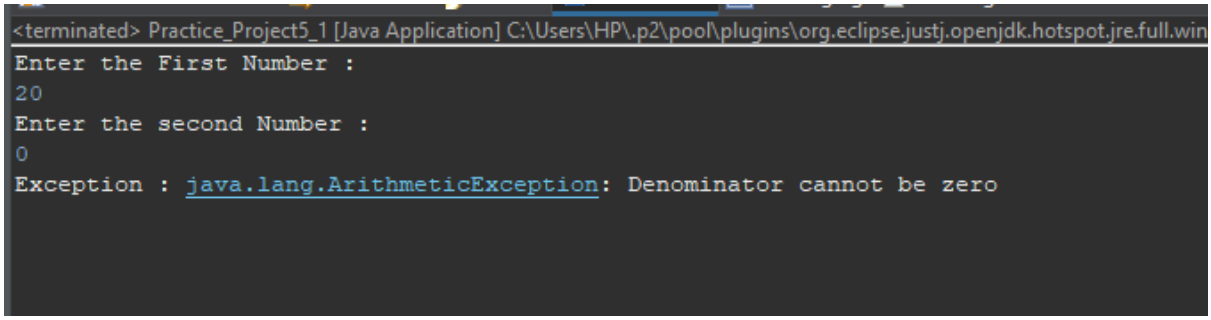
5. Writing a program in Java to throws, throw, finally, and custom exceptions in Java.

SOURCE CODE

throw

```
package assistedPracticeProject2;
import java.util.Scanner; //importing scanner class
public class Practice_Project5_1
{
	public static void main(String args[])
	{
		int num1,num2; //declare variables
		Scanner sc=new Scanner(System.in); //create scanner object
		System.out.println("Enter the First Number :");
		num1=sc.nextInt(); //read first number
		System.out.println("Enter the second Number :");
		num2=sc.nextInt(); //read second number
		try
		{
			if(num2==0) //check if second number is 0
			{
	  throw(new ArithmeticException("Denominator cannot be zero")); //throw exception
	}
			else
			{
				System.out.println("RESULT = "+(num1/num2)); //else calculate
result
			}
		}
		catch(ArithmeticException ae)
		{
			System.out.println("Exception : "+ae); //print exception error if second
number is 0
```

```
                }
        }
}
```

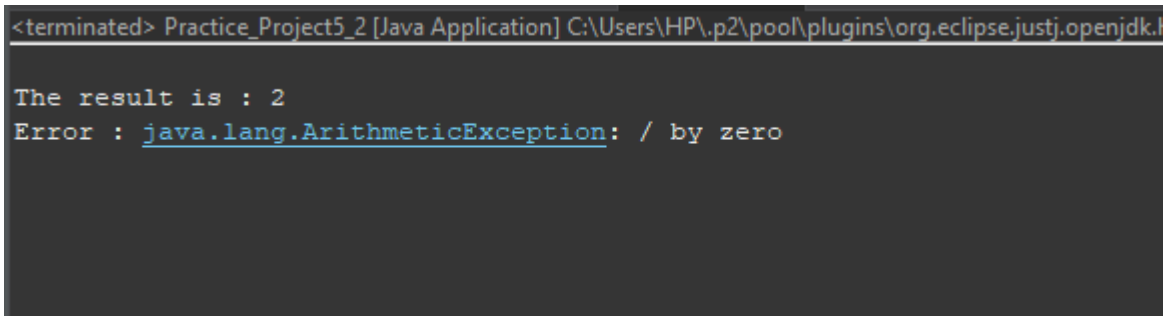


Throws

```
package assistedPracticeProject2;

public class Practice_Project5_2
{
          void disp(int num1,int num2) throws ArithmeticException //throws arithmetic expression
     {
        System.out.print("\nThe result is : " + (num1/num2)); //printing result
     }
      public static void main(String[] args)
     {
           Practice_Project5_2 p = new Practice_Project5_2(); //create class object
        try
        {
           p.disp(10,5); //invoke 10,5
           p.disp(10,0); //invoke 10,0
        }
        catch(ArithmeticException ae)
        {
```

```
            System.out.print("\nError : " +ae); //display exception
        }
    }
}
```



Finally

```
package assistedPracticeProject2;
import java.util.Scanner; //importing scanner class
public class Practice_Project5_3 {

        public static void main(String[] args)
        {
                int num1,num2; //declare variables
                Scanner sc=new Scanner(System.in); //create scanner object
                System.out.println("Enter the First Number :");
                num1=sc.nextInt(); //read first number
                System.out.println("Enter the second Number :");
                num2=sc.nextInt(); //read second number
                try
                {
                        if(num2==0) //check if second number is 0
                        {
          throw(new ArithmeticException("Denominator cannot be zero")); //throw exception
```

```
        }
                        else
                        {
                                System.out.println("RESULT = "+(num1/num2)); //else calculate
result
                        }
                }
                catch(ArithmeticException ae)
                {
                        System.out.println("Exception : "+ae); //print exception error if second
number is 0
                }
                finally
                {
                        System.out.println("END OF PROGRAM");
                }
         }
}
```

```
<terminated> Practice_Project5_3 [Java Application] C:\Users\HP\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.
Enter the First Number :
100
Enter the second Number :
0
Exception : java.lang.ArithmeticException: Denominator cannot be zero
END OF PROGRAM
```

Custom exception

```
package assistedPracticeProject2;

class CustomException extends Exception  //extending exception
{
        String message;
```

```
  CustomException(String str)  //constructor
  {
    message = str; //initialize
  }
  public String toString()
  {
    return ("Custom Exception Occurred : " + message); //return custom message
  }
}
public class Practice_Project5_4
{
  public static void main(String args[])
  {
    try
    {
      throw new CustomException("CUSTOM EXCEPTION"); //throw custom exception
    }
    catch(CustomException e)
    {
      System.out.println(e);
    }
  }
}
```