TECHNISCHE UNIVERSITÄT DRESDEN

Introduction to Matlab

Plots

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DRESDEN concept
Exzellenz aus Wissenschaft und Kultur

Recap: Plot commands

- plot(x,y), plot(x1,y1,x2,y2,…)
- bar, pie, imagesc
- subplot(a,b,c), hold on/off
- get(gca), xlabel, ylabel, legend, axis on/off, title

- Create a function MyPlot with three inputs: x-data, y-data and a string S. The function should plot (in the current figure, which is done automatically) the data presented, adding the title set by S, with only three x-ticks (beginning, middle, end) and the appropiate ticklabels, and ticks in 0, -1 and 1 for y; with xlabel 'Time', ylabel 'Activity'. To set the ticks, write set(gca,'XTick', [0,pi,2*pi]); set(gca,'YTick', [-1,0,1]); after the plot command.
- Create a function TwoPlots with no inputs (can be a script). This function will plot, using MyPlot, into two Figure windows. In the first one, it will plot sin(x) and in the second one cos(x). It must plot these functions with x in (0,2pi), for different timesteps. The timesteps must be (0.5,0.1,0.5,0.01). That means that, for the first one, x = 0:0.5:2*pi. For each timestep, the corresponding plot should be set in a subplot. Figure 1 will be a subplot with 4 plots, each one for a timestep, plotting sin(x). Figure 2 should be similar. The title for each plot in the subplots should be 'sin(x) with dt = 0.5', for example. Hint: use for ii=[0.5,0.1,0.05,0.01]. Hint: use s = sprintf('sin(x) with dt = %f', ii) to set the title of each plot.
- Set the title for Figure 1 'sin(x) plots with changing precision' and similarly for Figure 2.

Challenge

- Using only x = 0:0.1:10; y = sin(x); obtain the plot shown. The plot is actually 2D, repeating sin(x) many times.