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3 Fall 2022 Final Project <
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6 {HS Matching Algorithms}
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Today's 'Presentation' {

now

Overview

next

Code Component

after

Ethical Issues & Solutions

last

Discussion
or Q/A

}

Overview

The NYC HS Admissions process is complicated and unethical. One huge part of the admission process is the matching algorithm. Specialized High schools do not participate in the matching algorithm process.

Code Component

Our Code component is a simplified matching algorithm program, similar to to the Gale-Shapley algorithm.

It takes 9 students and matches them with 3 schools based on a) preference, b) zone c) priorities (set-asides), and d) lottery number.

Code Component - Schools

School Name: ● Red

Zoned: True

Available Seats: 3

Priority Seats: 0

Student Matches: [None yet]

School Name: ● Blue

Zoned: False

Available Seats: 3

Priority Seats: 2

Student Matches: [None yet]

School Name: ● Yellow

Zoned: False

Available Seats: 3




Priority Seats: 1

Student Matches: [None yet]


Code Component - Sample Student

Student Name: Dan

Lottery Number: 2

Rankings: 1:  Blue 2:  Red 3:  Yellow

Priority: True

Zoned:  Red: False  Yellow: False  Blue: False


Next Top Preference:  Blue


Current Match: None


Code Component - Post Matching


*****Matching Algorithm Complete!*****

*****STUDENTS after Matching*****


Ali matched at  Red, which was their #1 choice


Bee matched at  Blue, which was their #2 choice


Cal matched at  Red, which was their #2 choice

Dan matched at  Blue, which was their #1 choice

Eva matched at  Yellow, which was their #2 choice

Flo matched at  Blue, which was their #1 choice

Gus matched at  Red, which was their #2 choice

Hal matched at  Yellow, which was their #3 choice

Isa matched at  Yellow, which was their #2 choice

Pseudo Code Component

```
1 currStudent = unmatchedStudents[0]
2
3 currSchool = currStudent.topPick
4 while len(unmatchedStudents) > 0:
5     if currSchool has space, match currStudent and currSchool, remove currStudent from
6     unmatchedStudents, then grab next student as currStudent & their top school
7     if currSchool is full:
8         if currSchool is zoned:
9             if currStudent zoned for school:
10                 if there are unzoned students matched, unseat unzoned with lowest
11                 (worst) lottery number, match currStudent, then look at unseated
12                 student's next school
13                 If all seats are zoned students, student with lowest lottery number
14                 will not match/need to be unseated - if currStudent has lowest, look
15                 at their next school. If currStudent doesn't have lowest, unseat
16                 student with lowest number, match currStudent, then look at unseated
17                 student's next school
18             else:
19                 ...
```


Replit Code Link



Ethical Issues & Solutions

One ethical issue is the NYC DOE does not **provide transparency** about this admission process. They do not report (even when requested) the historical cutoff information. (Marian, 2021) Students/ families/ researchers don't have a transparent understanding and have to engage in a timely and resource consuming process.

One solution to the first Ethical Issue of non-transparency is to **publish the algorithm used**. Why is this not public information? Who benefits from keeping this really important matching algorithm hidden?

Discussion



Q/A



1 Thanks; {

2
3 'Do you have any questions?'

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Self-Advocacy:
Know Yourself,
Know What You
Need, Know How
to Get It