**Task 3. Exception Handling Mechanism in Java CO3**

* **Handling pre-defined exceptions**
* **Handling user-defined exceptions**

**3.1** John and vikram are two friends, one day they planned to play a game. John starts to say some number and vikram need to check whether the number is between 1 to 100 or not. If the number lies between 1 to 100 then vikram need to say “Your number is : ---“ or else Vikram will say “Wrong format”. Implement user defined exception to solve the above scenario.

**Input:**

Enter a number between 1 and 100 101

java.lang.Exception: Out of Range Exception. Must be in 1..100

Enter a number between 1 and 100 26

You entered 26

**Program:**

//UserdefinedException.java

import java.io.\*;

import java.util.\*;

public class UserdefinedException

{

public static void main( String args[] )

{

Scanner kbd = new Scanner(System.in);

do{

System.out.print("Enter a number between 1 and 100 ");

try{

int userNum = kbd.nextInt();

if(userNum <1 || userNum > 100){

throw new Exception("Out of Range Exception. Must be in 1..100");

}

System.out.printf("You entered %d\n", userNum );

break;

}

catch(InputMismatchException e){

kbd.nextLine();

System.out.println("Wrong format, try again");

}

catch(Exception e2){

System.out.println(e2);

}

}

while(true);

} //END main

} //EOF

**3.2** Create a program to implement Build-in Exception like Arithmetic Exception, NumberFormatException, ArrayIndexoutofboundsException.

**Input:**

10

20

**Output:**

Trying to Access the Arraysize that has not Declared..

**Program:**

**import** java.util.Scanner;

**public** **class** Ex1 {

**public** **static** **void** main (String [] args)

{

Scanner sr=**new** Scanner(System.***in***);

**try**

{

**int** a=sr.nextInt();

**int** b=sr.nextInt();

**int** c=a/b;

System.***out***.print("Division of a and b is:"+c);

**int**[] d= {10,20,30};

**for**(**int** i=0;i<4;i++)

{

System.***out***.println(d[i]);

}

}

**catch** (ArithmeticException Ae)

{

System.***out***.println ("DONT ENTER ZERO FOR DENOMINATOR...");

}

**catch** (NumberFormatException Nfe)

{

System.***out***.println ("PASS ONLY INTEGER VALUES...");

}

**catch** (ArrayIndexOutOfBoundsException Aioobe)

{

System.***out***.println ("Trying to Access the Arraysize that has not Declared...");

}

**finally**

{

System.***out***.println ("I AM FROM FINALLY...");

}

}

}

**3.3** create your own exception class MyException. Details of account numbers, customer names, and balance amounts are taken in the form of three arrays.

In main() method, the details are displayed using a for-loop. At this time, a check is done if in any account the balance amount is less than the minimum balance amount (1000) If it is so, then MyException is raised and a message is displayed “Balance amount is less”.

**Program:**

class MyException extends Exception

{

//store account information

private static int accno[] = {1001, 1002, 1003, 1004};

private static String name[] =

{"Nish", "Shubh", "Sush", "Abhi", "Akash"};

private static double bal[] =

{10000.00, 12000.00, 5600.0, 999.00, 1100.55};

// default constructor

MyException() { }

// parameterized constructor

MyException(String str) { super(str); }

// write main()

public static void main(String[] args)

{

try {

// display the heading for the table

System.out.println("ACCNO" + "\t" + "CUSTOMER" +

"\t" + "BALANCE");

// display the actual account information

for (int i = 0; i < 5 ; i++)

{

System.out.println(accno[i] + "\t" + name[i] +

"\t" + bal[i]);

// display own exception if balance < 1000

if (bal[i] < 1000)

{

MyException me =

new MyException("Balance is less than 1000");

throw me;

}

}

} //end of try

catch (MyException e) {

e.printStackTrace();

}

}

}