Week One

C++ starring Mr Feeney

1. Unix is function based.
2. Every program has a main function. They call different functions.
3. RAM are like mail slots.
    1. size matters (i.e. 5GB)
    2. indexed by multiples of 32/64 bits
4. “char” stands for “character”
    1. The computer assigns bytes in slots in RAM
    2. char is 1 byte in C++
    3. The process of putting the char into RAM is called “allocation”
5. 64 bit computer has significant bigger size than 32 bit.
6. Each line ends in semicolons.
    1. Because the computer doesn’t care about end of a line. It reads in streams
7. char letter; //allocation letter = ‘a’; //assign the value
8. You can do it in one line: char letter = ‘a’; //allocation + assign
9. equal sign means “set” (i.e a = 0; // set a to 0)
10. No one knows what’s in the mail box before you set it.
11. Types of variables matters:
    1. int (integer - whole number)
        1. most often 32bits (at least 16 bits)
        2. biggest number: 4294967296, OR not? Int is “signed”, so half of the number has to devote into negative numbers
        3. unsigned int: you can’t go under 0, but you can go up to 4294967296
    2. char (character - one character)
    3. bool (boolean - true or false)
    4. short (a 16 bit integer)
    5. long (? bits)
    6. long long (? bits)
    7. float (decimal, 32 bit, 3* 10^38 — 3* 10^38)
    8. double (decimal, 64 bit, 3* 10^308 — 3* 10^308)
    9. long double (decimal 80 bit)
12. Variables are just memory locations (place to stick stuff, if you don’t stick stuff, there might be garbage in there...)
13. automagicly, cout converts variables

14. #include <iostream> //it's a library
15. cout is wrote by someone else in the library
16. :: scope operator
    1. std:: (standard library)
    2. scope is what the computer can see
17. two main functions will cause a "linker error"
18. std::cout << "BBBBlarry"; //print "BBBBlarry"
    1. << is stream operator
    2. it reads from left to right
19. std::endl; //end of a line, similar to "\n"
20. "" quotes are String, '' are char
21. In string, at the end, there is a '\0' character at the end of it, i.e. computer sees "BW" as "BW\0"
22. << has different parameters under different circumstances
    1. similiar to +, -, *, / and so on
23. You CANNOT add float and int, physically
24. Read something from the console:
    1. cin >> a; //it assign the value from console to variable a
25. you have to include string