1. Problem Definition Find your favorite poem or song and put it into a single string
2. Problem Analysis: Using regex methods and shorthand codes for character classes write 10 expressions to find characters, words, and phrases from your text
3. Program Algorithm:

* Menu that shows a command board
* While loop that continues to cycle for commands.
  + Lyric counter
  + Alphabet checker
  + Word checker
  + Space counter
  + Lyric Changer
  + Exit

1. Program Code and Test:

# Author == 'Darren Isaacson'

# This program is designed to show my ability of ReGex when finding song lyrics

def main():

startupMessage() # Startup message for the menu

try:

while True:

print("Enter in your command here")

command = input("Command:") # Command center

command = command.lower() # Convert everything to lowercase

mysong = ('''Gotta be the one to bite the bullet

I’m a sinner, but I bet I could've been a better man

I wanna be Zen, but I go sippin' on some medicine

Instead of meditating, but I get it when I can

I don’t wanna wind up in the gutter with a bottle of malt

Liquor, bitter ‘cause I never got a call

Telling me that it’s all figured out

I’m sick of doubt, but I’m looking at the wall

Part of me was hoping to be caught up in the moment

And be open to the good and the God in me''')

if command == "findall": # Finds all alphabetical letters

findallWord(mysong)

elif command == 'findalpha': # Finds all case sensitive letters

findallAlpha(mysong)

elif command == "lyric": # Shows user lyrics

print("Your lyrics are: \n-------------------------------\n" + mysong)

elif command == 'change': # Changes some lyrics. Not permanent.

changeLyrics(mysong)

elif command == 'vowel': # Counts all vowels

vowelCheck(mysong)

elif command == 'novowel': # Counts all characters that are not vowels

letterCheck(mysong)

elif command == 'threeormore': # Shows all words based off their letter count

threeormore(mysong)

elif command == 'space': # Counts all the spaces

spaceChecker(mysong)

elif command == "exit": # Closes program

print("Thanks for using the program")

break

else:

print("This command isn't valid. Please enter a available command.\n")

except:

print("There was a bug somewhere.")

def startupMessage():

print("Welcome to the lyric discover program.")

print("These are your available commands.")

print("--------------------------------------------------")

print()

print("findall - Extract's words and letters from the lyrics and counts them. ")

print("findalpha - Exactly like the findall command but is case sensitive")

print("lyric - Shows the user the lyrics")

print("vowel - This calculates all the vowels in the song lyrics.")

print("novowel - This calculates all the letters that aren't vowels in the song lyrics.")

print("threeormore - This allows you to check all the words")

print("spaces - Counts the spaces written in the lyrics")

print("exit - Closes program.")

print()

def findallWord(song):

import re

whatLyric = input("What lyrics are you looking for?") # Gathers users input

search = re.compile(r''+whatLyric, re.I) # Set variables to compiler output. Compiler ignores case sensitivity.

words = search.findall(song) # Set another variable to list results from search variable. Searches song lyrics.

if words == [""]:

print("There were no words with those letters")

else:

amount = 0

for num in range(len(words)): # Counts list letters.

amount = num + 1

print("The artist used %s or %s %d times." % (whatLyric, whatLyric.upper(), amount))

print("The words that were extracted from the song are: " + str(words))

def findallAlpha(song):

import re

whatLyric = input("What lyrics are you looking for?") # Gathers user input

search = re.compile(r''+whatLyric) # Set variables to compiler output. Compiler is case sensitivity.

words = search.findall(song) # Set another variable to list results from search variable. Searches song lyrics.

if words == [""]:

print("There were no words with those letters")

else:

amount = 0

for num in range(len(words)): # Counts list letters

amount = num + 1

print("The artist used %s %d times." % (whatLyric, amount))

print("The words that were extracted from the song are: " + str(words))

def changeLyrics(song):

import re

songChange = song # Put mySong into a separate variable.

print(songChange + "\n") # Shows song

whatLyric = input("What lyric would you like to change:") # Gathers specific lyric

getChange = input("What would you like to change it to:") # Gathers change

search = re.compile(r''+whatLyric) # adds lyric for change

results = search.sub(getChange,songChange) # This changes it

print("This is what your song looks like now. \n-----------------------------------------\n" + results)

def vowelCheck(song):

import re

search = re.compile(r'[aeiouAEIOU]') # Only Checks for vowels

results = search.findall(song)

amount = 0

for num in range(len(results)): # Counts

amount = num + 1

print("The artist has %d vowels." % amount)

def letterCheck(song):

import re

search = re.compile(r'[^aeiouAEIOU]') # Only checks for letters that are not vowels.

results = search.findall(song)

amount = 0

for num in range(len(results)): # Counts

amount = num + 1

print("The artist has %d letters that are not vowels." % amount)

def threeormore(song):

import re

getwordCount = int(input("How many letters in a word do you want to check?:")) # Asks for letter count.

letterCount = "\w" \* getwordCount # Depending on getwordCount, it is multiplied by \w

search = re.compile(r' '+ str(letterCount) + '\*') # \w is inserted here

results = search.findall(song) # Searches for expression

amount = 0

for num in range(len(results)): # Counts

amount = num + 1

print("The artist has %d words that have %d or more letters in their lyrics" % (amount, getwordCount))

def spaceChecker(song):

import re

search = re.compile(r'\s') # Only search's for spaces

results = search.findall(song)

amount = 0

for num in range(len(results)): # Counts spaces

amount = num + 1

print("The artist has %d spaces in their lyrics" % amount)

main()











