<div align="center">

Week 11

Activity

</div>

Suppose you started working at the World Wildlife Foundation (WWF) and your first job is to create a clustering model to auto-classify new animals in the actual animal kingdom.

They give you a sample of the database, called "Zoo[1]" to make the model.

Follow the next questions or instructions. Answer using screenshots and paragraphs explaining what you do and why. Use your preferred Data Mining Software (Weka, R, SAS, SPSS, etc).

1. Make a model for each Hierarchical Cluster Method[2] and find the best HC model for the class in the database. Explain detailed how you do it and how it was built.
2. Make different models using the Gaussian mixture model[3] and find the best GM model. Compare with the class in the database. Explain detailed how you do it and how it was built.
3. Compare you best Hierarchical Cluster with the best GM model. Which is better?, why?
4. Your boss liked your work and made the following question: If you have to propose a new animal kingdom, which would be and how are the characteristic of each kingdom (each cluster).

---

[1] Is located in the R under the command data(Zoo, package = "seriation"). The explanation of each variable is in http://artax.karlin.mff.cuni.cz/r-help/library/seriation/html/Zoo.html
[2] Use at least 5 methods. For example single linkage, complete, average, centroid, median, etc.
[3] Do a small research to the mclust library in R.