6G7Z1020
Assignment 7

Refer to the work you have done in the lab practical, the relevant examples and the exercises given in the lecture notes. For each answer, include your results in a formatted PDF document that contains your graph, one small paragraph with your comments and a separate section that includes your `SAS` code.

Questions

1 Storks

A group of researchers suggested that storks deliver babies. In order to defend their theory they presented a dataset (file `storks.csv`) that summarises the number of storks in the Alsace region (`Storks`), in France, and the average number of children per woman (`Children`) in France for various years. The number of storks expresses the number of nesting couples in the Alsace region.

(a) Draw a scatterplot of Storks v.s. births and comment.   [15]

(b) Fit a linear regression model and interpret the model's parameters.   [15]

(c) Using the ANOVA result investigate whether there is a significant linear association between Storks and Births.   [15]

(d) Calculate a 95% prediction interval when $x = 1000$ storks. Comment on this interval, e.g. do you recommend this prediction as accurate?   [15]

(e) Using the appropriate plots (include them), assess the model assumptions.   [20]

(f) Does the statistical analysis support the theory that storks deliver babies?   [20]