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Branch: Information Technology **Div: D/IT1**

Course: **Object Oriented Programming using Java**

Experiment no. 10

Aim:To implement exceptions in Java (read input using DataInputStream/ BufferedReader classes)

Problem Statement 1:
WAP to implement exception handling -default exceptions -NumberFormatException -ArithmeticException -ArrayIndexOutOfBounds

Code:

```
import java.util.*;
class Handle
{
	public static void main(String[] args)
	{
		int a,num;
		Scanner obj=new Scanner(System.in);
		try
		{
			System.out.println("Enter num");
			num=Integer.parseInt(obj.next());
			a=100/num;
			System.out.println(a);
		}
		catch(Exception e)
		{
			System.out.println("Invalid Input\nPls Enter valid character");
		}
		System.out.println("End of program");
	}
}
```

Output

```
C:\Users\91720\OneDrive\Desktop\Anish Java>java Handle
Enter num
0
Invalid Input
Pls Enter valid character
End of program
```

Code:

```
import java.util.*;
class Exception1
{
	public static void main(String[] args)
	{
		int a,num;
		Scanner obj=new Scanner(System.in);
		try
		{
			System.out.println("Enter num");
			num=Integer.parseInt(obj.next());
			a=100/num;
			System.out.println(a);
		}
		catch(Exception e)
		{
			System.out.println(e);
		}
		System.out.println("End of program");
	}
}
```

Output

```
C:\Users\91720\OneDrive\Desktop\Anish Java>java Exception1
Enter num
0
java.lang.ArithmeticException: / by zero
End of program
```

Code:

```
import java.util.*;
class Exception1
{
	public static void main(String[] args)
	{
		int a,num;
		Scanner obj=new Scanner(System.in);
		try
		{
			System.out.println("Enter num");
			num=Integer.parseInt(obj.next());
			a=100/num;
			System.out.println(a);
		}
		catch(Exception e)
		{
			System.out.println(e);
		}
		System.out.println("End of program");
	}
}
```

Output

```
C:\Users\91720\OneDrive\Desktop\Anish Java>java Exception1
Enter num
abc
java.lang.NumberFormatException: For input string: "abc"
End of program
```

Code:

```
import java.util.*;
class ExceptionArray
{
	public static void main(String[] args)
	{
		Scanner obj=new Scanner(System.in);
		int arr[]=new int[5];
		System.out.println("Enter element");
		for(int i=0;i<arr.length;i++)
		{
			arr[i]=obj.nextInt();
		}
		try
		{
			System.out.println(arr[7]);
		}
		catch(Exception e)
		{
			System.out.println(e);
		}
		System.out.println("End of program");
	}
}
```

Output

```
C:\Users\91720\OneDrive\Desktop\Anish Java>java ExceptionArray
Enter element
1
2
3
4
5
java.lang.ArrayIndexOutOfBoundsException: Index 7 out of bounds for length 5
End of program
```

Problem Statement 2:

Write a Java Program to Create a User Defined Exception class MarksOutOfBoundsException, If Entered marks of any subject is greater than 100 or less than 0, and then program should create a user defined Exception of type MarksOutOfBoundsException and must have a provision to handle it

Code:

```
import java.util.*;
class MarksOutOfBoundsException extends Exception
{
	public MarksOutOfBoundsException(String s)
	{
		System.out.println(s);
	}
}
class CreateException
{
	public static void check(int a) throws MarksOutOfBoundsException //or Exception
	{
		if(a<0 || a>100)
			throw new MarksOutOfBoundsException("Invalid Marks");
		else
			System.out.println("Your marks is valid "+a);
	}
	public static void main(String[] args)
	{
		Scanner obj=new Scanner(System.in);
		System.out.println("Enter marks");
		int marks=obj.nextInt();

		try{
			check(marks);
		}
		catch(MarksOutOfBoundsException e){
			System.out.println(e);
```

```
            }
        }
}
```

Output

```
C:\Users\91720\OneDrive\Desktop\Anish Java>java CreateException
Enter marks
99
Your marks is valid 99

C:\Users\91720\OneDrive\Desktop\Anish Java>javac CreateException.java

C:\Users\91720\OneDrive\Desktop\Anish Java>java CreateException
Enter marks
-99
Invalid Marks
MarksOutOfBoundsException
```