1st End Semester Exam

Python LAB

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MCA I-Sem (Regular)

Q-1. Write a python program to accept a string, count the number of vowels and consonants in the string and print the results.

PROGRAM

```
vowel_count = 0;
const_count = 0;
String=input("Enter a string : ")
for i in range(len(String)):
    # Checking whether a character is a vowel
    if String[i] in ('a','e','i','o','u','A','E','I','O','U'):
        vowel_count += 1;
    elif ((String[i] >= 'a' and String[i] <= 'z')or(String[i] >= 'A' and String[i] <= 'Z')):
        const_count += 1;
print("\nTotal number of Vowels : ",vowel_count)
print("\nTotal number of Consonents : ",const_count)
```

Output :

```
= RESTART: C:/Users/Purushottam/AppData/Local/Programs/Python/Python39/Month.py
Enter a string : My Name is Purushottam

Total number of Vowels :  7

Total number of Consonents :  12
>>>
= RESTART: C:/Users/Purushottam/AppData/Local/Programs/Python/Python39/Month.py
Enter a string : Hello India

Total number of Vowels :  5

Total number of Consonents :  5
>>>
```

Q-2. Write a python program that prompts the user to enter a number between 1 to 7, based on the input given display the corresponding day of the week.

```
Week={1:"Sunday",2:"Monday",3:"Tuesday",4:"Wednesday",5:"Thursday",6:"Friday",7:"Saturday"}

def returnDay(N):
    if (N>=1 and N<=7):
        print("Day No-",N," = ",Week[N])
    else:
        print("\nInvalid Input ! Enter A Number Between 1 and 7")
        N=int(input("\nEnter A Number Between 1 and 7 : "))
        returnDay(N)

N=int(input("\nEnter A Number Between 1 and 7 : "))
returnDay(N)
```

Output :

```
== RESTART: C:/Users/Purushottam/AppData/Local/Programs/Python/Python39/Q2.py ==

Enter A Number Between 1 and 7 : 8

Invalid Input ! Enter A Number Between 1 and 7

Enter A Number Between 1 and 7 : 9

Invalid Input ! Enter A Number Between 1 and 7

Enter A Number Between 1 and 7 : 6
Day No- 6  =  Friday
>>>
```

Q-3. Imagine a Write a python program that uses functions to do the following :

(i) Display the following menu

1) Armstrong,
2) Palindrome,
3) Odd or even
4) Fibonacci and get the choice from the user

(ii) Call the relevant function, receive the necessary input and display the output.

Armstrong Number...

```
def Check_Armstrong(N):
    Total = 0
    A = N
    while A>0:
        Rem = A % 10
        Total += Rem ** 3
        A //= 10
    if N == Total:
        print(N," is an Armstrong number.")
    else:
        print(N," is not an Armstrong number.")
```

Palindrome..

```
def Check_Palindrome(N):
    Total=0
    Temp=N
    while Temp>0:
        Rem=Temp % 10
        Total = Total*10+Rem
        Temp//= 10
    if(N==Total):
        print(N," is a Palindrome Number.")
    else:
        print(N," is not a Palindrome Number.")
```

Odd Even .....

```
def Check_Odd_Even(Num):
    if(Num>0):
        if Num % 2 == 0:
            print(Num," is an even number")
        else:
            print(Num," is an odd number")
    else:
        print("\n You have entered Negative number !!\n")
```

Fibonacci Series .....

```
def fib(Num):
    if Num <= 1:
        return Num
    else:
        return(fib(Num-1) + fib(Num-2))

def Find_Fibonacci(Num):
    if Num > 0:
        print("Fibonacci Series is : ",end='')
        for i in range(Num):
            print(fib(i), end=' ')
    else:
        print("Enter positive integer only.")
```

Menu Driven Program Starts from Here....

```
while(True):
    print("\n1.Check Armstrong \n2.Check Palindrome \n3.Check Odd/Even \n4.Fibonacci \n5.Exit")
    Choice=int(input("Enter Your Choice : "))
    if(Choice==1):
        Num = int(input("\nEnter a positive Integer : "))
        Check_Armstrong(Num)
    elif(Choice==2):
        Num = int(input("\nEnter a positive Integer : "))
        Check_Palindrome(Num)
    elif(Choice==3):
        Num = int(input("\nEnter a positive Integer : "))
        Check_Odd_Even(Num)
    elif(Choice==4):
        Num = int(input("\nEnter a positive Integer : "))
        Find_Fibonacci(Num)
    elif(Choice==5):
        break
    else:
        print("\nInvalid Input ! Inter Valid Input \n")
```

Output :

```
== RESTART: C:/Users/Purushottam/AppData/L

1.Check Armstrong
2.Check Palindrome
3.Check Odd/Even
4.Fibonacci
5.Exit
Enter Your Choice : 1

Enter a positive Integer : 153
153  is an Armstrong number.

1.Check Armstrong
2.Check Palindrome
3.Check Odd/Even
4.Fibonacci
5.Exit
Enter Your Choice : 1

Enter a positive Integer : 126
126  is not an Armstrong number.

1.Check Armstrong
2.Check Palindrome
3.Check Odd/Even
4.Fibonacci
5.Exit
Enter Your Choice : 2

Enter a positive Integer : 12324
12324  is not a Palindrome Number.

1.Check Armstrong
2.Check Palindrome
3.Check Odd/Even
4.Fibonacci
5.Exit
Enter Your Choice : 2

Enter a positive Integer : 121
121  is a Palindrome Number.
```

```
== RESTART: C:/Users/Purushottam/AppData/Local

1.Check Armstrong
2.Check Palindrome
3.Check Odd/Even
4.Fibonacci
5.Exit
Enter Your Choice : 3

Enter a positive Integer : 121
121  is an odd number

1.Check Armstrong
2.Check Palindrome
3.Check Odd/Even
4.Fibonacci
5.Exit
Enter Your Choice : 3

Enter a positive Integer : 256
256  is an even number

1.Check Armstrong
2.Check Palindrome
3.Check Odd/Even
4.Fibonacci
5.Exit
Enter Your Choice : 4

Enter a positive Integer : 6
Fibonacci Series is : 0 1 1 2 3 5
1.Check Armstrong
2.Check Palindrome
3.Check Odd/Even
4.Fibonacci
5.Exit
Enter Your Choice : 4

Enter a positive Integer : 10
Fibonacci Series is : 0 1 1 2 3 5 8 13 21 34
1.Check Armstrong
2.Check Palindrome
3.Check Odd/Even
4.Fibonacci
5.Exit
Enter Your Choice : 6

Invalid Input ! Inter Valid Input
```

Q-5. Create a dictionary for student records and perform the following operations on the dictionary :

a) Add an item b) Modify an item c) Access an item

d) Delete an item e) Sort the item

```
S_record={"Purushottam":16,"Mukesh":17,"Rohan": 19,"Suresh":20}
def add():
    key=input("Enter Student Name : ")
    value=int(input("Enter the mark: "))
    S_record[key]=value
    print("The record added successfully..")
def update():
    key=input("Enter the student name : ")
    value=int(input("Enter the mark: "))
    if key in S_record:
        S_record[key]=value
        print("The record updated successfully..")
    else:
        print("Name Not Found")
def access():
    key=input("Enter Student Name : ")
    print("Mark of the student : ",key," = ",S_record[key])
def removeitem():
    key=input("Enter the student name : ")
    if key in S_record.keys():
        S_record.pop(key)
        print(key , " is removed successfully")
    else:
        print("there is no student in record with the name ",key)
def sort():
    temp=sorted(S_record.items())
    S_record.clear()
    S_record.update(temp)
```

```
def Main_Call():
    print("Currently in the record: ",S_record)
    choice=int(input("1) Add an item\n2) Modify an item\n3) Access an item\n4) Delete an item\n5) Sort the item\n other number to exit\nEnter your choice: "))
    if choice==1:
        add()
        Main_Call()
    elif choice==2:
        update()
        Main_Call()
    elif choice==3:
        access()
        Main_Call()
    elif choice==4:
        removeitem()
        Main_Call()
    elif choice==5:
        sort()
        Main_Call()
    else:
        print("Exiting program: ")
Main_Call()
```

OUTPUT

```
== RESTART: C:/Users/Purushottam/AppData/Local/Programs/Python/Python39/Q4.py ==
Currently in the record:  {'Purushottam': 16, 'Mukesh': 17, 'Rohan': 19, 'Suresh': 20}
1) Add an item
2) Modify an item
3) Access an item
4) Delete an item
5) Sort the item
 other number to exit
Enter your choice: 1
Enter Student Name : Moti
Enter the mark: 25
The record added successfully..
Currently in the record:  {'Purushottam': 16, 'Mukesh': 17, 'Rohan': 19, 'Suresh': 20, 'Moti': 25}
1) Add an item
2) Modify an item
3) Access an item
4) Delete an item
5) Sort the item
 other number to exit
Enter your choice: 2
Enter the student name : Rohan
Enter the mark: 25
The record updated successfully..
```

```
Currently in the record:  {'Purushottam': 16, 'Mukesh': 17, 'Rohan': 25, 'Suresh': 20, 'Moti': 25}
1) Add an item
2) Modify an item
3) Access an item
4) Delete an item
5) Sort the item
 other number to exit
Enter your choice: 3
Enter Student Name : Suresh
Mark of the student :  Suresh  =  20
Currently in the record:  {'Purushottam': 16, 'Mukesh': 17, 'Rohan': 25, 'Suresh': 20, 'Moti': 25}
1) Add an item
2) Modify an item
3) Access an item
4) Delete an item
5) Sort the item
 other number to exit
Enter your choice: 5
Currently in the record:  {'Moti': 25, 'Mukesh': 17, 'Purushottam': 16, 'Rohan': 25, 'Suresh': 20}
1) Add an item
2) Modify an item
3) Access an item
4) Delete an item
5) Sort the item
 other number to exit
Enter your choice: 4
Enter the student name : Suresh
Suresh  is removed successfully
Currently in the record:  {'Moti': 25, 'Mukesh': 17, 'Purushottam': 16, 'Rohan': 25}
1) Add an item
2) Modify an item
3) Access an item
4) Delete an item
5) Sort the item
 other number to exit
Enter your choice: 6
Exiting program:
```

Q.4. Write a python program that does the following:(i) Create afile for “reading and appendingmode”(ii) Prompts the user to enter a string.(iii) Get analphabet/digit/symbol from the user and countsthe number of times that alphabet/digit/symbolappears in the file.

```
file = open("Question.txt", "a+")
line = input("Enter the string : ")
file.write(line)
file.flush()
file.seek(0)
read_c = file.read()
print (read_c)
file.close()
alphabets = digits = special = 0
for i in range(len(read_c)):
    if (read_c[i].isalpha()):
        alphabets += 1
    elif (read_c[i].isdigit()):
        digits += 1
    else:
        special += 1
print("\nTotal Number of Alphabets: : ", alphabets)
print("Total Number of Digits : ", digits)
print("Total Number of Special Characters: ", special)
```

OUTPUT

```
>>>
== RESTART: C:/Users/Purushottam/AppData/Local/Programs/Py
Enter the string : Purushottam1227@gmail.com
Purushottam1227@gmail.com

Total Number of Alphabets: :  19
Total Number of Digits :  4
Total Number of Special Characters:  2
>>>
```