**Sample Java Source Code**

import java.text.NumberFormat;

import java.util.\*;

public class CarHire {

 static Scanner stdIn;

 // Prompts a question and returns a boolean if the user enters 'Y' instead of 'N' (any other will result

 // in this function returning false)

 private static boolean promptYN(String question) {

 System.out.print(question + " (Y/N): ");

 return stdIn.nextLine().toLowerCase().contains("y");

 }

 // Asks the user for a string response

 private static String promptString(String question) {

 System.out.print(question + ": ");

 return stdIn.nextLine();

 }

 // Ask the users for an integral response. This will retry until one is given

 private static int promptInt(String question) {

 while (true) {

 try {

 return Integer.parseInt(promptString(question));

 } catch (Exception e) {

 }

 }

 }

 // Prompts the user for a string, will keep asking if it doesn't match

 // the specified pattern

 private static String promptStringPattern(String question, String pattern) {

 String answer = "";

 do {

 answer = promptString(question);

 } while (!answer.matches(pattern));

 return answer;

 }

 // Helper function: prints part of the voucher

 private static void printVoucherPart(String leftSpacer, String key, String value) {

 if (key != "")

 key = key + ":";

 System.out.printf("%-20s %-21s%s\n", leftSpacer, key, value);

 }

 // Format a float as currency number

 private static String currency(float n) {

 // Format a floating point number to the Euro (IE) currency in English

 return NumberFormat.getCurrencyInstance(new Locale("en", "IE")).format(n);

 }

 public static void main(String[] args) {

 stdIn = new Scanner(System.in);

 // After the program has ran, subtract this by one to find the total cars hired

 int voucherNumber = 1;

 // There are only four cars available

 int[] carsHired = new int[]{0, 0, 0, 0};

 // Other variables used for the "daily report"

 int numGPS = 0, numChildSeats = 0;

 float grossRevenue = 0.0f, netRevenue = 0.0f;

 float totalDiscount = 0.0f;

 do {

 int driverAge = promptInt("> What's the driver's age?");

 if (driverAge < 18) {

 System.out.println("! people under the age of 18 cannot higher cars.");

 continue;

 } else {

 float carCost;

 String carType = "Economy";

 int carChoice = 1;

 if (driverAge <= 24) {

 // Drivers between 18-24 are charged a flat-rate and can only hire economy..

 carCost = 32.0f;

 } else {

 carChoice = promptInt("> What car would you like to hire (enter corresponding number on LHS)?" +

 "\n\t1) Economy, €14/day" +

 "\n\t2) Compact, €17/day" +

 "\n\t3) Intermediate, €23/day" +

 "\n\t4) Platinum, €26/day\t");

 switch (carChoice) {

 case 1: // Economy

 carType = "Economy";

 carCost = 14.0f;

 break;

 case 2: // Compact

 carType = "Compact";

 carCost = 17.0f;

 break;

 case 3: // Intermediate

 carType = "Intermediate";

 carCost = 23.0f;

 break;

 case 4: // Platinum

 carType = "Platinum";

 carCost = 26.0f;

 break;

 default:

 System.out.println("! Invalid car choice");

 continue;

 }

 }

 String name = promptStringPattern("> What's your full name?", "[a-zA-Z\\'\\- ]+");

 String address1 = promptString("> What's your first address line?");

 String address2 = promptString("> What's your second address line?");

 String address3 = promptString("> What's your third address line?");

 String licenseNumber = promptStringPattern("> What's your driver license number?", "[0-9]{7}[a-zA-Z][0-9][a-zA-Z][0-9]");

 int insuranceChoice = promptInt("What insurance type would you like? (enter corresponding number on LHS)?" +

 "\n\t1) Collision Damage Waiver, €4/day" +

 "\n\t2) Fully Comprehensive Cover, €11/day\t");

 float insuranceCost;

 String insuranceType;

 switch (insuranceChoice) {

 case 1: // CDW

 insuranceCost = 4.0f;

 insuranceType = "CDW";

 break;

 case 2: // FCC

 insuranceCost = 11.0f;

 insuranceType = "FCC";

 break;

 default:

 System.out.println("! Invalid insurance choice");

 continue;

 }

 int extraDrivers = promptInt("> How many extra drivers will be insured?");

 insuranceCost += (extraDrivers \* 8.0f);

 boolean wantsChildSeats = promptYN("> Would you like a child seat for €5/day up to a maximum of €15?");

 boolean wantsGPS = promptYN("> Would you like a GPS for €12/day up to a maximum of €149");

 int numDays = promptInt("> How many days would you like to hire the car for?");

 if (numDays <= 0) {

 System.out.println("! Invalid number of days");

 continue;

 }

 // Calculate costs of everything added up

 insuranceCost \*= numDays;

 carCost \*= numDays;

 // Logically speaking, this age range is only allowed to hire economy cars at a higher price

 // because they're high risk. But the brief specifies that they can only pay a maximum of €325 euro.

 // This is specified explicitly, it does NOT say that they can't hire for more than x days because of

 // this. Lucky and unlucky to be between 18 and 24 I suppose.

 if (driverAge >= 18 && driverAge <= 24)

 carCost = Math.min(carCost, 325.0f);

 float extrasCost = 0.0f;

 if (wantsChildSeats)

 extrasCost += Math.min(numDays \* 5.0f, 15.0f);

 if (wantsGPS)

 extrasCost += Math.min(numDays \* 12.0f, 149.0f);

 // Funny note: it's technically impossible to read the advertised "maximum cost" of extras

 // because this discount (as described in the brief) applies to extras. Having the number

 // of days high enough to reach the advertised maximums would mean the discount kicks in

 // and 15% is taken off.

 float thisDiscount = 0.0f;

 if (numDays > 3) {

 thisDiscount += carCost \* 0.15f;

 thisDiscount += insuranceCost \* 0.15f;

 thisDiscount += extrasCost \* 0.15f;

 carCost \*= 0.85;

 insuranceCost \*= 0.85;

 extrasCost \*= 0.85;

 }

 // The only thing listed as including VAT is insurance..

 float VAT = insuranceCost \* 0.195f;

 final float transactionFee = 3.0f;

 final float fullCost = carCost + insuranceCost + extrasCost;

 String ccNumber = promptStringPattern("> What's your credit card number?", "[0-9]{16}");

 String ccExpiry = promptStringPattern("> What's your credit card's expiry date (enter MM/YY)?", "(0[1-9]|10|11|12)\\/[0-9][0-9]");

 // Print out the voucher

 System.out.printf("%-41s VOUCHER#: %04d\n\n", "MAGNIFICENT CAR HIRE", voucherNumber);

 printVoucherPart("Customer Details:", "Name", name);

 printVoucherPart("", "Address", address1 + ", " + address2 + ", " + address3);

 printVoucherPart("", "License Number", licenseNumber);

 printVoucherPart("", "Credit Card Details", "XXXX-XXXX-XXXX-" + ccNumber.substring(12, 16));

 System.out.print("\n");

 printVoucherPart("Car Details:", "Car Type", carType);

 printVoucherPart("", "Number of Days", String.valueOf(numDays));

 printVoucherPart("", "Insurance Type", insuranceType);

 printVoucherPart("", "Optional Extras", (wantsGPS || wantsChildSeats) ? "Yes" : "No");

 if (wantsGPS || wantsChildSeats)

 printVoucherPart("", "Cost of Extras", currency(extrasCost));

 float totalCost = fullCost + VAT + transactionFee;

 System.out.print("\n");

 printVoucherPart("Cost details:", "Cost of Hire", currency(carCost));

 printVoucherPart("", "Discount", currency(thisDiscount));

 printVoucherPart("", "Cost of Insurance", currency(insuranceCost));

 printVoucherPart("", "Cost - Discount", currency(fullCost));

 printVoucherPart("", "VAT", currency(VAT));

 printVoucherPart("", "Handling Charge", "€3");

 printVoucherPart("", "", "\_\_\_\_\_\_\_\_\_\_\_\_");

 printVoucherPart("", "Total Cost", currency(totalCost));

 voucherNumber++;

 carsHired[carChoice - 1]++;

 if (wantsGPS)

 numGPS++;

 if (wantsChildSeats)

 numChildSeats++;

 totalDiscount += thisDiscount;

 grossRevenue += totalCost;

 netRevenue += fullCost + transactionFee;

 }

 } while (promptYN("> Would you like to rent another car?"));

 // Print a lovely daily report using variables from before. This code will be ran when the user choose "no"

 // when asked if they want to higher another car, thus triggering a report and program exit

 System.out.println("\n\n====================== DAILY REPORT ======================");

 System.out.printf("%-35s%s\n", "Total economy hires:", carsHired[0]);

 System.out.printf("%-35s%s\n", "Total compact hires:", carsHired[1]);

 System.out.printf("%-35s%s\n", "Total intermediate hires:", carsHired[2]);

 System.out.printf("%-35s%s\n", "Total platinum hires:", carsHired[3]);

 System.out.printf("%-35s%s\n", "Total GPS systems purchased:", numGPS);

 System.out.printf("%-35s%s\n", "Total child seats purchased:", numChildSeats);

 System.out.printf("%-35s%s\n", "Gross revenue generated:", currency(grossRevenue));

 System.out.printf("%-35s%s\n", "Total discounted to customers:", currency(totalDiscount));

 System.out.printf("%-35s%s\n", "Net revenue generated:", currency(netRevenue));

 stdIn.close();

 }

}