CS 1336 Assignment 3

Due: Friday, October 14th, 2021, 11:59 PM
Points Possible: 30
What to turn in: a Word/PDF document with the answers filled in. *Please* leave the questions in place so the grader has an easier time checking your answers (that is, add your responses in the spaces provided).

Reminder: your 3rd ZyLab assignment is due at the same time.

1. In one sentence, how does an iteration compare to the loop body? (4 pts)

    The loop body is everything in between the '{' and '}' whereas an iteration is a single running of the loop body itself.

2. As we've seen, characters in C++ strings are 0-indexed (that is, the first element is "at" position 0). Write a for loop statement (just the line with `for` (…, not the body) that cycles through the characters in a string called `myString`. (4 pts)

    For (int i = 0; i < myString.length(); i++)   {

    }

3. Fill in the blank: If I have a loop that begins like this…
    ```
    while ( true ) {
    ```
    …somewhere in the loop body I'll need a/an __break___ statement to keep the loop from being infinite. (2 pts)

4. Both if statements and while statements use a condition, but the effect of the condition being true is a bit different. In one sentence, what is that difference? (4 pts)

    if statements run **once** if the condition is true whereas while statements run **as long as** the condition is true

5. In one sentence, describe when you would prefer to use a while loop instead of a for loop. (4 pts)

    When you know the number of times you want to run a loop, a for loop would be a better option.

6. Let's say that I have a for loop, using `i` as a counter. I want to copy/paste/modify that loop as a new loop in the same function (but after the first loop completes). In one

sentence, explain why that copy/paste is likely to work without causing a naming conflict between the two `is`. (4 pts)

You don't move past a loop until it completes all its iterations. So the inner loop runs to completion for each iteration of the outer loop. This prevents any naming conflicts.

7. True/false: putting a continue; statement inside an if is silly because it just breaks you out of the if, but does nothing else. (2 pts)

False

8. Fill in the blank: Given this code, the `continue;` will execute line _____ next. (3 pts)

```
1.    int max;
2.    std::cin >> max;
3.    for ( int i=0; i<max; i++) {
4.       if ( (i % 100) == 0) {
5.          continue;
6.       }
7.       std::cout << i << std::endl;
8.    }
9.    std::cout << "Done!" << std::endl;
```

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9. Given this code, the `break;` will execute line _____ next. (3 pts)

```
1.    std::vector<std::string> stringVector;
2.    stringVector.push_back("Hello");
3.    stringVector.push_back("This is your professor.");
4.    stringVector.push_back("Please ignore these.");
5.    stringVector.push_back("They aren't important :)");
6.
7.    for ( int i=0; i<stringVector.size(); i++ ) {
8.       std::string currentString = stringVector[i];
9.       for ( int j=0; j<currentString.size(); j++ ) {
10.         if ( currentString[j] == 'P') {
11.            break;
12.         }
13.         std::cout << currentString.at(j);
14.      }
15.      std::cout << std::endl;
16.   }
```

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