

#### 4.4 THE save AND load COMMANDS

The save and load commands are most useful for saving and retrieving data for use in MATLAB. The save command can be used for saving the variables that are currently in the workspace, and the load command is used for retrieving variables that have been previously saved, to the workspace. The workspace can be saved when MATLAB is used in one type of platform (e.g., PC), and retrieved for use in MATLAB in another platform (e.g., Mac). The save and load commands can also be used for exchanging data with applications outside MATLAB. Additional commands that can be used for this purpose are presented in Section 4.5.

##### 4.4.1 The save Command

The save command is used for saving the variables (all or some of them) that are stored in the workspace. The two simplest forms of the save command are:

```
save file_name
```

and

```
save('file_name')
```

When either one of these commands is executed, all of the variables currently in the workspace are saved in a file named `file_name.mat` that is created in the current directory. In mat files, which are written in a binary format, each variable preserves its name, type, size, and value. These files cannot be read by other applications. The save command can also be used for saving only some of the variables that are in the workspace. For example, to save two variables named `var1` and `var2`, the command is:

```
save file_name var1 var2
```

or

```
save('file_name','var1','var2')
```

The save command can also be used for saving in ASCII format, which can be read by applications outside MATLAB. Saving in ASCII format is done by adding the argument `-ascii` in the command (for example, `save file_name -ascii`). In the ASCII format the variable's name, type, and size are not preserved. The data is saved as characters separated by spaces but without the variable names. For example, the following shows how two variables (a  $1 \times 4$  vector and a  $2 \times 3$  matrix) are defined in the Command Window and then saved in ASCII format to a file named `DatSavAscii`:

```
>> V=[3 16 -4 7.3];
```

```
Create a  $1 \times 4$  vector V.
```

```
>> A=[6 -2.1 15.5; -6.1 8 11];
```

```
Create a  $2 \times 3$  matrix A.
```

```
>> save -ascii DatSavAscii
```

```
Save variables to a file named DatSavAscii.
```