Due: Friday 3/10/2014 11:59 PM
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1)

a) Give an example of a syntax (compiler) error.

- int x = 5
- cout << x
- // syntax error: there is no semicolon after each statement

b) Give an example of a logic (runtime) error.

- if (x = 5) ….
- // there has to be two (==) for x to be equal to 5

2) Consider the following code snapshot

```cpp
#include <iostream>

using namespace std;

int main()
{
    string name1 = "Calvin";
    string name2 = "Bill";

    cout << "Hello my name is " << name1 << endl;
    cout << "Hi there " << name1 << "! My name is " << name2 << endl;
    cout << "Nice to meet you " << name2 << ".\n"
         << "I am wondering if you're available for what?\n";
    cout << "What? Bye" << name1 << "!\n";
    cout << "Uh... sure, bye " << name2 << "!\n\n";

    cout << name1 << name1 << name1 << name1 << name1 << endl;
    cout << name2 << name2 << name2 << name2 << name2 << endl;

    return 0;
}
```

a) What is output? (make sure you're specific)

- the output is the conversation that is held between the two strings, name1(Calvin) and name2(Bill). The conversation is executed within the (couts) including the strings.
    - Output
        - "Hello my name is Calvin"
        - "Hi there Calvin! My name is Bill"
        - "Nice to meet you Bill."
            - "I am wondering if you are available for what?"
        - "What? Bye Calvin!"
        - "Uh... sure, bye Bill!
        - Calvin Calvin Calvin Calvin Calvin
        - Bill Bill Bill Bill BIll

b) How many statements are there in the main() function?

- There are 10 statements if you include "return 0;".

c) Identify the code that are variable declaration and initialization statements
(Box these in the code snapshot).

- variable declaration and initialization statements:
    - string name1 = "Calvin";
    - string name2 = "Bill";

d) Identify the code that is the program (Circle this in the code snapshot).

- code of the program:
    - starts from string name1 = "Calvin and ends all the way down to return 0;
        - // I couldn't draw on the snapshot
        - // hope this works

e) Can you figure out one reason how variables are useful in this example?

- Variables are useful because we can store different data_types of information in them and then implement the variables into our code.

3) Create a program that receives 12 total scores, four for each person, and calculates the average of scores for each quiz. The program should output all values as indicated below. The averages have only two data points, and all numbers are right justified to the center of the QUIZ 1 output.

```
name        Quiz 1   Quiz 2   Quiz 3   Quiz 4
----        ------   ------   ------   ------
John          10        7       10        9
Mary           9        8       10        9
Matthew        8        7        9       10

Average     9.00     7.33     9.66     9.33
```

4) Write a program that plays the game of Mad Lib. Your program should prompt the user to enter the following strings: For simplicity, each input can only be a max of 10 characters.
    a. A name
    b. Another name
    c. A food
    d. A number between 100 and 120
    e. And Adjective
    f. A color
    g. An animal

    After the strings are input, the should be substituted into the story below and output to the console.

Dear [Name],

I am sorry that I am unable to turn in my homework at this time. First, I ate a rotten [Food], which made me turn [Color] and extremely ill. I came down with a fever of [Number 100-200]. Next, my [Adjective] pet [Animal] must have smelled the remains of the [Food] on my homework because he ate it. I am currently rewriting my homework and hope you will accept it late.

Sincerely,
[Name]