MATLAB for SMS

Lesson 3 - Figures

How to write a figure script

1. Save a copy of the figure's contents in a separate file.
2. In a new m-file, load the saved file, then create a figure and set its properties.

```
figure('papersize',[8.5 11])
orient tall

*See 'figure properties' for more detailed information.
```

3. Set the figure's current axes or use subplot to create axes and set their positions.

```
a = axes('position',[left bottom width height]);
set(gcf,'currentaxes',a)

subplot mnp

subplot(m,n,p)
```

4. Fill the axes with the proper plot, bar, or other graphics command.

```
plot(x1,y1,'c1',x2,y2,'c2','linewidth',1)

hold on;
plot(x1,y1,'color',[R G B],'linewidth',1)
plot(x2,y2,'color',[R G B],'linewidth',1.5)

bar(x,y,'c',1)
bar(x,y,'facecolor',[R G B],'edgecolor',[R G B])

*See 'plot properties' for more detailed information.
```

5. Set the font names and sizes, ticks and tick labels, limits, and axis labels.

```
set(gca,'fontsize',7,'xtick',1:10,'xticklabel',{'tick1','tick2'})

xlim([x1 x2]); ylim([y1 y2]);
axis([x1 x2 y1 y2]);

xlabel('xlabel','fontsize',8);
ylabel('ylabel','fontsize',12);

*See 'axes properties' for more detailed information.
```

6. Insert any text to be displayed on the plot.

```
text(x,y,'text','units','normalized','horizontalalignment','center')

*See 'text properties' for more information.
```

7. Insert or construct a legend.

```
legend('series1','series2','location','ne')
legend('series1','series2','location',[left bottom width height])
```

8. Repeat 3-7 for additional sets of axes.

9. Output the figure to an image or pdf.

```
print('filename.pdf','-dpdf')
print('filename.tif','-dtiff','-r300')

*See the 'print' function reference for more information.
```

10. View the details of the output image and adjust settings appropriately.