function [theta] = trainLinearReg(X, y, lambda)

%TRAINLINEARREG Trains linear regression given a dataset (X, y) and a

%regularization parameter lambda

% [theta] = TRAINLINEARREG (X, y, lambda) trains linear regression using

% the dataset (X, y) and regularization parameter lambda. Returns the

% trained parameters theta.

%

% Initialize Theta

initial\_theta = zeros(size(X, 2), 1);

% Create "short hand" for the cost function to be minimized

costFunction = @(t) linearRegCostFunction(X, y, t, lambda);

% Now, costFunction is a function that takes in only one argument

options = optimset('MaxIter', 200, 'GradObj', 'on');

% Minimize using fmincg

theta = fmincg(costFunction, initial\_theta, options);

end