

Overview:
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Implementation of linear regression to fit a line or a second-degree polynomial to a set of training data.

Language:
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MATLAB

Commands to run the program:
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`linear_regression <training_file> <degree> < λ >`

The arguments provide to the program the following information:

- The first argument is the path name of the training file, where the training data is stored.
The path name can specify any file stored on the local computer.
- The second argument is a number. This number should be either 1 or 2. We will not test your code with any other values.
If the number is 1, you should fit a line to the data. If the number is 2, you should fit a second-degree polynomial to the data.
- The third number is a non-negative real number (it can be zero or greater than zero). This is the value of λ that you should use for regularization. If $\lambda = 0$, then no regularization is used.

The training file is a text file, containing data in tabular format. Each value is a number, and values are separated by white space. Each row contains two numbers: the first of those numbers is the training input, and the second of those numbers is the target output.