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Topic:

Exception Handeling

Part-1

1.Abnormal behavior of the code which gives problem at run time and does not show output leading to program termination is called as Exception.

2. Exception handling is the process of responding to unwanted or unexpected events when a computer program runs. Exception handling deals with these events to avoid the program or system crashing, and without this process, exceptions would disrupt the normal operation of a program.

***Exception is Thrown by try block.**

***Catch block handles the Exception thrown by the try block.**

Q: What is try and catch block?

1. try and catch block together are used to handle exception.
2. suspicious code is mentioned inside try block.
3. try is a keyword.
4. try block throws the exception which is generated by the code.
5. try block is followed by the catch block.
6. try block cannot work without catch block.
7. catch block handles the exception thrown by try block.
8. Name of the Exception class is mentioned in Catch Block as a Parameter.

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List of Exceptions

1. ArithemticException --> div by 0.

```
try
        {
            int a=5;
            int res;

            res=a/0;//--Program  Arithmetic Exception

            System.out.println("result is:"+a);
        }
        catch(ArithmeticException e)
        {

            System.out.println(e);
        }
```

Output:
java.lang.ArithmeticException: / by zero

2. NullPointerException-->null.

```
try
{
    String name=null;

    System.out.println(name.length());
}
catch(NullPointerException e)
{
    System.out.println(e);
}
```

Output:

java.lang.NullPointerException:

3. NumberFormatException-->Converting a non-numeric data to numeric.

```
try
{
        String num1="abcd";
        String num2="pqrs";

        System.out.println("String format :"+num1);
        System.out.println("String fromat :"+num2);

        System.out.println("Addition is:"+(num1+num2));

        System.out.println("\n--After Parsing--\n");

        int value1=Integer.parseInt(num1);
        int value2=Integer.parseInt(num2);

        System.out.println("Integer Format:"+value1);
        System.out.println("Integer Format:"+value2);

        System.out.println("Addition is:"+(value1+value2));

}
catch(NumberFormatException e)
{
```


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

        }
```

Output:

String format :abcd
String fromat :pqrs
Addition is:abcdpqrs

--After Parsing--

java.lang.NumberFormatException: For input string: "abcd

4. ArrayIndexOutOfBoundsException.-->Crossing Array Size.

```
/Array is a collection of elements of Similar data types

        try
        {
            int num[]=new int[5];

            num[0]=77;
            num[1]=13;
            num[2]=23;
            num[3]=100;
            num[4]=17;
```


```
		num[200]=5;// We have crossed the boundary index of array

		for(int i=0;i<num.length;i++)
		{
			System.out.print(num[i]+"\t");
		}
}catch(ArrayIndexOutOfBoundsException e)
{

		System.out.println(e);
}
```

java.lang.ArrayIndexOutOfBoundsException: Index 200 out of bounds for length 5

5. StringIndexOutOfBoundsException.-->Crossing length of the String.

```
		try

		{
			String data="Maharashtra";

			System.out.println("\nString data is:"+data);

			System.out.println("\n"+data.charAt(55));
```


```
}
catch(StringIndexOutOfBoundsException e)
{
	System.out.println(e);
}
```

Output:

String data is:Maharashtra
java.lang.StringIndexOutOfBoundsException: String index out of range: 55

Complete Program

```
public class ExceptionHandeling
{

	public static void main(String[] args)
	{
		try
		{
			int a=5;
			int res;

			res=a/0;//--Program  Arithmetic Exception
```


```
		System.out.println("result is:"+a);
	}
	catch(ArithmeticException e)
	{

		System.out.println(e);
	}


	try
	{
		String name=null;

		System.out.println(name.length());
	}
	catch(NullPointerException e)
	{
		System.out.println(e);
	}



	try
	{
		String num1="abcd";
		String num2="pqrs";

		System.out.println("String format :"+num1);
		System.out.println("String fromat :"+num2);

		System.out.println("Addition is:"+(num1+num2));

		System.out.println("\n--After Parsing--\n");

		int value1=Integer.parseInt(num1);
		int value2=Integer.parseInt(num2);

		System.out.println("Integer Format:"+value1);
		System.out.println("Integer Format:"+value2);

		System.out.println("Addition is:"+(value1+value2));

	}
```


```
		catch(NumberFormatException e)
		{
			System.out.println(e);

		}



		//Array is a collection of elements of Similar data types

		try
		{
			int num[]=new int[5];

			num[0]=77;
			num[1]=13;
			num[2]=23;
			num[3]=100;
			num[4]=17;
			num[200]=5;// We have crossed the boundary index of
array

			for(int i=0;i<num.length;i++)
			{
				System.out.print(num[i]+"\t");
			}
		}catch(ArrayIndexOutOfBoundsException e)
		{

			System.out.println(e);
		}



		try
		{
			String data="Maharashtra";

			System.out.println("\nString data is:"+data);

			System.out.println("\n"+data.charAt(55));
		}
		catch(StringIndexOutOfBoundsException e)
		{
```


```
            System.out.println(e);
        }


        System.out.println("\n\n*Important Data*");


    }
}
```

Output:

```
java.lang.ArithmeticException: / by zero
java.lang.NullPointerException: Cannot invoke
"String.length()" because "name" is null
String format :abcd
String fromat :pqrs
Addition is:abcdpqrs

--After Parsing--
```

java.lang.NumberFormatException: For input string: "abcd"
java.lang.ArrayIndexOutOfBoundsException: Index 200 out of bounds for length 5

String data is:Maharashtra
java.lang.StringIndexOutOfBoundsException: String index out of range: 55

Important Data