

G. H. Raison College Of Engineering And Management, Wagholi Pune

2021- 2022

Group A :-Assignment no :- 2

Department	<u>CE [SUMMER 2022 (Online)]</u>		
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Subject Name /Code	<u>Python for Data Science / UCSP204</u>		
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Group A - Assignment No 2

Aim:→

- (a) write a program that prompts the user to input the radius of a circle and output the area (πr^2) and the circumference ($2\pi r$) of the circle
- (b) Suppose a , b and c denote the lengths of the sides of a triangle. Then the area of the triangle can be calculated using the formula:

$$\text{Area} = \sqrt{S(S-a)(S-b)(S-c)}$$

$$\text{Where } S = \frac{a+b+c}{2}$$

write a program that takes the input from user as length of side S of the triangle and print the area.

Theory:-

► Math

Python also has a build-in module called `math` which executes a list of mathematical functions.

`math` function/module provides functions to with both basic operations such as addition (+), subtraction(-), multiplication(*), division(/) and adv. operations like trigonometric, logarithmic, exponential functions. There is a power function also

Program code

#Part A

```
print("-----")
```

```
print("SCOB77_Pratham pitty_Group A Assignment 2")
```

```
print("*****")
```

```
print("Part A-Circumference of circle")
```

```
print("*****")
```

```
radius= float(input(" \nEnter radius of circle: "))
```

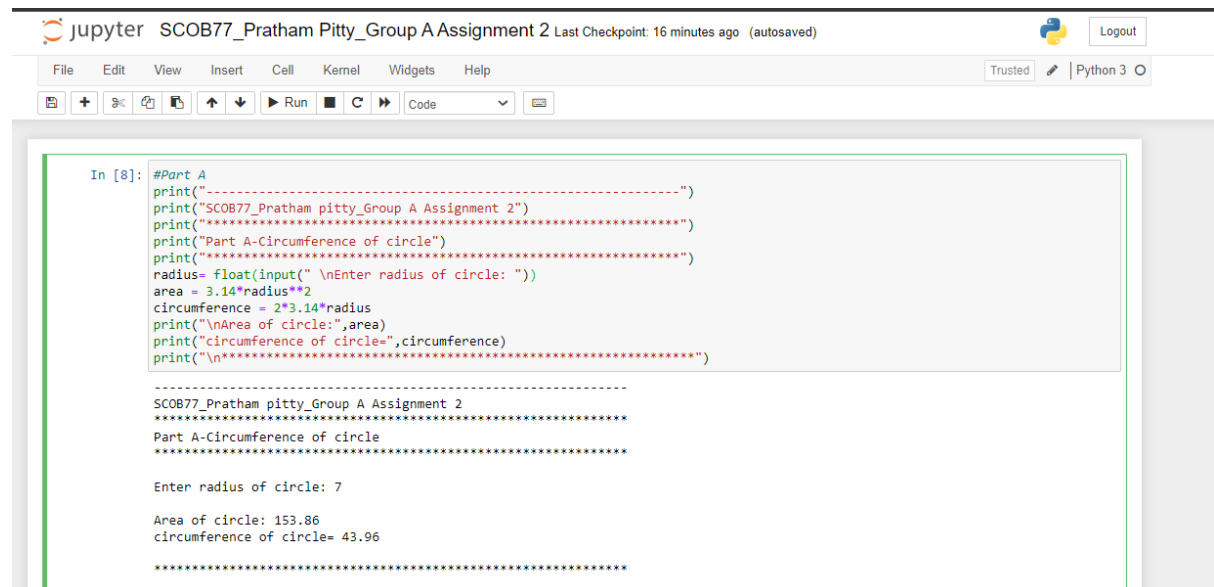
```
area = 3.14*radius**2
```

```
circumference = 2*3.14*radius
```

```
print("\nArea of circle:",area)
```

```
print("circumference of circle=",circumference)
```

```
print("\n*****")
```



The screenshot displays a Jupyter Notebook window titled "SCOB77_Pratham Pitty_Group A Assignment 2". The interface includes a top bar with the Jupyter logo, the notebook title, and a "Logout" button. Below the top bar is a menu bar with options: File, Edit, View, Insert, Cell, Kernel, Widgets, and Help. A toolbar contains icons for file operations, a "Run" button, and a dropdown menu currently set to "Code". The main area shows a code cell labeled "In [8]:" containing the Python code from the previous block. The code is executed, and the output is displayed below it. The output consists of several lines of text: a separator line of dashes, the assignment title, a line of asterisks, the heading "Part A-Circumference of circle", another line of asterisks, a prompt for the radius, the user input "7", the calculated area "153.86", and the calculated circumference "43.96", followed by a final line of asterisks.

```
In [8]: #Part A
print("-----")
print("SCOB77_Pratham pitty_Group A Assignment 2")
print("*****")
print("Part A-Circumference of circle")
print("*****")
radius= float(input(" \nEnter radius of circle: "))
area = 3.14*radius**2
circumference = 2*3.14*radius
print("\nArea of circle:",area)
print("circumference of circle=",circumference)
print("\n*****")

-----
SCOB77_Pratham pitty_Group A Assignment 2
*****
Part A-Circumference of circle
*****

Enter radius of circle: 7

Area of circle: 153.86
circumference of circle= 43.96

*****
```

```

#Part B

print("-----")

print("SCOB77_Pratham pittty_Group A Assignment 2")

print("*****")

print(" Part B-Area of Triangle \n")

print("*****")

import math

side1= float(input("Enter length of side 1: "))

side2= float(input("Enter length of side 2: "))

side3= float(input("Enter length of side 3: "))

s = (side1 + side2 + side3)/2

area = math.sqrt(s*(s - side1)*(s - side2)*(s - side3))

print("Area of triangle is ",area)

print("\n*****")

```

The screenshot shows a Jupyter Notebook titled "SCOB77_Pratham Pittty_Group A Assignment 2". The code cell contains the same Python script as above. The output cell shows the following text:

```

-----
SCOB77_Pratham pittty_Group A Assignment 2
*****
Part B-Area of Triangle
*****
Enter length of side 1: 3
Enter length of side 2: 3
Enter length of side 3: 3
Area of triangle is  3.897114317029974
*****

```

Conclusion:

Hence conclude that using different operators calculate circumference of circle and area of triangle