% Serial Data Logger

% Yu Hin Hau

% 7/9/2013

% \*\*CLOSE PLOT TO END SESSION

clear

clc

%User Defined Properties

serialPort = 'COM5'; % define COM port #

plotTitle = 'Bridge Accelerometer Readings'; % plot title

xLabel = 'X'; % x-axis label

yLabel = 'Y'; % y-axis label

zLabel = ‘Z’; % z-axis label

plotGrid = 'on'; % 'off' to turn off grid

min = -150000; % set y-min

max = 150000; % set y-max

scrollWidth = 1; % display period in plot, plot entire data log if <= 0

delay = .01; % make sure sample faster than resolution

%Define Function Variables

X = 0;

Y = 0;

Z = 0;

count = 0;

%Set up Plot

plotGraph = plot(X,Y,Z,'-mo',...

'LineWidth',1,...

'MarkerEdgeColor','k',...

'MarkerFaceColor',[.49 1 .63],...

'MarkerSize',2);

title(plotTitle,'FontSize',25);

xlabel(xLabel,'FontSize',15);

ylabel(yLabel,'FontSize',15);

zlabel(zlabel,’FontSize’,15);

axis([0 20 min max]);

grid(plotGrid);

%Open Serial COM Port

s = serial(‘COM5’)

disp('Close Plot to End Session');

fopen(s);

tic

while ishandle(plotGraph) %Loop when Plot is Active

dat = fscanf(s,'%f'); %Read Data from Serial as Float

if(~isempty(dat) && isfloat(dat)) %Make sure Data Type is Correct

count = count + 1;

X(count) = X; %Extract Elapsed Time

Y(count) = Y(1); %Extract 1st Data Element

Z(count) = Z (2);

%Set Axis according to Scroll Width

if(scrollWidth > 0)

set(plotGraph,'XData',X(X > X(count)-scrollWidth),'YData',Y(Y > Y(count)-scrollWidth),’ZData’,Z(Z > Z(count)-scrollWidth));

axis([X(count)-scrollWidth X(count) min max]);

else

set(plotGraph,'XData',X,'YData',Y,’ZData’,’Z’);

axis([0 X(count) min max]);

end

%Allow MATLAB to Update Plot

pause(delay);

end

end

%Close Serial COM Port and Delete useless Variables

fclose(s);

clear count dat delay max min plotGraph plotGrid plotTitle s ...

scrollWidth serialPort xLabel yLabel;