Session 1: Introduction to Java

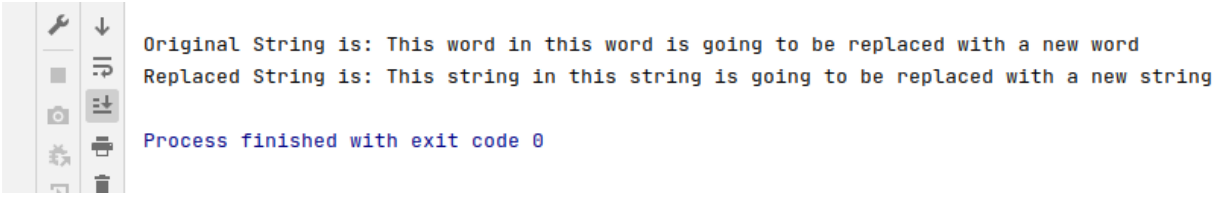
Assignment

1. Write a program to replace a substring inside a string with other string.

CODE

```
public class Ques1 {
    public static void main(String[] args) {
        String str = "This word in this word is going to be replaced with a new word";
        String newstr = str.replaceAll("word", "string");
        System.out.println("\nOriginal String is: "+str);
        System.out.println("Replaced String is: "+newstr);
    }
}
```

OUTPUT



```
Original String is: This word in this word is going to be replaced with a new word
Replaced String is: This string in this string is going to be replaced with a new string

Process finished with exit code 0
```

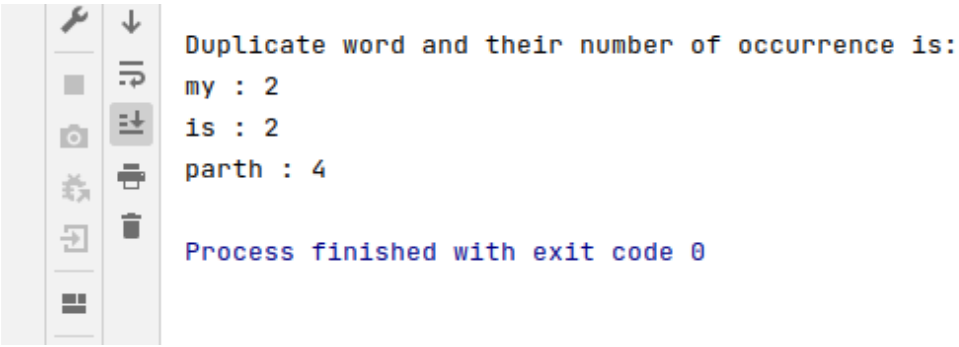
2. Write a program to find the number of occurrences of the duplicate words in a string and print them.

CODE

```
public class Ques2 {
    public static void main(String[] args) {
        String str = "my my name is is parth parth parth and parth";
        int count;
        String store[] = str.split(" ");
        System.out.println("\nDuplicate word and their number of occurrence is: ");
        for (int i = 0; i < store.length; i++) {
            count = 1;
            for (int j = i + 1; j < store.length; j++) {
                if (store[i].equals(store[j])) {
                    count++;
                    store[j] = "0";
                }
            }
            if (count > 1 && store[i] != "0") {
                System.out.println(store[i] + " : " + count);
```

```
        }
    }
  }
}
```

OUTPUT

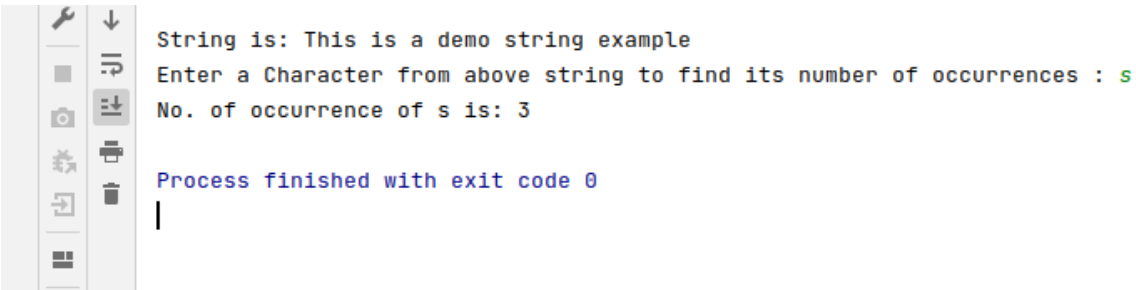


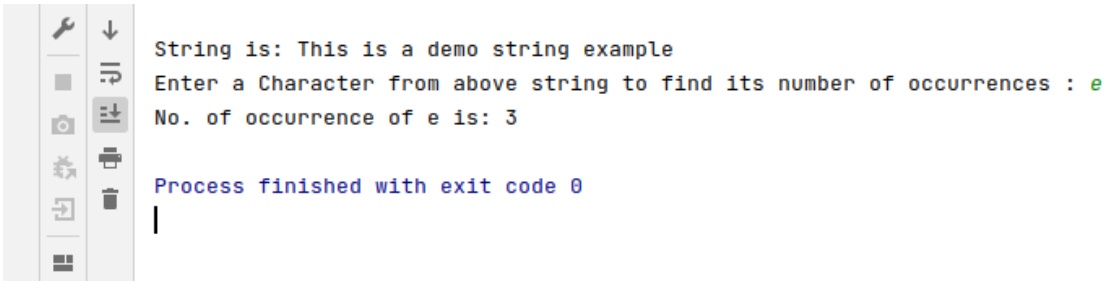
3. Write a program to find the number of occurrences of a character in a string without using loop?

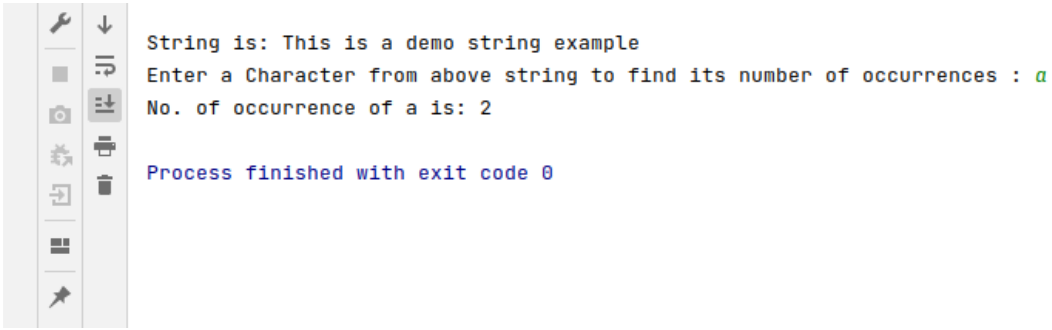
CODE

```
public class Ques3 {
   public static void main(String[] args) {
      String str = "This is a demo string example";
      int count;
      System.out.println("\nString is: " + str);
      System.out.print("Enter a Character from above string to find its number of occurrences : ");
      Scanner scanner = new Scanner(System.in);
      String input = scanner.nextLine();
      count = str.length() - str.replace(input, "").length();
      System.out.println("No. of occurrence of " + input + " is: " + count);
   }
}
```

OUTPUT







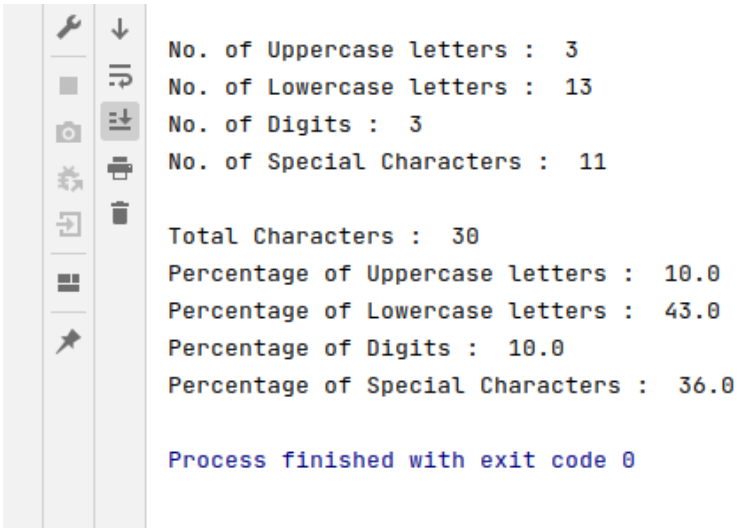
4. Calculate the number & Percentage of Lowercase Letters, Uppercase Letters, Digits and Other Special Characters in a String

CODE

```
public class Ques4 {
   public static void main(String[] args) {
      String str = "T#i$ i$ @ M0d1f1ed Te$t $tring";
      char ch;
      int uCount, lCount, sCount, nCount;
      uCount = lCount = sCount = nCount = 0;
      float upperP, lowerP, numP, specialP;

      for (int i = 0; i < str.length(); i++) {
         ch = str.charAt(i);
         if (ch >= 65 && ch <= 90) {
            uCount++;
         } else if (ch >= 97 && ch <= 122) {
            lCount++;
         } else if (ch >= 48 && ch <= 57) {
            nCount++;
         } else
            sCount++;
      }
      System.out.println("\nNo. of Uppercase letters :  " + uCount);
      System.out.println("No. of Lowercase letters :  " + lCount);
      System.out.println("No. of Digits :  " + nCount);
      System.out.println("No. of Special Characters :  " + sCount);
```

```
        int total = uCount + lCount + nCount + sCount;
        System.out.println("\nTotal Characters :  " + total);
        upperP = (uCount * 100) / total;
        lowerP = (lCount * 100) / total;
        numP = (nCount * 100) / total;
        specialP = (sCount * 100) / total;

        System.out.println("Percentage of Uppercase letters :  " + upperP);
        System.out.println("Percentage of Lowercase letters :  " + lowerP);
        System.out.println("Percentage of Digits :  " + numP);
        System.out.println("Percentage of Special Characters :  " + specialP);
    }
}
```

OUTPUT



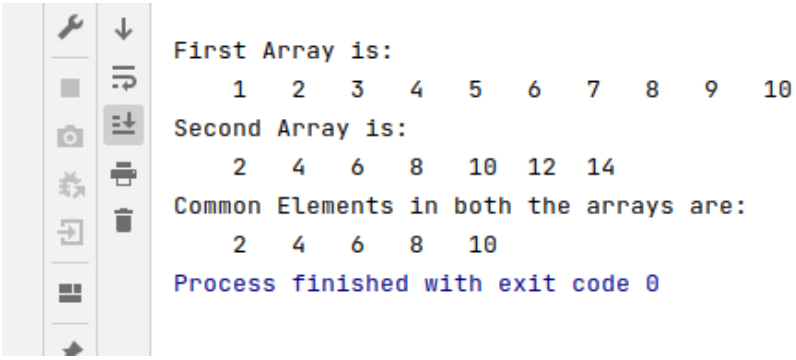
5. Find common elements between two arrays.

CODE

```
public class Ques5 {
    public static void main(String[] args) {
        int arr1[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};
        int arr2[] = {2, 4, 6, 8, 10, 12, 14};
        System.out.println("\nFirst Array is: ");
        for (int i = 0; i < arr1.length; i++) {
            System.out.print("\t" + arr1[i]);
        }
        System.out.println("\nSecond Array is: ");
        for (int i = 0; i < arr2.length; i++) {
            System.out.print("\t" + arr2[i]);
        }
```

```
        System.out.println("\nCommon Elements in both the arrays are: ");
        for (int i = 0; i < arr1.length; i++) {
            for (int j = 0; j < arr2.length; j++) {
                if (arr1[i] == arr2[j]) {
                    System.out.print("\t" + arr1[i]);
                }
            }
        }
    }
}
```

OUTPUT

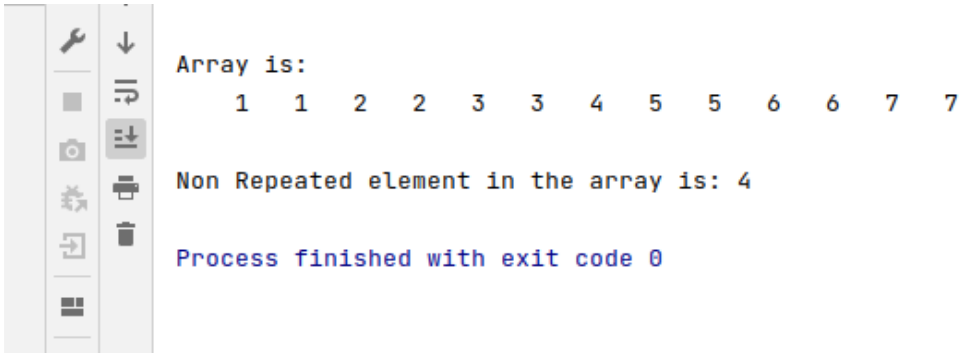


6. There is an array with every element repeated twice except one. Find that element

CODE

```
public class Ques6 {
    public static void main(String[] args) {
        int arr[] = {1, 1, 2, 2, 3, 3, 4, 5, 5, 6, 6, 7, 7};
        int single_element = arr[0];
        System.out.println("\nArray is: ");
        for (int i = 0; i < arr.length; i++) {
            System.out.print("\t" + arr[i]);
        }

        for (int i = 1; i < arr.length; i++) {
            single_element = single_element ^ arr[i];
        }
        System.out.println("\n\nNon Repeated element in the array is: " + single_element);

    }
}
```

OUTPUT



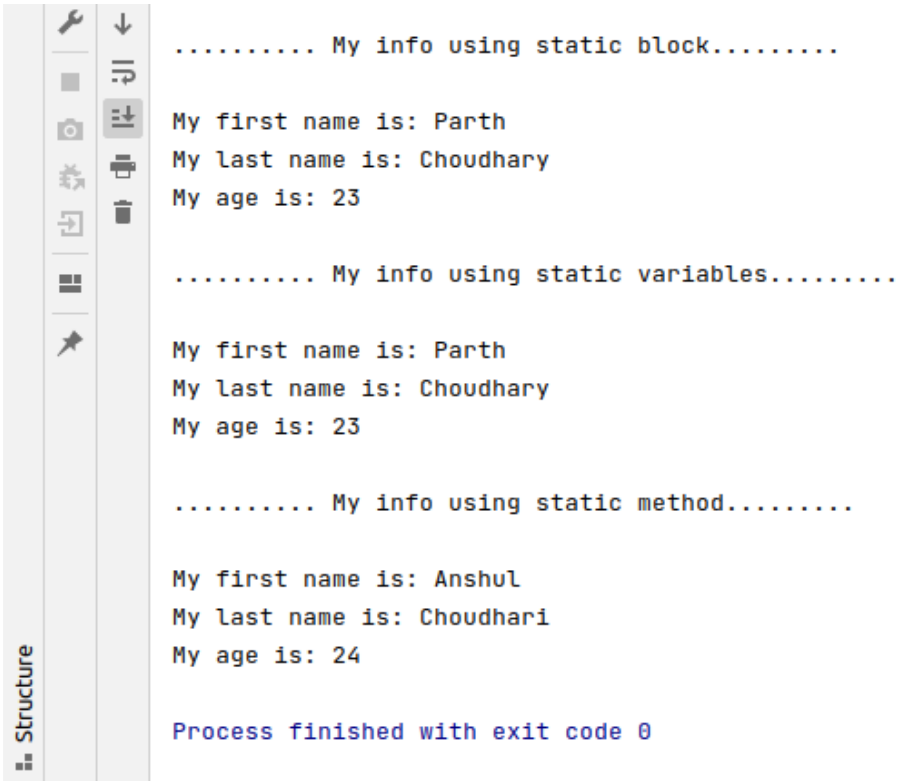
7. Write a program to print your First name, Last Name & age using static block, static method & static variable respectively

CODE

```
class MyInfo {
   static String firstname = "Parth";
   static String lastname = "Choudhary";
   static int age = 23;

   static void newInfo() {
      firstname = "Anshul";
      lastname = "Choudhari";
      age = 24;
      System.out.println("\n..... My info using static method.....");
      System.out.println("\nMy first name is: " + firstname + "\nMy last name is: " +
lastname + "\nMy age is: " + age);
   }
}

public class Ques7 {
   static {
      String firstname = "Parth";
      String lastname = "Choudhary";
      int age = 23;
      System.out.println("\n..... My info using static block.....");
      System.out.println("\nMy first name is: " + firstname + "\nMy last name is: " +
lastname + "\nMy age is: " + age);
   }

   public static void main(String[] args) {

      System.out.println("\n..... My info using static variables.....");
```

```
        System.out.println("\nMy first name is: " + MyInfo.firstname + "\nMy last name is:
" + MyInfo.lastname + "\nMy age is: " + MyInfo.age);
        MyInfo.newInfo();
    }
}
```

OUTPUT

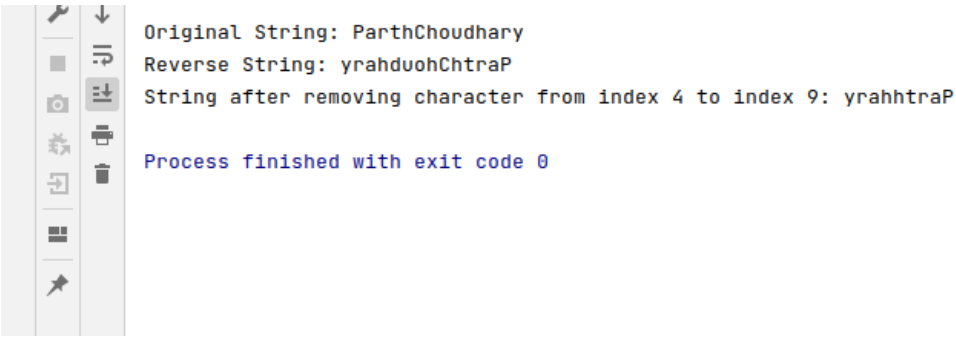


8. Write a program to reverse a string and remove character from index 4 to index 9 from the reversed string using String Buffer

CODE

```
public class Ques8 {
    public static void main(String[] args) {

        StringBuffer str = new StringBuffer("ParthChoudhary");
        System.out.println("\nOriginal String: " + str);
        StringBuffer rev = str.reverse();
        System.out.println("Reverse String: " + rev);
        rev = rev.delete(4, 9);
        System.out.println("String after removing character from index 4 to index 9: " +
rev);
    }
}
```

OUTPUT

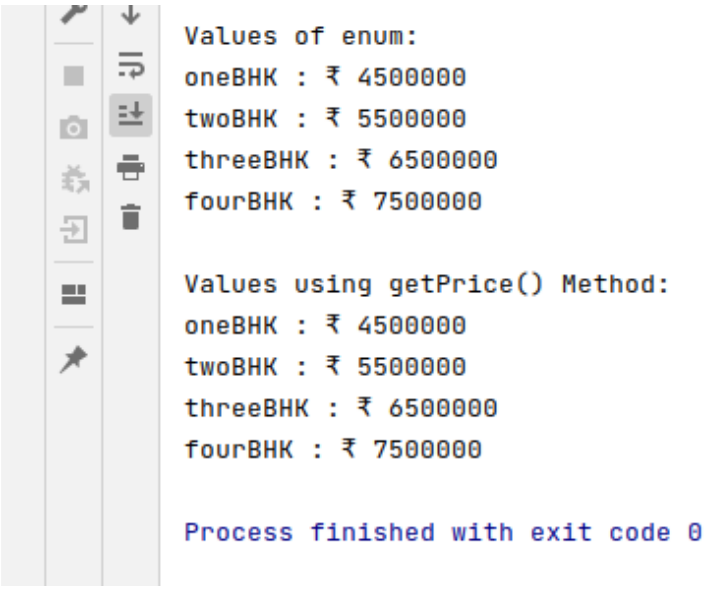


9. Write a program to display values of enums using a constructor & getPrice() method (Example display house & their prices)

CODE

```
public class Ques9 {

    enum Houses {
        oneBHK(4500000), twoBHK(5500000), threeBHK(6500000), fourBHK(7500000);
        int price;

        Houses(int price) {
            this.price = price;
        }

        int getPrice() {
            return price;
        }
    }
    public static void main(String[] args) {
        System.out.println("\nValues of enum: ");
        for (Houses h : Houses.values()) {
            System.out.println(h + " : \u20B9 " + h.price);
        }
        System.out.println("\nValues using getPrice() Method:");
        for (Houses h : Houses.values()) {
            System.out.println(h + " : \u20B9 " + h.getPrice());
        }
    }
}
```

OUTPUT



10. Write a single program for following operation using overloading

    A) Adding 2 integer number

    B) Adding 2 double

    C) Multiplying 2 float

    D) Multiplying 2 int

    E) Concate 2 string

    F) Concate 3 String

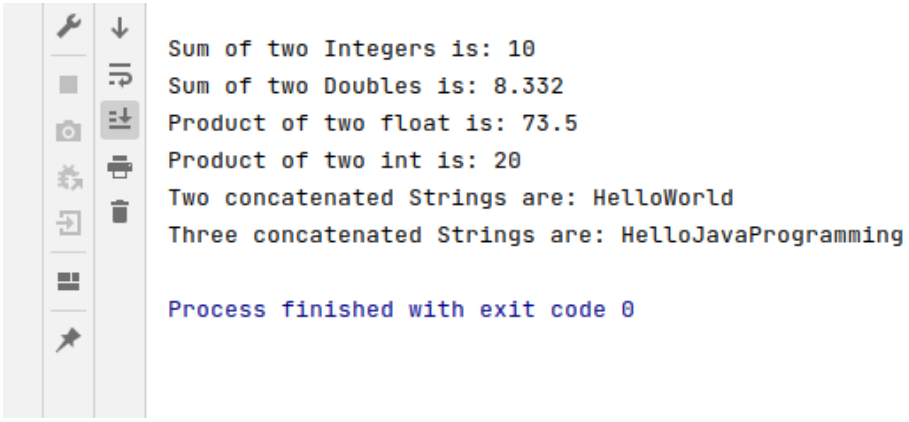
CODE

```
class DiffOperations {


   int add(int val1, int val2) {
      return (val1 + val2);
   }


   double add(double val1, double val2) {
      return (val1 + val2);
```

```
    }

    int prod(int val1, int val2) {
        return (val1 * val2);
    }

    float prod(float val1, float val2) {
        return (val1 * val2);
    }

    String strconcat(String s1, String s2) {
        return (s1 + s2);
    }

    String strconcat(String s1, String s2, String s3) {
        return (s1 + s2 + s3);
    }
}
public class Ques10 {
    public static void main(String[] args) {
        DiffOperations d1 = new DiffOperations();
        int sum_int = d1.add(3, 7);
        double sum_double = d1.add(4.876, 3.456);
        int prod_int = d1.prod(4, 5);
        float prod_float = d1.prod(7.5f, 9.8f);
        String str2cat = d1.strconcat("Hello", "World");
        String str3cat = d1.strconcat("Hello", "Java", "Programming");
        System.out.println("\nSum of two Integers is: " + sum_int);
```

```
        System.out.println("Sum of two Doubles is: " + sum_double);
        System.out.println("Product of two float is: " + prod_float);
        System.out.println("Product of two int is: " + prod_int);
        System.out.println("Two concatenated Strings are: " + str2cat);
        System.out.println("Three concatenated Strings are: " + str3cat);
    }
}
```

OUTPUT



11. Create 3 sub class of bank SBI, BOI, ICICI all 4 should have method called getDetails which provide their specific details like rateofinterest, etc. print details of every banks

CODE

```
class Bank {
    protected String bankCode;
    protected float rateOfInterest;
    protected String name;
    protected int noOfBranches;
    Bank(String name, float rateOfInterest, String bankCode, int noOfBranches) {
        this.name = name;
```

```
        this.bankCode = bankCode;
        this.rateOfInterest = rateOfInterest;
        this.noOfBranches = noOfBranches;
    }
    public void getDetails() {
        System.out.println("\nBank name is :" + name);
        System.out.println("Bank code is :" + bankCode);
        System.out.println("Bank rate of interest is: " + rateOfInterest + " %");
        System.out.println("No. of branches: " + noOfBranches);
    }
}
class SBI extends Bank {
    SBI(String name, float rateOfInterest, String bankCode, int noOfBranches) {
        super(name, rateOfInterest, bankCode, noOfBranches);
    }
}
class BOI extends Bank {
    BOI(String name, float rateOfInterest, String bankCode, int noOfBranches) {
        super(name, rateOfInterest, bankCode, noOfBranches);
    }
}
class ICICI extends Bank {
    ICICI(String name, float rateOfInterest, String bankCode, int noOfBranches) {
        super(name, rateOfInterest, bankCode, noOfBranches);
    }
}
public class Ques11 {
    public static void main(String[] args) {
```

```
        Bank bank = new Bank("Universal bank", 7.5f, "CUBI", 30);
        bank.getDetails();
        bank = new SBI("SBI", 5.5f, "CSBI", 100);
        bank.getDetails();
        bank = new BOI("BOI", 6.8f, "CBOI", 70);
        bank.getDetails();
        bank = new ICICI("ICICI", 8.2f, "CICICI", 90);
        bank.getDetails();
    }
}
```

OUTPUT