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Managing Massive Multiplayer Online Games

SoSe 2018

Exercise Sheet 7: Game Analytics

Discussion: May 30st, 2018

Exercise 7-1 *Linear Regression* (Homework)

The rent y_i of a n apartment i depends on its size x_i. There are other influences, too, but the relation between rent and size can be simplified and represented by a linear regression model, i.e.:

$$y_i = w_0 + w_1 x_i$$

As training set the following data is available:

area in m^2	cold rent in €
30	600
60	966
100	1640
55	992
93	1790
195	2925
21	469
61	840
62	1400

(a) Calculate the regression line which minimizes the mean square error (MSE) between the predicted rent $\hat{y}_i$ and the actual rent y_i

$$MSE = \frac{1}{n}\sum_{i=1}^{n}(\hat{y_i} - y_i)^2$$

(b) Compute the square error to estimate how good the model describes the relation.

(c) Calculate the expected rent for a flat with $120m^2$ using the regression line.