Virtual Labs

SCILAB

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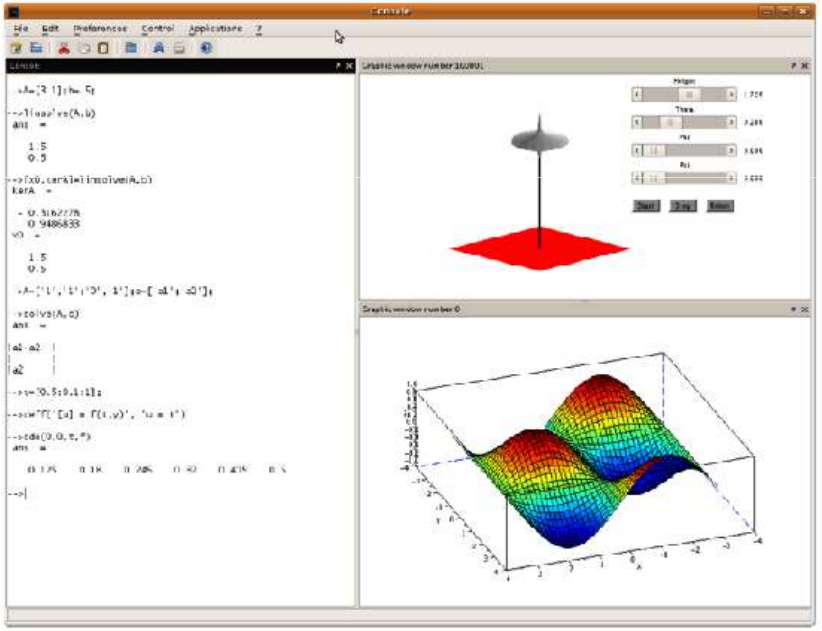
Introduction

• Scilab is an open source software on the lines of Matlab used extensively in all fields of Engineering.

• Developed since 1990 by researchers from INRIA Research in Computer Science and Roads), it is now maintained and developed by Scilab Consortium since its creation in May2003 and integrated into Digiteo Foundation in July 2008.

• The Scilab Consortium encourages its team to contribute to third party projects which are used in Scilab. The spoken and video tutorials provided by IIT, Bombay are very informative to first time users of Scilab.



Scilab in Virtual labs

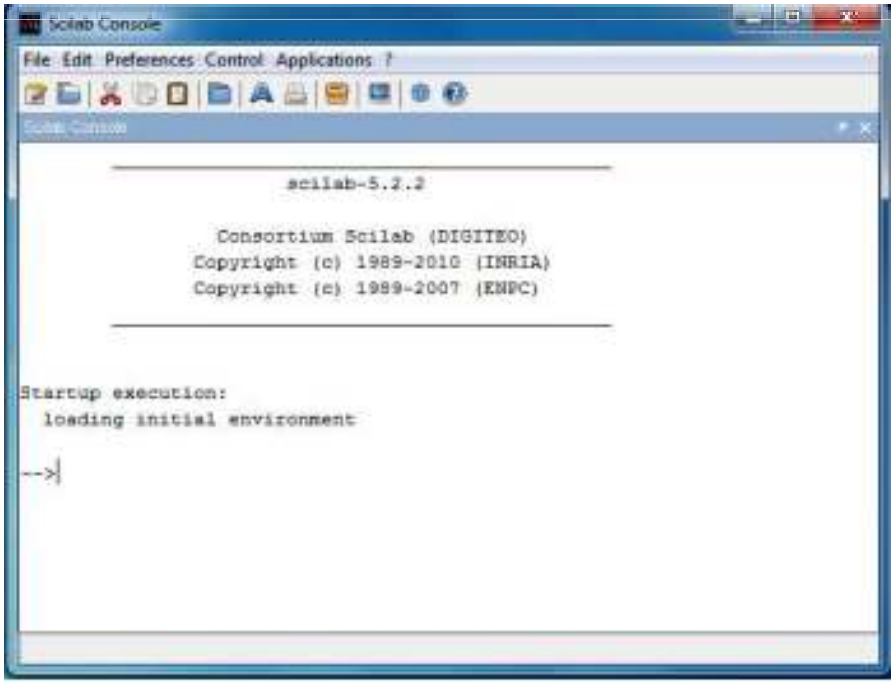
- The limited availability of resources was the major force behind introducing Scilab in Virtual labs.
- Scilab has been introduced in the signal processing section of the Virtual labs.
- Two courses viz. Signals & Systems and DSP have introduced Scilab.
- Signals & Systems course mainly deals with the fundamental concepts of signal processing.
- It starts with the definition of a signal and will extend upto transforms.

Working with Scilab

Installation:
Latest versions of Scilab software would be made available at the website

http://www.scilab.org

Starting Scilab opens the console window.



HELP:

The help menu is a very useful tool in Scilab.
It can be accessed by clicking the ? Symbol in the toolbar or typing help in the console window.

APPLICATIONS:

1. Editor

2. Xcos

3. Matlab to Scilab translator

4. Module Manager – ATOMS

Editor:

The editor is same as a Matlab editor. Here too, it is used to write scripts and run them on the console.

It has three options which are explained below.

1. Load into Scilab: Allows to execute the statements in the current file, as if we did a copy and paste. This implies that the statements which do not end with a ";" character will produce an output in the console.

2. Evaluate Selection: Allows to execute the statements which are currently selected.

3. Execute File Into Scilab: Allows to execute the file, as if we used the exec function. The results which are produced in the console are only those which are associated with printing functions, such as disp for example.

Signals & Systems Laboratory (Virtual labs)

DEMONSTRATION

Programming in Scilab

1. Write a program to print out numbers from 1 to n where n is an input provided by the user. However, in places where number is divisible by 3,5 or both we should print a 0.

2. Bitwise operations are not inbuilt functions in Scilab. Write a program to perform right shift, left shift and circular shift of binary numbers.