

Smart Dining Application: An Overview

Introduction:

In order to build a more inclusive university dining system, collecting data on dining plan registrants' dietary restrictions can provide insights for the design of smarter menus that cater to students' needs.

There are many fallbacks to creating an inclusive university dining menu:

- 1) It is hard to gauge broad trends in students' dietary needs from the feedback mechanisms currently in place.
- 2) Even when a given menu served at a dining location has options for every *individual* dietary restriction (i.e. vegan, peanut-free, halal, etc.), many students with intersecting dietary restrictions can still be left out. This makes the task of creating an inclusive menu very complicated.
- 3) Balancing disparities between the needs of the "majority" versus the "minority" of students creates additional challenges.

University dining systems can potentially mitigate these challenges by **gathering and leveraging data on student dining restrictions**. After all, universities feed the same consistent population year by year; it makes sense for them to concretely assess the needs of this population in order to directly cater to them. However, in order for universities to turn this raw data into useful insights, they need a program that can analyze the data and present key findings through a user-friendly interface.

Purpose:

Our team proposes an app that leverages data on students' dietary restrictions to analyze how well a given menu (assemblage) of recipes meets students' needs.

Example of inputs and outputs:

- in** →
1. Dietary restrictions of each student who signed up for a Pass Plan
 2. Douglass Dining Hall lunch menu
- out** →
1. Percentage of all students who can eat at least one menu item
 2. Pie chart of students who were left out and their dietary restrictions (ex. kosher & GF)
 3. Bar chart of each recipe vs. % of students who can eat it

Methods:

- Pseudo-data of students' dietary needs will be prepared. Example shown below:

Student #	Vegetarian	Vegan	Peanut-free	Halal	Kosher	Egg-free
12345678	0	0	1	0	0	1

- Real menu data will be taken from dining services website and extracted for this information:

Recipe	Vegetarian	Vegan	Peanut-free	Halal	Kosher	Egg-free
Beef Tacos	0	0	1	1	0	1