**Lab 10 – BasicBlackjack**

Open BlueJ, and create a new BlueJ project titled **Lab10-BasicBlackjack** in your CS\LABS folder.

Create a new class with this code skeleton:

//Name:

import java.util.\*;

public class PracticeProblems

{

public static void main(String[] args)

{

Scanner console = new Scanner(System.in);

}

}

REMEMBER – if statements are used for *conditional code execution.* Much more information can be found in the powerpoints and in [this](https://www.youtube.com/watch?v=JHIRCIwkXb8) excellent video; here is an example of basic if statement syntax:

int a = 12;

if (a > 10)

{

System.out.println("Must be over 10!");

}

**Would print:** Must be over 10!

**Before each problem, insert a COMMENT with the problem number.**

1. Declare two double variables called num1andnum2, and get their values from the keyboard.
2. Using ONLY ONE java statement, declare and initialize a Boolean variable called numsAreSame that stores either true or false, depending on whether or not num1 and num2 are the same. This should be done WITHOUT an if statement.
3. Print the value of numsAreSame to the screen.
4. Declare a double variable called totalBill and get its value from the keyboard. Write the code to determine what discount someone should receive. If the bill is over 1000 the customer will get a 10% discount, but if the bill is over $2000 the customer gets a 15% discount! Display the discount amount and their new bill. Sample run (**user input shown in red**):

Enter total bill amount >>> $ **2500.00**

15% discount >>> $375

New total after discount (if applicable) >>> $2125.0

1. The customer can get an additional 5% off the bill if they have a coupon. Make a Boolean variable called hasCoupon, and get its value from the keyboard. Print the total bill to the screen again, this time, taking the coupon into consideration (**user input shown in red**):

Customer has a coupon? (Enter true or false) >>> **true**

Coupon discount >>> $106.25

New total after coupon (if applicable) >>> $2018.75

1. (Riddle) What can you catch but not throw?
2. Complete the ‘Worksheet – Boolean Expressions’ (Excel file). Make sure to save it when done.

**Basic Blackjack app**

Create a new class in your current project with this code skeleton:

//Name:

import java.util.\*;

public class BasicBlackjack

{

public static void main(String[] args)

{

Scanner console = new Scanner(System.in);

}

}

In this program, you will write the algorithm used to determine the winner in a hand of the card game blackjack. First, read in two integer values, hand1and hand2*,* from the keyboard (from the user). These 2 numbers indicate the point total in each players’ hand at the end of a game of Blackjack. The rules of Blackjack have been simplified for this program:

* Whichever player’s ‘hand’ (point total) is nearest to 21 without going over is the winner
* If both players ‘bust’ (go over 21), print “Bust!” to the screen.

This program should print an appropriate message if given nonsense inputs (e.g. negative numbers).

Sample program output (w/ **user input shown in red**). Use this to test your code:

Player 1, enter hand value >>> **20**

Player 2, enter hand value >>> **17**

Player 1 wins!

Here’s another test run:

Player 1, enter hand value >>> **22**

Player 2, enter hand value >>> **14**

Player 2 wins!

And another test run:

Player 1, enter hand value >>> **-2**

Player 2, enter hand value >>> **17**

You entered bad numbers.

And another test run:

Player 1, enter hand value >>> **22**

Player 2, enter hand value >>> **24**

Bust!