1 Create Word document from editor

With the latest version of MATLAB (version 7), creating word document (or other presentation material) from M-code has been made easier. It is not necessary to use this feature, but using this may save time in creating your informal lab reports. This also relates to another new feature in Matlab, Using Cells in the M-File editor. This section helps you get started with using these features. For more detailed instructions and advanced features related to this, use Matlab Help. From Matlab command window select `Help` → `MATLAB Help` to open the Help browser. From `Contents` in the panel on the left, select `MATLAB` → `Desktop Tools and Development Environment` → `Publishing Results`

To use this feature you need to have Matlab 7 (this is version available in BH-216). If you are not using Windows or do not have access to Microsoft Word, you can use this feature to create a LaTeXfile. The next few steps will help you get started with using this feature. The purpose is to write Matlab code `mylab2.m` to create two sinusoids, add them and then plot them. Then using this code a Word document with relevant explanation will be created.

1. Open a new M-file `mylab2.m` in the Matlab editor.

   ```
   >> edit mylab2.m
   ```

2. In the editor, choose `Cell` and select `Enable Cell Mode`

3. When the Cell mode is enabled, `%%` has a special meaning and marks the beginning of a Cell. For now, it is sufficient to know that a Cell is group of code that can be selected and executed. Code that follows a `%%` in the same line will not be executed. The lines of code after `%%` and before the next `%%` form one cell.

4. Next we write the code to generate a Sinusoid and plot the signal generated.

   ```
   %% Create a sinusoid
   % The next line of code generates and plots a Sinusoid
   t=0:0.1:pi;
   y1=sin(3*t+0.05);
   plot(t,y1);
   title('My First Plot')
   ```

   The line containing `%% Create a sinusoid` , marks the beginning of this cell.

5. You can verify your code by running the script, either by calling the file name from the command line or by placing the cursor anywhere in the cell (within the editor) and selecting `Cell` → `Evaluate Current Cell`.

6. Once you have the correct code, you are ready to create a Word document. Comments (line starting with `%`) will act as the description of the code and will be placed as such in the document created.

7. To create the Word document. From the editor, select `File` → `Publish To` → `Word Document`. This will create a file `mylab2.doc` in a sub-directory named `html`.

8. If you wish to modify the code, either by modifying the code for the `Cell` you just coded or if you like to create another `Cell` to do something related to the previous Cell, you could do so. The file `mylab2.m` may look like

```
%% Create a sinusoid
% The next line of code generates and plots a Sinusoid
t=0:0.1:pi;
y1=sin(3*t+0.05);
plot(t,y1);
title('My First Plot')
%% Add Sinusoids
% The next few lines of code create another sinusoid and add it to the
% previously created one. Then makes a plot of the resulting signal.
y2 = sin(4*t + 0.05);
y = y1 + y2;
plot(t,y);
title('My Second Plot')
```

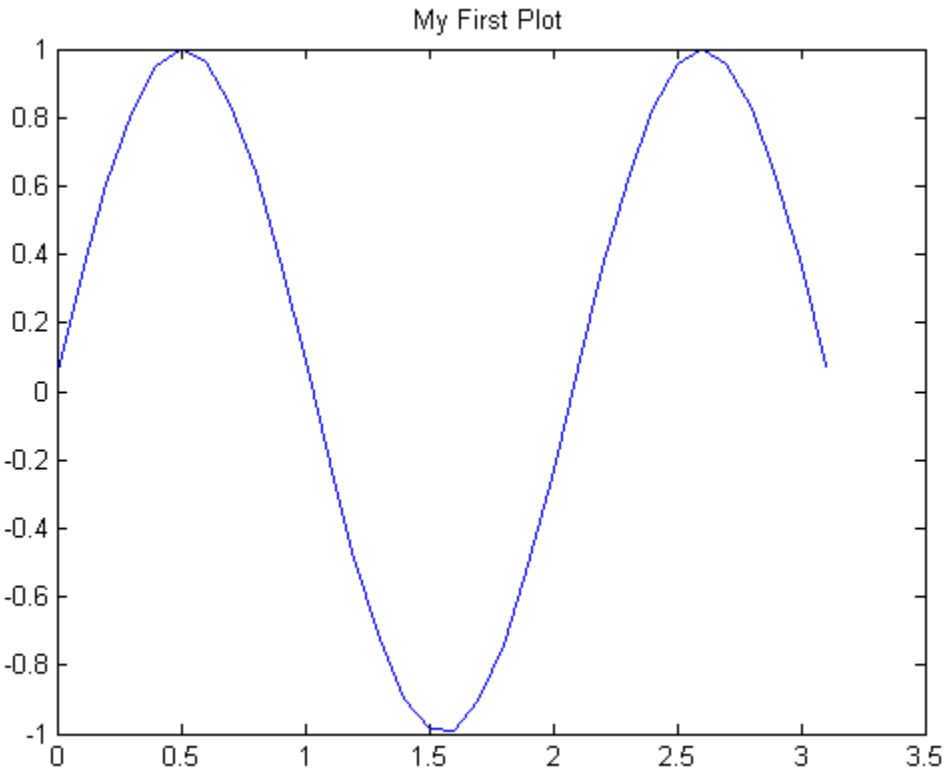
9. Then you can repeat step above to create an updated Word document. The previously created file will be overwritten.

10. Please refer to the online `MATLAB Help`, for more details on formatting and inserting headers.

Create a sinusoid

The next line of code generates and plots a Sinusoid

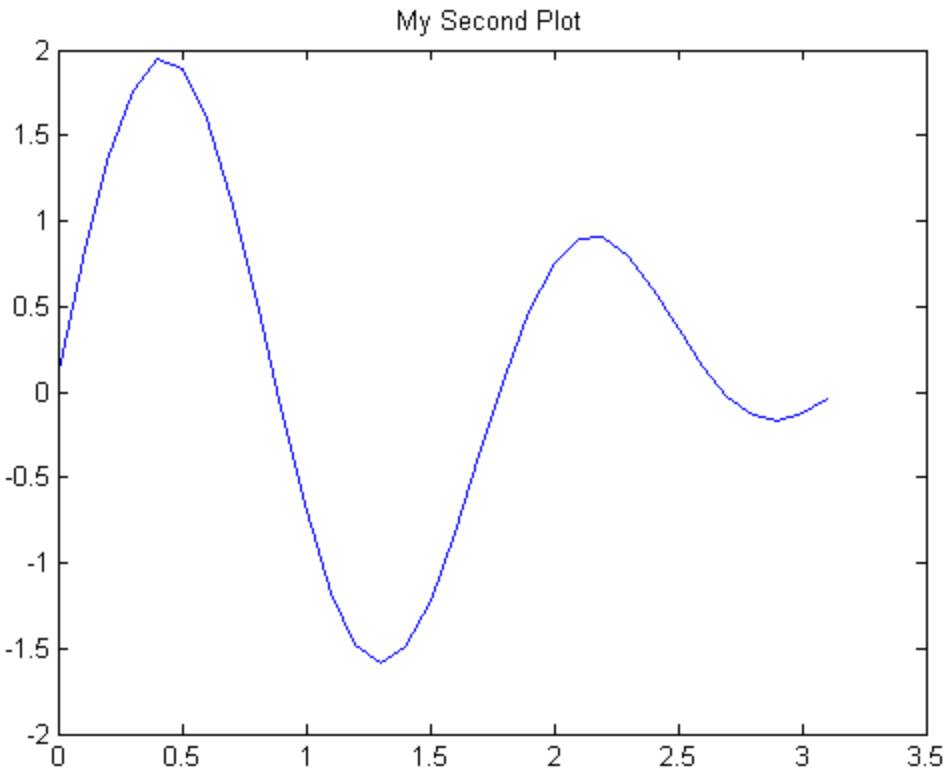
```
t=0:0.1:pi;
y1=sin(3*t+0.05);
plot(t,y1);
title('My First Plot')
```



Add Sinusoids

The next few lines of code create another sinusoid and add it to the previously created one. Then makes a plot of the resulting signal.

```
y2 = sin(4*t + 0.05);
y = y1 + y2;
plot(t,y);
title('My Second Plot')
```


My Second Plot
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
0
0.5
1
1.5
2
2.5
3
3.5