Assignment 1 from Module 1

1.Write a python program to design simple calculator for the operators

+ (addition),
- (subtraction),

* (multiplication),

/ (division),

% (modulus),

** (exponent),

// (Floor division).

Program:

```
def add(x, y):
   return x + y
def subtract(x, y):
   return x - y
def multiply(x, y):
   return x * y
def divide(x, y):
   return x / y
def floordivision(x, y):
   return x // y
def modulus(x, y):
   return x % y
def exponent(x, y):
   return x ** y
print("Select operation.")
print("1.Add")
print("2.Subtract")
```

```
print("3.Multiply")
print("4.Divide")
print("5.floordivision")
print("6.modulus")
print("7.exponent")
while True:
    choice = input("Enter choice(1/2/3/4/5/6/7): ")
    if choice in ('1', '2', '3', '4','5','6','7'):
        num1 = float(input("Enter first number: "))
        num2 = float(input("Enter second number: ")
        if choice == '1':
            print(num1, "+", num2, "=", add(num1, num2))
        elif choice == '2':
            print(num1, "-", num2, "=", subtract(num1, num2))
        elif choice == '3':
            print(num1, "*", num2, "=", multiply(num1, num2))
        elif choice == '4':
            print(num1, "/", num2, "=", divide(num1, num2))
        elif choice == '5':
            print(num1, "//", num2, "=", floordivision(num1, num2))
        elif choice == '6':
            print(num1, "%", num2, "=", modulus(num1, num2))
        elif choice == '7':
            print(num1, "**", num2, "=", exponent(num1, num2))
        break
    else:
        print("Invalid Input")
```

Output:

```
Select operation.
1.Add
```

2.Subtract

3.Multiply

4.Divide

5.floordivision

6.modulus

7.exponent

Enter choice(1/2/3/4/5/6/7): 7

Enter first number: 2

Enter second number:2

2.0** 2.0 = 4.0

2.Write a python program to calculate simple interest.

Program:

```
p = float(input("Enter the principal amount: "))
t = float(input("Enter the time in years: "))
r = float(input("Enter the interest rate: "))
simple_interest = p * t * r / 100
print("Simple Interest = %.2f" %simple_interest)
```

output:

Enter the principal amount: 100000

Enter the time in years: 1

Enter the interest rate: 12

Simple Interest = 12000.00

3. Write a python program to calculate area of a circle.

```
PI = 3.14
r = int(input("Enter the radius of the circle: "))
area = PI * r * r
print("%.2f" %area)
```

output:

```
Enter the radius of the circle: 2
12.56
```

4.Write a python program to calculate area of a triangle.

Program

```
a = float(input('Enter first side: '))
b = float(input('Enter second side: '))
c = float(input('Enter third side: '))
s = (a + b + c) / 2
area = (s*(s-a)*(s-b)*(s-c)) ** 0.5
print('The area of the triangle is %0.2f' %area)
```

output:

```
Enter first side: 5
Enter second side: 6
Enter third side: 7
The area of the triangle is 14.70
```

5.Write a python program to temperature in Celsius to Fahrenheit.

```
celsius = float(input("Enter the celsius"))
fahrenheit = (celsius * 1.8) + 32
print(celsius,”Celsius is equal to” fahrenheit “degree Fahrenheit”)
```

output:

Enter the celsius 37.5

37.5 Celsius is equal to 99.5 degree Fahrenheit

6.Write a python program to calculate area of rectangle.

Program:

```
length = float(input('Please Enter the Length of a Triangle: '))
width = float(input('Please Enter the Width of a Triangle: '))
area = length * width
print("The Area of a Rectangle is", area)
```

output:

Please Enter the Length of a Triangle: 3

Please Enter the Width of a Triangle: 5

The Area of a Rectangle is 15.0

7.Write a python program to calculate perimeter of a square.

Program:

```
a =int(input('Enter value of length: '))
p=4*a
print("perimeter of a square:",p)
```

output:

Enter value of length:5

perimeter of a square:20

8.Write a python program to calculate circumference of a circle.

Program:

```
PI = 3.14
radius = float(input(' Please Enter the radius of a circle: '))
circumference = 2 * PI * radius
print(" Circumference Of a Circle = %.2f" %circumference)
```

output:

```
Circumference Of a Circle = 31.40
```

9.Write a python program to swap two numbers.

Program:

```
x = input('Enter value of x: ')
y = input('Enter value of y: ')
temp = x
x = y
y = temp
print("x =",x)
print("y =",y)
```

output:

```
Enter value of x: 5
Enter value of y: 6
X=6
Y=5
```