WORKSHEET - 1.3

Student Name: Udit Gupta   **UID: 21BCS9091**

Branch: CSE   **Section/Group: 720 - B**

Semester: 4TH   **Date of Performance: 7/Mar/2023**

Subject Name: PROGRAMMING IN PYTHON   **Subject Code: 21CSP-259**

1. **Aim**: Demonstrate the use of functions in program.

   - Write a python program to calculate area of 10 different circles. Given the pie = 22/7 and radius of the circles entered by user using Simple Function, Parameterized Function, Return Type with function and return type with parameterizedFunctions.
   - Write a python program to print Multiplication tables from 2 to 20 whether table values entered by user using Simple Function, Parameterized Function, Return Type with function and return type with parameterized Functions.

2. **Source Code:**

 # Write a python program to calculate area of 10 different circles.

```python
pi = 22/7          # Declaring value of pi outside any function

def circle():          # Simple Function Without Return Type
    area = pi * r * r
    print(area)

def areaOfCircle(radius):   # Parameterized function with return type
    return pi*radius*radius

def circleArea():      # Simple Function With Return Type
    return pi*r*r

def AreaCircle(radius):    # Parameterized function without return type
    print(pi*radius*radius)
```

```python
# Main

print("Programmed by: Udit Gupta, 21BCS9091")
print("Here we will calculate area of 10 different circles...\n\n")
for i in range(1, 11):
    global r                # Making r as gloabal vairable
    r = float(input("\nEnter radius of circle: "))  #taking input from user

    # calling all functions one by one
    print("Using simple function: ", end = '')
    circle()
    area = areaOfCircle(r)
    print("Using parameterized function: ", area)
    areaC = circleArea()
    print("Using simple function with return type: ", areaC)
    print("Using parameterized function without return type: ", end = '')
    AreaCircle(r)
```

#OutPut

```
Programmed by: Udit Gupta, 21BCS9091
Here we will calculate area of 10 different circles...


Enter radius of circle: 1
Using simple function: 3.142857142857143
Using parameterized function:  3.142857142857143
Using simple function with return type:  3.142857142857143
Using parameterized function without return type: 3.142857142857143

Enter radius of circle: 2
Using simple function: 12.571428571428571
Using parameterized function:  12.571428571428571
Using simple function with return type:  12.571428571428571
Using parameterized function without return type: 12.571428571428571

Enter radius of circle: 3
Using simple function: 28.285714285714285
Using parameterized function:  28.285714285714285
Using simple function with return type:  28.285714285714285
Using parameterized function without return type: 28.285714285714285

Enter radius of circle: 4
Using simple function: 50.285714285714285
Using parameterized function:  50.285714285714285
Using simple function with return type:  50.285714285714285
Using parameterized function without return type: 50.285714285714285
```

```
Enter radius of circle: 5
Using simple function: 78.57142857142857
Using parameterized function:  78.57142857142857
Using simple function with return type:  78.57142857142857
Using parameterized function without return type: 78.57142857142857

Enter radius of circle: 6
Using simple function: 113.14285714285714
Using parameterized function:  113.14285714285714
Using simple function with return type:  113.14285714285714
Using parameterized function without return type: 113.14285714285714

Enter radius of circle: 7
Using simple function: 154.0
Using parameterized function:  154.0
Using simple function with return type:  154.0
Using parameterized function without return type: 154.0

Enter radius of circle: 8
Using simple function: 201.14285714285714
Using parameterized function:  201.14285714285714
Using simple function with return type:  201.14285714285714
Using parameterized function without return type: 201.14285714285714

Enter radius of circle: 9
Using simple function: 254.57142857142856
Using parameterized function:  254.57142857142856
Using simple function with return type:  254.57142857142856
Using parameterized function without return type: 254.57142857142856

Enter radius of circle: 10
Using simple function: 314.2857142857143
Using parameterized function:  314.2857142857143
Using simple function with return type:  314.2857142857143
Using parameterized function without return type: 314.2857142857143
```

WAP to print multiplication tables from 2 to 20, the choice of tables to be entered by user.

```
def simple_table():          # Simple Function
    for i in range(1, 11):
        print(num,"*",i,"=", num*i)


def table(n):                # Parameterized function
    for i in range(1,11):
        print(n,"*", i ,"=",n*i)


def tableNum():              # Simple function with return type
    table = ""               #taking table as an empty string
    for i in range(1 , 11):
        table += f"{num} x {i} = {num*i}\n"
```

```python
        return table

def tableNumm(n):              # Parameterized function with return type
    table = ""
    for i in range(1, 11):
        table+= f"{n} x {i} = {num*i}\n"
    return table

#main
print("This program is programmed by Udit Gupta, 21BCS9091")
while(True):
    global num
    num = int(input("Enter the number "))
    if(num < 21 and num > 1):
        print("\nTable using simple function: ")
        simple_table()
        print("\nTable using parameterized function: ")
        table(num)
        print("\nTable using Simple function with return type: ")
        # for i in tableNum():
        print(tableNum())
        print("Table using Parameterized function with return type: ")
        print(tableNumm(num))
        break

    else:
        print("Enter value between 2 to 20")
```

#OutPut

```
This program is programmed by Udit Gupta, 21BCS9091
Enter the number 21
Enter value between 2 to 20
Enter the number 5

Table using simple function:
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50

Table using parameterized function:
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50
```

```
Table using Simple function with return type:
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50

Table using Parameterized function with return type:
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50
```