Python Lab Assignment 2

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Q.1 Write a program to check if number is even or not.

Code:

```python
num = int(input("Enter a number:"))
if(num%2==0):
    print("The number is even")
else:
    print("The number is odd")
```

Output:

```
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> python -u "c:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab\lab_assignment_1.p
y"
Enter a number:45
The number is odd
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> python -u "c:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab\lab_assignment_1.p
y"
Enter a number:68
The number is even
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> 
```

Q.2 Using for loop, write a program that prints out the decimal equivalents of 1/2, 1/3, 1/4, . . . , 1/10.

Code:

```python
import decimal
i=2
while(i<=10):
    print(float(1/i))
    i=i+1
```

Output:

```
0.5
0.3333333333333333
0.25
0.2
0.16666666666666666
0.14285714285714285
0.125
0.1111111111111111
0.1
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> 
```

Q.3 Write a program using a while loop that asks the user for a number, and prints a countdown from that number to zero.

Code:

```python
num = int(input("Enter a number:"))
print("The sequence of numbers until 0 is:")
while(num>=0):
    print(num,' ',end='')
    num=num-1
```

Output:

```
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> python -u "c:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab\la
Enter a number:6
6 5 4 3 2 1 0
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> python -u "c:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab\la
Enter a number:30
The sequence of numbers until 0 is:
30  29  28  27  26  25  24  23  22  21  20  19  18  17  16  15  14  13  12  11  10  9  8  7  6  5  4  3  2  1  0
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab>
```

Q.4 Write a python script to print the current date in the following format "Mon August 12 02:26:23 IST 2024".

```python
from datetime import datetime
time = datetime.now()
string = time.strftime("%d/%m/%Y %H:%M:%S")
print(string)
```

Output:

```
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> python -
14/08/2024 16:26:24
PS C:\Users\LENOVO\Deskton\IIIT PUNE\sem 3\Python lab>
```

Q.5 Write a python program to find largest of three numbers.

Code:

```python
a = int(input("Enter the first number:"))
b = int(input("Enter the second number:"))
c = int(input("Enter the third number:"))
if(a>b and a>c):
    print(f"{a} is greater than {b} and {c}")
elif(b>a and b>c):
    print(f"{b} is greater than {a} and {c}")
else:
    print(f"{c} is greater than {a} and {b}")
```

Output:

```
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> python -u "c:\Users
Enter the first number:56
Enter the second number:78
Enter the third number:90
90 is greater than 56 and 78
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> []
```

Q.6 Write a Python program to convert temperatures to and from Celsius, Fahrenheit. [Formula : c/5 = f-32/9]

Code:

```python
temp = int(input("Enter your temp:"))
inp = int(input("Enter to convert temp into 1.celsius 2.fahrenheit"))
if(inp==2):
    fh=((temp * 9/5) + 32)
    print("The converted temp in fh is:",fh)
else:
    ce=(temp-32) * (5/9)
    print("The converted temp in degree celsius is:",ce)
```

 Output:

```
Enter to convert temp into 1.celsius 2.fahrenheit
2
The converted temp in fh is: 98.6
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> python -u "c:\Users\LENOVO\Desktop\IIIT PUNE\sem
y"
Enter your temp:98
Enter to convert temp into 1.celsius 2.fahrenheit
1
The converted temp in degree celsius is: 36.66666666666667
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> |
```

Q 7. Write a Python script that prints prime numbers less than 20.

Code:

```python
i=20
while(i>0):
    if(i==2 or i==3 or i==5 or i==7):
        print(f"{i} is a prime number")
    elif((i%2!=0 and i!=2) and i%3!=0 and i%5!=0 and i%7!=0):
        print(f"{i} is a prime number")
    else:
        print(f"{i} is not a prime number")
    i=i-1
```

Output:

```
19 is a prime number
17 is a prime number
13 is a prime number
11 is a prime number
7 is a prime number
5 is a prime number
3 is a prime number
2 is a prime number
1 is a prime number
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab>
```

Q.8 Write a program that accepts the lengths of three sides of a triangle as inputs. The program output should indicate whether or not the triangle is a right triangle (Recall from the Pythagorean Theorem that in a right triangle, the square of one side equals the sum of the squares of the other two sides).

Code:

```python
import math
a = int(input("Enter the first side length:"))
b = int(input("Enter the second side length:"))
c = int(input("Enter the third side length:"))
sab = math.sqrt(a*a + b*b)
sbc = math.sqrt(b*b + c*c)
sac = math.sqrt(a*a + c*c)
if((sab==c) or (sbc==a) or (sac==b)):
    print("Yes, this is a right-angle triangle")
else:
    print("No, it is not a right-angle triangle")
```

Output:

```
1 is a prime number
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> python -u "c:\Users\LENOVO\Desktop\IIIT PU
Enter the first side length:3
Enter the second side length:4
Enter the third side length:5
Yes, this is a right angle triangle
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> python -u "c:\Users\LENOVO\Desktop\IIIT PU
Enter the first side length:6
Enter the second side length:7
Enter the third side length:8
No, it is not a right angle triangle
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab>
```

Q.9 Write a python program to find the best of two test average marks out of three test's marks accepted from the user.

Code:

```python
a = int(input("Enter marks for test1:"))
b = int(input("Enter marks for test2:"))
c = int(input("Enter marks for test3:"))
```

```
large=0
slarge=0
if(a>b and a>c):
    large=a
elif(b>a and b>c):
    large=b
else:
    large=c
if(a==large and b>c):
    slarge=b
else:
    slarge=c
if(b==large and a>c):
    slarge=a
else:
    slarge=c
if(c==large and a>b):
    slarge=a
else:
    slarge=b
print("The average of best two test marks is:",(large+slarge)/2)
```
 Output:

```
SyntaxError: invalid syntax. Maybe you meant '==' or ':=' instead of '='?
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> python -u "c:\Users\LENOVO\Desktop\IIIT
Enter marks for test1:45
Enter marks for test2:39
Enter marks for test3:48
The average of best two test marks is: 46.5
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab>
```

Q.10 Develop a Python program to check whether a given number is palindrome or not and also count the number of occurrences of each digit in the input number.

Code:

```
num = int(input("Enter a number: "))
temp = num
temp2 = str(num)
rev = 0
while num != 0:
    digit = num % 10
    rev = rev * 10 + digit
    num = num // 10
if temp == rev:
    print("The number is a palindrome")
else:
    print("The number is not a palindrome")
i = 0
while i < len(temp2):
    print(f"{temp2[i]} appears {temp2.count(temp2[i])} times")
```

```
    i += 1
```

Output:

```
14/08/2024 16:26:24
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> python -u "c:\Users\LENOVO\De
Enter a number: 1221
The number is a palindrome
1 appears 2 times
2 appears 2 times
2 appears 2 times
1 appears 2 times
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab>
```

Q.11 Write a Python program that accepts a sentence and find the number of words, digits, uppercase letters and lowercase letters.

```python
Ans. string = input("Enter a sentence:")

i=0
upper=0
lower=0
num=0
while i<len(string):
    if(string[i].isupper()):
        upper=upper+1
    elif(string[i].islower()):
        lower=lower+1
    elif(string[i].isdigit()):
        num=num+1
    i=i+1
print("The uppercase char present in string are:",upper)
print("The lowercase char present in string are:",lower)
print("\nThe numbers present in string are:",num)
```

Output:

```
Enter a sentence:ram went to the grocery store 1
The uppercase char present in string are: 0
The lowercase char present in string are: 24

The numbers present in string are: 1
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab> python -u "c:\Users\LENOVO\
Enter a sentence:Ram Went to Grocery Store
The uppercase char present in string are: 4
The lowercase char present in string are: 17

The numbers present in string are: 0
PS C:\Users\LENOVO\Desktop\IIIT PUNE\sem 3\Python lab>
```