



Problem Set:	Assignment 07	Semester:	Spring 2018
Points:	See autograder		
Date Set:	April 18, 2018	Due Date:	April 20, 2018, 6 PM
Course:	CS101 Introduction to Computing	Instructor:	Shakir Ullah Shah

1 Tasks to do

1. File name must be `cs101-s18-a-07-<section>-<rollno>-<name>.cpp`
2. Start your program with multi line comments containing your name, roll number, section
3. Implement the following algorithm using `c++`
 - (a) Prompt the user with "Enter the shape type: (1=rectangle, 2=circle, 3=cylinder)"
 - (b) Read it and store the value inside a variable `shape`
 - (c) if the entered value is 1 or 'rectangle' means shape is rectangle then prompt the user **Enter the length of the rectangle:** to get the value of height and store in variable `height` of type double. Similarly prompt the user **Enter the width of the rectangle:** to get the value of height and store in variable `width` of type double. Now display the message
Perimeter of the rectangle = 2 (length + width)
Area of the rectangle = length x width
 - (d) if the entered value is 2 or 'circle' means shape is circle then prompt the user **Enter the radius of the circle:** to get the value of radius, store it inside `radius` and display the message
Area of the circle = $\pi(radius)^2$
Circumference of the circle: $2\pi(radius)$
 - (e) if the entered value is 3 or 'cylinder' means shape is cylinder then prompt the user **Enter the height of the cylinder:** to get the value of height, store it inside `height`, then prompt the user **Enter the radius of the base of the cylinder:** and display the message

Volume of the cylinder = $\pi(radius)^2 \times height$
Surface area of the cylinder: $2\pi.radius.height + 2\pi(radius)^2$

- Sample Run 1: -

```
Enter the shape type: (rectangle, circle, cylinder) rectangle
Enter the length of the rectangle: 10
Enter the width of the rectangle: 2
Perimeter of the rectangle = 24
Area of the rectangle = 20
```

- Sample Run 2: -

```
Enter the shape type: (rectangle, circle, cylinder) circle
Enter the radius of the circle: 2.3
Area of the circle = 16.6191
Circumference of the circle: 33.2381
```

- Sample Run 3: -

Enter the shape type: (rectangle, circle, cylinder) **cylinder**

Enter the height of the cylinder: 10

Enter the radius of the base of the cylinder: 4

Volume of the cylinder = 502.656

Surface area of the cylinder: 351.859

Note: create a constant PI with a value of 3.1416