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%Sarah Schwettmann, CAAM 210, Fall 2013
%sweetpotatocommenting.m
%Sweet potato commenting models the output of my sweet potato plant over a
%five month period. It also gives new MATLAB students a guide as to where
%commenting in code is appropriate.
%Usage: type sweetpotatocommenting from the command prompt.
%Example: sweetpotatocommenting

%The example problem we covered in lab 1:
%The number of sweet potatoes Sarah's plant produces depends on how much it
%rains in a certain month.
%If the amount of rainfall is more than half an inch, the plant produces 5
%sweet potatoes.
%If the amount of rainfall is less than half an inch, the plant produces 2
%sweet potatoes.
%Translate this scenario into an executable model of Sarah's sweet potato
%plant over a 5 month period using MATLAB.
%Also produce a plot of the total number of sweet potatoes as it increases
%each month.

sp = 0;                %we begin with 0 sweet potatoes

spcount=[];
spcount(1)=0;

for m=1:5              %counts 5 months

    r=rand;            %rainfall is a random number between 0 and 1

    if r > .5          %considers the case that rainfall is > .5 inch

        sp = sp + 5;   %plant produces 5 sweet potatoes

    elseif r < .5     %considers the case that rainfall is < .5 inch

        sp = sp + 2;   %plant produces 2 sweet potatoes

    end

    spcount(m+1)=sp;  %puts number of sweet potatoes for that month into
                    %a vector for later plotting. (FYI, the reason we
                    %use m+1 is because we are offsetting the month
                    %number since we started at month 0. So month 1
                    %will go in the second slot of the vector).

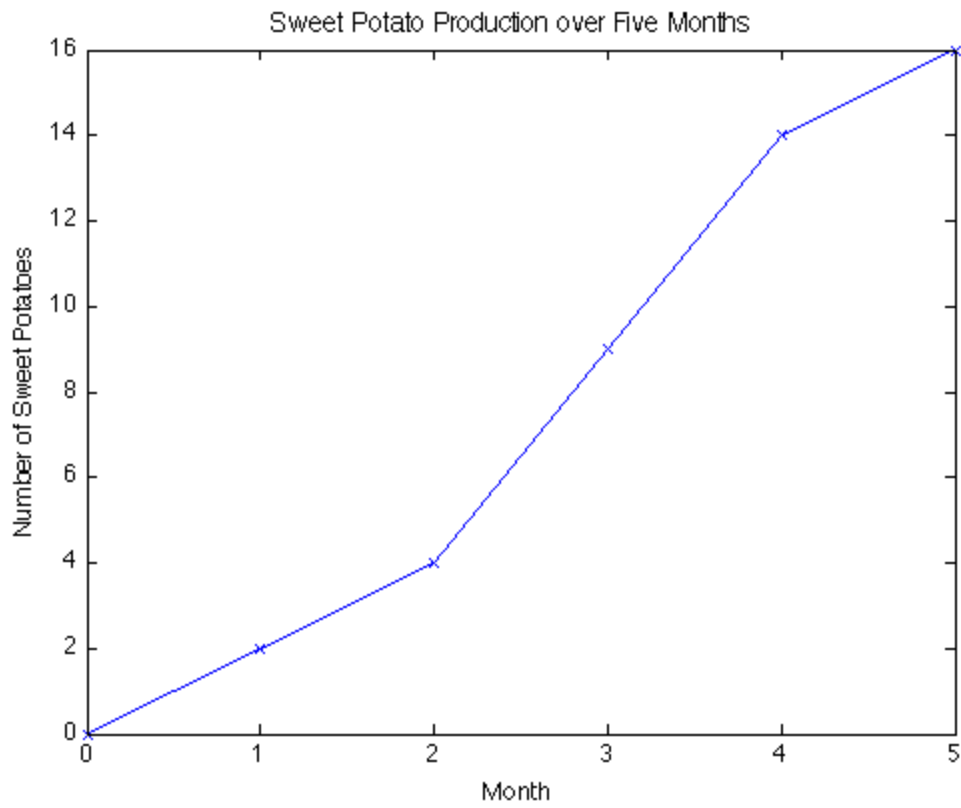
end

months=[0 1 2 3 4 5];

plot(months,spcount,'bx-')
xlabel('Month')
ylabel('Number of Sweet Potatoes')
title('Sweet Potato Production over Five Months','fontsize',11)

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%Notice I don't comment on commands like "plot," or "title," because I find
%that those are rather self-explanatory. Just comment the lines that you
%feel need explaining, if you were re-reading this code 5 months from now
%and wanted to quickly understand what it does.
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