**Aim:**

1. To write a program in scilab to plot a sine wave of given frequency and amplitude

2. To plot a sine wvae with sampling frequency = 1000 HZzs

**Requirements**: Scilab 5.5.1

Theory:

Scilab is an open source, cross-platform numerical computational package and a high-level, numerically oriented programming language.

It can be used for signal processing, statistical analysis, image enhancement, fluid dynamics simulations, numerical optimization, and modeling, simulation of explicit and implicit dynamical systems and (if the corresponding toolbox is installed) symbolic manipulations.

Scilab is the most complete open source alternative to MATLAB.

Scilab is a high-level, numerically oriented programming language.

The language provides an interpreted programming environment, with matrices as the main data type.

By using matrix-based computation, dynamic typing, and automatic memory management, many numerical problems may be expressed in a reduced number of code lines, as compared to similar solutions using traditional languages, such as Fortran, C, or C++.

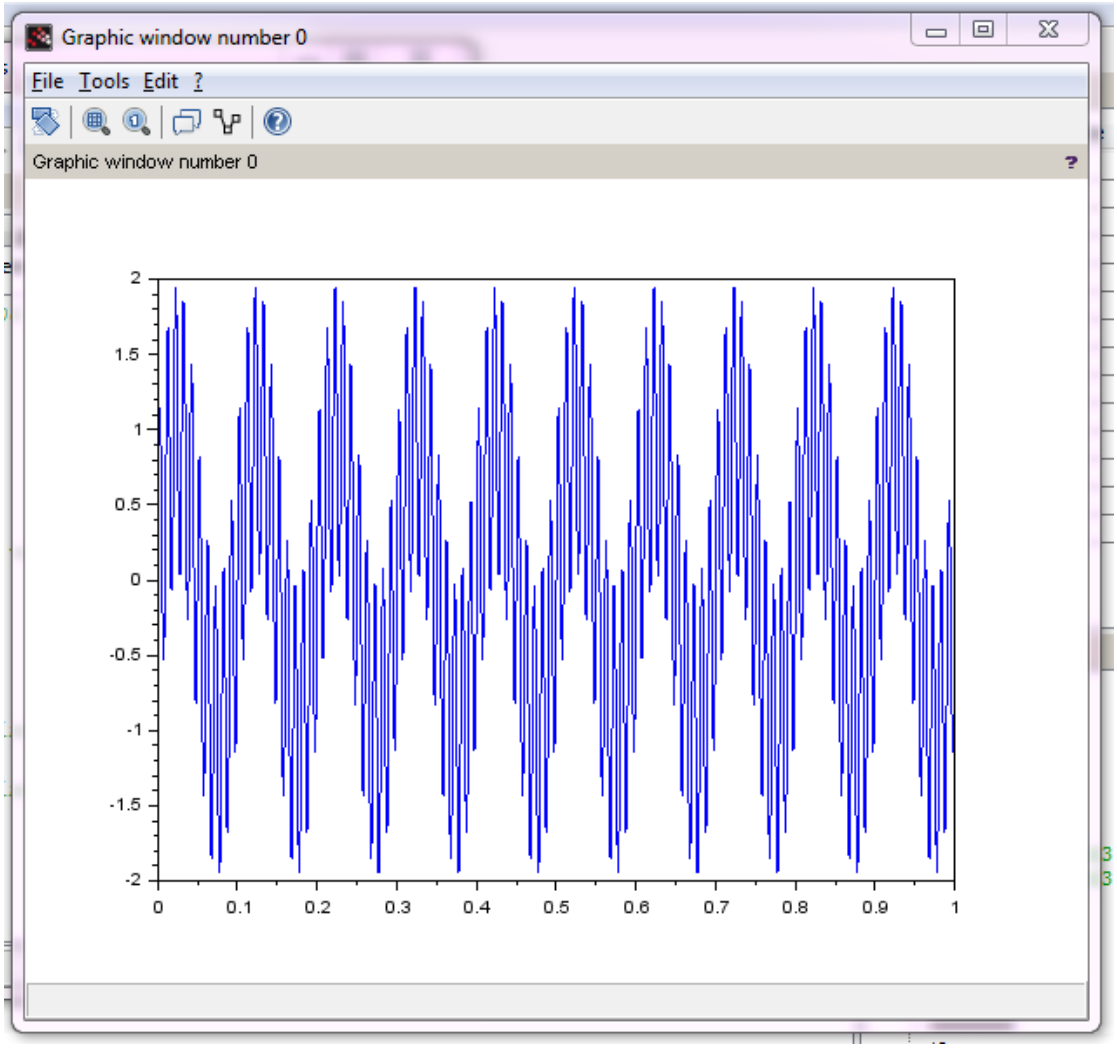
This allows users to rapidly construct models for a range of mathematical problems. While the language provides simple matrix operations such as multiplication, the Scilab package also provides a library of high-level operations such as correlation and complex multidimensional arithmetic.

The software can be used for signal processing, statistical analysis, image enhancement, fluid dynamics simulations, and numerical optimization.

Program:

```
// Creating signals with sampling frequency of 1000 Hz

Fs = 1000;

t = 0:1/Fs:1;

n = length(t);

f = linspace(0,Fs,length(t)); // Create frequency vectors

x1 = sin(2*%pi*10*t); // 10 Hz Sine Wave

x2 = sin(2*%pi*100*t); // 100 Hz Sine Wave

x = x1 + x2; // Combination of 10 Hz and 100 Hz Sine Wave

plot(t,x); // Time Domain representation of the sine waves
```

Output:


Graphic window number 0
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2
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