

Appendix B -- Submitting Assignments

1 Assignments should be turned in as word processor files with figures and captions.

To accommodate correspondence students as well as resident students, each assignment should be submitted as a zipped MS word file attached to an email message. The filename should be formed from your last name and the assignment number. For example, if your last name is Smith, assignment 2 would be emailed as “smith2.zip”, which is a zip file containing “smith2.doc”. For the first assignment you will zip data files as well as an MS word document, but for other assignments you will simply send a zipped MS word document. Graded assignments are returned to you as pdf files with the same prefix (e.g., “smith2.pdf”)

In each assignment, you run a MATLAB© script on your data. The script produces one or more figure windows with graphics or text results. Sometimes the assignment includes modifying figure windows, or running the script more than once and including windows from multiple runs. As part of the assignment, you are asked to interpret the information in the figure windows. The procedure for submitting your answers is to get the figure into your word processor, write your answer in a caption to the figure, and submit your whole assignment as the zipped word processor document composed of figures with captions. No additional text should be in the document.

2 How do you get a MATLAB© figure into a word processor document?

Say you are using MS Word, and the MATLAB© script has produced a figure in Figure Window No. 1.

1. Open an MS word document, preferably full-page view
2. Use top menu: Insert→Text Box→Draw Text Box and draw box where you want the figure to be
3. In MATLAB©, click on Figure Window 1 to make it the current figure window
4. Resize the figure as needed by tugging on the corners
5. Annotate the plot if you want by using the tool menu at top of the figure. There you may add arrows and text, for example, to point out some feature of interest. Be sure to use the “pin to axes” tool to pin annotations to the axes before you finish with the figure (otherwise add arrows, text, etc., may shift relative to the axes if you resize the figure later)
6. In the MATLAB© figure-window menu: Edit→Copy Figure
7. In MS Word, click in the text box and Edit→Paste

3 How do you put answers to an assignment in a caption?

Continue with the above example. Suppose now you have the figure in a text box in MS Word.

8. Click on the lower handle of the text box and drag it down to open up space for the caption
9. Right click on the figure in the text box to bring up a menu that includes a “caption” option
10. Click “caption” and enter the desired text

Here is a quick exercise showing the generation of a MATLAB® figure and its insertion into MS Word. Open a new blank document in MS Word, click View/PrintLayout, set the view to “whole page”, click Insert/TextBox, and draw a text box to hold a figure. Then switch to MATLAB® to generate the figure. Give the next two commands:

```
>>x=rand(10,1);  
>>plot(x,'-o')
```

You can use the figure-window annotation features (e.g., arrows and text) to point out items of interest in the figure. The necessary tools for annotation are in the menu at the top of the figure window. I used the tools here to insert a text arrow. The next step is to put the figure into the MS Word document. On the MATLAB® figure window menu, click Edit/CopyFigure, then inside the box in MS Word click Paste. You now have the figure in a text box in MS Word. Pull down the bottom of the text box to allow room for a caption. Right-click the figure inside the text box to bring up a menu that includes “Caption”. Click Caption, and then OK when the figure box comes up with a caption number. Now can enter whatever text you want as the caption (Figure 1).

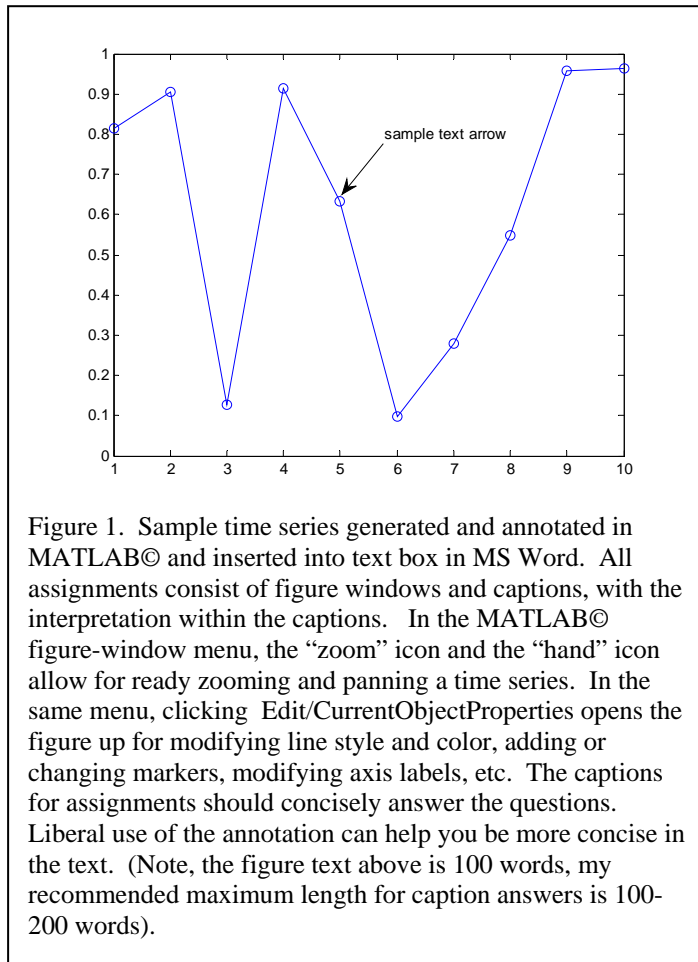


Figure 1. Sample time series generated and annotated in MATLAB® and inserted into text box in MS Word. All assignments consist of figure windows and captions, with the interpretation within the captions. In the MATLAB® figure-window menu, the “zoom” icon and the “hand” icon allow for ready zooming and panning a time series. In the same menu, clicking Edit/CurrentObjectProperties opens the figure up for modifying line style and color, adding or changing markers, modifying axis labels, etc. The captions for assignments should concisely answer the questions. Liberal use of the annotation can help you be more concise in the text. (Note, the figure text above is 100 words, my recommended maximum length for caption answers is 100-200 words).

4 How do you combine two (or more) MATLAB figures in one MS Word text box?

Say you want two plots, A and B, to be one above the other in an MS Word text box. You also want a caption in the text box describing A and B, and want the caption to be below the plot B (at the bottom of the text box). Assume in MATLAB you have plots A and B in different figure windows, and have used the text tool to label them as “A” and “B”.

1. Draw the text box in MS Word, as described in (2) above
2. As in (2.3) to (2.7) above, insert A into the text box
3. Drag the bottom of the text box if need to make space in the text box below A
4. As in (2.3) to (2.7) above, insert B into the text box, directly below A
5. Right click on B and insert caption

5 How do you extract data produced by the scripts?

Most of the assignments include all needed results in the graphics output. But sometimes you are asked to use some of the data or statistics produced by the scripts. What if you run a script to illustrate filtering and you actually want to save and use the filtered series outside MATLAB or in some other MATLAB script? Two ways to do this are 1) using the Workspace window from the desktop and 2) writing some code in the script to export and save data in the desired format. See “Getting Started with MATLAB” for information on exporting data.

6 How do you zoom and pan on time series

Some assignments ask for zoomed versions of plots, so that detail is more clearly visible. Zooming and panning are convenient for looking at portions of time series. The “hand” signal on the top menu of the Figure Window lets you pan, or shift the series along the time axis. You can readily zoom in on any of the figure windows created by the scripts. This can be done with the zoom tool from the figure window menu. Right clicking with zoom on will let you change the zoom options. The horizontal zoom is most useful for looking at portions of time series while preserving the view of the whole y-axis range. You can also zoom on the current figure window by issuing the following command from the command window:

```
>zoom xon ..... for horizontal zoom  
>zoom on ..... for zoom on both
```

Putting a grid on the figure is also useful for some purposes:

```
>grid on  
>grid off
```

Zoom and grid are toggle commands, so that if the grid is already on and you give the “grid” command, the grid turns off. Likewise for zoom. You will notice that some figures made by the scripts already have grid and/or zoom turned on.