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Title: Seat Assigning System

THE SCENARIO

The client, the Head Multipurpose Hall (MPH) Executive of a school – an International school that offers the International Baccalaureate Diploma Program and the Middle Years Program – have a system of assigning seats to students in the MPH located on the campus. The students sit at assigned tables for all meals throughout the day.

The assigned seats allow students to "interact with each other and form friendships with both seniors and juniors to get rid of any intimidation" according to the client. It also prevents anti-social behavior from students and helps with social skills but is a "tedious task to undertake".

After a consultation with the client (See Appendix 1), my client stated that the current problems were that:

- It takes too long to assign seats in the MPH because it is a manual system.
- The current system is not environmentally friendly because it wastes a lot of paper.
- Some students are not assigned seats during the process because their names are being put down one by one and might be skipped.
- Sometimes, the students are not evenly spread across most of the tables.

Due to the inefficiency with the current system, the client has contracted me to make an "application to group students and place them on tables" (See Appendix 1) new system to solve the problems.

Word Count: 209

Rationale for the proposed solution

I concluded that a group generator program would be the most effective solution to the problem. To make this application, I will be using Jet Brains PyCharm to create the User Interface and Functionality and Microsoft Access to connect a database. My program would be the best way to resolve the problem because:

- It is going to reduce the time taken to assign seats to students as it is an automated system.
- It will not leave any students without seats.
- It will balance out students in number.
- It will be a free software, which the school will own, and which can be accessed whenever needed.

- It will reduce paper waste because it is an automated system.

Using PyCharm to write code would be most useful for creating the new system because:

- It has automatic code completion which will make it easier to develop the program.
- It offers exceptionally good database integration allowing me to work with Access seamlessly.
- It offers a local history which is helpful in case I need to roll back on some earlier development.
- It allows unit testing which is helpful to run smaller parts of the overall program without affecting other parts.
- My client also does not want to incur any additional costs with the creation of this system and PyCharm is free.

Microsoft Access would be the best database software to use because:

- It will allow me to quickly create customizable databases for the program.
- It does not use as much code as compared to Oracle or MySQL, which saves time.
- It is ideal for a single user system.
- The client will not incur any additional costs since it is already installed on their device.
- It offers the option to work with other platforms such as PyCharm.

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Success Criteria

The system will be said to be successful if:

1. The program displays an error if Student details are not valid.
2. Admin is able to remove students from the database.
3. Admin is able to search for records based on names or grade levels.
4. Admin is able to add students to the database.
5. Admin is able to update student data.
6. The program can output a document with tables groups and students.
7. It should be able to calculate the number of tables needed to seat all students.
8. It can place an equal number of students on each table.
9. It can place at least 1 person from each grade on a table.