**Lab #3: Decision Making**

**Objective:** In this lab, you will get more practice using variables while incorporating decision making into your program.

1. What is the value stored in the variable *number* after the following lines of code are executed.

number = 5

test = 1

if number\*2 - test < test:

number = 27

elif -2\*test + number <= number:

number = 15

else:

number = -100

1. What is the value stored in the variable *number* after the following lines of code are executed.

number = 5

test = 1

if number <= test or test > -1\*number + 7:

number = 38

elif number > 7 and test <= 2 or number = 5:

number = 54

else:

number = 20

1. What is the value stored in the variable *word* after the following lines of code are executed.

word = “Hello!”

truthValue = 2\* len(word) - 4 <= 9;

if truthValue == true:

word = “one”

elif truthValue:

word = “two”

else:

word = “three”

1. What is wrong with the following if/else block? Explain in full.

test = 1

if test = 1:

print(“Test is equal to one!”)

else:

print(“Test is not equal to one!”)

1. Considering the following variables and their values:

a = 11

b = -2

c = 19

d = False

Find the value of the following. Try to do these by hand before checking with IntelliJ:

1. not d
2. d or False
3. (a > b) and (b > c)
4. d or not d
5. not (a / 2 == 6) or d or (c \* 3 == 57)
6. (c < a) == True
7. Consider the following code:

if num >= 0:

if num < 100:

print(“!”)

Rewrite the code so that it does the same thing with just one if statement.

1. Write a program in a main method that accomplishes the following:

* Create a String variable called *word.*
* You should write a program that will split the word in half symmetrically with a dash or dashes. The output should be formatted as such:

ev-en (for even length words) OR o-d-d (for odd length words)

**Sample Input 1: Sample Input 2:**

*word = “bookshelf”* word = “ozarka”

**Correct Output 1: Correct Output 2:**

book-s-helf oza-rka

1. Write a program in a main method that accomplishes the following:

* You should create a variable called *average* that will store a numerical value that represents a student’s grade in a class.
* Your program should output the letter grade corresponding to the value of the variable *average*.
* If you change the value of the variable average, your output should change accordingly. Format your output as seen below.

**Sample Input 1: Sample Input 2:**

*average* = 83.1 *average* = 95.2

**Correct Output 1: Correct Output 2:**

The grade is a B The grade is an A

1. Write a program in a main method that accomplishes the following:

* Creates a character variable for a letter of the alphabet.
* Prints “vowel” if the character is a vowel, and “consonant” if the variable is a consonant.
* Your code should work for any character in the alphabet

**Sample Input 1: Sample Input 2:**

c= ’d’ *c = ‘e’*

**Correct Output 1: Correct Output 2:**

**“**consonant” “vowel”

1. Write a program in that accomplishes the following:

* Declares and initializes a character variable for a letter of the alphabet.
* Prints “vowel” if the character is a vowel, and “consonant” if the variable is a consonant.
* Your code should work for any character in the alphabet

**Sample Input 1: Sample Input 2:**

c= ’d’ *c = ‘e’*

**Correct Output 1: Correct Output 2:**

**“**consonant” “vowel”