Call MATLAB Functions from C/C++ Program

Pradeep Chatterjee pchats@ieee.org

The step by step procedure is as follows

Software Used

Microsoft Visual C++ ver 6.0

MATLAB R12 Version 6

Step 1

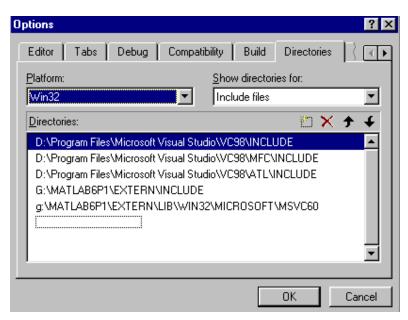
Start Microsoft Visual c++, choose New Project, choose a win32 console application, (make sure the box in right hand bottom side) win32 is clicked. Name the project matlabcall.

New	? ×	
Files Projects Other Documents		
 ATL COM AppWizard Cluster Resource Type Wizard Cluster Resource Type Wizard Custom AppWizard Database Project DevStudio Add-in Wizard Extended Stored Proc Wizard ISAPI Extension Wizard MARefile MATLAB Project Wizard MFC ActiveX ControlWizard MFC AppWizard (dll) MFC AppWizard (exe) New Database Wizard Win32 Application Win32 Console Application 	Project name: matlabcal Logation: H:\Al program\matlabcal\\downfi Create new workspace Add to current workspace Dependency of: MATLABCALL Platforms: Win32	
·	OK Cancel	

Step2

Next we need to add paths to the MATLAB Engine for the header and the library files. For that click on tools -> options, choose directory. For the include files add new path i.e. where the MATLAB include directory is stored. It is usually in the MATLAB folder-> extern-> include and

MATLAB folder ->extern ->lib ->win32 ->Microsoft ->msvc60. The window should look like this



Step 3

Next click on Project -> Settings. In link tab and under the object/library modules add

Libmx.lib libmex.lib libeng.lib

The window should look like this

Project Settings	? ×
Project Settings Settings For: Win32 Debug	General Debug C/C++ Link Resource Category: General <
	OK Cancel

Step 4

Choose File-> new -> C++ source file. Name the file matlabcall

The code is all in BLUE.

a) The header files need to written first

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

#include"engine.h" This file is needed to call the subroutines needed to call the MATLAB.

Next we need to declare the variables that we are going to use.

Engine *ep;

Step 5)

Write the code in C++ file as below

void main()

{

Engine *ep;

```
ep = engOpen("");
```

engEvalString(ep,"x = (1:1:10);");

engEvalString(ep, "y = x.^2;");

engEvalString(ep, "plot(x,y);");

engClose(ep);

}

To start the MATLAB Engine . we typed in

```
ep = engOpen("");
```

This command initializes the MATLAB engine and returns ep to it.

To close the engine we typed.

engClose(ep);

Save the program, compile and build it.

The author acknowledges the work of Bharat Shah, which forms the basic framework of the method described above. Some changes have been incorporated in the above-mentioned process.
