CS 161
Intro to CS I
Continue Functions
Odds and Ends...

• Design Critique due by the end of the week!!!
• Exam I – Friday, 10/21
• Assignment #3 due Sunday!
• Cool link:
  – http://pythontutor.com/visualize.html#mode=edit
More About Functions

• Do not use global variables!

• Function Headers
  – Description, Parameters, and Return Value
  – Postconditions
  • What is this?
  – Preconditions
  • What is this?

• above each function call

-10 globals

anything that holds true about params
#include <iostream>

using std::cout;
using std::endl;

int pwr(int, int n=1); // Example of default args

int main() {
    int base=2, expn=8;

    cout << "The power function: " << pwr(base, expn) << endl;
    cout << "The power function: " << pwr(base) << endl;

    return 0;
}

int pwr(int x, int n) {
    int num=1;

    for(int i=0; i < n; i++) {
        num*=x;
    }

    return num;
}
C++ Function Overloading

• Multiple functions w/ same name
• Arguments determine function
• Default Args can be done w/ overloading
• Example: pow()
```cpp
#include <iostream>

using std::cout;
using std::endl;

int pwr(int, int n=1); // Example of default args
double pwr(double, double); // Example of overloading

int main() {
    int base=2, expn=8;
    double dbase=2.2, dexp=8.0;

    cout << "The power function: " << pwr(base, expn) << endl;
    cout << "The power function: " << pwr(dbase) << endl;
    cout << "Pow with int and double: " << pwr(2, 2.2) << endl;
    return 0;
}

double pwr(double x, double n = 1) {
    double num=1.0;
    return 1;
}
```