

**CSC186 – OBJECT ORIENTED**

**PROGRAMMING**

**LAB ASSIGNMENT 5**

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QUESTION 5.1

SOURCE CODE 1.1 : FTMSKApp Class

import java.io.\*;

import java.util.\*;

public class FTMSKApp {

    public static void main(String[] args) {

        try {

            // Open all files

            BufferedReader in = new BufferedReader(new FileReader ("FTMSK.txt"));

            PrintWriter outCS110 = new PrintWriter(new BufferedWriter(new FileWriter("CS110Male.txt")));

            PrintWriter outCS111 = new PrintWriter(new BufferedWriter(new FileWriter("CS111Male.txt")));

            outCS110.println("\t\tMale Students in CS110");

            outCS110.printf("%-15s%-30s%-10s\n", "Matrix Number", "Name", "Part");

            outCS111.println("\t\tMale Students in CS111");

            outCS111.printf("%-15s%-30s%-10s\n", "Matrix Number", "Name", "Part");

            // Read data from input file

            int cntCS110 = 0;

            int cntCS111 = 0;

            String inData = null;

            while((inData = in.readLine()) != null) {

                // Tokenize the record intro field

                StringTokenizer at = new StringTokenizer(inData, ";");

                String matrixNum = at.nextToken();

                String studName = at.nextToken();

                String program = at.nextToken();

                String part = at.nextToken();

                String gender = at.nextToken();

                // Manipulation

                if (program.equalsIgnoreCase("CS110") && gender.equalsIgnoreCase("M")) {

                    outCS110.printf("%-15s%-30s%-10s\n", matrixNum, studName, part);

                    cntCS110++;

                }

                if (program.equalsIgnoreCase("CS111") && gender.equalsIgnoreCase("M")) {

                    outCS111.printf("%-15s%-30s%-10s\n", matrixNum, studName, part);

                    cntCS111++;

                }

            } //end while

            outCS110.println("\nNumber of male students for CS110: " + cntCS110);

            outCS111.println("\nNumber of male students for CS111: " + cntCS111);

            // Close all files

            in.close();

            outCS110.close();

            outCS111.close();

        } //end try block

        // Catch block

        catch(FileNotFoundException fnf) {

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

        }

        catch(IOException iox) {

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

        }

        catch(Exception e) {

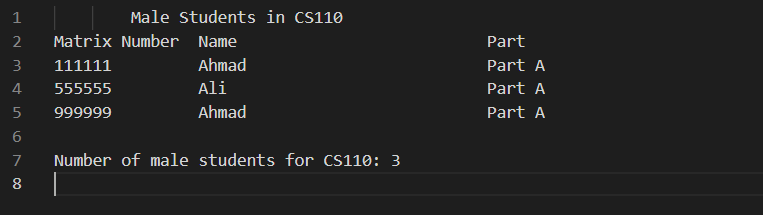
            System.out.println("Problem: " + e.getMessage());

        }

    } //end main

} //end class

OUTPUT FILE 1.1 : CS110Male.txt



OUTPUT FILE 1.2 : CS111Male.txt

A screenshot of a computer program

Description automatically generated with medium confidence

QUESTION 5.2

SOURCE CODE 2.1 :Main Class

import java.io.\*;

public class Main {

    public static void main(String[] args) {

        try {

            Vehicle[] arrCar = new Vehicle[100];

            BufferedReader in = new BufferedReader(new FileReader("Car.txt"));

            PrintWriter outSelangor = new PrintWriter(new BufferedWriter(new FileWriter("selangor.txt")));

            PrintWriter outTerengganu = new PrintWriter(new BufferedWriter(new FileWriter("terengganu.txt")));

            outSelangor.println("Type\t\tPlate Number\tPrice (RM)");

            outSelangor.println("----\t\t------------\t----------");

            outTerengganu.println("Type\t\tPlate Number\tPrice (RM)");

            outTerengganu.println("----\t\t------------\t----------");

            int i = 0;

            double sumSelangor = 0.0, sumTerengganu = 0.0;

            String inData;

            while ((inData = in.readLine()) != null) {

                String[] tokens = inData.split(";");

                String type = tokens[0];

                String plateNo = tokens[1];

                double price = Double.parseDouble(tokens[2]);

                Vehicle vehicle = new Vehicle(type, plateNo, price);

                arrCar[i] = vehicle;

                if (vehicle.getPlateNo().charAt(0) == 'B') {

                    outSelangor.println(vehicle.getType() + "\t\t" + vehicle.getPlateNo() + "\t\t\t" + vehicle.getPrice());

                    sumSelangor += vehicle.getPrice();

                } else if (vehicle.getPlateNo().charAt(0) == 'T') {

                    outTerengganu.println(vehicle.getType() + "\t\t" + vehicle.getPlateNo() + "\t\t\t" + vehicle.getPrice());

                    sumTerengganu += vehicle.getPrice();

                }

                i++;

            } //end while

            outSelangor.println("\nTotal price: RM" + sumSelangor);

            outTerengganu.println("\nTotal price: RM" + sumTerengganu);

            // Close the output files

            outSelangor.close();

            outTerengganu.close();

            in.close();

        } catch (FileNotFoundException fnf) {

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

        } catch (IOException iox) {

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

        } catch (Exception e) {

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

        }

    } //end main

} //end class

SOURCE CODE 2.2 : Vehicle Class

public class Vehicle {

    private String type;

    private String plateNo;

    private double price;

    public Vehicle(String type, String plateNo, double price) {

        this.type = type;

        this.plateNo = plateNo;

        this.price = price;

    }

    public void setType(String type) {

        this.type = type;

    }

    public void setPlateNo(String plateNo) {

        this.plateNo = plateNo;

    }

    public void setPrice(double price) {

        this.price = price;

    }

    public String getType() {

        return this.type;

    }

    public String getPlateNo() {

        return this.plateNo;

    }

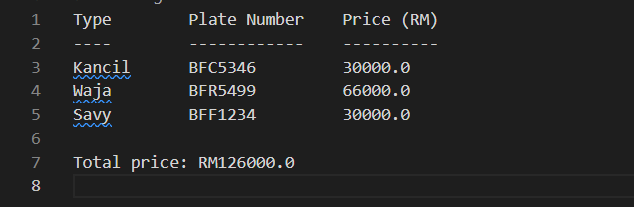
    public double getPrice() {

        return this.price;

    }

}

OUTPUT FILE 2.1 : selangor.txt



OUTPUT FILE 2.2 : terengganu.txt

A screenshot of a computer

Description automatically generated with medium confidence

QUESTION 5.3

SOURCE CODE 1.1 : DeliveryApp Class

import java.io.\*;

import java.time.\*;

import java.time.format.DateTimeFormatter;

public class DeliveryApp {

    public static void main(String[] args) {

        try {

            BufferedReader in = new BufferedReader(new FileReader("deliveroo.txt"));

            PrintWriter out = new PrintWriter(new BufferedWriter(new FileWriter("earnings.txt")));

            out.println("Profit earned for each delivery");

            out.printf("%-20s%-15s\n", "Date(day)", "Profit");

            out.println("=======================================");

            int i = 0; //to count number of records

            int cntDelivery = 0;

            double sumProfit = 0;

            String inData;

            while ((inData = in.readLine()) != null) {

                String[] token = inData.split(",");

                String date = token[0].trim();

                String day = token[1].trim();

                String startTime = token[2].trim();

                double price = Double.parseDouble(token[5].trim());

                double priceMultiplier = Double.parseDouble(token[7].trim());

                double profit = (price \* priceMultiplier) - price;

                if (isTimeLaterThan(startTime)) { //to count delivery after 9PM

                    cntDelivery++;

                }

                String dateDay = date + "(" + day.substring(0, 3) + ")"; //just to make it output date(day)

                out.printf("%-20sRM%-15.2f\n", dateDay, profit);

                sumProfit += profit;

                i++;

            } //end while

            double avgProfit = sumProfit / i;

            out.println("=======================================");

            out.printf("Average profit for each order: RM%.2f", avgProfit);

            //print on console

            System.out.println("\nNumber of deliveries with start time at 9 PM or later: " + cntDelivery);

            System.out.println();

            //close all files

            in.close();

            out.close();

        } //end try

        catch (FileNotFoundException fnf) {

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

        }

        catch (IOException iox) {

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

        }

        catch (Exception e) {

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

        }

    } //end main

    public static boolean isTimeLaterThan(String startTime) { //to check if time is later than 9PM

        String[] parts = startTime.split(":");

        int hour = Integer.parseInt(parts[0]);

        String meridiem = parts[2].split(" ")[1];

        if (meridiem.equalsIgnoreCase("PM") && hour < 12) {

            hour += 12;

        }

        LocalTime time = LocalTime.of(hour, Integer.parseInt(parts[1]));

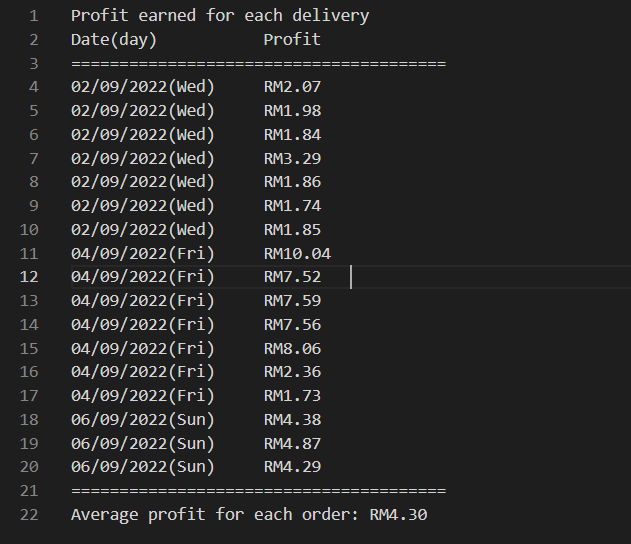
        LocalTime targetTime = LocalTime.parse("21:00", DateTimeFormatter.ofPattern("HH:mm"));

        return time.isAfter(targetTime);

    } //end isTimeLaterThan

} //end class

OUTPUT FILE 1.1 : earnings.txt



QUESTION 5.4

SOURCE CODE 2.1 :Main Class

import java.io.\*;

public class Main {

    public static void main(String[] args) {

        try {

            Supermarket[] arrStore = new Supermarket[100];

            BufferedReader in = new BufferedReader(new FileReader("20180221.txt"));

            PrintWriter out = new PrintWriter(new BufferedWriter(new FileWriter("reportSale.txt")));

            out.printf("%-30s%-15s%-15s%-10s", "Item", "Quantity", "Price(RM)", "Sub total(RM)");

            int i = 0;

            double sum = 0;

            String inData = null;

            while((inData = in.readLine()) != null) {

                String[] tokens = inData.split(",");

                String itemName = tokens[0];

                int qty = Integer.parseInt(tokens[1]);

                double unitPrice = Double.parseDouble(tokens[2]);

                sum = qty \* unitPrice;

                Supermarket supermarket = new Supermarket(itemName, qty, unitPrice);

                arrStore[i] = supermarket;

                out.println();

                out.printf("%-30s%-15s%-15s%-10.2f", supermarket.getItemName(), supermarket.getQty(), supermarket.getUnitPrice(), sum );

                i++;

            }

            out.println();

            out.println();

            out.printf("TOTAL SALE for date: 21st, February 2018 is: RM %.2f", sum);

            in.close();

            out.close();

        } //end try

        catch (FileNotFoundException fnf) {

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

        } catch (IOException iox) {

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

        } catch (Exception e) {

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

        }

    } // end main

} //end class

SOURCE CODE 2.2 : Supermarket Class

public class Supermarket {

    private String itemName;

    private int qty;

    private double unitPrice;

    public Supermarket(String itemName, int qty, double unitPrice) {

        this.itemName = itemName;

        this.qty = qty;

        this.unitPrice = unitPrice;

    }

    public void setItemName(String itemName) {

        this.itemName = itemName;

    }

    public void setQty(int qty) {

        this.qty = qty;

    }

    public void setUnitPrice(double unitPrice) {

        this.unitPrice = unitPrice;

    }

    public String getItemName() {

        return itemName;

    }

    public int getQty() {

        return qty;

    }

    public double getUnitPrice() {

        return unitPrice;

    }

}

OUTPUT FILE 2.1 : selangor.txt

A screen shot of a computer

Description automatically generated with low confidence