Programming and Problem Solving
Winter 2015 – CS110-001

Quiz #2 – March 16 @ 8:30 in CL112

Name: _____

Student Number: _____

There are 10 multiple choice questions and 1 programming question in this quiz. Answer the multiple choice questions on the Scantron sheet. Answer the programming question in the space provided on the quiz. You have 50 minutes to complete the quiz.

There are 20 marks available on this quiz:

        Multiple choice (10):   / 10

        Programming (10):   / 10

                                            / 20

Multiple Choice (10 questions x 1 mark each = 10 marks. Answer on Scantron sheet)

1.   What is the index of the first character in a string, accessed either by [] or .at()?
        A. -1
        B. 1
        C. 0
        D. 0.5

2.   Which pair of symbols are used to indicate the beginning and end of a loop body?
        A. { and }
        B. -> and <-
        C. BEGIN and END
        D. (and)

3.   Which of the following statements creates infinite loop?
        A. for (; ;)
        B. while (; ;)
        C. when (; ;)
        D. if (; ;)

4.   What is the purpose of a `break;` statement within a loop?
        A. to cause a run-time error
        B. to pause execution of the program
        C. to end the current iteration of the loop
        D. to end the loop innermost loop that contains the `break;` statement

5.   What is the value of `sum` at the end of the following code snippet?

```
int sum = 0;
for (int i = 0; i < 10; i++);
{
    sum += 10;
}
```
        A. this code will not compile
        B. 10
        C. 45
        D. 100

6. Given the following code snippet:

```
string s1 = "antz";
string s2 = "antler";
cout << (s1 < s2 ? s1 : s2) << endl;
```

what will be displayed, and why?
  A. s2, because antler < antz
  B. antler, because l comes before z in the alphabet
  C. s1, because antz < antler
  D. antz, because its length is shorter

7. Given the following code snippet:

```
cout << ("c" == 'c') << endl;
```

what will be displayed, and why?
  A. nothing, because this code has an error in it
  B. 1 (or true), because both literals store the letter c
  C. 0 (or false), because both literals store the letter c differently
  D. none of the above are true

8. The loop body of any do-while loop guaranteed to be executed how many times?
  A. 0
  B. 1
  C. depends on the loop continuation condition
  D. infinitely many

9. The widely-used simulation method that uses random numbers and probability is known as:
  A. Monty Python
  B. Monte Carol
  C. Monty Hall
  D. Monte Carlo

10. How many lines of output will be generated by the following code snippet?

```
for (int i = 0;i < 100;i)
{
    cout << "Iteration " << i+1 << endl;
}
```
  A. 0
  B. 1
  C. 100
  D. more than 100

Programming Question (10 marks):

You are given a file called `temperatures.txt` that contains several integer readings of temperatures from a sensor. Write a readable C++ program, with meaningful comments, that takes this file as input and produces the following output:
  • minimum temperature and the number of times this value occurred in the file
  • maximum temperature and the number of times this value occurred in the file
  • largest difference between consecutive temperature values read from the file

CS 110-01 Quiz #2: 16 March 2015

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