Date : 20-01-2024

Experiment - 4.1

Aim:

Write a Java program to demonstrate the use of Java Beans.

Code:

```
public class Person {
    private String name;
    private int age;

    public Person() {}

    public String getName() { return name; }
    public void setName(String name) { this.name = name; }

    public int getAge() { return age; }
    public void setAge(int age) { this.age = age; }

    public static void main(String[] args) {
        Person person = new Person();
        person.setName("Raj");
        person.setAge(24);
        String name = person.getName();
        int age = person.getAge();
        System.out.println("Name: " + name);
        System.out.println("Age: " + age);
    }
}
```

Output:

```
[Running] cd "c:\Users\ankus\OneDrive\Desktop\java test\" && javac Person.
java && java Person
Name: Raj
Age: 24
```

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Experiment - 4.2

Aim:

Write a Java program to demonstrate encapsulation in Java Beans.

Code:

```
public class BankAccount {
    private String accountNumber;
    private double balance;

    public BankAccount() {
    }

    public BankAccount(String accountNumber, double balance) {
        this.accountNumber = accountNumber;
        this.balance = balance;
    }

    public String getAccountNumber() {
        return accountNumber;
    }

    public void setAccountNumber(String accountNumber) {
        this.accountNumber = accountNumber;
    }

    public double getBalance() {
        return balance;
    }

    public void deposit(double amount) {
        if (amount > 0) {
            balance += amount;
            System.out.println(amount + " deposited successfully.");
        } else {
            System.out.println("Invalid amount for deposit.");
        }
    }

    public void withdraw(double amount) {
        if (amount > 0 && balance >= amount) {
            balance -= amount;
            System.out.println(amount + " withdrawn successfully.");
        } else {
```

```
            System.out.println("Insufficient balance or invalid amount for withdrawal.");
        }
    }
    public static void main(String[] args) {
        BankAccount account = new BankAccount();
        account.setAccountNumber("1234567890");
        System.out.println("Welcome, Account Number: " + account.getAccountNumber());
        account.deposit(1000);
        account.withdraw(500);
        System.out.println("Current Balance: $" + account.getBalance());
    }
}
```

Output:

```
[Running] cd "c:\Users\ankus\OneDrive\Desktop\java test\" && javac
BankAccount.java && java BankAccount
Welcome, Account Number: 1234567890
1000.0 deposited successfully.
500.0 withdrawn successfully.
Current Balance: $500.0
```

Date : 20-01-2024

Experiment – 1.3

Aim:

Write a program that can count the number of instances created for the class.

Code:

```
public class CountObject {
    private static int count;
    public CountObject() {
        count++;
    }
    public static void main(String args[]) {
        CountObject ob1 = new CountObject();
        CountObject ob2 = new CountObject();
        CountObject ob3 = new CountObject();
        CountObject ob4 = new CountObject();
        CountObject ob5 = new CountObject();
        System.out.print("Total Number of Objects: " + CountObject.count);
    }
}
```

Output:

```
PS C:\Users\ankus\OneDrive\Desktop\java test> javac CountObject.java
PS C:\Users\ankus\OneDrive\Desktop\java test> java CountObject
Total Number of Objects: 5
```

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Experiment - 1.4

Aim:

Write a Java Program to get the cube of a given number using the static method.

Code:

```
import java.util.Scanner;
public class FindingCube {
  public static void main(String args[]){
    System.out.println("Enter a number ::");
    Scanner sc = new Scanner(System.in);
    int num = sc.nextInt();
    System.out.println("Cube of the given number is "+(num*num*num));
    sc.close();
  }
}
```

Output:

```
PS C:\Users\ankus\OneDrive\Desktop\java test> javac FindingCube.java
PS C:\Users\ankus\OneDrive\Desktop\java test> java FindingCube
Enter a number ::
4
Cube of the given number is 64
```

Date : 20-01-2024

Experiment - 1.5

Aim:

Create a class Box that uses a parameterized constructor to initialize the dimensions of a box. The dimensions of the Box are width, height, depth. The class should have a method that can return the volume of the box. Create an object of the Box class and test the functionalities.

Code:

```
public class Box {
   double h, w, d;
   Box(double height, double width, double depth) {
      h=height;
      w=width;
      d=depth;
      System.out.println("Height : " + h);
      System.out.println("Width : " + w);
      System.out.println("Depth : " + d);
   }
   double volume() {
      double v = h * w * d;
      return v;
   }
   public static void main(String[] args) {
      Box bc = new Box(40.7, 10.2, 2.5);
      System.out.println("Volume of the box is : " + bc.volume());
   }
}
```

Output:

```
PS C:\Users\ankus\OneDrive\Desktop\java test> javac Box.java
PS C:\Users\ankus\OneDrive\Desktop\java test> java Box
Height : 40.7
Width : 10.2
Depth : 2.5
Volume of the box is : 1037.85
```