**PROJECT Invoice Creation –Control 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 invoice that allows for user input and provides for some calculations and the displaying of the invoice total amount to be billed.

***Steps To Complete This Project***

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

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

For Project Name include **Lab3**

For the Main Class include **lab3.Invoices**

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.

|  |
| --- |
|  |

**Figure 1 Source Code for the BankAccount Program**

|  |
| --- |
| package lab3;  import java.util.\*;  public class Invoices {  public static void main(String args[]) {  // the variables  int invNum = 0;  int numItems = 0;  double itemPrice = 0.0, shipCharge = 0.0, totAmt = 0.0;  double discount = 0.02, subTotal = 0.0;  char shipMethod = '\0';  String invDate = "";  boolean check = false;  Scanner sc = new Scanner(System.in);    //obtain today's date  Date date = new Date();    // display time and date using toString()  System.out.println(date.toString());    // the program header  System.out.println("[ Invoice Processing ]");  System.out.println("----------------------\n");  System.out.println("Today's Date is: " + date + "\n");  // prompt user for data and receive data  System.out.println("please enter the invoice number");  invNum = sc.nextInt();  System.out.println("the invoice number is: " + invNum);  System.out.println("please enter the invoice date");  invDate = sc.next();  System.out.println("the invoice date is: " + invDate);  System.out.println("please enter the number of items purchased");  numItems = sc.nextInt();  System.out.println("the number of items is: " + numItems);    //determine the per item price  if (numItems > 0 && numItems <= 10)  itemPrice = 0.75;  else if (numItems > 10 && numItems <= 50)  itemPrice = 0.65;  else  itemPrice = 0.62;  System.out.printf("the per item price is: $%.2f\n",itemPrice);    //determine the shipping method  System.out.println("enter shipping method (A , B or C)");  shipMethod = sc.next().charAt(0);    //determine the shipping charge  switch(shipMethod) {  case 'A': case 'a': shipCharge = 5.00; break;  case 'B': case 'b': shipCharge = 7.20; break;  case 'C': case 'c': shipCharge = 10.00; break;  default: shipCharge = 20.00;  }  System.out.printf("the shipping charge is: $%.2f\n" , shipCharge);    //determine the days from invoice date to today's date  System.out.println("is discount period valid? true or false");  check = sc.hasNext();  if (sc.hasNextBoolean()) {  System.out.println("discount valid? " + check);  check = true;  }    //determine and display the total invoice amount  subTotal = numItems \* itemPrice;  if(check == true)  totAmt = subTotal \* (1 - discount) + shipCharge;  else  totAmt = subTotal + shipCharge;  System.out.printf("(total invoice amount due) $%.2f\n",totAmt);    // the program footer  System.out.println(" ");  System.out.println("thank you!");  System.out.println("---------------------");  }  } |

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

From the NetBeans Run menu select Run Project (Lab3) 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**

Tue Sep 20 12:06:53 CDT 2016

[ Invoice Processing ]

----------------------

Today's Date is: Tue Sep 20 12:06:53 CDT 2016

please enter the invoice number

1

the invoice number is: 1

please enter the invoice date

2

the invoice date is: 2

please enter the number of items purchased

87

the number of items is: 87

the per item price is: $0.62

enter shipping method (A , B or C)

b

the shipping charge is: $7.20

is discount period valid? true or false

t

(total invoice amount due) $60.06

thank you!

---------------------

**STEP 4 Modify Your Program**

Modify your existing code as follows for this lab:

• Include the ability for the program user to offer free shipping by supplementing the switch() case statement.

• Include the ability for the user to view the amount of the discount if applicable as well as the total amount due.  We can say "you saved" $xx.xx dollars.

• Include the ability for the program user to select the shipping service from a list of companies such as: Federal Express, United Parcel Service, DHL and United States Postal Service.

**STEP 5 Submit Your Project**

Once you have determined that your modified program is correctly computing the invoice and that it displays information appropriatey (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.