**Lab 11 – Bottles on the Wall**

Open BlueJ, and create a new BlueJ project titled **Lab11-BottlesOnTheWall** in your CS\LABS folder.

Create a new class with this code skeleton:

//Name:

public class PracticeProblems

{

public static void main(String[] args)

{

}

}

A while loop is very similar to an if statement, except that the code inside the code block (between the curly brackets) **will continue to run** *while* the test condition is true. Example syntax:

int i = 0;

while (i < 50) //will execute while i is less than 50

{

System.out.print(i);

i = i + 1; //can also be written as i++ or i += 1

}

Much more information can be found in our notes.

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

1. Write the code, using a while loop and a loop variable, to produce the following output.

123456789 //note – must be done with a while loop that will run 9 times

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1 2 3 4 5 6 7 8 9

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1 3 5 7 9 11 13 15 17 19

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5 10 15 20 25 30 35 40 45 50

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10 9 8 7 6 5 4 3 2 1

1. (Riddle) Why can't a man living in the USA be buried in Canada?
2. Write the code, using a while loop and a loop variable, to produce the following output.

-4 -8 -12 -16 -20 -24 -28 -32 -36 -40

1. Write the code, using a while loop and a loop variable, to produce the following output.

1 2 4 8 16 32 64 128 256

1. Write the code, using a while loop and a loop variable, to produce the following output.

1000 500 250 125 62 31 15 7 3

1. Write the code, using a while loop and a loop variable, to produce the following output.

1 -1 2 -2 3 -3 4 -4 5 -5 6 -6 7 -7 8 -8

**Bottles on the Wall app**

Create a new class with this code skeleton:

//Name:

import java.util.\*;

public class BottlesOnTheWall

{

public static void main(String[] args)

{

Scanner console = new Scanner(System.in);

}

}

You find yourself in a curious predicament – you can never remember how to sing the famous “99 bottles of <something> on the wall” song, but there’s no way you’re going to sing it all the way to the end to remember it – that would take way too long. Luckily, you know how to code, and you could write a program to do it for you in much less time.

First, prompt the user, asking them their age. If they are over 21, ask them if they prefer beer or Coke. The song will be sung with “99 bottles of beer on the wall” if they are over 21 and choose beer; if they’re under 21 (or choose Coke), the song will be sung with “99 bottles of Coke on the wall”.

Use concatenation whenever possible. Sample program run below (**user input shown in red**):

Enter your age (whole number only) >>> **52**

Do you prefer beer or Coke (enter 1 for beer, 2 for Coke) >>> **2**

99 bottles of Coke on the wall

99 bottles of Coke

Take one down, pass it around, 98 bottles of Coke on the wall!

… all the way to the last 2 verses (*notice they are slightly different than the others!*):

2 bottles of Coke on the wall

2 bottles of Coke

Take one down, pass it around, 1 bottle of Coke on the wall!

1 bottle of Coke on the wall

1 bottle of Coke

Take one down, pass it around, no more bottles of Coke on the wall!