CSE 1570 Plots (III)

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http://www.cse.yorku.ca/course/1570

Objective

The objective of this class is to learn the techniques used in solving a question in Assignment #5

Outline

- Drawing shapes on figure window
- Adjusting the axes
- Changing background color
- Display text in the Figure window
- The **ginput** command
- The **cell** data type

Drawing Special Shapes with plot

The plot command generates a graph by connecting points with line segment.

We can use it to draw special shapes, such as square, rectangle, triangle, circle,













Display Text in a Figure Window Use the text command: text(x, y, 'text to be shown') It places the "text to be shown" in the figure such that the first character is positioned at the point with coordinates x and y Example: text(-2, 1, 'Hello')



Solution to Exercise 1

% create vectors for the coordinates of corners x=[0,0,1,1,0]; You can use other points as

y=[0,1,1,0,0]; long as they make a square.

% make the data units on both axes the same axis equal

axis off % hide axes

% set the color of the current figure window to white set(gcf, 'color', 'w');

% display the words text(0.1,0.9,'Man'); text(0.8,0.9,'Woman');

text(0.45,0.5, 'John');



The ginput Command

The **ginput** command allows the user to

- select points from the figure using the mouse for cursor
- positioning and return the coordinates of the points, or
 type the buttons on the keyboard and return the internal ASCII codes of the characters typed.

Format:

[x, y, b] = ginput(n)

- The input argument **n** specifies
 - the number of points that can be selected by the user, or
 - the number buttons that can be typed by the user.
- Three output arguments:
 - \mathbf{x} is a column vector storing the x-coordinates of the n selected points
 - \boldsymbol{y} is a column vector storing the y-coordinates of the n selected points
 - **b** is a column vector storing the ASCII codes of the typed characters.



















Solution to Exercise 3

close all, clear x=[0,0,1,1,0]; y=[0,1,1,0,0]; plot(y,x)

axis equal axis off set(gcf, 'color', 'w') text(0.1,0.9,'Man'); text(0.8,0.9,'Woman'); - Same as in Exercises 1 and 2

Names={'Ben','James','John','Tim','Sue','Kate','Fanny','Sara'}; r=round((8-1)*rand+1); text(0.45,0.5, Names{r});

text(0.1,0.1, 'Type c for male name or m for female name');
[x,y,b]=ginput(1);

Solution to Exercise 3 (Continued) if r<=4 if b==99 text(0.45,0.25,' Correct! ','BackgroundColor','g'); elseif b==109 text(0.45,0.25,'Incorrect!','BackgroundColor','r'); else text(0.45,0.25,' Invalid! ', 'BackgroundColor','y'); end else if b==109 text(0.45,0.25,' Correct! ','BackgroundColor','g'); elseif b==99 text(0.45,0.25,'Incorrect!','BackgroundColor','r'); else text(0.45,0.25,' Invalid! ', 'BackgroundColor','y'); end end