EECE.3220: Data Structures

Spring 2019

Key Questions
C++ I/O Basics (Lecture 2)

QUESTIONS

1. Describe the key components of the basic C++ program shown below, particularly namespaces and the basic output stream `cout`.

```
#include <iostream>

using namespace std;

int main() {
     cout << "Hello World!\n";
     return 0;
}
```

2. Describe the basic input/output streams in C++.
3. Describe the basics of using `cout` and the stream insertion operator for output.
4. Describe the basics of using `cin` and the stream extraction operator for input.
5. Describe the basics of text file I/O in C++.

EXAMPLES

1. Show the output of the following short programs:

a.

```
#include <iostream>
using std::cout;    // Only include part
                    //  of std namespace
                    //  you actually use
int main() {

     // display message
     cout << "Welcome ";
     cout << "to C++!\n";

     return 0;
}
```

b.

```
#include <iostream>
using std::cout;

int main() {
     cout << "Welcome\nto\n\nC++!\n";
     return 0;
}
```

2. Determine the output of the following short programs:

a. Assume the user inputs: `1 2 4.5`

```
#include <iostream>
using std::cout;
using std::cin;
using std::endl;
int main() {
    int i, j;
    double x;
    cin >> i >> j;
    cin >> x;
    cout << "output \n";
    cout << i << ',' << j << endl
         << x << "cm" << endl;
    return 0;
}
```

b. Assume the user inputs:
```
1 2
3.4 5
2 3 3.4 7
```

```
#include <iostream>
using std::cout;
using std::cin;
using std::endl;
int main() {
    int i, j;
    double x, y;
    cin >> i >> j >> x >> y;
    cout << "First output " << endl;
    cout << i << ',' << j << ',' << x
         << ',' << y << endl;
    cin >> x >> y >> i >> j;
    cout << "Second output" << endl;
    cout << i << ',' << j << ',' << x
         << ',' << y << endl;
    return 0;
}
```