Activity 3

Comp 11 - Summer Session — Decisions, decisions, decisions

With a partner(or two), discuss the following code sample and answer the questions below. The instructor and teaching assistants will let you discuss and then be around to answer questions. [1]

3.1 Description

Work through the following questions below by filling in the values in the code.

```
int main(){
  int a = 3;
  int b = 3;

  if (a > b){
      b = 7;
  }

  // (1)
  // a = _____
  // b = _____

  if (a >= b){
      b = 7;
      a = b;
  }

  // (2)
  // a = _____
  // b = _____

  return 0;
}
```

Listing 3.1: Control Statements 1

[1] Activities do not need to be returned to instructors, they are for your benefit.

```cpp
#include <string>
#include <iostream>

int main(){
  // Note, why can I not name the variable 'continue'
  char continueProgram = 'y';
  std::string user = "Michael";
  std::string secretCode = "";
  long countdown = 0;

  for(int i =0; i < 100; i=i+1){
    countdown = countdown + 1;
  }

  // (1)
  // countdown = _________

  while(countdown > 0 && continueProgram=='y'){
    countdown = countdown - 1;

    if(countdown <=50){
      continueProgram = 'n';
    }
  }

  // (2)
  // countdown = __________
  // continueProgram = ______


  int half = user.length()/2;
  int counter = 0;
  for(char c: user){
    counter = counter + 1;
    if(counter < half){
    std::cout << c;
        secretCode = secretCode + c;
    }else{
      break;
    }
  }

  std::cout << secretCode << "\n";

  // (2)
  // counter = __________
  // secretCode = ______



  return 0;
}
```

Listing 3.2: Control Statements 2

3.2 Questions

1. What happens if a loop does not terminate in a program (i.e. the condition can be proved to always evaluate to true)?

2.
```
Write a conditional statement with the >, ||, and == signs
    that demonstrates the equivalent conditional statement to
    "if(a >= b)"
```

Listing 3.3: Control Statements 2

```
#include <iostream>

int main(){

  int a = 1;
    if(a==1){
      int b = 3;
        if(b==2){
          int c = 3;
        }else{
          int d = 4;
        }

        // (1) What is the value (if any) of c and d here?
        // -------------------------------------
    }else if(a > 0){
      a = 37;
    }

      std::cout << a << "\n";
      // (2) What value would a print out here?
        // -------------------------------------


  return 0;
}
```

Listing 3.4: Nesting