Python Practical (208) – Assignment-1

'''

Q.1. Write a Python program to input principal amount, rate of interest and number of years with appropriate prompts. Find simple interest and display all the details in the following format:

Principal Amount : Rs. _____

Rate of Interest : ____ %

Number of Years : ____

Simple Interest : Rs. _____

Maturity Amount : Rs. _____

'''

```
#Simple Interest

principalAmount = float(input('Enter Principal Amount : '))
rateOfInterest = float(input('Enter Rate of Interrest : '))
numberOfYears = float(input('Enter Number of years : '))
simpleInterest = (principalAmount * rateOfInterest * numberOfYears) / 100
maturityAmount = principalAmount + simpleInterest

print('Principal Amount : Rs. ',principalAmount)
print('rate of Interest : Rs. ',rateOfInterest,'%')
print('Number of years : Rs. ',numberOfYears)
print('Simple Interrest : Rs. ',simpleInterest)
print('Maturity Amount : Rs. ',maturityAmount)
```

'''

Q.2. Write a Python program to find area of i) Square, ii) Rectangle, iii) Circle. Take input of all the values need to calculate these areas from the user with appropriate prompts. Display all the values with appropriate titles.

'''

```
#Square
length = float(input('Enter Lenght of Square : '))
area = length ** 2;
print('Area of Square : ',area)

#Rectangle
length = float(input('Enter Lenght of Rectangle : '))
width = float(input('Enter width of Rectangle : '))
area = length * width;
print('Area of Rectangle : ',area)

#Circle
radius = float(input('Enter Lenght of Circle : '))
area = 3.14 * (radius ** 2);
print('Area of Circle : ',area)
```

'''

Q.3. Write a Python program which prompts the user to input temperature in Celsius, convert the temperature to Fahrenheit and display both the values with appropriate titles. Use the following formular: T(°F) = T(°C)× 9/5 + 32

'''

```
#temperature
celcius = float(input('Enter Temperature in Celcius : '))
farenheit = celcius * (9/5) + 32
print('Temparature : ')
print('Cencius : ',celcius)
print('Farenheit : ',farenheit)
```

'''

Q.4. Write a Python program to input 3 numbers and find the largest. Print all the numbers, and the largest among them, with appropriate titles.

'''

```
#largest number
num1 = int(input('Enter Number 1 : '))
num2 = int(input('Enter Number 2 : '))
num3 = int(input('Enter Number 3 : '))
if num1 > num2 and num1 > num3:
   large = num1
else:
   if num2 > num3:
      large = num2
   else:
      large = num3
print('All Numbers are : ',num1,num2,num3)
print('Larget Number : ',large)
```

'''

Q.5. Write a Python program to input principal amount and number of years with appropriate prompts. Find simple interest and display all the details in the following format. Consider rate of interest based on the following criteria. (NOTE: Use simple if..else statement to determine the rate of interest)

Rate of interest = 5% if number of years < 1

= 5.5% if 1 <= number of years < 3

= 6 % if 3 <= number of years < 5

= 5.75% otherwise

Principal Amount : Rs. _____

Rate of Interest : ____ %

Number of Years : ____

Simple Interest : Rs. _____

Maturity Amount : Rs. _____

'''

```
#Simple Interest usig if..else

principalAmount = float(input('Enter Principal Amount : '))
numberOfYears = float(input('Enter Number of years : '))

if numberOfYears < 1:
    rateOfInterest = 5
elif numberOfYears >= 1 and numberOfYears < 3:
    rateOfInterest = 5.5
elif numberOfYears >= 3 and numberOfYears < 5:
    rateOfInterest = 6
else:
    rateOfInterest = 5.75

simpleInterest = (principalAmount * rateOfInterest * numberOfYears) / 100
maturityAmount = principalAmount + simpleInterest
```

```
print('Principal Amount : Rs. ',principalAmount)
print('rate of Interest : Rs. ',rateOfInterest,'%')
print('Number of years : Rs. ',numberOfYears)
print('Simple Interrest : Rs. ',simpleInterest)
print('Maturity Amount : Rs. ',maturityAmount)
```

'''

Q.6. Attempt Q.5. using Nested if.

'''

```
#Simple Interest usig if..else

principalAmount = float(input('Enter Principal Amount : '))
numberOfYears = float(input('Enter Number of years : '))

if numberOfYears < 5:
    if numberOfYears < 3:
        if numberOfYears < 1:
            rateOfInterest = 5
        else:
            rateOfInterest = 5.5
    else:
        rateOfInterest = 6
else:
    rateOfInterest = 5.75

simpleInterest = (principalAmount * rateOfInterest * numberOfYears) / 100
maturityAmount = principalAmount + simpleInterest

print('Principal Amount : Rs. ',principalAmount)
print('rate of Interest : Rs. ',rateOfInterest)
print('Number of years : Rs. ',numberOfYears)
print('Simple Interrest : Rs. ',simpleInterest)
print('Maturity Amount : Rs. ',maturityAmount)
```

'''

Q.7. Attempt Q.5. using shorthand if..else.

'''

```
#Simple Interest usig if..else

principalAmount = float(input('Enter Principal Amount : '))
numberOfYears = float(input('Enter Number of years : '))

rateOfInterest = 5 if numberOfYears<1 else 5.5 if numberOfYears>=1 and numberOfYears<3 else 6 if numberOfYears>=3 and numberOfYears<5 else 5.75

simpleInterest = (principalAmount * rateOfInterest * numberOfYears) / 100
maturityAmount = principalAmount + simpleInterest

print('Principal Amount : Rs. ',principalAmount)
print('rate of Interest : Rs. ',rateOfInterest,'%')
print('Number of years : Rs. ',numberOfYears)
print('Simple Interrest : Rs. ',simpleInterest)
print('Maturity Amount : Rs. ',maturityAmount)
```

'''

Q.8. Write a Python program to input 3 numbers and find the largest. Print all the numbers, and the largest among them, with appropriate titles. Display appropriate message and exit from the program if any of these inputs is not a numeric value.

'''

#largest number with exit condition

#using isnumeric [list]

```
large = 0
num_list = []
for i in range(1,4):
    val = input('Enter Number : ')
    if val.isnumeric():
        val = int(val)
    else:
        ValueError : print("This is Not Numeric Type")
        exit()
    num_list.append(val)
    if large<val:
        large = val
print('All Numbers : ',num_list)
print('Largest Number : ',large)
```

#using try...except [list]

'''

```
large = 0
num_list = []
for i in range(1,4):
    val = input('Enter Number : ')
    try:
        val = int(val)
    except:
        ValueError : print("This is Not Numeric Type")
```

```
        exit()
    num_list.append(val)
    if large<val:
        large = val
print('All Numbers : ',num_list)
print('Largest Number : ',large)
 '''

# using isnumeric
'''
num1 = input('Enter Number 1 : ')
if num1.isnumeric():
    int(num1)
else:
    print("This is Not Numberic value")
    exit()
num2 = input('Enter Number 2 : ')
if num2.isnumeric():
    int(num2)
else:
    print("This is Not Numberic value")
    exit()
num3 = input('Enter Number 3 : ')
if num3.isnumeric():
    int(num3)
else:
    print("This is Not Numberic value")
    exit()
if num1 > num2 and num1 > num3:
    large = num1
else:
    if num2 > num3:
        large = num2
    else:
```

```
        large = num3
print('All Numbers are : ',num1,num2,num3)
print('Larget Number : ',large)
'''
```

#using try...except

```
'''
num1 = input('Enter Number 1 : ')
try:
    num1 = int(num1)
except:
    ValueError : print("This is Not Numberic value")
    quit()
num2 = input('Enter Number 2 : ')
try:
    num2 = int(num2)
except:
    ValueError : print("This is Not Numberic value")
    quit()
num3 = input('Enter Number 3 : ')
try:
    num3 = int(num3)
except:
    ValueError : print("This is Not Numberic value")
    quit()
if num1 > num2 and num1 > num3:
    large = num1
else:
    if num2 > num3:
        large = num2
    else:
        large = num3
```

```
print('All Numbers are : ',num1,num2,num3)
print('Larget Number : ',large)
'''
#using break
'''
large = 0
num_list = []
for i in range(1,4):
    val = input('Enter Number : ')
    if val.isnumeric():
        val = int(val)
    else:
        ValueError : print("This is Not Numeric Type")
        break
    num_list.append(val)
    if large<val:
        large = val
print('All Numbers : ',num_list)
print('Largest Number : ',large)
'''
```