

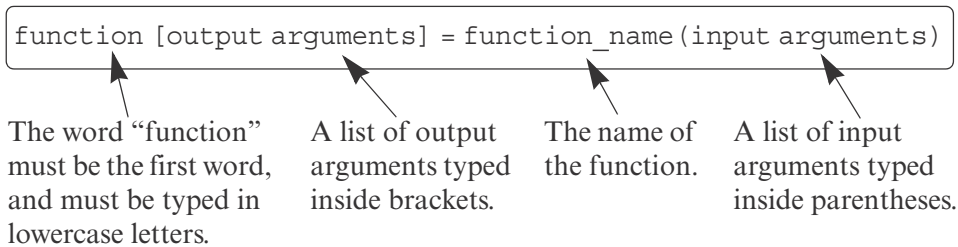
The various parts of the function file are described in detail in the following sections.

7.2.1 Function Definition Line

The first executable line in a function file *must* be the function definition line. Otherwise the file is considered a script file. The function definition line:

- Defines the file as a function file
- Defines the name of the function
- Defines the number and order of the input and output arguments

The form of the function definition line is:



The word “function,” typed in lowercase letters, must be the first word in the function definition line. On the screen the word function appears in blue. The function name is typed following the equal sign. The name can be made up of letters, digits, and the underscore character (the name cannot include a space). The rules for the name are the same as the rules for naming variables described in Section 1.6.2. It is good practice to avoid names of built-in functions and names of variables already defined by the user or predefined by MATLAB.

7.2.2 Input and Output Arguments

The input and output arguments are used to transfer data into and out of the function. The input arguments are listed inside parentheses following the function name. Usually, there is at least one input argument, although it is possible to have a function that has no input arguments. If there are more than one, the input arguments are separated with commas. The computer code that performs the calculations within the function file is written in terms of the input arguments and assumes that the arguments have assigned numerical values. This means that the mathematical expressions in the function file must be written according to the dimensions of the arguments, since the arguments can be scalars, vectors, or arrays. In the example shown in Figure 7-2 there are three input arguments (`amount`, `rate`, `years`), and in the mathematical expressions they are assumed to be scalars. The actual values of the input arguments are assigned