EC-350 AI decision Support Sys

Lab 1 Report

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Lab Tasks:

Q1: Write a simple calculator program. Follow the steps below:

Declare and define a function name “Menu” which displays a list of choices for user such as addition, subtraction, multiplication etc. It takes the choice from user as an input and return.

Define and declare a separate function for each choice.

In the main body of the program call respective function depending on user’s choice.

Program should not terminate till user chooses last option that is “Quit”.

```
##task1
def add(a,b):
    return a+b
def subtract(a,b):
    return a-b
def multiply(a,b):
    return a*b
def divide(a,b):
    return a/b

func = {1: add , 2:subtract ,3:multiply, 4:divide}
while(True):
    choice= int(input("Enter choice ie\n1- add\n2- subtract\n3- Multiply\n4-
divide\n5- Exit\n? "))
    if(choice==4):break
    a = int(input("Enter A: "))
    b = int(input("Enter B: "))
    print("Result",func[choice](a,b))
```

```
Enter choice ie
1- add
2- subtract
3- Multiply
4- divide
5- Exit
? 1
Enter A: 5
Enter B: 8
Result 13
Enter choice ie
1- add
2- subtract
3- Multiply
4- divide
5- Exit
? 2
Enter A: 18
Enter B: 8
Result 10
Enter choice ie
1- add
2- subtract
3- Multiply
4- divide
5- Exit
? 5
```

Q2: Write a method to calculate factorial of a number entered by the user.

```python
##task 2
def fact(n):
    if (n<1):return 1
    return n*fact(n-1)

num = int(input("Enter a number: "))
print(f"Factorial {num} : {fact(num)}")
```

```
'C:\Users\dell\AppData\Local\Programs\Python\Python311\python.exe'
honFiles\lib\python\debugpy\adapter/../..\debugpy\launcher' '51656
Lab1_task2.py'
Enter a number: 5
Factorial 5 : 120
PS C:\Users\dell\Desktop\Studies\Semester 7\AI and Dss\Labs>
```

Q3: Write a program that lets the user enter in some English text, then converts the text to Pig-Latin.

To review, Pig-Latin takes the first letter of a word, puts it at the end, and appends “ay”. The only exception is if the first letter is a vowel, in which case we keep it as it is and append “hay” to the end.

E.g. “hello” -> “ellohay”, and “image” -> “imagehay”

Hint: *Split the entered string through split() method and then iterate over the resultant list, e.g. “My name is John Smith”.split(“ ”) -> [“My”, “name”, “is”, “John”, “Smith”]*

```
##task 3
vowels =['i','o','u','a','e']
text = input("Enter a text:")
textlst =text.split(' ')
Pig_Latin = []

for word in textlst:
    if(word[0].lower() not in vowels):
        Pig_Latin.append(word[1:]+word[0]+'ay')
    else:
        Pig_Latin.append(word+'hay')

print(Pig_Latin)
```

```
PS C:\Users\dell\Desktop\Studies\Semester 7\AI and Dss\Labs>  &
python.exe' 'c:\Users\dell\.vscode\extensions\ms-python.python-2
ebugpy\launcher' '50122' '--' 'C:\Users\dell\Desktop\Studies\Sem
Enter a text:How are you doing
owHay arehay ouyay oingday
PS C:\Users\dell\Desktop\Studies\Semester 7\AI and Dss\Labs>
```

Q4: Write a simple program that builds a random password generator. For password generator the user must enter total number of passwords and their lengths. Display all the passwords with random characters.

```
import random

count = int(input("Enter the number of passwords: "))
charlen = int(input("Enter the number of charecters: "))

for C in range(count):
    password= ''
    for i in range(charlen):
        rand_char = random.choice([str(random.randint(0,9)),
        chr(random.randint(ord('A'),ord('Z'))),
```

```
        chr(random.randint(ord('a'),ord('z')))])
        password+=rand_char
    print(password)
```

```
hon.python-2023.16.0\pythonFiles\lib\python\debugpy\adapter/
\Studies\Semester 7\AI and Dss\Labs\Lab1_task4.py'
Enter the number of passwords: 10
Enter the number of charecters: 8
n563724E
swU50zOT
PVK8WuqG
876NvudI
89b8JJPE
119sDn9R
Y8aH6YU3
GTBpfYZI
28sp30eQ
9IDTn7hk
```

Q5: Write a method to calculate Fibonacci series up to 'n' points. After calculating the series, the method should return it to main.

```
def fib(num):
    a,b= 1,1
    for i in range(num):
        temp= b
        b+= a
        a= temp
    return b

num= int(input("Enter a number: "))
print('Num: ', fib(num) )
```

```
PS C:\Users\dell\Desktop\Studies\Semester 7\AI and Dss\Labs>  c:; (
ss\Labs'; & 'C:\Users\dell\AppData\Local\Programs\Python\Python311'
hon.python-2023.16.0\pythonFiles\lib\python\debugpy\adapter/../..\(
\Studies\Semester 7\AI and Dss\Labs\Lab2_task5.py'
Enter a number: 5
Num:  13
PS C:\Users\dell\Desktop\Studies\Semester 7\AI and Dss\Labs>
```