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PART2 REFLECTION QUESTIONS
Based on the algorithm you just implemented, answer the following questions:

Q6: Reflect on the outcomes (15 points)

Based on what I observed, outliers are defined based on assumptions, not facts. Thus, the lower requirement set for the overall score may lead to a decrease in admitted students' quality because their circumstances might not be what the outlier algorithm expected. For instance, those students who have a demonstrated interest score of 0 do not necessarily mean that they don't use social media or not having access to a computer. This could instead be caused by their own ignorance or lack of critical thinking skills to come up with alternative methods for the facilities that they are lacking. If they do not have access to online methods for demonstrating their interest, they could send letters, attend in-person events, or make phone calls instead. The same is applied to other students that got a low SAT score or performed very poorly in one of the four semesters. Besides a student's ability to perform consistently, withstanding exam pressure or taking care of their health are basic skills that a competent student must have. This does not justify a lower score standard for them and creates a disadvantage for those students that are truly capable.

Q7: Algorithmic bias (10 points)

I believe that the algorithm successfully avoids protected characteristics such as age, gender, and ethnicism for it is objectively based on scores. However, as previously stated, the algorithm includes an unfair bias for outlier students that fail to see that scores are not the only thing that matter when applying to a university. To elaborate, students with a demonstrative interest of 0 showed their passive behavior in procuring information while a sudden drop in scores is evidence of their poor decision-making skills and mentality. This should lead to their downfall and be a learning experience for them, not an opportunity to "sneak" into the university with a lower threshold in score requirement. Even worse, the student quota will be fulfilled faster because more students will be admitted, and cut short the truly capable ones with a more limited quota.

Q8: Mitigating bias (10 points)

a.

The privileged ones are without a doubt the outliers with different situations than what the algorithm expected, especially those who only have to have to score just a bit better consistently in order to get a whole one lower GPA tolerance. Since they are not having those specific circumstances, their standards are loosened and they have another chance to enter the college with a lower overall score. On the other hand, the unprivileged ones are students that still have an overall score of 5 or higher whose scores improved for 3 semesters but experienced a slight decrease in one semester between them, or students that still have an overall score of 5 or higher with less than 20 difference in between each grade. These groups of students are unprivileged because their situations are not expected by the algorithm, thus they still have to meet the same requirement as the regular ones which is an overall score of 6.

b.

Instead of permitting a lower score of GPA for students with 0 demonstrated interest score which essentially gambles whether the student truly has access to a home computer or not, the college can either hold a quick survey when the students are applying or send letters to their residence whether they are able to engage in online activities and such. Another strategy to prevent a huge disparity between GPA and SAT scores besides lowering the standard is by allowing the student to use other exam results equivalent to SAT standards like A levels. This will allow students to avoid a gap between the scores yet still ensure fairness among them. The constraint is as follows, A* in A level is equivalent to 1560-1600 in SAT score, and after dividing the result by 160, this conversion rate can be

used for the rest of the letter grades.

Q9: How should and shouldn't algorithms be used in college admissions? Why? (15 points)

Back then, colleges went through numerous lengthy processes during the admissions period because of the large amount of data being received. These include verifying if they have uploaded all the scores required, manually sorting and filtering to see which ones meet their requirements, and typing each of the results into a file. Due to this, not only is there a chance of inaccuracy because of human mistakes, but the resources and time taken will be tremendous as well. This is where an algorithm should be used, i.e., when the process involves automating students' personal information or their scores. This will make the process more precise as well as more efficient because the code can be reused for all the students. For instance, sorting those who have scored higher than 7 overall. However, the algorithm should not be used for determining permanent scholarships, or when the college is accepting students that excel at other subjects like sports or arts. As permanent scholarship is a special privilege, scores are not the only important aspect because their attitude is important as well. If the algorithm is still used in this case, it might produce undesirable outcomes like how the student does not want to maintain the minimum scores and just leech off the permanent scholarship for the rest of one's study period. In addition, students that have outstanding achievements in other subjects might not meet the minimum score requirement that the algorithm used. However, the algorithm is not aware of that since it does not check their personal statements/certificates/interview results. Thus, it will produce another undesirable outcome where those students that are supposedly to be accepted because they have the potential to bring more achievements for the college are rejected.