2. Time this function for various n e.g. n = 1,2,3.... You should have small values of n all the way up to large values. Plot "time" vs "n" (time on y-axis and n on x-axis). Also, fit a curve to your data, hint it's a polynomial.

-> Code

```
% Define the function
function x = f(n)
    x = 1;
    for i = 1:n
        for j = 1:n
            x = x + 1;
        end
    end
end

% Time the function for various values of n
n_values = 1:100;
times = zeros(size(n_values));
for i = 1:length(n_values)
    n = n_values(i);
    tic;
    f(n);
    times(i) = toc;
end

% Plot the results
plot(n_values, times, 'o', 'MarkerFaceColor', 'b',
'MarkerEdgeColor', 'b');
xlabel('n');
ylabel('Time (s)');
title('Time vs. n for function f(n)');
grid on;
```