
```
%function stuff = Linear_reg(x,y,j)
```

Worksheet 5 Part 2

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Linear Regression

```
j = 0;
t = load('featureOne.mat');
% creating matrices from original data set
x = t.dataPoints(:,1);
y = t.dataPoints(:,2);
[len,~] = size(y);
x1 = ones(len,2);
x1(:,2) = (x);
x = x1;
xt = x';

w = ( ( xt * x)^(-1) ) * (xt * y) ;
b = w(1);
m = w(2);
stuff = [m,b];

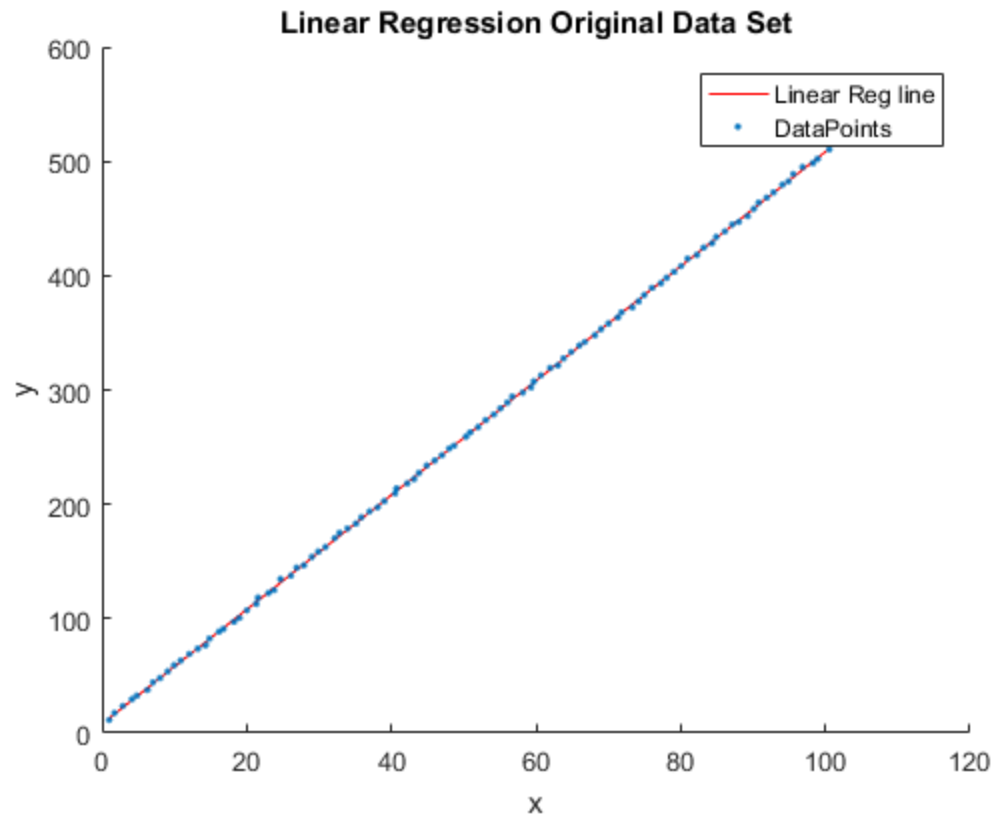
% Plotting linear regression line from original data set
yL = (m*x(:,2) + b);
figure
hold on
title('Linear Regression Original Data Set')
xlabel('x')
ylabel('y')

plot(x(:,2),yL,'r-', x(:,2),y, '.');
legend('Linear Reg line', 'DataPoints');

if(j == 0)
    fprintf('Equation of line original set is: Y = %fX + %f\n',m,b);
else
    fprintf('Equation of line %i is: Y = %fX + %f\n' ,j,m,b);
end

%end
```

Equation of line original set is: Y = 5.002515X + 7.958876



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