**Course: Object Oriented Programming**

**Lab 02**

**Classes, Objects, Methods, User Input, Encapsulation**

**Task 1:** Write a class Circle, which will model the functionality of a Circle.

1. Attributes
   * radius
2. Methods
   * *calculateArea():* To compute area
   * *calculatePerimeter():* To compute perimeter

**Note: For value of pi, use Math.PI**

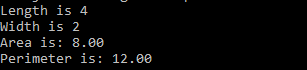
**Expected Output:**

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**Task 2:** Write a class Rectangle, which will model the functionality of a Rectangle.

1. Attributes
   * Length
   * Width
2. Methods
   * *calculateArea():* To compute area
   * *calculatePerimeter():* To compute perimeter

**Expected Output:**



**Task 3:** Make BankAccount class with balance and name attributes of type double and String. Define public void deposit(double amount) and public void withdraw(double amount) methods. Deposit should increase the balance by passed value and withdraw should decrease the balance with passed amount.  
  
Make BankAccountTest class. In main method, create a new object of BankAccount class. Get balance and name of account holder from user input and initilize both object attributes. Then show this menu:

Press 1: To Deposit an amount  
Press 2: To Withdraw an amount  
Press 3: To View the current balance

If user press 1: show following:   
Enter the amount you want to desposit in your account >

For example. If user enters 500, call the desposit method of BankAccount object and pass 500 to it. Do it for option 2 but call the withdraw method. If user choose 3 from menu, print the current balance.

**Task 4:** Make a Rectangle class that has color, width and height attribute. Color is of String type, while other two are int type attribute. All the attributes should be private and exposed via setter/getter methods. Value of width and height should be greater than zero.

Define a method inside Rectangle class: int *calculateArea()* that returns area of Rectangle. Define another method in Rectangle class: *int calculatePerimeter()* that returns perimeter of rectangle. Make a RectangleTest class, in main method, instantiate a rectangle object. Ask user to input value of color, width and height, and prints its area and perimeter.

**Task 5:** Write a class BankAccount, which have following attributes:

1. Attributes
   * accountNumber
   * accountTitle
   * balance (should be greater than zero)

All attributes are private.

Create a test class named BankAccountTest. In main method, instantiate BankAccount object and display information of account.

**Note: Ask user to input value of accountNumber, accountTitle and balance.**