Announcements

- You must implement programming projects by yourself
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
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
  \[ \text{return expression}; \]
- 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 $\rightarrow$ 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?