**Java lab sheet-10**

1).

import java.util.Scanner;

public class DivisionWithExceptionHandling {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

try {

System.out.print("Enter the numerator: ");

int numerator = scanner.nextInt();

System.out.print("Enter the denominator: ");

int denominator = scanner.nextInt();

int result = divideNumbers(numerator, denominator);

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

}

}

public static int divideNumbers(int numerator, int denominator) {

if (denominator == 0) {

throw new ArithmeticException("Division by zero is not allowed.");

}

return numerator / denominator;

}

}

**2).**

import java.util.Scanner;

public class ArrayIndexExceptionHandling {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

try {

int[] numbers = { 10, 20, 30, 40, 50 };

System.out.print("Enter the index to access: ");

int index = scanner.nextInt();

int value = getArrayValue(numbers, index);

System.out.println("Value at index " + index + ": " + value);

} catch (ArrayIndexOutOfBoundsException e) {

System.out.println("Error: Invalid index. The array index is out of bounds.");

} catch (Exception e) {

System.out.println("Error: Invalid input. Please enter a valid integer for index.");

} finally {

scanner.close();

}

}

public static int getArrayValue(int[] arr, int index) {

return arr[index];

}

}

**3).**

import java.io.File;

import java.io.FileNotFoundException;

import java.util.Scanner;

public class FileNotFoundHandling {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

try {

System.out.print("Enter the file path: ");

String filePath = scanner.nextLine();

readFile(filePath);

} catch (FileNotFoundException e) {

System.out.println("Error: File not found. Please check the file path and try again.");

} finally {

scanner.close();

}

}

public static void readFile(String filePath) throws FileNotFoundException {

File file = new File(filePath);

Scanner fileScanner = new Scanner(file);

while (fileScanner.hasNextLine()) {

String line = fileScanner.nextLine();

System.out.println(line);

}

fileScanner.close();

}

}