PapCoat

A new preference-based course registration system for Trinity College.

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01 THE PROBLEM

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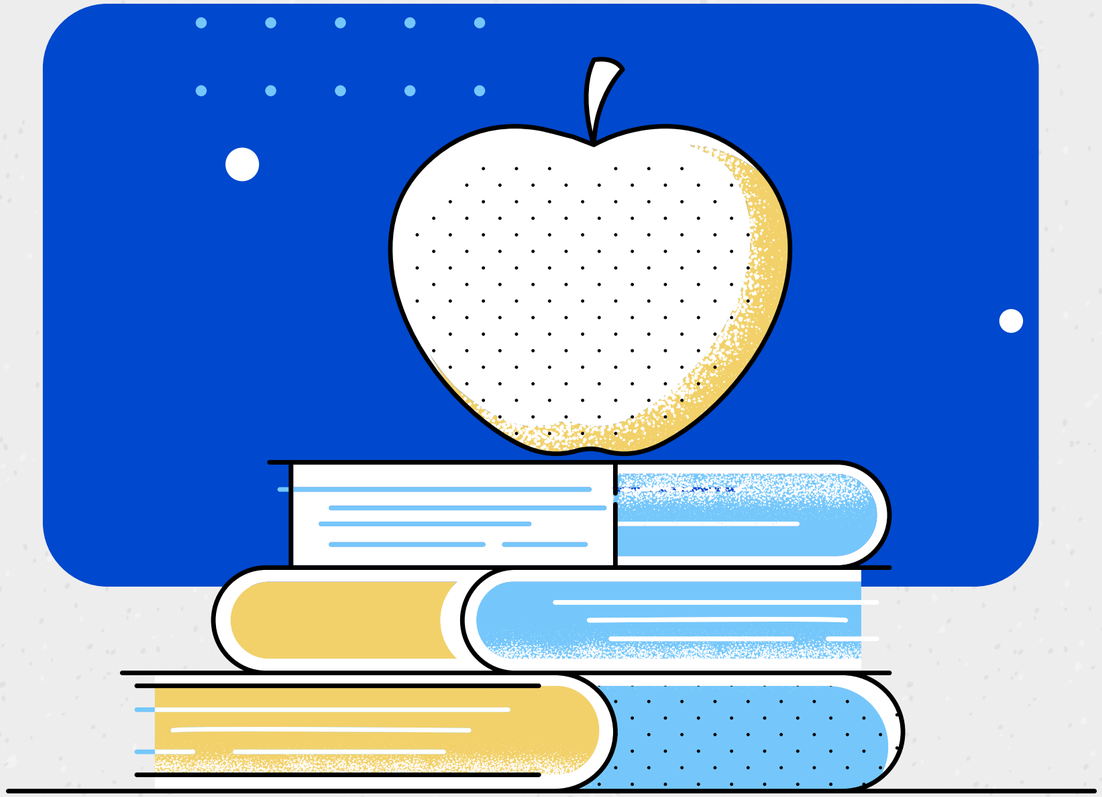
01 THE PROBLEM

Students aren't getting into the courses that they want to take.



02

OUR SOLUTION

Solution: PapCoat

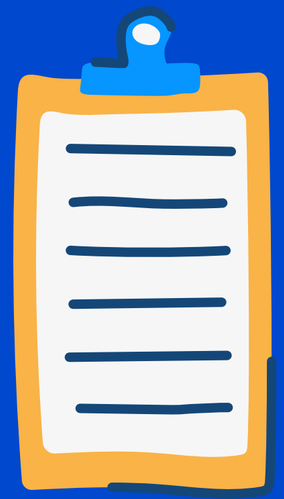
Priority Algorithm Processed Course Offering Application for Trinity

Current System

First come, first served.

Our System

Considers ranked list of classes a student wants.



System Plan

1. Students submit ranked list of preferences.
2. Preference list validated.
3. Seniors, classes that fulfill major requirements, etc. prioritized.
4. Run algorithm.
5. Maximize weighted happiness of all students.
6. Return results to students.

Algorithm Attempts

How can we maximize students' satisfaction with their courses?

STUDENT-FIRST

Rank each student. Enroll based on student rank.

COURSE-FIRST

Fill non-conflicted classes first.

MIXED-APPROACH

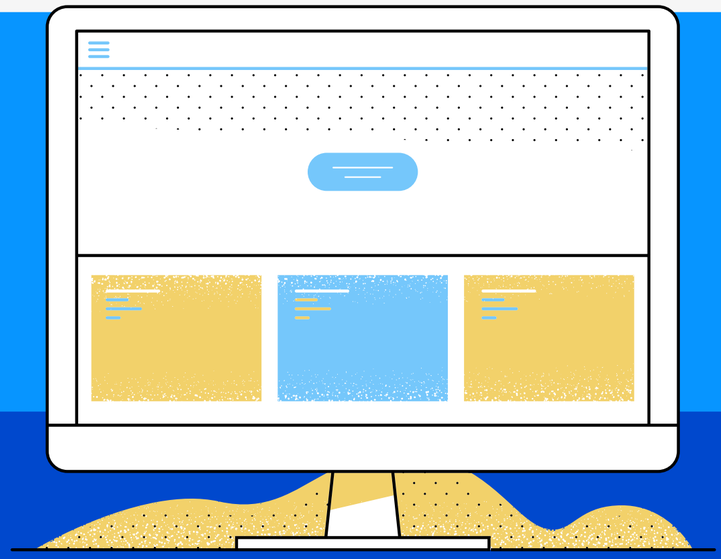
Find a middle ground between the student-first and course-first approach.

Simplex Algorithm

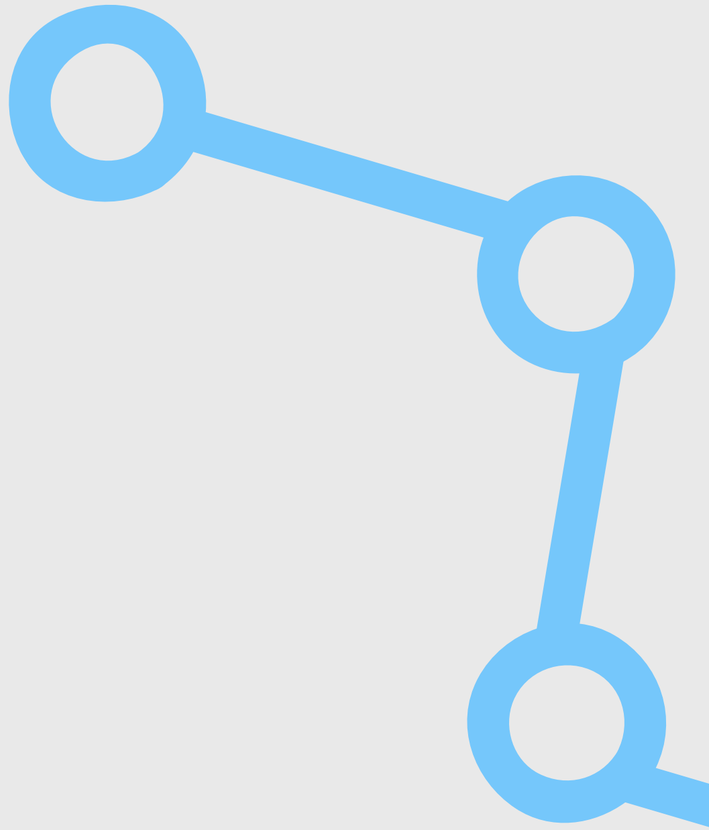
an optimization technique to solve large systems of linear inequalities

Requirements

- Maximize or minimize a variable x.
- Variable x is subject to constraints, represented as linear inequalities.
- All variables must be >= 0



03 PROGRESS MADE

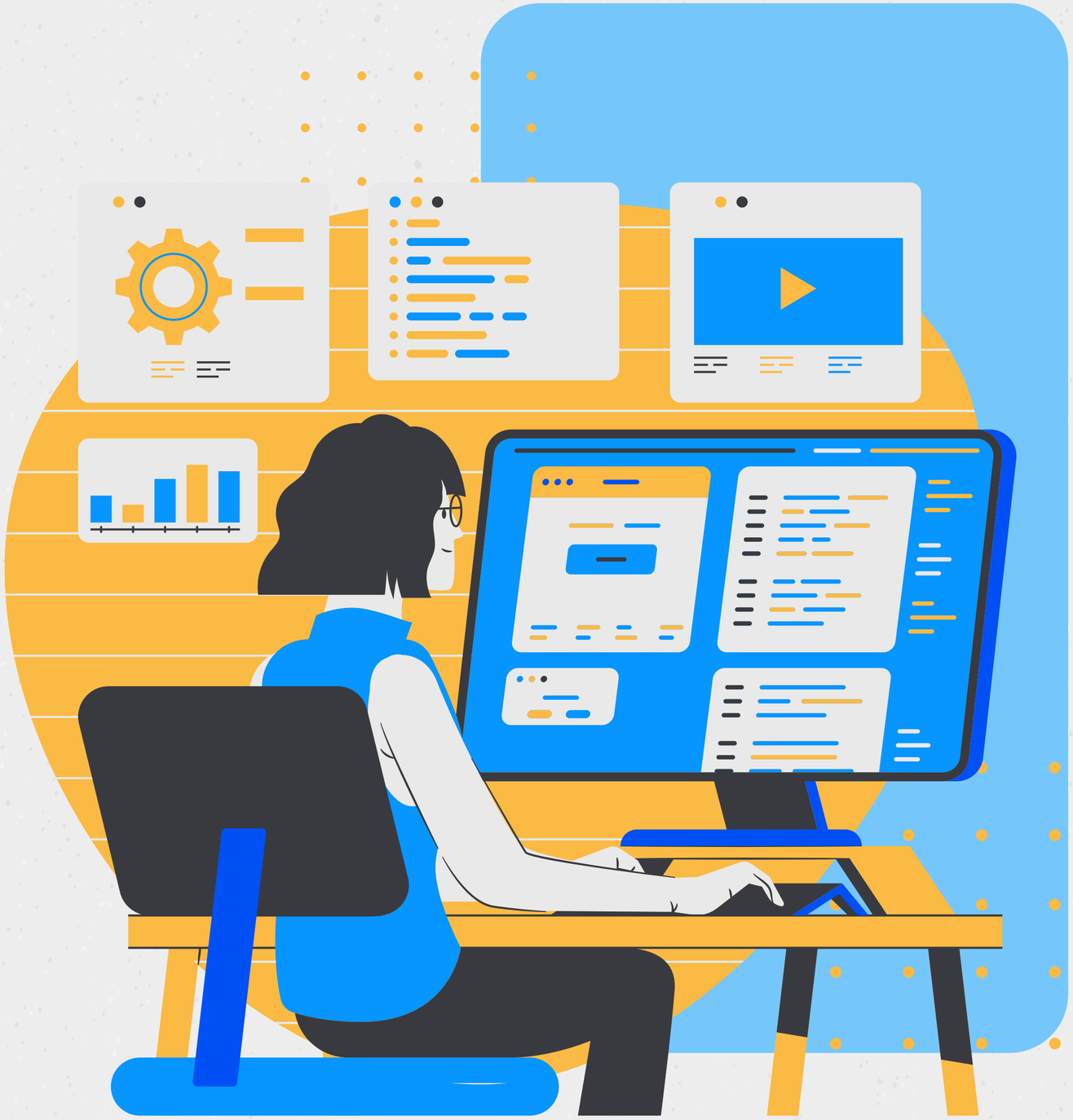


So far...

- Designing our system.
- Conducting research.
- Creating proof of concept algorithm tests.
- Configure application framework.

04 LOOKING FORWARD

Next step: Coding!



Timeline

Implement algorithm in back end.

JAN-FEB 2021

Build front end; refine back end.

MARCH 2021

Polish application.

APRIL-MAY 2021

Thank you!