1MCA-B PYTHON Programming 26-07-2023(Wednesday 09-11AM)

Regular lab Questions - Q1

1. Demonstrate use of Python data structures.
   STR

(a) Write a paragraph on your identified domain. Write a python program
to find the frequency of the given word(your domain name) in the paragraph.
to compute the number of characters, words and lines in the paragraph
to arrange the letters of the given word(your domain name) in alphabetical order

(b) Write a python program to encrypt a given string(your domain name) using the following method:
Encrypt Method: Add a number 'n'(given by the user) to each alphabet in the given string to create the corresponding letter.
Example:
Input: bat
Encrypt Method:value of n = 3
Output:edw.\

2. Functions
   Implement a function pay() that takes as input two arguments: an hourly wage and the number of hours an employee worked last week. Your function should compute and return the employee's pay. Any hours worked beyond 40 is overtime and should be paid 1.5 times the regular hourly wage.

```
pay(10,35)
350
pay(10,45)
475
```

3. Tuple
   Create a list of tuples that consists of two neumatic and one string For example houses for rent, the number of bedrooms and their prices, like so:
   [('main st.', 4, 4000), ('elm st.', 1, 1200), ('pine st.', 2, 1600)]
   Sort the list in the following ways:
   In ascending order by first numeric value
   In descending order by second numeric value
   In alphabetical order of string value\

```
import time
```

Question 1 : Strings

```
lyrics="""I found a love, for me
Darling, just dive right in and follow my lead
Well, I found a girl, beautiful and sweet
Oh, I never knew you were the someone waiting for me
'Cause we were just kids when we fell in love
Not knowing what it was
I will not give you up this time
But darling, just kiss me slow
Your heart is all I own
And in your eyes, you're holding mine
Baby, I'm dancing in the dark
With you between my arms
Barefoot on the grass
Listening to our favourite song
When you said you looked a mess
I whispered underneath my breath
But you heard it
Darling, you look perfect tonight
Well, I found a woman, stronger than anyone I know
She shares my dreams, I hope that someday I'll share her home
I found a lover, to carry more than just my secrets
To carry love, to carry children of our own
We are still kids, but we're so in love
Fighting against all odds
I know we'll be alright this time
Darling, just hold my hand
Be my girl, I'll be your man
I see my future in your eyes
Baby, I'm dancing in the dark
With you between my arms
Barefoot on the grass
Listening to our favorite song
When I saw you in that dress, looking so beautiful
I don't deserve this
Darling, you look perfect tonight
Baby, I'm dancing in the dark
With you between my arms
Barefoot on the grass
Listening to our favorite song
I have faith in what I see
Now I know I have met an angel in person
And she looks perfect
I don't deserve this
You look perfect tonight"""
```

```
    def wordFreq():
        print("You selected option to check for word frequency!\n")
        print("Song selected (default): Perfect [by Ed Sheeran]\n")
        time.sleep(1)
        word=input("Enter any word to check its frequency : ")
        time.sleep(0.5)
        print(f"Keyword : {word}")
        word.lower()
        lyrics.lower()
        frequency=lyrics.count(word)
        print(f"Number of occeurrences of {word} : {frequency}")

    def numberOfCharWordsLines():
        print("You selected option list number of words,characters and lines!\n")
        print("Song selected (default): Perfect [by Ed Sheeran]\n")
        ncharacters=len(lyrics)
        nwords=len(lyrics.split())
        nlines=len(lyrics.splitlines())
        time.sleep(0.5)
        print(f"Number of characters : {ncharacters}")
        time.sleep(0.5)
        print(f"Number of words : {nwords}")
        time.sleep(0.5)
        print(f"Number of lines : {nlines}")

    def arrangeAsc():
        print("You selected option arrange lyrics in ascending order!\n")
        print("Song selected (default): Perfect [by Ed Sheeran]\n")
        words = lyrics.split()
        words.sort()
        arranged_lyrics = " ".join(words)
        time.sleep(0.5)
        print(arranged_lyrics)

    def login():
        welcome_text="WELCOME TO SPOTIFY :)"
        print("\n")
        for char in welcome_text:
            print(char,end='',flush=True)
            time.sleep(0.1)
        print()
        token=input("Enter your token id : ") #[ valid token : aryan@12345 ]
        print(f" Your token is : [ {token} ]")
        key=""
        shiftKey=token[:5]
        for i in shiftKey:
          # print(i)
          passkey=chr((ord(i.lower()) - ord('a') + 5) % 26 + ord('a'))#value increased by 5
          key+=passkey
        print(key)
        key+=token[5:]
```

```
        # print(f"key : {passkey}")
        # print(f"key : {key}")
      if(key=="fwdfs@12345"):
        print("WELCOME aRyAn !")
      else:
        print("SORRY! invalid token id ")
        # exit(0)

  def main():
      while True:
          print("\nMenu:")
          print("1. Token verification")
          print("2. Check Word Frequency")
          print("3. Find number of character, words and lines")
          print("4. Arrange the whole song in alphabetical order (a-z)")
          print("5. Exit")

          choice = input("Enter your choice (1/2/3/4/5): ")

          if choice == "1":
              login()
          elif choice == "2":
              wordFreq()
          elif choice == "3":
              numberOfCharWordsLines()
          elif choice == "4":
              arrangeAsc()
          elif choice == "5":
              time.sleep(1)
              print("Thank You..")
              for i in range(0,2):
                time.sleep(1)
                print("Bye")
              break
          else:
              print("Invalid choice! Please select a valid option i.e. -> (1/2/3/4/5).")

  if __name__ == "__main__":
      main()
```

```
 Menu:
 1. Token verification
 2. Check Word Frequency
 3. Find number of character, words and lines
 4. Arrange the whole song in alphabetical order (a-z)
 5. Exit
 Enter your choice (1/2/3/4/5): 1


 WELCOME TO SPOTIFY :)
```

```
Enter your token id : aifhuacjkadnch
 Your token is : [ aifhuacjkadnch ]
fnkmz
SORRY! invalid token id

Menu:
1. Token verification
2. Check Word Frequency
3. Find number of character, words and lines
4. Arrange the whole song in alphabetical order (a-z)
5. Exit
Enter your choice (1/2/3/4/5): 5
Thank You..
Bye
Bye
```

```
print(ord('r')-ord('b'))
```

```
16
```

```
print(ord('a'))
print(ord('a') - ord('a'))
print(ord('a') - ord('a')+5)
print((ord('a') - ord('a')+5) %26)
print((ord('a') - ord('a')+5) %26+ord('a'))
chr(102)
```

```
97
0
5
5
102
'f'
```

```
token="aryan@12345"
change= token[:5]
print(token[5:])
print(change)
key=""
for i in change:
  print(i)
  passkey=chr((ord(i.lower()) - ord('a') + 5) % 26 + ord('a'))#chr((ord(char.lower()) - ord('
  key+=passkey
  print(f"key : {passkey}")
key+=token[5:]
print(f"key : {key}")
```

```
@12345
aryan
a
```

```
key : f
r
key : w
y
key : d
a
key : f
n
key : s
key : fwdfs@12345
```

Question 2 : Functions

```
import time

def customPlan(hours,days):
  if hours<=40:
    bill=hours*days*3.99
  else:
    bill=hours*days*(1.5*3.99)
  if(hours>40):
    print("* For playtime more than 40 hours will charge 5.985")
  print(f"Your bill for {days} days : ${bill}")
def main():
    while True:
        print("\nMenu:")
        print("1. Add Spotify Plan")
        print("2. Exit")

        choice = input("Enter your choice (1/2): ")

        if choice == "1":
            print("-------------------------------------------------------------------------")
            print("| ? Custom Plan lets u choose how many hours u will use the app and billin
            print("-------------------------------------------------------------------------")
            hours=int(input("Enter number of hours you want to avail this plan : "))
            print(f"No. of hours to be used : {hours}")
            days=int(input("Enter number of days you want to avail this plan : "))
            print(f"No. of days to be used : {days}")
            customPlan(hours,days)
        # elif choice == "2":
        #     wordFreq()
        # elif choice == "3":
        #     numberOfCharWordsLines()
        # elif choice == "4":
        #     arrangeAsc()
        elif choice == "2":
            time.sleep(1)
            print("Thank You..")
            for i in range(0,2):
```

```
                time.sleep(1)
                print("Bye")
            break
        else:
            print("Invalid choice! Please select a valid option i.e. -> (1/2).")

if __name__ == "__main__":

    main()
```

```
 Menu:
 1. Add Spotify Plan
 2. Exit
 Enter your choice (1/2): 1
 ------------------------------------------------------------------------------------------
 | ? Custom Plan lets u choose how many hours u will use the app and billing happens acc
 ------------------------------------------------------------------------------------------
 Enter number of hours you want to avail this plan : 45
 No. of hours to be used : 45
 Enter number of days you want to avail this plan : 7
 No. of days to be used : 7
 Your bill for 7 days : 1885.275

 Menu:
 1. Add Spotify Plan
 2. Exit
 Enter your choice (1/2): 2
 Thank You..
 Bye
 Bye
```

Question : 3 Tuple

```
import time

listPlans = []

def addPlan(firstName,lastName,price):

  tuplePlans = ()
  print(f"Plan added for {firstName} {lastName}")
  tuplePlans=(firstName,lastName,price)
  listPlans.append(tuplePlans)

def sortAscPlan():
  time.sleep(0.5)
  print("Sorting by Plans in ascending order")
  listPlans.sort(key=lambda a:a[2])
  time.sleep(0.5)
```

```
    print("DONE!")

def sortDescPlan():
    time.sleep(0.5)
    print("Sorting by Plans in descending order")
    listPlans.sort(key=lambda a:a[2],reverse=True)
    time.sleep(0.5)
    print("DONE!")

def sortfirstName():
    time.sleep(0.5)
    print("Sorting by Names in ascending order")
    listPlans.sort(key=lambda a:a[0])
    time.sleep(0.5)
    print("DONE!")

def displayPlans():
    time.sleep(0.5)
    print("Displaying all plans : \n")
    for i in range(0,len(listPlans)):
        time.sleep(0.5)
        print(listPlans[i])

def main():
    while True:
        print("\nMenu:")
        print("1. Add Spotify Plan")
        print("2. Sort plans by plan prices (Asc)")
        print("3. Sort plans by plan prices (Desc)")
        print("4. Sort plans by Names")
        print("5. Display Saved Plans")
        print("6. Exit\n")

        choice = input("Enter your choice (1/2): ")

        if choice == "1":
            firstName=input("\nEnter your first name : ")
            print(f"Your first name : {firstName}\n")
            lastName=input("\nEnter your last name : ")
            print(f"Your last name : {lastName}\n")
            price=float(input("\nEnter the plan u are using : "))
            print(f"Plan used by u : {price}\n")
            addPlan(firstName,lastName,price)
        elif choice == "2":
            sortAscPlan()
        elif choice == "3":
            sortDescPlan()
        elif choice == "4":
            sortfirstName()
        elif choice == "5":
            displayPlans()
```

```
            elif choice == "6":
                time.sleep(1)
                print("Thank You..")
                for i in range(0,2):
                  time.sleep(1)
                  print("Bye")
                break
            else:
                print("Invalid choice! Please select a valid option i.e. -> (1/2).")

    if __name__ == "__main__":

        main()
```

```
        1. Add Spotify Plan
        2. Sort plans by plan prices (Asc)
        3. Sort plans by plan prices (Desc)
        4. Sort plans by Names
        5. Display Saved Plans
        6. Exit

        Enter your choice (1/2): 5
        Displaying all plans :

        ('anupam', 'kumar', 8.99)
        ('aryan', 'majhi', 3.99)

        Menu:
        1. Add Spotify Plan
        2. Sort plans by plan prices (Asc)
        3. Sort plans by plan prices (Desc)
        4. Sort plans by Names
```

```
tuple1=("aryan","majhi",3.99)
tuple2=("anupam","kumar",5.99)
print(tuple1)
list1=[]
print(list1)
list1.append(tuple1)
print(list1)
list1.append(tuple2)
print(list1)
print(len(list1))
for i in range (0,2):
  print(list1[i])
```

```
        ('aryan', 'majhi', 3.99)
        []
        [('aryan', 'majhi', 3.99)]
        [('aryan', 'majhi', 3.99), ('anupam', 'kumar', 5.99)]
        2
        ('aryan', 'majhi', 3.99)
        ('anupam', 'kumar', 5.99)
```