## **Introduction To MATLAB**

The name MATLAB stands for MATrix LABoratory. It is a software package for high-performance numerical computation and visualization. It provides an interactive environment with hundreds of built-in functions for technical computation, graphics, and animation.

MATLAB works through three basic windows:

1. **Command window:** This is the main window. It is characterized by the MATLAB command prompt ‘*>>* ’.
2. Graphics Windows: output of all graphics commands.
3. **Edit window:** write, edit, create, and save your own programs in files called ‘*M-files*’.

MATLAB supports taking the input from the screen, and flushing the output to the screen:

1. The **fundamental data-type** in MATLAB is the *array*. It encompasses several distinct data objects — integers, doubles, etc… In most cases, however, you never have to worry about the data-type or the data object declarations.
2. **Dimensioning** is automatic in MATLAB.
3. MATLAB is **case-sensitive**.
4. The output of every command is displayed on the screen unless MATLAB is directed otherwise.
5. MATLAB saves previously typed commands (**history**) in a buffer which can be recalled with the *up-arrow*key.

MATLAB has three types of files for storing information:

1. **M-files** are standard ASCII text files, with a .m extension to the filename. Most programs you write in MATLAB are saved as M-files.
2. **Mat-files** are created by MATLAB when you save data with the save command. The data is written in a special format that only MATLAB can read.
3. **Mex-files** are MATLAB-callable Fortran and C programs.

Tabulated below are some useful keywords, which you will be needing throughout your usage of MATLAB.

|  |  |
| --- | --- |
| **command** | **function** |
| help *topic* | provides help on *topic* |
| clear | clears the workspace, all variables are removed |
| clc | clears command window, command history is lost |
| clf | clears figure window |
| pwd | shows the current working directory |
| cd | changes the current working directory |
| ls | lists contents of the current directory, same as dir |
| mkdir | creates a directory |
| Date | tells you the date as a string |
| clock | gives you wall clock time and date as a vector |