CS 161
Intro to CS I

Finish Variables/Constants
Chap. 1.2
Variables

• How do we get a value in the variable?
  – Assignment Statement
    int age;
    age = 20;
    Or
    int age = 20;
  – = IS NOT equal to!!!!!
• “gets” or “is assigned”
Printing Variables

• C++: cout
  – Example:
    
    ```cpp
    std::cout << “The integer value is: ” << value;
    ```
  – What about the newline?
    • Special character in string: \n
    • Pre-defined function: std::endl
Constants

• What is a constant?
• How do we define a constant?
  – Use of a macro
    • `#define`  
    • Placed at top of program  
    • No semicolon at end  
    • Example: `#define MAX_SIZE 100`
  – Use of `const`
    • Same as declaring a variable but preface with `const`
    • Example: `const int MAX_SIZE = 100;`
Assignment #1 Macros

• C++: <climits>
• Use MIN and MAX macros from library
  http://www.cplusplus.com/reference/clibrary/climits/
  (Note that the values listed are not the values on our system!!!)
  – INT_MAX
  – INT_MIN
  – LONG_MAX
  – LONG_MIN
  – SHRT_MAX
  – SHRT_MIN
• Remember unsigned too...
Quiz #1

• What will the variable declarations and assignments look like?
• How are you going to directly compute the largest and smallest signed short numbers? (Assume a short is 2 bytes.)
Program Demo

```cpp
#include <iostream>
#include <climits>
using std::cout;
using std::endl;

//using namespace std;

int main() {
    unsigned short us_num_max;
    us_num_max=USHRT_MAX;
    cout << "Unsigned Short Max: " << us_num_max << endl;
    return 0;
}
```

"al.cpp" 16L, 241C

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Reading/Assignments

• Read Chap. 1.3 – 1.5