This assignment is mainly about presenting your work nicely.  You’re encouraged to delve into using HTML/CSS to customize the website to your heart’s content. This project is to help you start thinking about producing a portfolio that you can use when your job seeking to showcase your knowledge of using data structures and fluency with programming, as well as project organization. You can challenge yourself to use it as a platform for showcasing your creativity as well, the sky's the limit.

**Introduction**

Welcome Page

**Data structure used**

The data is read from a file on the hard drive and saved into a dictionary data structure in python

**Design code**

Matplotlib and numpy libraries are used to plot the data from the dictionary referred to above

**The code**

"""

CISC 3130

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"""

#import support libraries

import matplotlib.pyplot as plot, base64

from io import BytesIO

import numpy as numpy

def fileToDict(file):

fileOpen = open(file, "r" )

if fileOpen.mode == "r":

lyrics = fileOpen.read() #open the lyrics file

wordList = lyrics.replace(",", " ") #strip commas from the lyrics

wordList = wordList.split() #split the string into individual words

wrdFrq = [] #This will hold the frequency of occurence

for i in wordList:

wrdFrq.append(wordList.count(i)) #populate the frequency list

wordDict = dict(list(zip(wordList, wrdFrq))) #combine wordList and wrdFrq to create dictionary

return wordDict

#function below plots a bargraph

def getBarGraph(data):

plot.bar(range(len(data)), data.values(), align = 'center', linewidth=100)

plot.xticks(range(len(data)), list(data.keys()), rotation=90, fontsize = 4)

barTmpFile = BytesIO()

barGraph = plot.savefig(barTmpFile, format='png', bbox = 'tight', dpi=200)

barTmpFile.seek(0)

plot.close()

return barTmpFile

#The code below is a function to to plot donut chart, it takes as input a dictionary of the words(and frequency) and plots the chart

#The code below is sort of our main method

def main():

print("Hello Sit tight while I do the magic\n")

skylarWords = fileToDict('skylargreywords.txt') #lyrics to dictionary

barTmpFile = getBarGraph(skylarWords)

barPNGEnc = base64.b64encode(barTmpFile.getvalue()) #encoding the byte64 files

#code below is our html file

htmlBar = '<!Doctype html><html><head></head><link rel="stylesheet" type="text/css" href="https://stackpath.bootstrapcdn.com/bootstrap/4.4.1/css/bootstrap.min.css" /><body><h1 class="text-center">Bar graph of Skylar Grey: Words lyrics</h1>' + '<img src="data:image/png;base64,{}" class="text-center">'.format(barPNGEnc.decode('utf-8')) + '</body></html>'

with open('wordFrequencyBar.html','w') as htmlFile:

htmlFile.write(htmlBar)

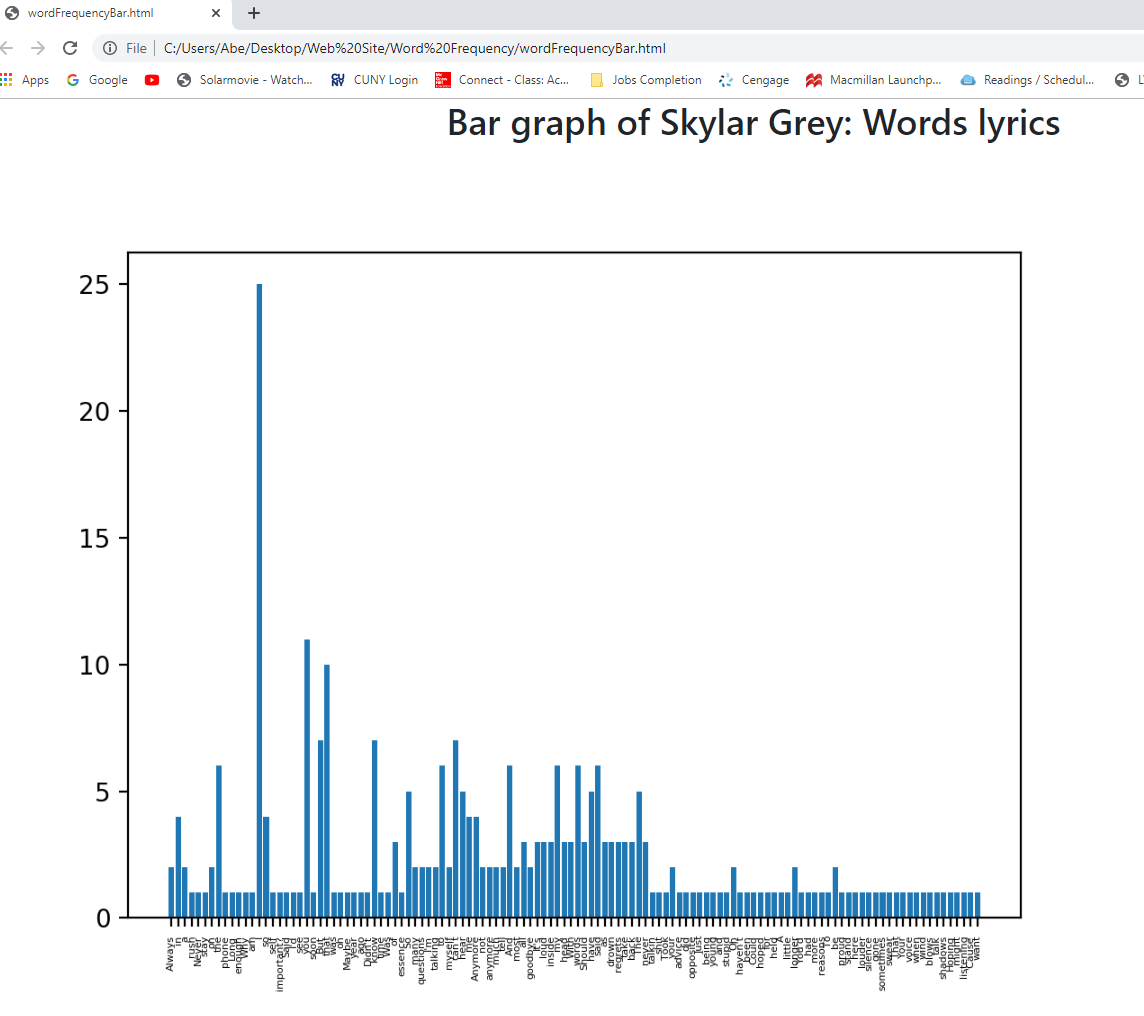
print("Done, check the file 'wordFrequencyBar.html' in the current directory\n")

#The code below fires up the program

if \_\_name\_\_ == '\_\_main\_\_':

main()

**OUTPUT**

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