

Program 8: Title: "Java Program: Custom Exception Handling for DivisionByZero and Arithmetic Exceptions".

Problem Description: Develop a Java program that demonstrates the handling of custom exceptions, specifically for DivisionByZero and Arithmetic exceptions. You are required to utilize try-catch blocks along with throw statements to handle these exceptions gracefully.

Method: Ensure that the program demonstrates the proper usage of try-catch blocks, throw statements, and custom exception handling for DivisionByZero and Arithmetic exceptions.

Theory Reference: Module 4 Page no:205

Code:

```
import java.util.Scanner;

//Custom exception class

class DivisionByZeroException extends Exception {

    public DivisionByZeroException(String message) {

        super(message);

    }

}

public class pgm8 {

    // Method to perform division and throw custom exception if
    denominator is zero

    static double divide(int numerator, int denominator) throws
    DivisionByZeroException {

        if (denominator == 0) {

            throw new DivisionByZeroException("Cannot divide by zero!");

        }

    }

}
```

```
return (double) numerator / denominator;
```

```
}
```

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

```
    // TODO Auto-generated method stub
```

```
    Scanner input = new Scanner(System.in);
```

```
    System.out.println("Enter numerator and denominator ");
```

```
    int numerator = input.nextInt();
```

```
    int denominator = input.nextInt();
```

```
    try {
```

```
        double result = divide(numerator, denominator);
```

```
        System.out.println("Result of division: " + result);
```

```
    }
```

```
catch (DivisionByZeroException e) {
```

```
    System.out.println("Exception caught: " + e.getMessage());
```

```
}
```

```
finally {
```

```
    System.out.println("Finally block executed");
```

```
}
```

```
}
```

```
}
```