Overview

Our team has been assigned the Knowledge Maps project. The aim of this project is to provide an easy to use, intuitive visualisation of academic courses to make searching for the right course easier for prospective students.

The client, SuSy Research Ltd is an independent research company. They usually develop new engineering and mathematical models for network robustness and resilience. This project will be mostly unrelated to the rest of the SuSy Research’s other endeavours which include two tech start ups.

The problem we aim to solve is that many students in schools and universities the world over struggle endlessly to make the right choice of which A-levels, university degree and modules to take. It is often a time consuming and difficult to navigate process. Many do not realise until it is too late that they have not completed the pre-requisites their university course requires or conversely have taken a subject which was not necessary for their career path. Our solution will make clear how courses are linked not only by topic but also how courses are pre-requisites for one another. This should result in students spending less time finding what course to choose and be assured it is the right choice.

Our vision is a web application (with mobile development a possible extension) which would be used as a plug-in on Academic websites. Using the plug-in the student will be able to navigate a tree-like graph where the nodes will represent courses and edges will represent one course being a pre-requisite for another. The edges will be different colours based on what topic the courses are (for example edges from the Algorithms and Algorithms II courses would share the same colour). The user should be able to click on nodes to find out more course information. In order to navigate this graph the user will be able to drag/ pan, zoom in and out or search for a specific course.

The key objective of the product is ease of use. Our client has asked us to make the design accessible to as many users as possible. This is why the aesthetic will take inspiration from the London Tube Map, a map which is notorious for its simplification of a complex network.

The users for this product will be students deciding on what A-levels to take, or University students deciding what courses in their degree to take. Our client has a contact who has a courses website for ENEM (Brazil’s equivalent to A-levels) so there is potential for this product to be accessed by hundreds of thousands of students, though it is yet to be confirmed that this will go ahead. Furthermore this product has scope beyond the realm of university courses and could be used for a multitude of education platforms including Udemy and Coursera.

We envisage the front end of the solution will be created in Javascript and the back end will be coded in Java using spring boot for the rest of our API to do data handling. Initially the product will be a web application so that it is accessible to students and there is scope for adapting to mobile users.