

CS 1173: MATLAB Code Sample: Scatter Plot with Linear Best Fit

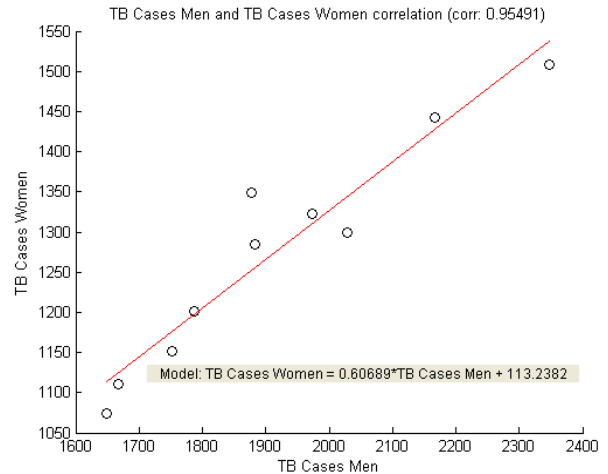
The following block of code with slight modifications will produce a scatter plot of your data including a best fit line.

```
% initialize generic variables
xdata = menTB;
xString = 'TB Cases Men';
ydata = womenTB;
yString = 'TB Cases Women';

% define endpoints and equation for best fit line
pPoly = polyfit(xdata, ydata, 1); % Linear fit of xdata vs ydata
linePointsX = [min(xdata) max(xdata)]; % find left and right x values
linePointsY = polyval(pPoly, [min(xdata), max(xdata)]); % find y values

% generate graph with labels and correlation value in title
tString = [xString, ' and ', yString, ' correlation (corr: ', ...
    num2str(corr(xdata, ydata)) ' )'];
figure('Name', tString)
hold on
plot(xdata, ydata, 'ko') % Plot a scatter plot
plot (linePointsX, linePointsY, '-r') % Plot best fit line
hold off
xlabel(xString); % Label the x-axis
ylabel(yString); % Label the y-axis
title(tString);

% add textbox to figure with best fit line equation
MyBox = uicontrol('style','text');
set(MyBox, 'String', ['Model: ', yString, ' = ', num2str(pPoly(1)), '*', ...
    xString, ' + ', num2str(pPoly(2))]) % text
set(MyBox, 'Position', [140, 90, 370, 15]) % position and size of box
set(MyBox, 'FontSize', 9) % size of text
```



Modifications:

- Initialize xdata and ydata to be your comparison vectors. Ensure they have only a single dimension and are the same length.
- Set xString and yString to have a meaningful, but short label.
- Change graph properties (color, symbols, etc.) if appropriate.
- Change the position and size of textbox ('Position',[140,90,370,15]) to prevent covering up data points. Example is 140 pixels from left, 90 pixels from bottom, 370 pixels wide, and 15 pixels tall.
- Change the size of the text ('FontSize') to prevent covering up data points.