Announcements

- You must implement programming projects by yourself

First Bug

- http://www.jamesshuggins.com/h/tek1/first_computer_bug.htm

Introduction to Functions

- Function → An entity that completes a particular task for us
- It can take values necessary to complete a particular task
- After completing a task it returns to the point after the call
- Examples of JavaScript functions
  - document.writeln
  - alert()
- You can define your own functions.
- Order of declaration is immaterial
- **Example:** Functions.html
- Note: +=
  - x += 10 → x = x + 10

Introduction to Functions

- General form of a function is:

  function name (<comma-separated list of parameters>) {
  statements
  }

- Functions are invoked (called) by using the () operator
- A function can receive values via parameters
  - We don't use var for parameters
- A function may return a value
- There are other approaches to define functions

Scope of Variables

- Variables declared in a function are called local variables
- They are created on entry to the function and destroy on exit
- You can use the same name in different functions as they are different variables
- Variables declared outside of a function are called global variables

Functions Returning Values

- A function can return a value via the return statement

  return expression;

- A call to a function that returns a value can be used as an expression
- The function execution terminates when a return statement is executed
- A return statement with no return value terminates the function execution
- Can we return more than one value?
- **Example:** FunctionReturn.html
- Can we reduce the code for the maxValue function?
- What if we want to compute the maximum of more than two values?

JavaScript (Functions)

- Advantages of functions are:
  - Allows you to factor out common code
  - Allows you to reuse code
  - Allows you to control the code complexity
- While designing a solution to a problem you can divide a problem into sub-problems each represented by a function

main() Function

- The organization for code dealing with functions will be as specified in the following example
- **Example:** MainFunction.html

Global Variables

- Global Variables → variables defined outside of any function
- We want to avoid using global variables. Why?

Passing Values to Function

- Mechanism used to pass values to function is called *pass-by-value*
- Parameters
  - Variables that receive data
  - There are normal variables
- Arguments
  - Values you pass to a function
- **Example:** PassByValue.html
- Does it matter how we name the parameters?