Assignment - 10

Q1)

```java
package Exception;

import java.util.*;

public class Exception {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int a;
        int b;
        int c;
        System.out.println("Enter two number: ");
        a = sc.nextInt();
        b = sc.nextInt();

        try {
            c = a / b;
            System.out.println("Result = " + c);
        } catch (ArithmeticException e) {
            System.err.println(e);

        } finally {
            System.out.println("Operation has completed");
        }
    }
}
```

```
<terminated> Exception [Java Application] C:\Users\hp\Downloads\ecli
Enter two number:
5
0
java.lang.ArithmeticException: / by zero
Operation has completed
```

Q2)

```java
package Exception;

import java.util.*;

public class ArrayBound {
    public static void main(String[] args) {
        int[] numbers = { 10, 20, 30, 40, 50 };
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a index to access: ");
        int a = sc.nextInt();

        try {

            System.out.println("Enter the index " + a + ":" + numbers[a]);
        } catch (ArrayIndexOutOfBoundsException e) {
            System.out.println("Exception caught: " + e);
        } finally {
            System.out.println("Array access operation is complete.");
        }
    }
}
```

```
Enter a index to access:

5
Exception caught: java.lang.ArrayIndexOutOfBoundsException: Index 5 out of bounds for length 5
Array access operation is complete.
```

Q3)

```java
package Exception;

public class NullPointerDemo {

    public static void main(String[] args) {
        String str = null;

        try {
            System.out.println("Length: " + str.length());
        } catch (NullPointerException e) {
            System.err.println(e);
        } finally {
            System.out.println("The operation is performed");
        }
    }
}
```

```
java.lang.NullPointerException: Cannot invoke "String.length()" because "str" is null
The operation is performed
```

Q4)

```java
package Exception;
import java.util.*;
public class NumberFormatExceptions {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a String: ");
        String a = sc.nextLine();


    try {
        int number = Integer.parseInt(a);
        System.out.println("Converted number :" + a);
    }

    catch(NumberFormatException e) {
        System.err.println(e);
    }
    finally {
        System.out.println("Operation on is done");
    }


}}
```

```
<terminated> NumberFormatExceptions [Java Application] C:\Users\hp\Downloads\eclipse-jee-2025
Enter a String:
five
java.lang.NumberFormatException: For input string: "five"
Operation on is done
```

Q5)

```java
package Exception;

import java.util.Scanner;

public class ArithmeticExceptions {
    public static void main(String[] args) {
        try {
            try {
                int a = 10;
                int b = 0;
                int c = a / b;
                System.out.println(c);
            } catch (ArithmeticException e) {
                System.err.println(e);
            }
            try {
                int[] arr = { 10, 20, 30, 40, 50 };
                System.out.println("Enter the index " + arr[5]);
            }

            catch (ArrayIndexOutOfBoundsException e) {
                System.err.println(e);
            }
        } finally {
            System.out.println("Operation Completed");
        }
    }
}
```

```
Problems  Javadoc  Declaration  Console  Install Java 25 Support
<terminated> ArithmeticExceptions [Java Application] C:\Users\hp\Downloads\eclipse-jee-2025-09-R-win32-x86_64\eclipse\plugin
java.lang.ArithmeticException: / by zero
java.lang.ArrayIndexOutOfBoundsException: Index 5 out of bounds for length 5
Operation Completed
```

Q6)

```java
/*Problem 1: Create Customer class with the relevant information like name, address,
 id, phone no etc. Write a parameterized constructor and relevant methods (disp(),)
  appropriately.
Create Account class with account type, account number, minimum balance etc.,
Write calculateInterest method
 (use simple interest - assume time and rate appropriately).
Create a user defined exception class "NegativeBalanceException" and
throw that exception when there is negative balance while calculating the interest.
Use Account class in Customer class display the details of customer with account
 information. (No Inheritance - use association<0xa0>only)
 */
public class Account{

    String accty;
    int accno;
    int minbal;
    int bal;
    int t = 5;
    int r = 2;

    public Account(String accty, int accno, int minbal,int bal){

        this.accty  = accty;
        this.accno  = accno;
        this.minbal = minbal;
        this.bal    = bal;
    }
    public int calInt() throws NegativeBalanceException {
        if (minbal > bal) {
            throw new NegativeBalanceException("Insufficent Balance");
            }
        return (bal*t*r)/100;
    }
    public void setdata(){
    System.out.println("Account Type : "+accty+"\nAcvcount Number : "+accno+"\nMinimum Balance : "+minbal+"\nBalance : "+bal);

    }
}
```

```java
 */
public class Customer{

    String name;
    String addr;
    int id;
    int phn;
    int intrest;
    Account a;

    public Customer(String name, String addr, int id, int phn, Account a){
        this.a    = a;
        this.name = name;
        this.addr = addr;
        this.id   = id;
        this.phn  = phn;
        this.intrest = intrest;
    }

    public void si() throws NegativeBalanceException  {
        try{
            intrest = a.calInt();
           }
        catch(NegativeBalanceException e){

            System.out.println(e.getMessage());
            intrest = 0;
        }
        System.out.println("Intrest is "+intrest);
    }


    public void setdata(){
    System.out.println("Name: "+name+"\nAddress : "+addr+"\nID : "+id+"\nPhone No : "+phn);
    a.setdata();
    }
}
```

Nested.java | NegativeBalanceException.java | Exception.java

```java
public class NegativeBalanceException extends RuntimeException{

    public NegativeBalanceException(String e){
        super("Insufficent Balance");
    }


}
```

Nested.java | NegativeBalanceException.java | *Exception.java*

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

    Account a = new Account("Saving", 323233, 10000,1000);
    Customer c = new Customer("Yash", "Mumbai",213,534233,a);
    c.setdata();
    c.si();

 }
}
//String name, String addr, int id, int phn, Account a,
//String accty, int accno, int minbal,int bal
```

```
D:\CDAC Hydrabad\JAVA\Assignment 07>java Exception.java
Name: Yash
Address : Mumbai
ID : 213
Phone No : 534233
Account Type : Saving
Acvcount Number : 323233
Minimum Balance : 10000
Balance : 1000
Insufficent Balance
Intrest is 0
```