```
% 3) second part
function hw4_q3

tot_its = [10,100,1000,10000];
num_experiments = length(tot_its);

n = 1000;
%Generate Linear System
[A,b] =  generate_SPD_mat_and_rhs_vec(n);

err_jacobi = zeros(num_experiments,1);
err_gs = zeros(num_experiments,1);
err_cg = zeros(num_experiments,1);
exp_num = 1;

for tot_it =tot_its

    %Compute Solutions

    %Jacobi
    x_jacobi = my_jacobi(A,b,tot_it);

    %Gauss Siedel
    x_gs = my_gauss_siedel(A,b,tot_it);

    %CG
    x_cg = my_cg(A,b, tot_it);

    %"True" Solution
    x_t = A\b;

    %Errors
    err_jacobi(exp_num) = norm(x_t - x_jacobi);
    err_gs(exp_num) = norm(x_t - x_gs);
    err_cg(exp_num) = norm(x_t - x_cg);

    exp_num = exp_num + 1;
end

format long;

% Creating table
T1 = table;
    T1.Num_Iterations = tot_its'

T2 = table;
    T2.Error_Jacobi = err_jacobi;
    T2.Error_GS = err_gs;
    T2.Error_CG = err_cg


T1 =
```

Num_Iterations
10
100
1000
10000

T2 =

Error_Jacobi	Error_GS	Error_CG
997.043820069796	995.558042410641	993.31904868842
989.304156432798	984.566926926436	930.932963748778
964.333111730433	948.88053625838	17.9202362196398
880.695670897671	825.933665168027	17.9202362196398

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