Assign #2 Sample Shawn Brown, COMP 116 section 002

start by reading in the data; we have to be in the same directory as the data file to do this.

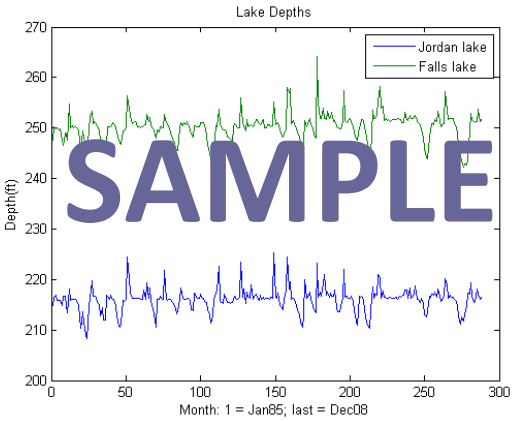
Note: Your file doesn't have to look exactly like this, just similar ... For Example: The pictures don't have to be on the right side. You can have them after the source code vertically if you want.

```
load water08
```

Task #1. Lake Depths

Plot a line graph of depths for both lakes. (Is there an obvious yearly cycle?)

```
% !!! Your code goes Here !!!
title( 'Lake Depths' );
legend( 'Jordan lake', 'Falls lake' );
xlabel( 'Month: 1 = Jan85; last = Dec08' );
ylabel( 'Depth(ft)' );
```



Task #2. Days above target

The targets for Jordan and Falls lakes are 216ft and 251.5ft, respectively. For how many months was each lake over its target?

```
% !!! Your code goes Here !!!
```

```
jordan_daysAbove =

   186

falls_daysAbove =

    75
```

OR Alternately

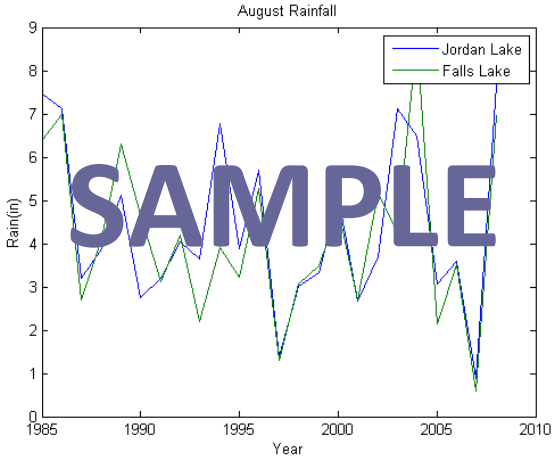
```
% !!! Your code goes Here !!!
```

```
daysAbove =

   186    75
```

Task #3. Rain in August

Plot the rain in August as a line graph over years for both lakes.

```
% !!! Your code goes Here !!!
title( 'August Rainfall' );
legend( 'Jordan Lake', 'Falls Lake' );
xlabel( 'Year' );
ylabel( 'Rain(in)' );
```

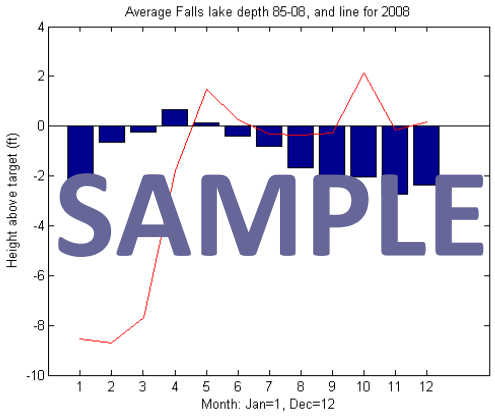


Task #4. Average depth

Compute the average height that Falls Lake is above its target for each month over the 24 years from 1985-2008, and display as bar chart with a bar for each month. Plot the line for 2008 on top of this bar chart.

```
% !!! Your code for computing average depth goes Here !!!
title('Average Falls lake depth 85-08, and line for 2008');
xlabel( 'Month: Jan=1, Dec=12' );
ylabel( 'Height above target (ft)' );
```

```
% !!! Your code for overlaying last years data goes
here !!!
```



Task #5. Daily Rainfall

Determine how many days had more than 1 inch of precipitation at the two sites in hawrain, and how many days had less than 1/4 inch.

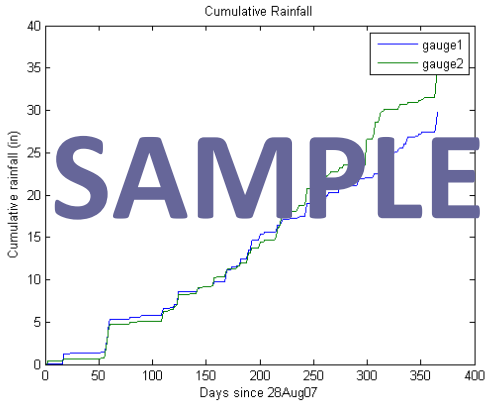
```
% !!! Your code goes Here !!!
```

```
rainAbove1in =

     7     7

rainBelow1_4in =

   330   324
```

Task #6. Cumulative Rainfall

Plot line graphs showing the cumulative amount of rain over the past year at both sites. Which of the two locations (1 or 2) received the most rain?

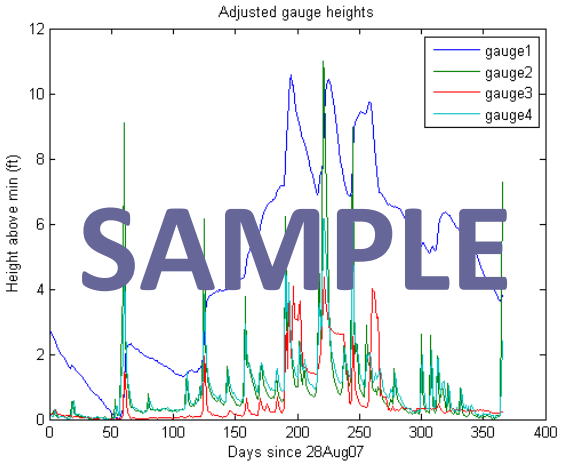
```
% !!! Your code goes Here !!!
title( 'Cumulative Rainfall' );
legend( 'gauge1','gauge2' );
xlabel( 'Days since 28Aug07' );
ylabel( 'Cumulative rainfall (in)' );
```



Task #7. Adjusted Gauge Heights

Determine the lowest height for each gauge, and create a matrix or vectors of adjusted heights by subtracting the corresponding lowest heights. Plot these adjust heights as a line graph.

```
% !!! Your code goes Here !!!
title( 'Adjusted gauge heights' );
legend( 'gauge1','gauge2','gauge3','gauge4' );
xlabel( 'Days since 28Aug07' );
ylabel( 'Height above min (ft)' );
```



Task #8. Max daily increase/decrease

Determine the maximum increase and maximum decrease in height from one day to the next for each of the four gauges in hawgage.

Both sets of values are shown as positive numbers.

```
% !!! Your code goes Here !!!
```

```
maxincrease =

    1.1600    7.1500    2.5700    4.3700


maxdecrease =

    0.4700    6.2200    1.5600    2.5300
```

Task #9. Gauge Order

From the data and Tasks 7 & 8, can you determine the order of the gauges from upstream to downstream?

```
% !!! Your answer and justification goes here !!!
```