

## Introduction to Java-2

### Assignment

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 Main {  
  
    public static void main(String[] args) {  
  
        Bank a=new SBI("rashmi","Gokulpuri","Anish",23,4.35F,3.45F,4.43F);  
  
        System.out.println(a.printdetails());  
  
        Bank b=new BOI();  
  
        b.setbranchcount(22);  
  
        b.setchairmanName("Akash Joshi");  
  
        b.setName("Simran");  
  
        b.sethoAddress("Shastri Park");  
  
        b.sethlirate((float)5.0);  
  
        b.setplirate((float)6.67);  
  
        b.setFdirate((float)4.56);  
  
        System.out.println("Name:"+b.getname());  
  
        System.out.println("Chairman name: "+b.getChairmanName());  
  
        System.out.println("home office Address : "+b.gethoAddress());  
  
        System.out.println("Branch Count: "+b.getBranchcount());  
  
        System.out.println("FDI rate: "+b.getfdirate());  
  
    }  
}
```

```

        System.out.println("PLI rate : "+b.getplirate());

        System.out.println("HLI rate: "+b.gethlirate());

        ICICI c=new ICICI();

        c.setName("Shreya");

        c.setchairmanName("Shruti");

        c.sethoAddress("Krishna Nagar");

        c.setbranchcount(21);

        c.sethlirate((float)4.56);

        c.setplirate((float)5.55);

        c.setFdirate((float)3.67);

        System.out.println(c.printdetails());

    }

}

```

```

public abstract class Bank {

    public String name,hoAddress,chairmanName;

    public int branchcount;

    public float fdirate, plirate,hlirate;

    public Bank() {

    };

    public Bank(String name,String hoAddress,String chairmanName,int
branchcount,float fdirate,float plirate,float hlirate) {

        this.name=name;

        this.hoAddress=hoAddress;

        this.branchcount=branchcount;

        this.fdirate=fdirate;

```

```
        this.hlirate=hlirate;

        this.plirate=plirate;

        this.chairmanName=chairmanName;
    }

    public void setbranchcount(int branchcount) {

        this.branchcount=branchcount;
    }

    public void setName(String name) {

        this.name=name;
    }

    public void sethoAddress(String hoAddress) {

        this.hoAddress=hoAddress;
    }

    public void setchairmanName(String chairmanName) {

        this.chairmanName=chairmanName;
    }

    public void setFdirate(float fdirate) {

        this.fdirate=fdirate;
    }
}
```

```
public void setplirate(float plirate) {  
  
    this.plirate=plirate;  
  
}
```

```
public void sethlirate(float hlirate) {  
  
    this.hlirate=hlirate;  
  
}
```

```
public String getname() {  
  
    return name;  
  
}
```

```
public String gethoAddress() {  
  
    return hoAddress;  
  
}
```

```
public String getChairmanName() {  
  
    return chairmanName;  
  
}
```

```
public int getBranchcount() {  
  
    return branchcount;  
  
}
```

```
public float getfdirate() {  
  
    return fdirate;  
  
}
```

```
public float getplirate() {
```

```

        return plirate;
    }

    public float gethlirate() {

        return hlirate;
    }

    public String printdetails() {

        return "Name : "+name+" \nHome Office Address: "+hoAddress+"
\nChairman Name : "+chairmanName+" \nBranch count : "+branchcount+" \n
FDI rate: "+fdirate+" \nPLI rate: "+plirate+"\n HLI rate: "+hlirate;

    }

}

```

```

public class SBI extends Bank{

    public SBI(String name, String hoAddress, String chairmanName, int
branchcount, float fdirate, float plirate, float hlirate) {

        super(name, hoAddress, chairmanName, branchcount, fdirate,
plirate, hlirate);
    }

    public SBI(){

        super();
    }

}

```

```

public class BOI extends Bank{

    public BOI(String name, String hoAddress, String chairmanName, int
branchcount, float fdirate, float plirate, float hlirate) {

        super(name, hoAddress, chairmanName, branchcount, fdirate,
plirate, hlirate);
    }

}

```

```
}

public BOI () {

    super();

}

}

public class ICICI extends Bank{

    public ICICI(String name, String hoAddress, String chairmanName, int
branchcount, float fdirate, float plirate, float hlirate) {

        super(name, hoAddress, chairmanName, branchcount, fdirate,
plirate, hlirate);

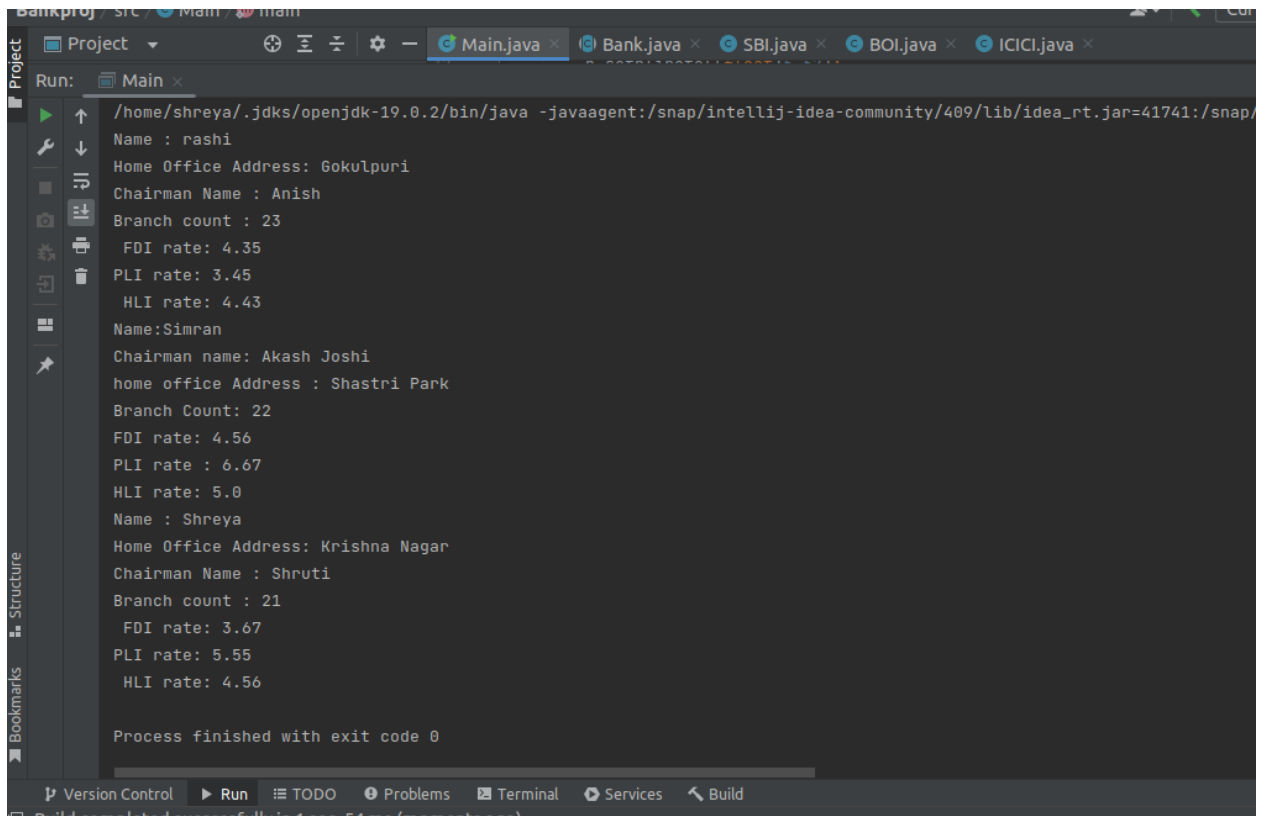
    }

    public ICICI () {

        super();

    }

}
```



```
Run: Main ×
/home/shreya/.jdk/openjdk-19.0.2/bin/java -javaagent:/snap/intellij-idea-community/409/lib/idea_rt.jar=41741:/snap/
Name : rashmi
Home Office Address: Gokulpuri
Chairman Name : Anish
Branch count : 23
    FDI rate: 4.35
    PLI rate: 3.45
    HLI rate: 4.43
Name:Simran
Chairman name: Akash Joshi
home office Address : Shastri Park
Branch Count: 22
    FDI rate: 4.56
    PLI rate : 6.67
    HLI rate: 5.8
Name : Shreya
Home Office Address: Krishna Nagar
Chairman Name : Shruti
Branch count : 21
    FDI rate: 3.67
    PLI rate: 5.55
    HLI rate: 4.56

Process finished with exit code 0
```

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

```
public class Exceptiontut {

    public static void main(String[] args) {

        try{

            int a[]= new int[3];

            a[3]=45/0;

        }

        catch(ArrayIndexOutOfBoundsException e){

            System.out.println("Array Index out of bound occurred ");

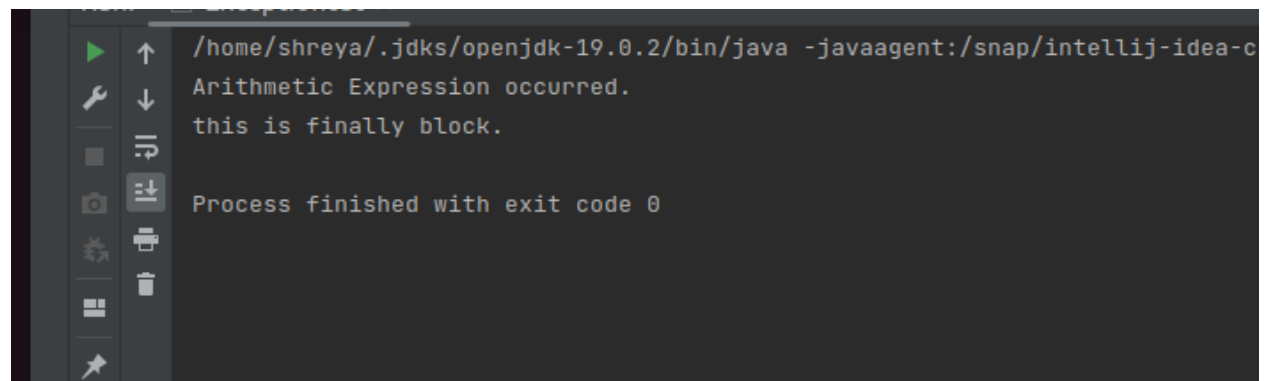
        }

        catch(ArithmeticException e){
```

```

        System.out.println("Arithmetic Expression occurred.");
    } finally{
        System.out.println("this is finally block.");
    }
}
}

```



```

/home/shreya/.jdk/openjdk-19.0.2/bin/java -javaagent:/snap/intellij-idea-c
Arithmetic Expression occurred.
this is finally block.

Process finished with exit code 0

```

3) WAP to produce NoClassDefFoundError and ClassNotFoundException exception.

```

public class Excepttut {

    public static void main(String[] args){

        try {

            Class.forName("Excepti");

        }

        catch (ClassNotFoundException e){

            System.out.println("Class not found Exception");

        }

    }

}

```



```
}
```

```
↑ /home/shreya/.jdk/openjdk-19.0.2/bin/java -javaagent:/snap/intellij-idea-community/409/lib/idea_rt.jar  
↓ Class not found Exception  
≡ Process finished with exit code 0  
≡  
≡  
≡  
≡
```

```
public class Except {  
  
    public static void main(String[] args){  
  
        try {  
  
            SimpleCalulator calculator1 = new SimpleCalulator();  
  
        } catch (Throwable t) {  
  
            System.out.println(t);  
  
        }  
  
        SimpleCalulator calculator2 = new SimpleCalulator();  
  
    }  
}  
  
public class SimpleCalulator {  
  
    static int undefined = 1 / 0;  
  
}
```

```
/home/shreya/.jdk/openjdk-19.0.2/bin/java -javaagent:/snap/intellij-idea-community/409/lib/idea_rt.jar=33259:/snap/intellij-idea-community/409/
java.lang.ExceptionInInitializerError
Exception in thread "main" java.lang.NoClassDefFoundError: Could not initialize class SimpleCalculator
    at Except.main(Except.java:10)
Caused by: java.lang.ExceptionInInitializerError: Exception java.lang.ArithmeticException: / by zero [in thread "main"]
    at SimpleCalculator.<clinit>(SimpleCalculator.java:2)
    at Except.main(Except.java:5)

Process finished with exit code 1
```

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

```
import java.lang.*;

public class CustomException extends RuntimeException {

    public CustomException(String message) {

        super( message,null,false,false);

    }

    public synchronized Throwable fillInStackTrace() {

        return this;

    }

}
```

```
public class Custom {

    public static void main(String[] args) {

        try{

            throw new CustomException("Custom Exception generated");

        }

        catch(CustomException e){

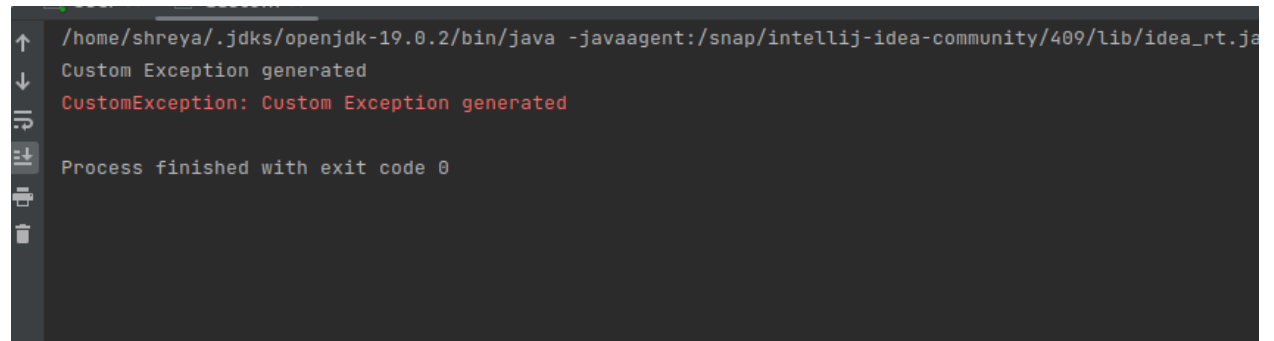
            System.out.println(e.getMessage());

            e.printStackTrace();

        }

    }

}
```



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

The image shows a terminal window with a dark background. On the left side, there is a vertical toolbar with icons for navigation (up, down arrows), search (magnifying glass), and other standard terminal functions. The main area of the terminal displays the execution of a Java command. The first line is the command: `/home/shreya/.jdk/openjdk-19.0.2/bin/java -javaagent:/snap/intellij-idea-community/409/lib/idea_rt.jar`. The subsequent lines show the output: `Custom Exception generated`, `CustomException: Custom Exception generated` (in red text), and `Process finished with exit code 0`.