MongoDB Design with Flutter/Dart

Assumptions about Design:

* Location information is shared with University if there for longer than 15 minutes

Requirements for the Design:

* Location Data
  + Time
  + Dorm
    - Building
    - Room
  + Cafeteria
  + Library
* Class Data (From Schedule Information)
  + Time
  + Students
  + Room
  + Building
  + Professor
* Following Class
  + Class Data as above, for the classes following the Positive COVID student’s room
    - If Patient A is in room 400, what classes follow before the next cleaning
* Student Data (Could also be gotten from school)
* Name
* Email
* Phone number

Positive case comes up for a student. Now we compare that student to every other student. CDC says that after 14 days if you haven’t had symptoms you are good. So only keep up to 14 days worth of data? For each day that the positive person is on campus, we must check to see if the other person came into contact. First check the day. Was that person on campus that day? If yes proceed. If no, move to the next day. If the student was on campus that day, compare classes. Did they have any classes together? If yes, mark the student as yes. If no, move on to the common areas. Did the student spend time in the common rooms. If yes, then check the time that they were in the common rooms. Do those times match up? If yes, mark as the student as yes. If no, move to the next day. After all days are checked, move on to the next student.

Documents:

Building

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Id: int PK

Room

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Id: int PK

Building\_id: int

Class

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Id: int PK

Room\_Id: int

Students: array [Student\_id, Student\_id, … ]

Teacher: int

Start time: time

End time: time

Person

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Id: int PK

Name: string

Email: string

Phone number: string

Student

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Id: int PK

Person\_Id: int

Teacher → all other teachers in department should be notified when one becomes infected

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Id: int PK

department\_ID: int