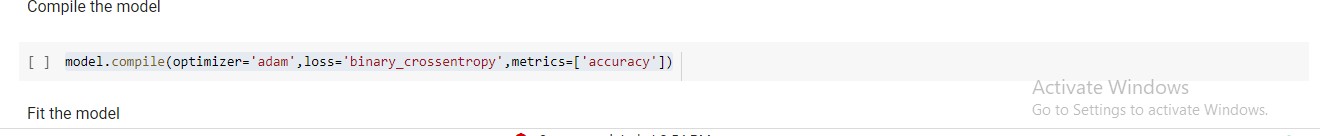


# Question-6:

Compile The Model

# Solution

model.compile(optimizer='adam',loss='binary\_crossentropy',metrics=['accuracy'])

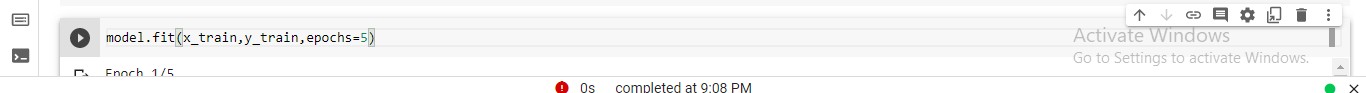


# Question-7:

Fit The Model

# Solution

model.fit(x\_train,y\_train,epochs=5)



# Question-7:

Save The Model

# Solution

model.save("Flowers.h5")

