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%HW1-Prb2
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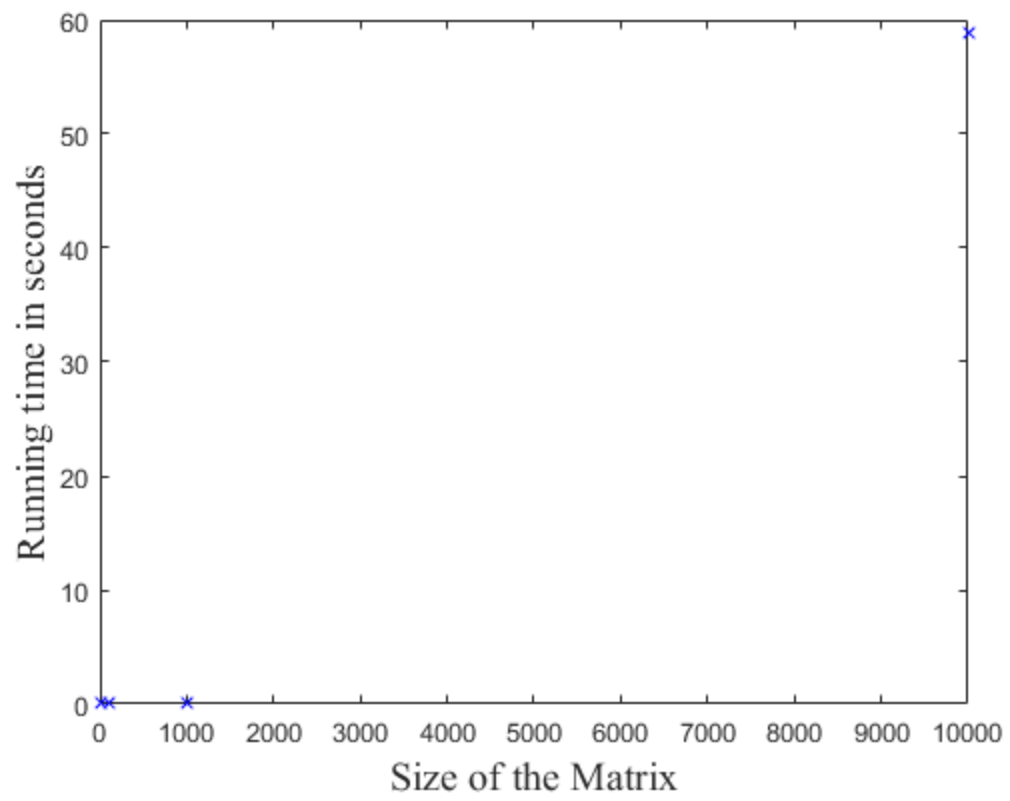
function problem_2
clc
close all
clear all
function [y] = invtime(n) % writing a function to calculate inversing
    time.
        z = zeros(n);           % initializing a n*n matrix
        z = rand(n);           % filling matrix z with random numbers
                                % between 0 and 1.
        tic;                    % starting stopwatch timer
        inv(z);
        y = toc;                % stopping stopwatch timer
    end

n = [10,100,1000,10000]; % defining cases for calculating inverse
    time.
j = numel(n);
t = zeros(1,j);          % intializing t matrix to store time.
for i =1:j                % running loop to calculate time for all
    cases.
        t(1,i) = invtime(n(1,i)); %calling 'invtime' function to calculate
        time to inverse matrix.
    end
plot (n,t,'bx');          %plotting matrix size vs running time.
xlabel('Size of the Matrix','fontsize',15,'fontname','times new
    roman');
ylabel('Running time in seconds','fontsize',15,'fontname','times new
    roman');
t = table(n,t);           %generating table for matrix size vs
    running time.
t.Properties.VariableNames = {'Matrix_Size' 'Running_Time_in_seconds'}
end

```

t =

<i>Matrix_Size</i>	<i>Running_Time_in_seconds</i>
10	0.00032699
100	0.0003914
1000	0.089951
10000	58.934



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