Welcome to your last (and hopefully, first) assignment!

Objective

Build a mini website where a user can upload a CSV, and see back a visualisation. The given CSV is an adjacency matrix, **A**, where **A**(i,j) corresponds to a directed link between node *i* and *j*; in this case each node corresponds to an activity. In addition, you have access to a simple table which records the start and end date of each task. For the purposes of this exercise we assume it to be well-structure and high quality (clean, without particularities).

Instructions

- Develop a front-end: Use a modern web dev framework, such as Angular, Django, Ruby-on-Rails, node.js etc. For the purposes of this exercise, aim a super quick page.
- Develop a pipeline: From a CSV to some form of storage, trigger a task to consume the data – this could be a Python script – which stores the data in a persistent way. Be prepared to discuss the benefit and the process of triggering the task on airflow Kubernetes.
- Develop a visualisation scheme: At the end of the pipeline, develop a visualisation using D3.js (or similar) that plots the nodes and the links within the given data. Extra points for integrating the tasks' start date in a modern way to show the temporal order of tasks. Hint: check how Gantt charts do this (in our view, in an outdated way).
- Deploy and/or discuss user analytics: Identify and develop the means to collect user interaction data (e.g., click throughs). Be prepared to discuss how these data could be used to personalise the product experience.

Your best chance of completing this task is to use technologies that you feel comfortable with. Kudos points if you can do so using the technologies mentioned and/or webservices.

In addition, be prepared to discuss

- AWS events (serverless computing) such as Lambda, and their importance in the pipeline design.
- Pipelinining between different cloud services, *e.g.*, AWS for the front-end, and Lambdas, GC for storage and BigQuery, and Jenkins for automation.

Remember – send us the pack (incl. code) of your work at **jobs@nodeslinks.com** before you present your results to the team.