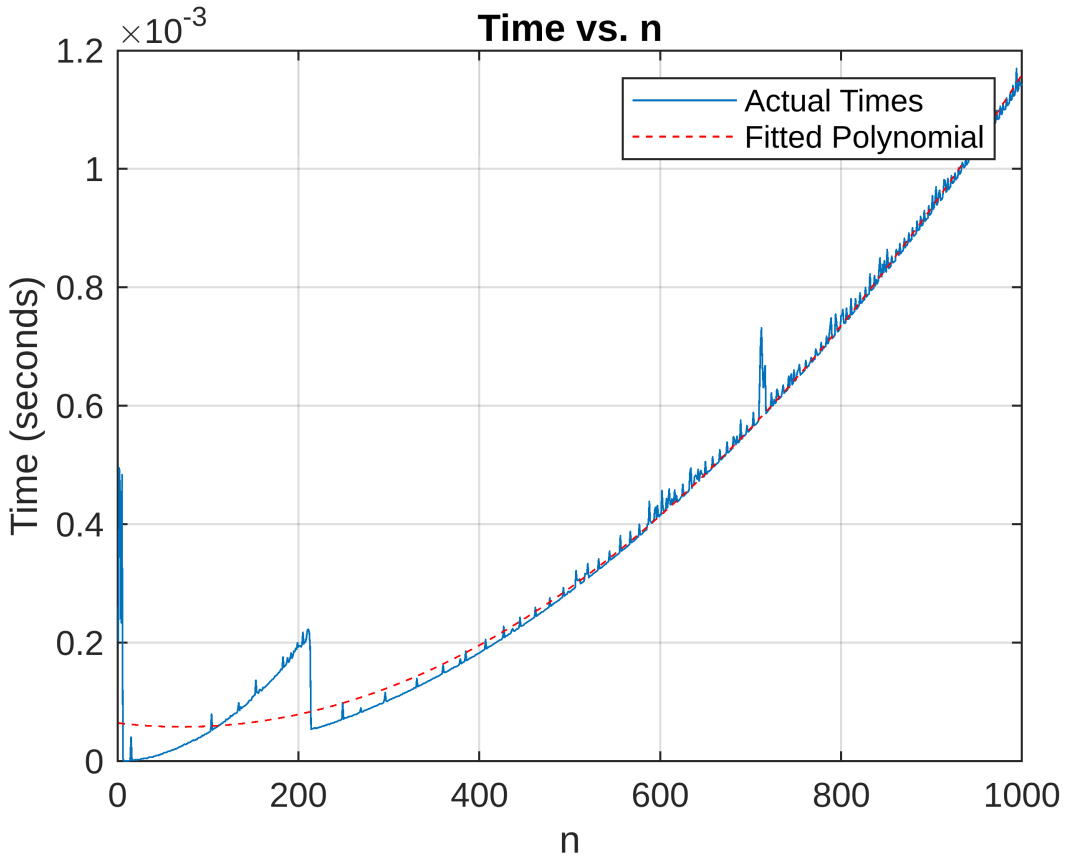
```
% Preallocate array to store times
n_values = 1:1000; % Range of values for n
times = zeros(1, length(n_values));
for idx = 1:length(n_values)
 n = n_values(idx);
 tic; % Start timing
 f(n); % Call the function f(n)
 times(idx) = toc; % Record the time taken
end
% Plot the results
plot(n_values, times);
xlabel('n');
ylabel('Time (seconds)');
title('Time vs. n');
grid on;
% Function definition
function x = f(n)
 x = 1;
 for i = 1:n
 for j = 1:n
 x = x + 1;
 end
 end
end
p = polyfit(n_values, times, 2); % Fit a 2nd-degree polynomial
fitted_times = polyval(p, n_values); % Generate fitted times
% Plot the fitted curve on the same plot
hold on;
plot(n_values, fitted_times, '--r');
legend('Actual Times', 'Fitted Polynomial');
```


Time vs. n
×10^-3
1.2
1
0.8
0.6
0.4
0.2
0
Time (seconds)
0
200
400
600
800
1000
n
Actual Times
Fitted Polynomial