Politecnico di Milano
Scuola di Ingegneria Industriale e dell'Informazione
APPLIED STATISTICS
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Problem 1: Dietary habits and physical health outcomes

We want to investigate how vegetarian diet and vitamin intake affect various health indicators. The dataset `diet.txt` contains measurements of two health indicators:

- `pressure` which corresponds to the systolic blood pressure (in mmHg), that should be kept low;

- `cholesterol` which corresponds to the Low-Density Lipoprotein (LDL) cholesterol concentration (in mg/dL), that should also be kept low,

of 200 randomly selected individuals, along with the indication of a vegetarian diet or not (`vegetarian`) and a vitamin intake or not (`vitamin`).

a) Do dietary habits have a significant effect on the health indicators? Support your answer with a MANOVA model.

b) Specify and verify the assumptions of the model introduced in a).

c) After fitting the model in (a), would you now propose a different one? Give reasons for your choice.

d) Provide Bonferroni intervals (global level 95%) for the effects of the vegetarian diet and the vitamin intake on the health indicators. How would you describe the effect of the vegetarian diet and vitamin intake on the health indicators?

Upload your results here: https://forms.office.com/e/EQx9SMW4Jd