Topic 4 Else-If statements and Topic 5 Compound Boolean Expressions

1. What is a nested if statement?
   1. A nested if statement is an if statement inside of another if statement.
2. What is Dangling else, what does the presenter says about this? How you can recognize a dangling else statement?
   1. An else statement that is not associated with a specific if statement. You can recognize a dangling else statement if you cannot definitely tell which if statement the else statement belongs to. You can avoid this with indentation and proper statement groupings.
3. What is the order of the evaluation of the logical operators?
   1. The order of evaluation of the logical operators is in order from left to right. For example, result = a && b || c && d; - && is evaluated first
4. Watch the videos in Topic 1 While Loops and Topic 2 For Loops. Answer the following questions. **(60 points)**
   1. How does a Loop Control Variable function?
   2. How does the placement of the Loop Control Variable update affect a while loop?
   3. What are two ways we can update a while loop to prevent infinite loops?
   4. What are the three parts of a for loop and how do they work together?
   5. What are three things to consider when choosing between a for loop and a while loop?
   6. What is an "off by one" error and how do you prevent it?
5. Watch the Topic 4 Nested Iteration videos and answer the questions. **(40 points)**
   1. The outer loop only iterates when what happens?
   2. What happened when the inner and outer for loop headers were switched in the counting example from video 1? Why?
   3. What happens when you switched the nesting while loop headings in video 3? Why?
6. What is the condition for two variables that are evaluated with the && operator if the evaluation is true?
   1. Both conditions have to be true
7. How short-circuit works for an && (AND) operator and a II (OR) operator, what rule we can establish after this?
   1. If the first operand is evaluated as false, then the && operator is short circuited. If the first operand is evaluated as true, then the || operator is short circuited. We can establish that these two operators have opposite short circuit rules.
8. In short-circuit, using the && operand, if the first operand is evaluated as False, what is the result of the Boolean operation?
   1. If the first operand is evaluated as false, the result of the boolean expression is false because there is no need to evaluate the second operand.

Topic 6 Equivalent Boolean Expressions, and Topic 7: Comparing Objects

* 1. What is used to compare and contrast Boolean expressions?
     + Logical operators are used to compare and contrast boolean expressions.
  2. What does Morgan’s Law say about the negation of the evaluation of two Boolean variables or expressions?
     + Morgan’s Law says that the negation of the evaluation of two boolean variables or expressions leads to the opposite evaluation.
  3. What is a thru table, for what is it used for?
     + I assume this means truth table. A truth table is used to evaluate all possible scenarios of a certain set of boolean expressions being evaluated by logical operators.
  4. What is it called when two objects have the same reference address?
     + They are considered aliases.
  5. When two objects are called aliases?
     + I’m not entirely sure what this question is asking, but I assume it is asking what scenario classifies two objects as aliases. Two objects are aliases when they have the same reference address.
  6. How do we know if two objects are equal?
     + We know if the two objects are equal if using the .equals() function returns true (which compares their attributes rather than their reference value)
  7. What is the difference between == and the equal () method to compare two objects?
     + == compares the two references’ point in memory. .equals is implemented by different object types to compare attributes rather than reference values.