```matlab
% Given data points
xdata = [0, 2, 4, 6, 9, 11, 12, 15, 17, 19];
ydata = [5, 6, 7, 6, 9, 8, 8, 10, 12, 12];

% Calculate the slope (m)
N = length(xdata);
m = (N * sum(xdata .* ydata) - sum(xdata) * sum(ydata)) / (N * sum(xdata.^2) - sum(xdata)^2);

% Calculate the y-intercept (c)
c = (sum(ydata) - m * sum(xdata)) / N;

% Display the equation of the line
fprintf('Equation of the best-fit line: y = %.4fx + %.4f\n', m, c);

% Plot the data points and the best-fit line
figure;
plot(xdata, ydata, 'bo', 'MarkerSize', 8); % Plot data points
hold on;
x_fit = linspace(min(xdata), max(xdata), 100);
y_fit = m * x_fit + c;
plot(x_fit, y_fit, 'r-', 'LineWidth', 2); % Plot best-fit line
xlabel('x');
ylabel('y');
title('Linear Regression by Hand');
legend('Data Points', 'Best-fit Line');
grid on;
hold off;

% Linear fit
linearFit = fit(xdata', ydata', 'poly1');
% Polynomial fit with 2nd degree
polyFit2 = fit(xdata', ydata', 'poly2');

% Plot the data points and the fitted curves
figure;
plot(linearFit, xdata, ydata);
hold on;
plot(polyFit2, xdata, ydata);
xlabel('x');
ylabel('y');
title('Curve Fitting Toolbox: Linear and Polynomial (2nd Degree) Fits');
legend('Linear Fit', 'Polynomial (2nd Degree) Fit');
grid on;
hold off;

% Display goodness of fit for both models
disp('Goodness of Fit for Linear Fit:');
disp(linearFit);
disp('Goodness of Fit for Polynomial (2nd Degree) Fit:');
disp(polyFit2);
```

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Equation of the best-fit line: y = 0.3591x + 4.8881
Goodness of Fit for Linear Fit:
     Linear model Poly1:
     linearFit(x) = p1*x + p2
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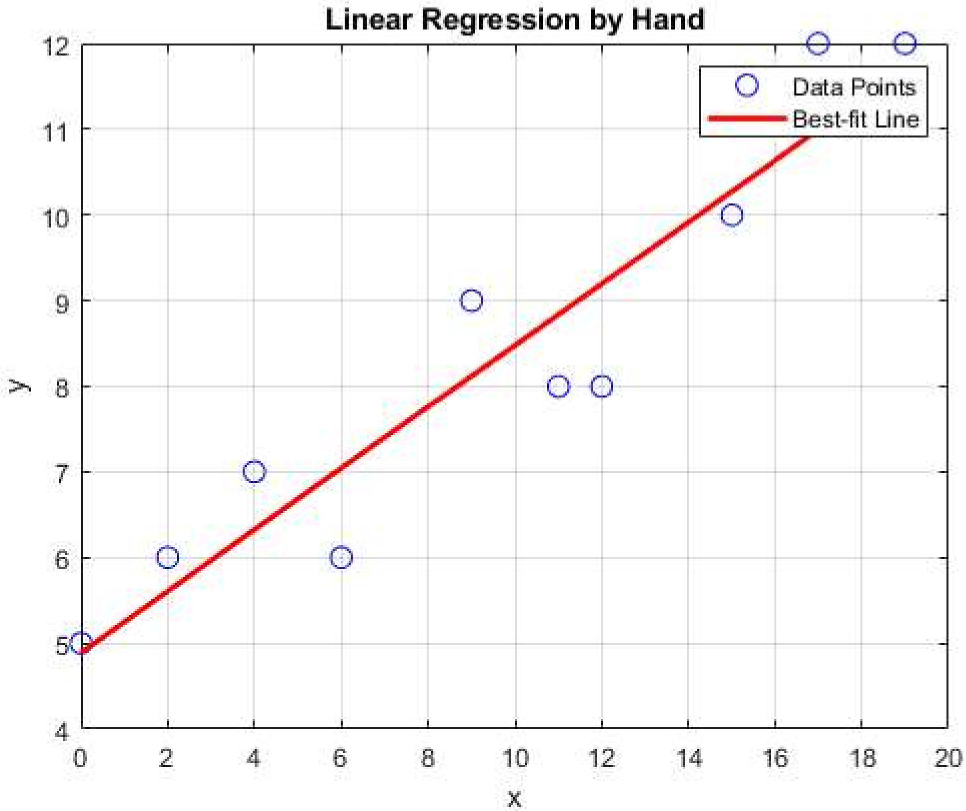
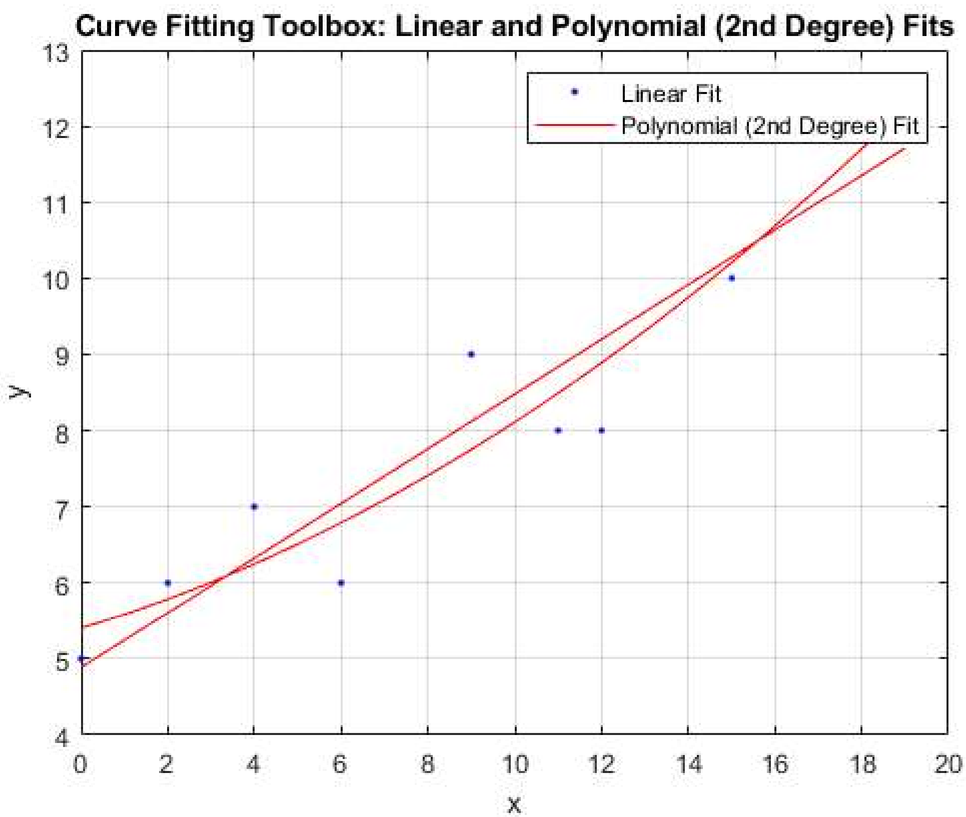
     Coefficients (with 95% confidence bounds):
       p1 =      0.3591  (0.2577, 0.4606)
       p2 =       4.888  (3.742, 6.034)
Goodness of Fit for Polynomial (2nd Degree) Fit:
     Linear model Poly2:
     polyFit2(x) = p1*x^2 + p2*x + p3
     Coefficients (with 95% confidence bounds):
       p1 =    0.009893  (-0.009025, 0.02881)
       p2 =      0.1718  (-0.2003, 0.5439)
       p3 =       5.404  (3.898, 6.911)
```





Published with MATLAB® R2023b