Web Technology II

The Help Desk

Team:

Anusha Kamath - 01FB15ECS048

Anvith S. Shetty - 01FB15ECS049

Anwika Bhandary - 01FB15ECS050

Abstract

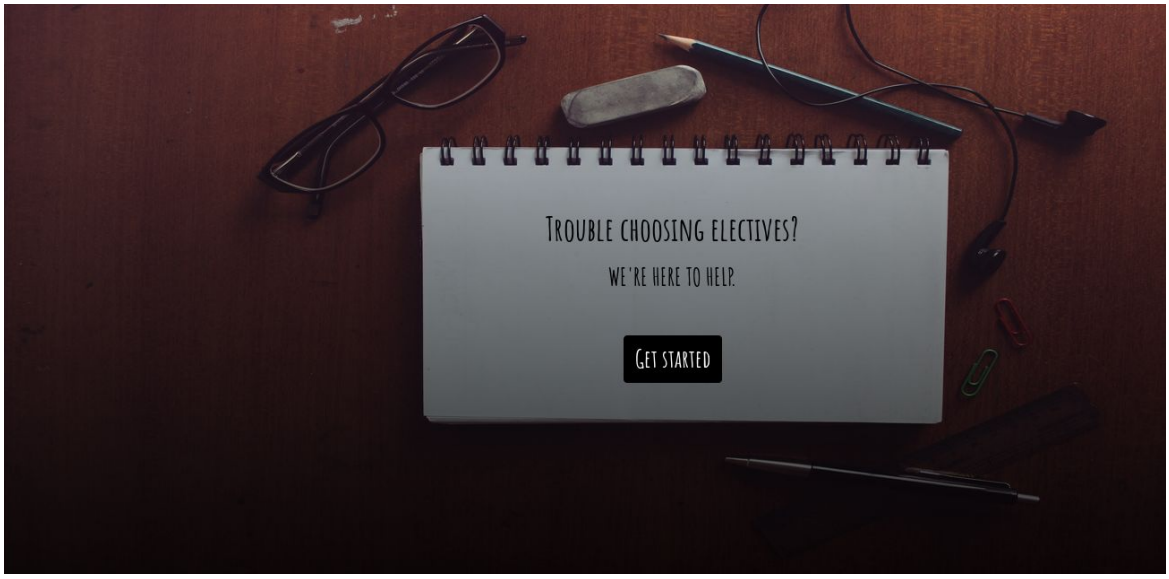
The Help Desk is an elective recommendation application, created for students who need some assistance choosing their electives for the coming semester. We start off by asking for student details, including past performance, electives taken in previous semesters, their desired specialization, their interests and most importantly, the weightage of importance given to each factor. After careful evaluation, along with the employment of RNN and content-based filtering techniques, we recommend two electives, one per pool, best fit to their requirements, along with a second option in each. The student is also provided with some further information about the course, such as a description, teachers, etc.

Frameworks Used

- Client-side framework: Vue.js
- Server-side framework: Django

Flow

The Help Desk application starts with the landing page seen below.

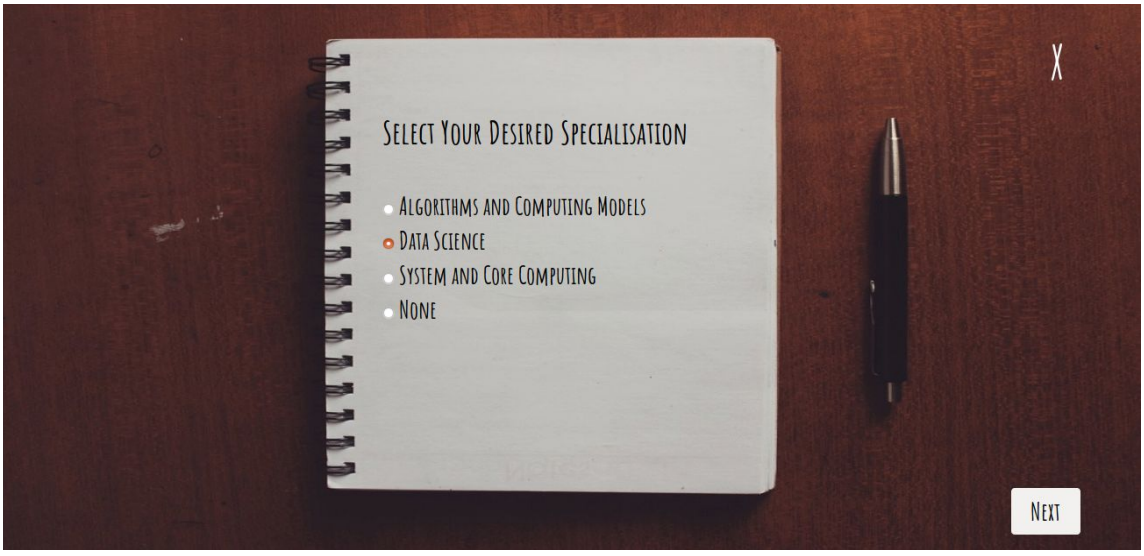


When the user selects “Get Started,” the home page is displayed.

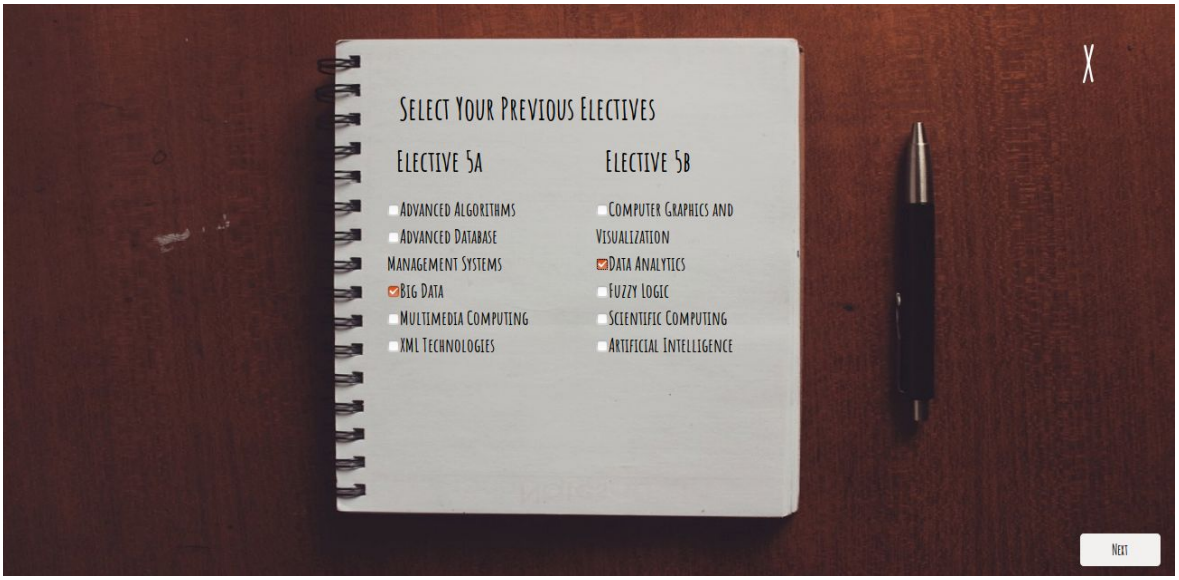
Our entire UI is designed as a table top view, with items appearing and disappearing via a stop motion animation, to make the quiz as creative and interactive as possible for the student.

When they select “Start Quiz,” the stationery disappears, and the quiz begins. First, we ask them for their USN and whether they’re in the even or odd semester, which calculates and automatically fills in the semester field.

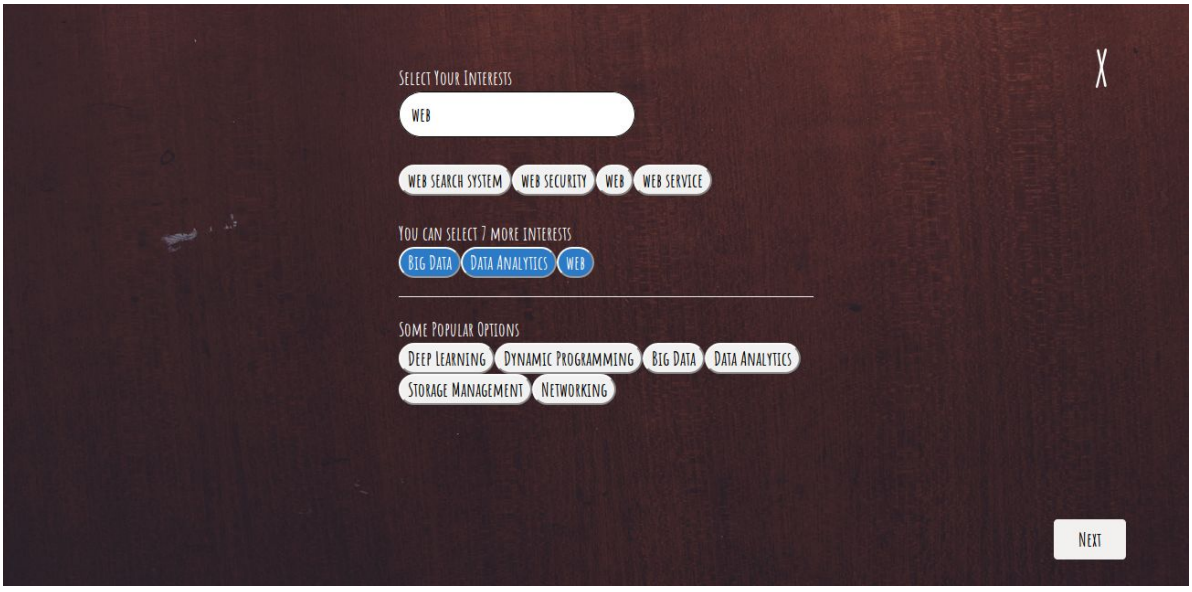
The next page asks them to select their desired specialisation (if any).



Next, we ask them to select the electives they had taken in the previous semester(s). If they are just starting 5th sem, this page is skipped.



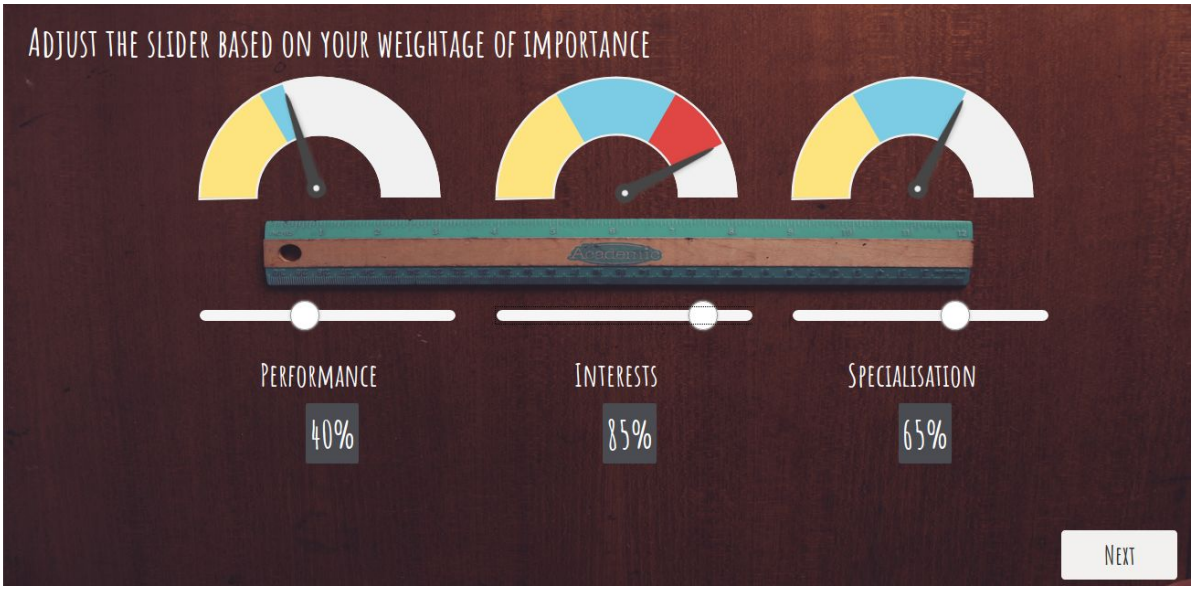
Then, we ask for the student's interests. They can select upto 10 interests, either from the popular options given at the bottom, or by searching for others via the search bar. This uses the technique of **submission throttling** and late send, by waiting a second for the user to type, before displaying a list of matches.



Till now, we've collected information about

1. Their desired **specialisation**, and hence a list of subjects that come under that specialisation
2. Their past **performance**, which was obtained through their USN from a dataset with all student USN's and grades in core subjects. This information will be used to judge if the student's performance in a prerequisite subject will be good enough to cope with the elective itself.
3. Their **interests**, which are collected in two ways:
    a. After asking them to enter their electives from previous semesters, we performed **content-based filtering** using the keywords associated with each elective to match them to new electives
    b. After asking them to select their interests, we used an **RNN** to suggest new electives as well

The next important step, is to ask the student the weightage of importance they give to each of the above three factors. Some students may be completely focussed on getting a specialisation, some may struggle with studies and want electives they can perform well in, while some feel that the most important aspect is their interest in the field. Hence, we have provided the student three meters, each out of 100, to give their personal importance to each.



We then take the three weightages and normalize them. Since we have a list of suggested electives from each of the three factors, with some electives common in more than one list, we total up the weightages for every individual elective.

Eg. If the normalized weights are:

Specialisation - 0.47

Interests - 0.41

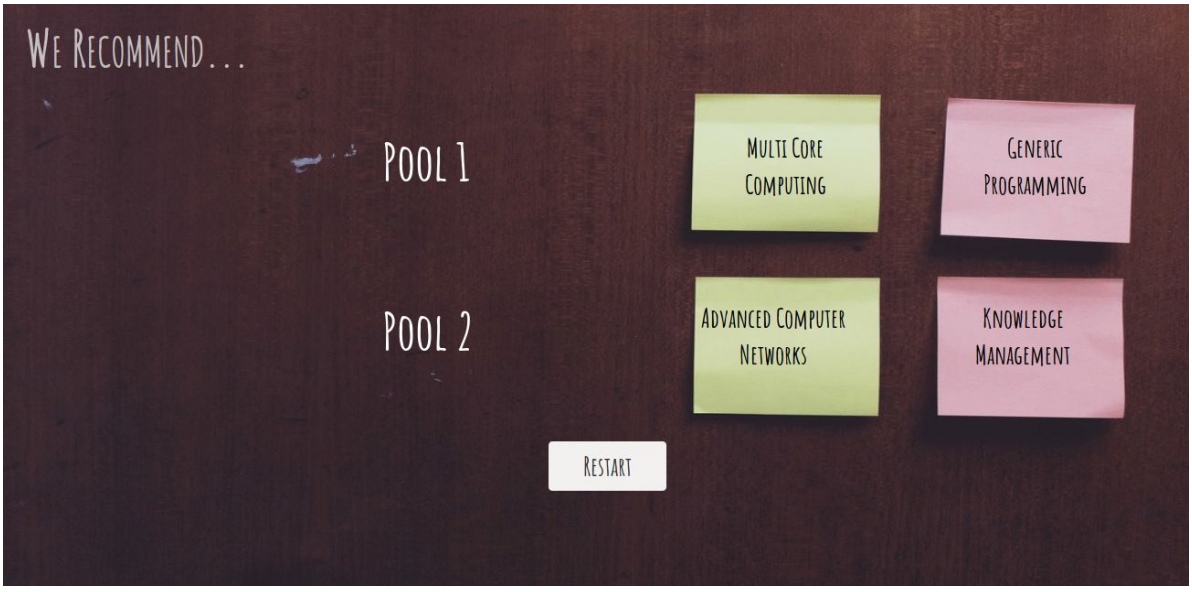
Performance - 0.12

Let's say Computer Graphics comes under the Performance list, its total is then 0.12. On the other hand, if Advanced Computer Networks comes under both the Interests and the Specialisation list, its total is 0.41 + 0.47 = 0.88.

Hence, ACN is a much better option for the student.

Here, we display the final recommendations. We have the best fit elective in each pool on the yellow post-its, with a second option in the pink post-its.

If the student wants to take the quiz again, they simply click on Restart.



The student can click on the post-it to read more about the elective. We have provided a brief description about the course, along with details like the teacher(s), specialisation and prerequisite (if any).