The procedure to practise

1. You are given a set of spoken tutorials and files, available in the directory `Scilab_Workshop`, on your `Desktop`. You may also have been given these in a CD.
2. Follow the tutorials in the sequence given below.

Please find out from the workshop co-ordinator whether Scilab is already installed. If so, please skip the next section and go to Section 2.

1 Scilab Installation (Windows):

Tutorial required: `01-Installation-Windows.wmv`
In this tutorial you will learn how to install Scilab on Windows Operating System.

1. Locate the folder `Scilab_Workshop` that is available on your Desktop. Go inside the sub-folder `01 Installation` and right click on `01-Installation-Windows.wmv`, select `open with` option, choose the `VLC Media Player`, and listen to the tutorial.
2. Follow the tutorial as shown in the video and install Scilab.

2 Getting Started with Scilab:

Tutorial required: `02-Getting-Started.wmv`
In this tutorial you will learn about some of the very basic functionalities of Scilab.

1. Double Click on the Scilab Shortcut icon on your Desktop to launch Scilab. This will open the Scilab console window on your computer.
2. Locate the folder `Scilab_Workshop` that is available on your Desktop.
   (a) Go inside the sub-folder `02 Getting Started` and right click on `02-Getting-Started.wmv`.
   (b) Choose `Open with` and select `VLC Media Player` to play the tutorial.
3. Follow the tutorial and reproduce all the commands on your `Scilab Console` as shown in the video. Use pause, rewind and play, as required.
4. At 5:34, change the directory to `Desktop` before giving the `diary()` command. You may also do this from any other directory location, where you have the write access.
5. At 5:34, the tutorial explains the `diary()` command. Please note that only the SUBSEQUENT commands will be saved in the file. All commands given BEFORE the `diary()` command will NOT be saved.
6. At 6:00, pause the video and work out the assignment given in the video or in the assignment sheet or in both. Solve as many assignment problems, as time permits.
7. At 7:49, `D-17` denotes 10^{-17}.
8. After completing this tutorial, please go to the next tutorial, namely, `Vector Operations`.

3 Vector Operations:

Tutorial required: `03-Vector-Operations.wmv`
This tutorial explains how to define vectors and matrices in Scilab, and how to perform some basic arithmetic operations on vectors.

1. Open Scilab as mentioned in Section 2.
2. As explained in Section 2, point 2, open `03-Vector-Operations.wmv`, and play it.
3. At 2:49 pause the video and work out the assignment given in it or in the assignment sheet or in both. Solve as many assignment problems, as time permits.
4. Please follow the tutorial and reproduce all the commands as shown in the video.

4 Matrix Operations:

Tutorial required: `04-Matrix-Operations.wmv`
In this tutorial you will learn some of the most basic but frequently used arithmetic operations on matrices. The main motivation of this tutorial is to give you a head start about using vectors and matrices in Scilab.

1. Open Scilab as mentioned in Section-2, point-1
2. Open `04-Matrix-Operations.wmv` as explained in Section-2, point-2.

3. At 1:55 - Notice the type of bracket used in the command, it is round bracket and not the square bracket.
4. At 6:10, Solve the assignments as suggested in the tutorial. Solve as many as possible.
5. At 11:18 - Matrix A represents a matrix of coefficients of x1, x2, x3 in the equations.
6. At 11:46 - Matrix b represnts a matrix of constants in the equations.

5 Scripts and Functions:

Tutorial required:`05-Scripts-and-Functions.wmv`

In this tutorial you will learn how to write script files (.sci files) and function files (.sce files). Also we will see how to load and execute user-defined functions in the Scilab console.

1. Open Scilab and also play `05-Scripts-and-Functions.wmv` using the procedure suggested in the earlier tutorials.
2. At 2:10, the video talks about a `Scilab editor`. In Scilab versions 5.3 and above, this editor is called `SciNotes`. Pause the video here type the commands shown in the `helloworld.sce` file in the editor yourself and save the file as `helloworld.sce` on the `Desktop`.
3. At 3:25 - Type `pwd` to check the present working directory; change the directory using `Change Directory` shortcut icon to the `Desktop` or the directory where you have saved the `helloworld.sce` file before using the `exec` command.
4. At 4:00, in the video a file named `function.sci` is opened.
   (a) At 4:03, pause the video, type the function statements shown in the file yourself in the editior and save it on your `Desktop`.
5. At 5:51, in the video a file named `2outputs.sci` is opened, pause the video, type the function statements shown in the file yourself in the editior and save it on your `Desktop`.
6. At 9:47, in the video a file named `inline.sci` is opened, pause the video, type the function statements shown in the file yourself in the editior and save it on your `Desktop`.
7. Solve the assignments as given in the Assignment Sheet. Solve as many as possible.

6 Conditional Branching:

Tutorial required:
`06-Conditional-Branching-mov.mov`
In this tutorial we will discuss two types of Conditional constructs in Scilab, which are, the "if-then-else" construct and the "select-case" conditional construct.

1. Open Scilab as mentioned in Section-2, point-1
2. Open Scilab and also play `06-Conditional-Branching-mov.mov` using the procedure suggested in the earlier tutorials.
3. Please follow the tutorial and reproduce all the commands as shown in the video.
4. Solve the assignments as given in the Assignment Sheet. Solve as many as possible.

7 Iterations:

Tutorial required: `07-Iterations-mov.mov`
In this tutorial we will discuss about the for-loop and the while-loop, used for iterative calulations.

1. Open Scilab as mentioned in Section-2, point-1
2. Open `07-Iterations-mov.mov` using the procedure suggested in the earlier tutorials.
3. Please follow the tutorial and reproduce all the commands as shown in the video.
4. Solve the assignments as given in the Assignment Sheet. Solve as many as possible.

8 Plotting 2D Graphs:

Tutorial required: `08-Plotting2dGraphs-mov.mov`
In this tutorial we will learn about the in-built functions like linspace(), plot(), plot2d(). We will also demonstrate how to change the properties of figures using various commands.

1. Open Scilab as mentioned in Section-2, point-1
2. Open `08-Plotting2dGraphs-mov.mov` as explained in Section-2, point-3
3. Please follow the tutorial and reproduce all the commands as shown in the video.
4. Solve the assignments as given in the Assignment Sheet. Solve as many as possible.

9 Ordinary Differential Equations:

Tutorial required: `09-odes.mov`
This tutorial is designed to familiarize the participants with solving ordinary differential equations using the Scilab procedure, "ode".

1. Open Scilab as mentioned in Section-2, point-1
2. Open `09-odes.mov` as explained in Section-2, point-3
3. Please follow the tutorial and reproduce all the commands as shown in the video.
4. Solve the assignments as given in the Assignment Sheet. Solve as many as possible.

10 Polynomials:

Tutorial required: `10-polynomials.mov`
In this tutorial we will see the use of Scilab to create polynomials, find their roots and perform operations on them such as addition, subtraction, multiplication, division, simplification, etc.

1. Open Scilab as mentioned in Section-2, point-1
2. Open `10-polynomials.mov` as explained in Section-2, point-3
3. Please follow the tutorial and reproduce all the commands as shown in the video.
4. Solve the assignments as given in the Assignment Sheet. Solve as many as possible.

11 Why Scilab:

Tutorial required: `00-Why-Scilab.wmv`
In this tutorial you will get an overview about the capabilities of Scilab and the benefits of using Scilab.