**Day-10 Basics of Java**

Problem Statement 1: Input & Output Streams

1. **package** com.mycom.streams.copyfile;

**import** java.io.\*;

**import** java.util.Scanner;

**public** **class** CopyFile {

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

**if** (args.length < 2) {

System.***out***.println("Usage: java CopyFile <source> <destination>");

**return**;

}

File sourceFile = **new** File(args[0]);

File destinationFile = **new** File(args[1]);

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

System.***out***.println("Source file does not exist.");

**return**;

}

**if** (destinationFile.exists()) {

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

System.***out***.print("Destination file exists. Overwrite? (Yes/No): ");

String response = scanner.nextLine();

**if** (!response.equalsIgnoreCase("Yes")) {

System.***out***.println("Operation aborted.");

**return**;

}

}

**try** (InputStream in = **new** FileInputStream(sourceFile);

OutputStream out = **new** FileOutputStream(destinationFile)) {

**byte**[] buffer = **new** **byte**[1024];

**int** length;

**while** ((length = in.read(buffer)) > 0) {

out.write(buffer, 0, length);

}

System.***out***.println("File copied successfully.");

} **catch** (IOException e) {

e.printStackTrace();

}

}

}

2. **package** com.mycom.streams.seralizable;

**import** java.io.\*;

**import** java.util.Scanner;

**class** Student **implements** Serializable {

**private** **static** **final** **long** ***serialVersionUID*** = 1L;

**int** rollNumber;

String name;

**int** age;

String address;

Student(**int** rollNumber, String name, **int** age, String address) {

**this**.rollNumber = rollNumber;

**this**.name = name;

**this**.age = age;

**this**.address = address;

}

@Override

**public** String toString() {

**return** "Roll Number: " + rollNumber + ", Name: " + name + ", Age: " + age + ", Address: " + address;

}

}

**public** **class** StudentData {

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

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

System.***out***.print("Enter Roll Number: ");

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

scanner.nextLine(); // consume newline

System.***out***.print("Enter Name: ");

String name = scanner.nextLine();

System.***out***.print("Enter Age: ");

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

scanner.nextLine(); // consume newline

System.***out***.print("Enter Address: ");

String address = scanner.nextLine();

**if** (name.isEmpty() || address.isEmpty()) {

System.***out***.println("Name and Address cannot be blank.");

**return**;

}

Student student = **new** Student(rollNumber, name, age, address);

System.***out***.print("Do you want to write the data to the file? (Yes/No): ");

String response = scanner.nextLine();

**if** (response.equalsIgnoreCase("Yes")) {

**try** (ObjectOutputStream oos = **new** ObjectOutputStream(**new** FileOutputStream("students.dat", **true**))) {

oos.writeObject(student);

System.***out***.println("Data written to file.");

} **catch** (IOException e) {

e.printStackTrace();

}

} **else** {

System.***out***.println("Program terminated.");

}

}

}

3. **package** com.mycom.streams.deseralizable;

**import** java.io.EOFException;

**import** java.io.FileInputStream;

**import** java.io.IOException;

**import** java.io.ObjectInputStream;

**import** com.mycom.streams.seralizable.StudentData;

**public** **class** DisplayRecors {

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

**try** (ObjectInputStream ois = **new** ObjectInputStream(**new** FileInputStream("students.dat"))) {

**while** (**true**) {

**try** {

StudentData student = (StudentData) ois.readObject();

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

} **catch** (EOFException e) {

**break**;

}

}

} **catch** (IOException | ClassNotFoundException e) {

e.printStackTrace();

}

}

}

4. **package** com.mycom.streams.filecopy;

**import** java.io.\*;

**import** java.nio.file.\*;

**public** **class** CopyFileUsingNIO {

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

**if** (args.length < 2) {

System.***out***.println("Usage: java CopyFileUsingNIO <source> <destination>");

**return**;

}

Path sourcePath = Paths.*get*(args[0]);

Path destinationPath = Paths.*get*(args[1]);

**try** {

Files.*copy*(sourcePath, destinationPath, StandardCopyOption.***REPLACE\_EXISTING***);

System.***out***.println("File copied successfully.");

} **catch** (IOException e) {

e.printStackTrace();

}

}

}

5. **package** com.mycom.streams.string;

**import** java.io.\*;

**import** java.nio.file.\*;

**import** java.util.Scanner;

**public** **class** StringToFile {

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

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

System.***out***.print("Enter a string: ");

String input = scanner.nextLine();

File file = **new** File("io.txt");

**try** (BufferedWriter writer = **new** BufferedWriter(**new** FileWriter(file))) {

writer.write(input);

} **catch** (IOException e) {

e.printStackTrace();

}

System.***out***.println("File size: " + file.length() + " bytes");

**try** (BufferedReader reader = **new** BufferedReader(**new** FileReader(file))) {

String line;

**while** ((line = reader.readLine()) != **null**) {

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

}

} **catch** (IOException e) {

e.printStackTrace();

}

**if** (file.delete()) {

System.***out***.println("File deleted successfully.");

} **else** {

System.***out***.println("Failed to delete the file.");

}

}

}

6. **package** com.mycom.streams.combinenotes;

**import** java.io.\*;

**public** **class** CombineNotes {

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

String[] inputFiles = {

"DavidEnglish.txt",

"DavidScience.txt",

"DavidComputer.txt"

};

String outputFile = "C:\\Users\\DavidNotes.txt";

*combineFiles*(inputFiles, outputFile);

}

**public** **static** **void** combineFiles(String[] inputFiles, String outputFile) {

**try** (BufferedWriter writer = **new** BufferedWriter(**new** FileWriter(outputFile))) {

**for** (String inputFile : inputFiles) {

**try** (BufferedReader reader = **new** BufferedReader(**new** FileReader(inputFile))) {

String line;

**while** ((line = reader.readLine()) != **null**) {

writer.write(line);

writer.newLine();

}

writer.newLine();

} **catch** (IOException e) {

System.***err***.println("Error reading file " + inputFile + ": " + e.getMessage());

}

}

System.***out***.println("Notes combined into " + outputFile);

} **catch** (IOException e) {

System.***err***.println("Error writing to file " + outputFile + ": " + e.getMessage());

}

}

}