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import java.io.*;
import java.text.*;
import java.util.*;
import java.util.stream.Collectors;

public class EmployeeShiftAnalyzer {
    public static void main(String[] args) {
        if (args.length != 1) {
            System.out.println("Usage: java EmployeeShiftAnalyzer <input_file.csv>");
            return;
        }

        String inputFile = args[0];
        List<EmployeeShift> shifts = readEmployeeShiftsFromFile(inputFile);

        if (shifts.isEmpty()) {
            System.out.println("No data found in the input file.");
            return;
        }

        List<EmployeeShift> consecutive7Days = findEmployeesWithConsecutiveDays(shifts, 7);
        List<EmployeeShift> lessThan10HoursBetweenShifts =
findEmployeesWithTimeBetweenShifts(shifts, 1, 10);
        List<EmployeeShift> moreThan14HoursSingleShift = findEmployeesWithShiftDuration(shifts, 14);

        // Output the results to the console
        System.out.println("Employees who worked for 7 consecutive days:");
        printEmployeeShifts(consecutive7Days);

        System.out.println("Employees who had less than 10 hours between shifts:");
        printEmployeeShifts(lessThan10HoursBetweenShifts);
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        System.out.println("Employees who worked for more than 14 hours in a single shift:");
        printEmployeeShifts(moreThan14HoursSingleShift);

        // You can also write the results to an output.txt file if needed
        writeResultsToFile("output.txt", consecutive7Days, lessThan10HoursBetweenShifts,
moreThan14HoursSingleShift);
    }

    private static List<EmployeeShift> readEmployeeShiftsFromFile(String inputFile) {
        List<EmployeeShift> shifts = new ArrayList<>();

        try (BufferedReader reader = new BufferedReader(new FileReader(inputFile))) {
            String line;
            SimpleDateFormat dateFormat = new SimpleDateFormat("yyyy-MM-dd");
            SimpleDateFormat timeFormat = new SimpleDateFormat("HH:mm");

            while ((line = reader.readLine()) != null) {
                String[] data = line.split(",");
                if (data.length == 5) {
                    String employeeName = data[0];
                    String position = data[1];
                    Date shiftDate = dateFormat.parse(data[2]);
                    Date shiftStartTime = timeFormat.parse(data[3]);
                    Date shiftEndTime = timeFormat.parse(data[4]);

                    shifts.add(new EmployeeShift(employeeName, position, shiftDate, shiftStartTime,
shiftEndTime));
                }
            }
        } catch (IOException | ParseException e) {
            e.printStackTrace();
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        }
        return shifts;
    }

    private static List<EmployeeShift> findEmployeesWithConsecutiveDays(List<EmployeeShift> shifts,
int days) {
        // Implement logic to find employees who worked for the specified consecutive days
        // ...
        return new ArrayList<>();
    }

    private static List<EmployeeShift> findEmployeesWithTimeBetweenShifts(List<EmployeeShift>
shifts, int minHours, int maxHours) {
        // Implement logic to find employees with the specified time between shifts
        // ...
        return new ArrayList<>();
    }

    private static List<EmployeeShift> findEmployeesWithShiftDuration(List<EmployeeShift> shifts, int
hours) {
        // Implement logic to find employees who worked for the specified duration in a single shift
        // ...
        return new ArrayList<>();
    }

    private static void printEmployeeShifts(List<EmployeeShift> employees) {
        for (EmployeeShift shift : employees) {
            System.out.println("Name: " + shift.getEmployeeName() + ", Position: " + shift.getPosition());
        }
    }

    private static void writeResultsToFile(String outputFile, List<EmployeeShift> consecutiveDays,
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                                List<EmployeeShift> timeBetweenShifts,
                                List<EmployeeShift> shiftDuration) {
        try (PrintWriter writer = new PrintWriter(outputFile)) {
            // Write the results to the output.txt file
            // ...
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}

class EmployeeShift {
    private String employeeName;
    private String position;
    private Date shiftDate;
    private Date shiftStartTime;
    private Date shiftEndTime;

    public EmployeeShift(String employeeName, String position, Date shiftDate, Date shiftStartTime,
Date shiftEndTime) {
        this.employeeName = employeeName;
        this.position = position;
        this.shiftDate = shiftDate;
        this.shiftStartTime = shiftStartTime;
        this.shiftEndTime = shiftEndTime;
    }

    public String getEmployeeName() {
        return employeeName;
    }
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    public String getPosition() {
        return position;
    }

    public Date getShiftDate() {
        return shiftDate;
    }

    public Date getShiftStartTime() {
        return shiftStartTime;
    }

    public Date getShiftEndTime() {
        return shiftEndTime;
    }
}
```