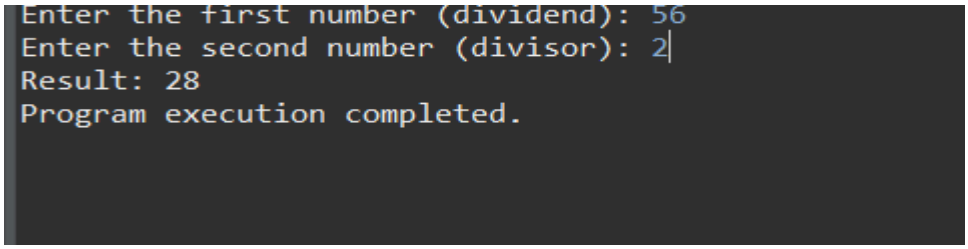
Task 7

1.

```
package guvitask ;
import java.util.Scanner;
public class DivisionHandling {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        try {
            System.out.print("Enter the first number (dividend): ");
            int dividend = scanner.nextInt();
            System.out.print("Enter the second number (divisor): ");
            int divisor = scanner.nextInt();
            int result = dividend / divisor;
            System.out.println("Result: " + result);
        } catch (ArithmeticException e) {
            System.out.println("Error: Division by zero is not allowed.");
        } catch (Exception e) {
            System.out.println("Error: Invalid input. Please enter valid integers.");
        } finally {
            scanner.close();
            System.out.println("Program execution completed.");
        }
    }
}
```

OUTPUT:



2.

```
package guvitask ;
public class ArrayIndexOutOfBoundsExample {
   public static void main(String[] args) {
      int[] numbers = {1, 2, 3};


      try {
         System.out.println("Accessing index 3: " + numbers[3]);
      } catch (ArrayIndexOutOfBoundsException e) {
         System.out.println("Error: Array index out of bounds. Valid indices are from 0 to " +
(numbers.length - 1) + ".");
      }
      System.out.println("Program continues after handling
ArrayIndexOutOfBoundsException.");
   }
}
```

OUTPUT:

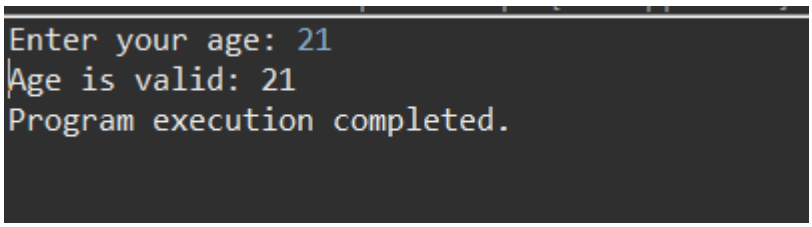
```
Error: Array index out of bounds. Valid indices are from 0 to 2.
Program continues after handling ArrayIndexOutOfBoundsException.
```

3.

```
package guvitask ;
class InvalidAgeException extends Exception {
 public InvalidAgeException(String message) {
    super(message);
 }
}
public class CustomExceptionExample {
 public static void validateAge(int age) throws InvalidAgeException {
    if (age < 18) {
```

```
        throw new InvalidAgeException("Age must be 18 or above. Invalid age entered: " +
age);
    } else {
        System.out.println("Age is valid: " + age);
    }
 }
 public static void main(String[] args) {
    java.util.Scanner scanner = new java.util.Scanner(System.in);
    try {
        System.out.print("Enter your age: ");
        int age = scanner.nextInt();
        validateAge(age);
    } catch (InvalidAgeException e) {
        System.out.println("Error: " + e.getMessage());
    } catch (Exception e) {
        System.out.println("Error: Invalid input. Please enter a valid integer.");
    } finally {
        scanner.close();
        System.out.println("Program execution completed.");
    }
 }
}
```

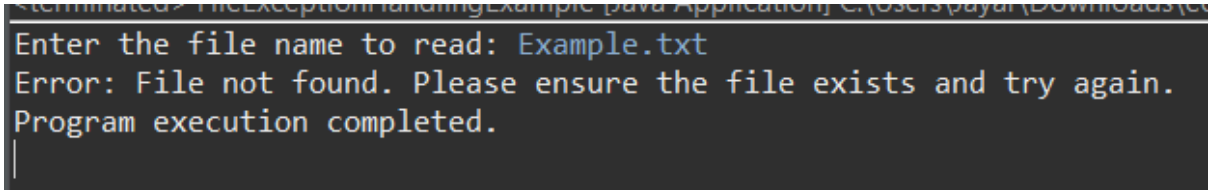
OUTPUT:



4.

```
package guvitask ;
import java.io.File;
import java.io.FileNotFoundException;
import java.util.Scanner;
public class FileExceptionHandlingExample {
    public static void main(String[] args) {
        Scanner consoleScanner = new Scanner(System.in);
        try {
            System.out.print("Enter the file name to read: ");
            String fileName = consoleScanner.nextLine();
            File file = new File(fileName);
            Scanner fileScanner = new Scanner(file);
            System.out.println("File Contents:");
            while (fileScanner.hasNextLine()) {
                System.out.println(fileScanner.nextLine());
            }
            fileScanner.close();
        } catch (FileNotFoundException e) {
            System.out.println("Error: File not found. Please ensure the file exists and try
again.");
        } catch (Exception e) {
            System.out.println("An unexpected error occurred: " + e.getMessage());
        } finally {
            consoleScanner.close();
            System.out.println("Program execution completed.");
        }
    }
}
```

OUTPUT:



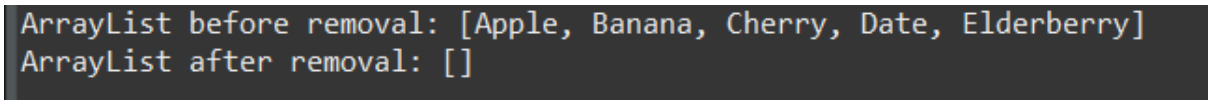
5.

```
package guvitask ;

import java.util.ArrayList;

public class RemoveAllElements {
    public static void main(String[] args) {
        ArrayList<String> stringList = new ArrayList<>();
        stringList.add("Apple");
        stringList.add("Banana");
        stringList.add("Cherry");
        stringList.add("Date");
        stringList.add("Elderberry");
        System.out.println("ArrayList before removal: " + stringList);
        stringList.clear();
        System.out.println("ArrayList after removal: " + stringList);
    }
}
```

OUTPUT:



6.

```
package guvitask ;

import java.util.TreeMap;

public class EmployeeTreeMap {
    public static void main(String[] args) {
        TreeMap<Integer, String> employeeMap = new TreeMap<>();
```

```
        employeeMap.put(101, "John");
        employeeMap.put(102, "Alice");
        employeeMap.put(103, "Bob");
        employeeMap.put(104, "David");
        employeeMap.put(105, "Eva");
        System.out.println("Employee Names in Alphabetical Order:");
        employeeMap.values().stream()
                .sorted()
                .forEach(name -> System.out.println(name));
    }
}
```

OUTPUT:

```
Employee Names in Alphabetical Order:
Alice
Bob
David
Eva
John
```

7.

```
package guvitask ;
import java.util.ArrayList;
import java.util.List;
public class ListToArray {
    public static void main(String[] args) {
        List<String> fruitList = new ArrayList<>();
        fruitList.add("Apple");
        fruitList.add("Banana");
        fruitList.add("Cherry");
        fruitList.add("Date");
        fruitList.add("Elderberry");
        String[] fruitArray = new String[fruitList.size()];
```

```
        fruitList.toArray(fruitArray);
        System.out.println("Array elements:");
        for (String fruit : fruitArray) {
            System.out.println(fruit);
        }
    }
}
```

OUTPUT: