

1.) Implement a banking system using java. Create 3 sub class of Bank : SBI,BOI,ICICI
Classes should have attributes like Name, headofficeAddress, chairmanName, branchCount, fdInterestRate, personalLoanInterestRate, homeLoanInterestRate. All 3 should have following methods:

- add getters and setters for the fields
- print details of every bank (override toString)

```
public class Bank {  
  
    private String name,headofficeAddress,chairmanName;  
  
    private int branchCount;  
  
    private double fdInterestRate,personalLoanInterestRate,homeLoanInterestRate;  
  
    public Bank(String name, String headofficeAddress, String chairmanName, int  
branchCount, double fdInterestRate, double personalLoanInterestRate, double  
homeLoanInterestRate) {  
  
        this.name = name;  
  
        this.headofficeAddress = headofficeAddress;  
  
        this.chairmanName = chairmanName;  
  
        this.branchCount = branchCount;  
  
        this.fdInterestRate = fdInterestRate;  
  
        this.personalLoanInterestRate = personalLoanInterestRate;  
  
        this.homeLoanInterestRate = homeLoanInterestRate;  
  
    }  
  
    public String getName() {  
  
        return name;  
  
    }  
  
    public void setName(String name) {  
  
        this.name = name;  
  
    }  
  
}
```

```
public String getHeadofficeAddress() {  
    return headofficeAddress;  
}  
  
public void setHeadofficeAddress(String headofficeAddress) {  
    this.headofficeAddress = headofficeAddress;  
}  
  
public String getChairmanName() {  
    return chairmanName;  
}  
  
public void setChairmanName(String chairmanName) {  
    this.chairmanName = chairmanName;  
}  
  
public int getBranchCount() {  
    return branchCount;  
}  
  
public void setBranchCount(int branchCount) {  
    this.branchCount = branchCount;  
}  
  
public double getFdInterestRate() {  
    return fdInterestRate;  
}  
  
public void setFdInterestRate(double fdInterestRate) {  
    this.fdInterestRate = fdInterestRate;  
}  
  
public double getPersonalLoanInterestRate() {  
    return personalLoanInterestRate;  
}
```

```

    }

    public void setPersonalLoanInterestRate(double personalLoanInterestRate) {

        this.personalLoanInterestRate = personalLoanInterestRate;

    }

    public double getHomeLoanInterestRate() {

        return homeLoanInterestRate;

    }

    public void setHomeLoanInterestRate(double homeLoanInterestRate) {

        this.homeLoanInterestRate = homeLoanInterestRate;

    }

    @Override

    public String toString() {

        return

            "name= " + name + '\n' +

                "headofficeAddress= " + headofficeAddress + '\n' +

                "chairmanName= " + chairmanName + '\n' +

                "branchCount= " + branchCount + '\n' +

                "fdInterestRate= " + fdInterestRate + '\n' +

                "personalLoanInterestRate= " + personalLoanInterestRate
+ '\n' +

                "homeLoanInterestRate= " + homeLoanInterestRate + '\n' ;

    }

    public static void main (String[] args){

        ICICI icici = new ICICI("ICICI Bank", "Delhi", "harshit aggarwal", 5000,
5.5, 11.5, 7.5);

```

```
SBI sbi = new SBI("SBI bank","Delhi","harsh",9000,7.5,6.5, 8.8);

System.out.println(icici.toString());

System.out.println(sbi.toString());


icici.setFdInterestRate(6.0);

icici.setPersonalLoanInterestRate(12.0);

icici.setHomeLoanInterestRate(8.0);


sbi.setFdInterestRate(5.0);

sbi.setPersonalLoanInterestRate(4.0);

sbi.setHomeLoanInterestRate(6.6);


System.out.println(icici.toString());

System.out.println(sbi.toString());

}

}
```

```
public class ICICI extends Bank {
```

```

    public ICICI(String name, String headofficeAddress, String chairmanName, int
branchCount, double fdInterestRate, double personalLoanInterestRate, double
homeLoanInterestRate) {

        super(name, headofficeAddress, chairmanName, branchCount,
fdInterestRate, personalLoanInterestRate, homeLoanInterestRate);

    }

    public static void main(String[] args) {

    }

}

```

```

public class BOI extends Bank {

    public BOI(String name, String headofficeAddress, String chairmanName, int
branchCount, double fdInterestRate, double personalLoanInterestRate, double
homeLoanInterestRate) {

        super(name, headofficeAddress, chairmanName, branchCount,
fdInterestRate, personalLoanInterestRate, homeLoanInterestRate);

    }

}

```

```

public class SBI extends Bank {

```

```
    public SBI(String name, String headofficeAddress, String chairmanName, int
branchCount, double fdInterestRate, double personalLoanInterestRate, double
homeLoanInterestRate) {

        super(name, headofficeAddress, chairmanName, branchCount,
fdInterestRate, personalLoanInterestRate, homeLoanInterestRate);

    }

}
```

Output 😊:

```
/home/himanshu/.jdk/openjdk-19.0.2/bin/java -javaagent:/snap/intellij-idea-community/409/lib/idea_rt.ja
name= ICICI Bank
headofficeAddress= Delhi
chairmanName= harshit aggarwal
branchCount= 5000
fdInterestRate= 5.5
personalLoanInterestRate= 11.5
homeLoanInterestRate= 7.5

name= SBI bank
headofficeAddress= Delhi
chairmanName= harsh
branchCount= 9000
fdInterestRate= 7.5
personalLoanInterestRate= 6.5
homeLoanInterestRate= 8.8

name= ICICI Bank
headofficeAddress= Delhi
chairmanName= harshit aggarwal
branchCount= 5000
fdInterestRate= 6.0
```

```
name= ICICI Bank
headofficeAddress= Delhi
chairmanName= harshit aggarwal
branchCount= 5000
fdInterestRate= 6.0
personalLoanInterestRate= 12.0
homeLoanInterestRate= 8.0

name= SBI bank
headofficeAddress= Delhi
chairmanName= harsh
branchCount= 9000
fdInterestRate= 5.0
personalLoanInterestRate= 4.0
homeLoanInterestRate= 6.0

Process finished with exit code 0
```

Q.2) WAP showing try, multi-catch and finally blocks.

```
import java.util.Scanner;

public class multiCatch
{
    public static void main(String args[])
    {
        Scanner scn = new Scanner(System.in);

        try
        {
            int n = Integer.parseInt(scn.nextLine());

            if (99/n == 0)

                System.out.println(n + " is a factor of 99");
        }
    }
}
```

```
    }

    catch (ArithmeticException ex)

    {

        System.out.println("Arithmetic " + ex);

    }

    catch (NumberFormatException ex)

    {

        System.out.println("Number Format Exception " + ex);

    }

    finally {

        System.out.println("Closing the blocks");

    }

}

}
```

Output 😊 :

```
/home/himanshu/.jdk/openjdk-19.0.2/bin/java -javaagent:/snap/intellij-idea-community/409/lib/idea_rt.jar
0
Arithmetic java.lang.ArithmeticException: / by zero
Closing the blocks

Process finished with exit code 0
```


Q 4.) Create a custom exception that do not have any stack trace.

```
public class ques4 {  
  
    public static void main(String args[]){  
  
        try{  
  
            throw new second("Custom_expectation");  
  
        }  
  
        catch(second ex){  
  
            System.out.println("caught");  
  
            System.out.println(ex.getMessage());  
  
        }  
  
    }  
  
}
```

Output 😊

```
/home/himanshu/.jdk/openjdk-19.0.2/bin/java -javaagent:/snap/intellij-idea-community/409/lib/idea_rt.jar  
caught  
Custom_expectation  
  
Process finished with exit code 0
```

Q 3.)WAP to produce NoClassDefFoundError and ClassNotFoundException exception.

```
public class ques3b {  
    public static void main(String []args){  
        ques3c other = new ques3c();  
  
    }  
}
```

```
public class ques3c {  
  
}
```

Output 😊

```
/home/himanshu/.jdk/openjdk-19.0.2/bin/java -javaagent:/snap/intellij-idea-community/409/lib/idea_rt.jar  
  
Process finished with exit code 0
```

```
himanshu@TTNPL-himanshu:src (master)$ javac ques3b.java  
himanshu@TTNPL-himanshu:src (master)$ java ques3b  
Exception in thread "main" java.lang.NoClassDefFoundError: ques3c  
    at ques3b.main(ques3b.java:3)  
Caused by: java.lang.ClassNotFoundException: ques3c  
    at java.base/jdk.internal.loader.BuiltinClassLoader.loadClass(BuiltinClassLoader.java:641)  
    at java.base/jdk.internal.loader.ClassLoaders$AppClassLoader.loadClass(ClassLoaders.java:188)  
    at java.base/java.lang.ClassLoader.loadClass(ClassLoader.java:521)  
    ... 1 more  
himanshu@TTNPL-himanshu:src (master)$
```