**PROJECT Parking Garage - Repetition Structures 100 points**

**Objective** To type a simple Java program, execute ( run ) the program for some particular values, observe the output and then modify the program.

***PROJECT DESCRIPTION***

Type, compile and run the basic Java program that is shown in **Figure 1** , which follows.

Then compile and run your program, observe the output then modify the program.

***Information About This Project***

For this project we will create a simple fee calculator that allows for user input and provides some calculations for displaying various totals for parking fees.

***Steps To Complete This Project***

**STEP 1**  **Open NetBeans**

Open NetBeans and create a Java project with the following details.

For Project Name include **Lab4**

For the Main Class include **lab4.PrattParkingGarage**

In your **Code** window, shown below, copy in the program code shown in **Figure 1** below, in the appropriate places, except substitute your own name in place of Sammy Student.

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**Figure 1 Source Code for the Parking Garage Program**

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| package lab4;  import java.util.Scanner;  // Sammy Student, Programmer  public class PrattParkingGarage  {  static Scanner sc = new Scanner(System.in);  public static void main(String args[])  {  // the local variables declared and initialized  char answer = 'Y', specEvent = 'N', rateCode = '\0';  int ticketNum = 0;  int timeIn = 0, timeOut = 0, timeDiff = 0;  double amountTendered = 0.0, changeDue = 0.0;  double flatFee = 0.0, monthFee = 0.0;  double EXTRA\_CHARGE = 0.0;  double coupon = 0.0, tip = 0.0;  double flatTax = 3.00, totalDueFromCust = 0.0;    System.out.println("");  System.out.println("");  System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");  System.out.println("----Pratt Parking Garage---");  System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");  System.out.println("");  System.out.println("");  while(answer == 'Y' || answer == 'y')  {  System.out.println("--------- M E N U ---------");  System.out.println("data entry process: enter each of these");  System.out.println("customer ticket number ->");  ticketNum = sc.nextInt();  System.out.println("ticket number " + (ticketNum));  System.out.println("time in (mil time)");  timeIn = sc.nextInt();  System.out.println("time out (mil time)");  timeOut = sc.nextInt();  timeDiff = timeOut - timeIn;  System.out.println("time difference " + (timeDiff));    System.out.println("rate code: (F or M)");  rateCode = sc.next().charAt(0);  System.out.println("rate code: " + rateCode);  if (rateCode == 'F')  {  flatFee = 10.00;  totalDueFromCust = flatFee;  }  if (rateCode == 'M')  {  monthFee = 30.00;  totalDueFromCust = monthFee;  }  else  monthFee = 0.00;  System.out.println("tip amount");  tip = sc.nextDouble();  System.out.printf("tip: $%.2f\n", tip);  totalDueFromCust += tip;    System.out.printf("flat tax: $%.2f\n", flatTax);  totalDueFromCust += flatTax;    System.out.println("special event(Y or N)?");  specEvent = sc.next().charAt(0);  if(specEvent == 'Y') EXTRA\_CHARGE = 10;  totalDueFromCust += EXTRA\_CHARGE;  System.out.println("coupon amount");  coupon = sc.nextDouble();  totalDueFromCust -= coupon;    System.out.printf("total charge: $%.2f\n", totalDueFromCust);    System.out.println("amount tendered from customer");  amountTendered = sc.nextDouble();  changeDue = amountTendered - totalDueFromCust;  System.out.printf("change: $%.2f\n", changeDue);  System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");  System.out.println("run again(Y or N)?");  answer = sc.next().charAt(0);  }  System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");  }// end main()  }// end class |

**STEP 2 Build, Compile and Run the Program**

From the NetBeans Run menu, select Run Project (Lab4) to run your app.

**STEP 3 Test the Program**

Once you have successfully compiled your program, enter the following information, when prompted, into the output **Console** window of NetBeans.

**Initial Test Run**

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| \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  ----Pratt Parking Garage---  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  --------- M E N U ---------  data entry process: enter each of these  customer ticket number ->  523  ticket number 523  time in (mil time)  0900  time out (mil time)  1300  time difference 400  rate code: (F or M)  F  rate code: F  tip amount  2  tip: $2.00  flat tax: $3.00  special event(Y or N)?  Y  coupon amount  0  total charge: $25.00  amount tendered from customer  30  change: $5.00  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  run again(Y or N)?  Y  --------- M E N U ---------  data entry process: enter each of these  customer ticket number ->  524  ticket number 524  time in (mil time)  0900  time out (mil time)  1200  time difference 300  rate code: (F or M)  M  rate code: M  tip amount  2  tip: $2.00  flat tax: $3.00  special event(Y or N)?  N  coupon amount  0  total charge: $45.00  amount tendered from customer  45  change: $0.00  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  run again(Y or N)?  Y  --------- M E N U ---------  data entry process: enter each of these  customer ticket number ->  525  ticket number 525  time in (mil time)  1000  time out (mil time)  1500  time difference 500  rate code: (F or M)  F  rate code: F  tip amount  5  tip: $5.00  flat tax: $3.00  special event(Y or N)?  N  coupon amount  2  total charge: $26.00  amount tendered from customer  26  change: $0.00  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  run again(Y or N)?  N  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* |

**STEP 4 Modify Your Program**

Modify your existing code as follows for this lab:

• Include accumulating variables that will track and display the total revenue of

the customers tickets that are entered as well as the total tax and tip amounts.

**STEP 5 Submit Your Project**

Once you have determined that your modified program is correctly computing the invoice and that it displays information appropriately (including amount discounted and total invoice amount), complete the submission process as follows:

Open MS Word and type a heading for a new document that includes your full name, course number, lab number and date.

Within the document paste in a snapshot of your modified code. Label your snapshot of your modified run with a reasonable description.

After your snapshot, paste in your finished source code as well copied in from your NetBeans editor.

Submit your MS Word document to Blackboard when complete.