

Exercise 1

1. Consider a simple regression model $y_i = \beta_0 + \beta_1 x_i + \varepsilon_i$, $i = 1, 2, \dots, n$, where the errors ε_i are iid $N(0, \sigma^2)$, in other words $y_i \sim N(\beta_0 + \beta_1 x_i, \sigma^2)$. Find a three-dimensional sufficient statistic for the parameters.
2. Take the file `example1.txt` (1.5 Gb) and fit the data by a simple regression model, estimating also the standard errors of the parameters and the variance of the errors. Investigate which is the number of chunks optimum to minimize the execution time.

You have to work in couples (groups of two persons). Deadline: February 29 at 23:59h