**Java task 7**

**Q1.**

**package javaTask7;**

**public class Main{**

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

**int numerator = 7;**

**int denominator = 0;**

**try {**

**int answer = numerator / denominator;**

**System.*out*.println("Result: " + answer);**

**} catch (ArithmeticException ex) {**

**System.*out*.println("Error: " + ex.getMessage());**

**System.*out*.println("Cannot divide a value by zero.");**

**}**

**}**

**}**

**RESULT:**

**Error: / by zero**

**Cannot divide a value by zero.**

**Q2.**

**package javaTask7;**

**public class ArrayIndexOutOfBoundsExample {**

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

**// TODO Auto-generated method stub**

**int[] arr = new int[10]; // Array with 5 elements, indices 0 to 4**

**try {**

**System.*out*.println(arr[10]);**

**} catch (ArrayIndexOutOfBoundsException e) {**

**System.*out*.println(" ArrayIndexOutOfBoundsException caught: " + e.getMessage());**

**}**

**}**

**}**

**RESULT:**

**ArrayIndexOutOfBoundsException caught: Index 10 out of bounds for length 10.**

**package javaTask7;**

**public class StringIndexOutOfBoundsExceptionExample {**

**// TODO Auto-generated method stub**

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

**String str = " good ";**

**try {**

**System.*out*.println(str.charAt(9));**

**} catch(StringIndexOutOfBoundsException e) {**

**System.*out*.println("String index out of bounds. String length: " + str.length());**

**}**

**}**

**}**

**RESULT:**

**String index out of bounds. String length: 6**

**Q3.**

**package javaTask7;**

**import java.util.Scanner;**

**public class InvalidAgeExceptionExample {**

**public static void main(String[] args) throws Throwable {**

**Scanner scanner = new Scanner(System.*in*);**

**System.*out*.print("Enter your age: ");**

**int age = scanner.nextInt();**

**try {**

**if (age < 18) {**

**throw new Exception("your age should be 18 or older.not below 18.you put " + age);**

**} else {**

**System.*out*.println("You are eligible. Age: " + age);**

**}**

**} catch (InvalidAgeException e) {**

**System.*out*.println("Error: " + e.getMessage());**

**} finally {**

**scanner.close();**

**}**

**}**

**}**

**RESULT:**

**Enter your age: 10**

**Exception in thread "main" java.lang.Exception: your age should be 18 or older.not below 18.you put 10**

**at javaTask7/javaTask7.InvalidAgeExceptionExample.main(InvalidAgeExceptionExample.java:16)**

**Q4.**

**package javaTask7;**

**import java.io.File;**

**import java.io.FileReader;**

**import java.io.IOException;**

**public class FileReadExample {**

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

**String filePath = "problem";**

**try {**

**File file = new File(filePath);**

**if (!file.exists()) {**

**throw new java.io.FileNotFoundException("File not found: " + filePath);**

**}**

**FileReader fileReader = new FileReader(file);**

**int character;**

**System.out.println("File contents:");**

**while ((character = fileReader.read()) != -1) {**

**System.out.print((char) character);**

**}**

**fileReader.close();**

**} catch (java.io.FileNotFoundException e) {**

**System.out.println("Error: " + e.getMessage());**

**} catch (IOException e) {**

**System.out.println("Error reading the file: " + e.getMessage());**

**}**

**}**

**}**

**RESULT:**

**Error: File not found: problem**

**Q5.**

**package javaTask7;**

**import java.util.ArrayList;**

**public class RemoveAllElementsFromArrayList {**

**// TODO Auto-generated method stub**

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

**ArrayList<String> stringList = new ArrayList<>();**

**stringList.add("Dog");**

**stringList.add("Puppy");**

**stringList.add("Lab");**

**stringList.add("Shih tzu");**

**System.*out*.println("ArrayList before removal: " + stringList);**

**stringList.clear();**

**System.*out*.println("ArrayList after removal: " + stringList);**

**}**

**}**

**RESULT:**

**ArrayList before removal: [Dog, Puppy, Lab, Shih tzu]**

**ArrayList after removal: []**

**Q6.**

**package javaTask7;**

**import java.util.\*;**

**public class EmployeeTreeMap {**

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

**TreeMap<Integer, String> employeeMap = new TreeMap<>();**

**employeeMap.put(01, "Annamalai");**

**employeeMap.put(02, "Baba");**

**employeeMap.put(03, "Charu");**

**employeeMap.put(04, "Durai");**

**employeeMap.put(05, "Elango");**

**Collection<String> employeeNames = employeeMap.values();**

**List<String> sortedNames = new ArrayList<>(employeeNames);**

**Collections.*sort*(sortedNames);**

**System.*out*.println("Employee names in alphabetical order:");**

**for (String name : sortedNames) {**

**System.*out*.println(name);**

**}**

**}**

**}**

**RESULT:**

**Employee names in alphabetical order:**

**Annamalai**

**Baba**

**Charu**

**Durai**

**Elango**

**Q7.**

**package javaTask7;**

**import java.util.\*;**

**public class ListToArray {**

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

**// TODO Auto-generated method stub**

**List<String> stringList = new ArrayList<>();**

**stringList.add("Beetroot");**

**stringList.add("Broccoli");**

**stringList.add("Carrot");**

**stringList.add("Cauliflower");**

**stringList.add("Spinach");**

**stringList.add("Onion");**

**String[] stringArray = stringList.toArray(new String[0]);**

**System.*out*.println("Converted Array:");**

**for (String str : stringArray) {**

**System.*out*.println(str);**

**}**

**}**

**}**

**RESULT:**

**Converted Array:**

**Beetroot**

**Broccoli**

**Carrot**

**Cauliflower**

**Spinach**

**Onion**