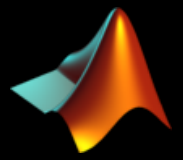

Programming with MATLAB

(more) Visualizing data

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Access elements of graphics

Use *gca* to Get Current Axis

```
temp = [30 33 32 29];
bar(temp)
ax = gca;          % ax contains several fields with additional variables
                   related to the axes of your bar graph

% See the fields by typing the name of your new variable (ax)
```

Access elements of graphics

More properties of the axes

```
ax.XTickLabes = {‘Monday’, ‘Tuesday’, ‘Wednesday’ }
ax.YColorMode = ‘manual’;
ax.YColor = ‘r’;

grid on                 % Add a background grid (semi-transparent by default)
ax.GridColorMode = ‘manual’;
ax.GridColor = ‘r’;
ax.GridAlphaMode = ‘manual’;        % To be able to change the transparency
ax.GridAlpha = 1;                   % Fully opaque

% There are many options that would need a complete semester to cover.
% Almost anything you may want is available, so explore possibilities.
```

Access elements of figure

Use *gcf* to Get Current Figure

```
figure;
h = gcf;

% The properties of the figure are now in variable 'h'.
% You can access these similarly to when using gca
% You can specify the position of your figure, whether it is docked or not,
% its background color, and many more…

h.WindowStyle = 'docked';
h.Color = [0.46, 0.67, 0.19];
```

Scatter plots

Scatter plots let you change the size and/or color of individual symbols

```
x = 0: 0.1: 2*pi;
y = sin(x);
sz = linspace(1, 100, length(x));
c = linspace(1, 100, length(x));

% both sz & c contain 100 different values, equally spaced between 1-100
% We can use these values to edit the size and color of the symbols
scatter = (x, y, sz, c);

scatter = (x, y, sz);     % Change only the size but not the color
scatter = (x, y, [ ], c); % Change only the color but not the size
```

Tips

***gca* can contain different properties for different visualization methods**

Create a line plot, a bar graph, and a histogram and observe

Did you do enough *help* to yourself?

help gca
help gcf
help scatter
…

Good luck!