Day-10 Practise

Solve following sub problems,

1. Write a program which take source file and destination file as input as a command line argument. Itcopies the source file contents to destination file. If source file does not exist, it should give appropriate message to the user. If destination file d oes not exist, it should be created. If it exists, programshould ask that, “whether you want to overwrite? (Yes/No)”.

a. Basedon user choice, appropriate actionshould be taken.

b. Note: Files may be any type of files like bitmap files, exe files, text files etc.

**package** TenPractise.com;

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

**import** java.util.Scanner;

**public** **class** FileCopy {

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

**if** (args.length != 2) {

System.***out***.println("Usage: java FileCopy <sourcefile> <destinationfile>");

**return**;

}

String sourceFile = args[0];

String destinationFile = args[1];

File srcFile = **new** File(sourceFile);

File destFile = **new** File(destinationFile);

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

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

**return**;

}

**if** (destFile.exists()) {

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

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

String choice = scanner.nextLine().trim().toLowerCase();

**if** (choice.equals("no")) {

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

**return**;

} **else** **if** (!choice.equals("yes")) {

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

**return**;

}

}

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

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

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

**int** bytesRead;

**while** ((bytesRead = in.read(buffer)) != -1) {

out.write(buffer, 0, bytesRead);

}

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

} **catch** (IOException e) {

e.printStackTrace();

}

}

}

 2. Write a stream-based program which will accept Roll Number, Name, Age and Address from user. Perform following tasks,

a. Age and Roll-no should be numeric.

b. Handle built-in exception as None of the field should be blank. Handle with custom

exception

c. Ask the user whether to write the data in the file. If answer is yes, then data is saved into a file as an object. (User can write many records in the file), otherwise terminate the current program.

d. Hint: Use Serialization.

package TenPractise.com;

import java.io.\*;

import java.util.Scanner;

class Student implements Serializable {

    private static final long serialVersionUID = 1L;

    private int rollNo;

    private String name;

    private int age;

    private String address;

    public Student(int rollNo, String name, int age, String address) {

        this.rollNo = rollNo;

        this.name = name;

        this.age = age;

        this.address = address;

    }

    @Override

    public String toString() {

        return "Roll Number: " + rollNo + "\nName: " + name + "\nAge: " + age + "\nAddress: " + address;

    }

}

public class StudentDataApp {

    private static final String FILE\_NAME = "students.dat";

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        try {

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

            int rollNo = Integer.parseInt(scanner.nextLine().trim());

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

            String name = scanner.nextLine().trim();

            if (name.isEmpty()) throw new CustomException("Name cannot be blank.");

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

            int age = Integer.parseInt(scanner.nextLine().trim());

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

            String address = scanner.nextLine().trim();

            if (address.isEmpty()) throw new CustomException("Address cannot be blank.");

            System.out.print("Do you want to save this data to a file? (Yes/No): ");

            String response = scanner.nextLine().trim().toLowerCase();

            if (response.equals("yes")) {

                try (ObjectOutputStream oos = new ObjectOutputStream(new FileOutputStream(FILE\_NAME, true))) {

                    oos.writeObject(new Student(rollNo, name, age, address));

                    System.out.println("Data saved successfully.");

                }

            } else {

                System.out.println("Operation terminated.");

            }

        } catch (NumberFormatException e) {

            System.out.println("Error: Roll Number and Age must be numeric.");

        } catch (CustomException e) {

            System.out.println(e.getMessage());

        } catch (IOException e) {

            System.out.println("An error occurred while saving the data.");

        }

    }

}

class CustomException extends Exception {

    public CustomException(String message) {

        super(message);

    }

}

3. Write another classto display all the records savedinto the file in the problem 2.

a. Hint : Use De-serialization.

package TenPractise.com;

import java.io.\*;

import java.util.ArrayList;

import java.util.List;

public class DisplayStudentRecords {

    private static final String FILE\_NAME = "students.dat";

    public static void main(String[] args) {

        List<Student> students = new ArrayList<>();

        try (ObjectInputStream ois = new ObjectInputStream(new FileInputStream(FILE\_NAME))) {

            while (true) {

                try {

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

                    students.add(student);

                } catch (EOFException e) {

                    break;

                }

            }

        } catch (FileNotFoundException e) {

            System.out.println("No records found. The file does not exist.");

            return;

        } catch (IOException | ClassNotFoundException e) {

            System.out.println("Error occurred while reading the file.");

        }

        if (students.isEmpty()) {

            System.out.println("No student records to display.");

        } else {

            for (Student student : students) {

                System.out.println(student);

                System.out.println("-----------------------------");

            }

        }

    }

}

4. Write a program using java file system to copy the contents of one file into another. (Refer Java API documentation).

package TenPractise.com;

import java.io.FileReader;

import java.io.FileWriter;

import java.io.IOException;

public class day\_10\_4 {

public static void main(String[] args) {

try(FileReader fr = new FileReader("newfile.txt")){

FileWriter fw = new FileWriter("file101.txt", true);

int data;

while((data = fr.read()) != -1) {

fw.write((char)data);

}

fr.close();

fw.close();

}catch(IOException e) {

e.getMessage();

}

}

}

5. Write a program which will accept an input String from user and do following steps.

package TenPractise.com;

import java.io.File;

import java.io.FileNotFoundException;

import java.io.FileReader;

import java.io.FileWriter;

import java.io.IOException;

import java.util.Scanner;

public class Que5 {

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

// TODO Auto-generated method stub

Scanner sc = new Scanner(System.in);

String s = sc.nextLine();

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

try(FileWriter fw = new FileWriter("io.txt")) {

fw.write(s);

fw.close();

FileReader fr = new FileReader("io.txt");

int data;

while((data = fr.read())!= -1) {

System.out.print((char)data);

}

fr.close();

}catch(FileNotFoundException e) {

System.out.println(e.getMessage());

}

long len = file.length();

System.out.println("\n io.txt file size is: "+len);

file.deleteOnExit();

sc.close();

}

}

6. For a student David there is a text file named DavidEnglish.txt and DavidScience.txt containing notes for two subjects English, and Science for Semester 1. Similarly, for Semester 2 there is another text file DavidComputer.txt containing notes for Computers. Read these files and write it to a file called DavidNotes.txt having notes for the complete year.

package TenPractise.com;

import java.io.BufferedReader;

import java.io.BufferedWriter;

import java.io.FileReader;

import java.io.FileWriter;

import java.io.IOException;

import java.util.Scanner;

public class Ten\_6 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

try {

FileWriter fw = new FileWriter("DavidNotes.txt", true);

try (BufferedWriter bw = new BufferedWriter(fw)) {

FileReader fr = new FileReader("DavidEnglish.txt");

BufferedReader br = new BufferedReader(fr);

String data;

while((data=br.readLine())!=null) {

bw.write(data + "\n");

}

bw.write("\n");

FileReader fr1 = new FileReader("DavidScience.txt");

BufferedReader br1 = new BufferedReader(fr1);

String data1;

while((data1=br1.readLine())!=null) {

bw.write(data1 + "\n");

}

bw.write("\n");

FileReader fr2 = new FileReader("DavidComputer.txt");

BufferedReader br2 = new BufferedReader(fr2);

String data2;

while((data2=br2.readLine())!=null) {

bw.write(data2 + "\n");

}

}

} catch (IOException e) {

e.printStackTrace();

}

sc.close();

}

}

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