DBMS CLASS HACKATHON

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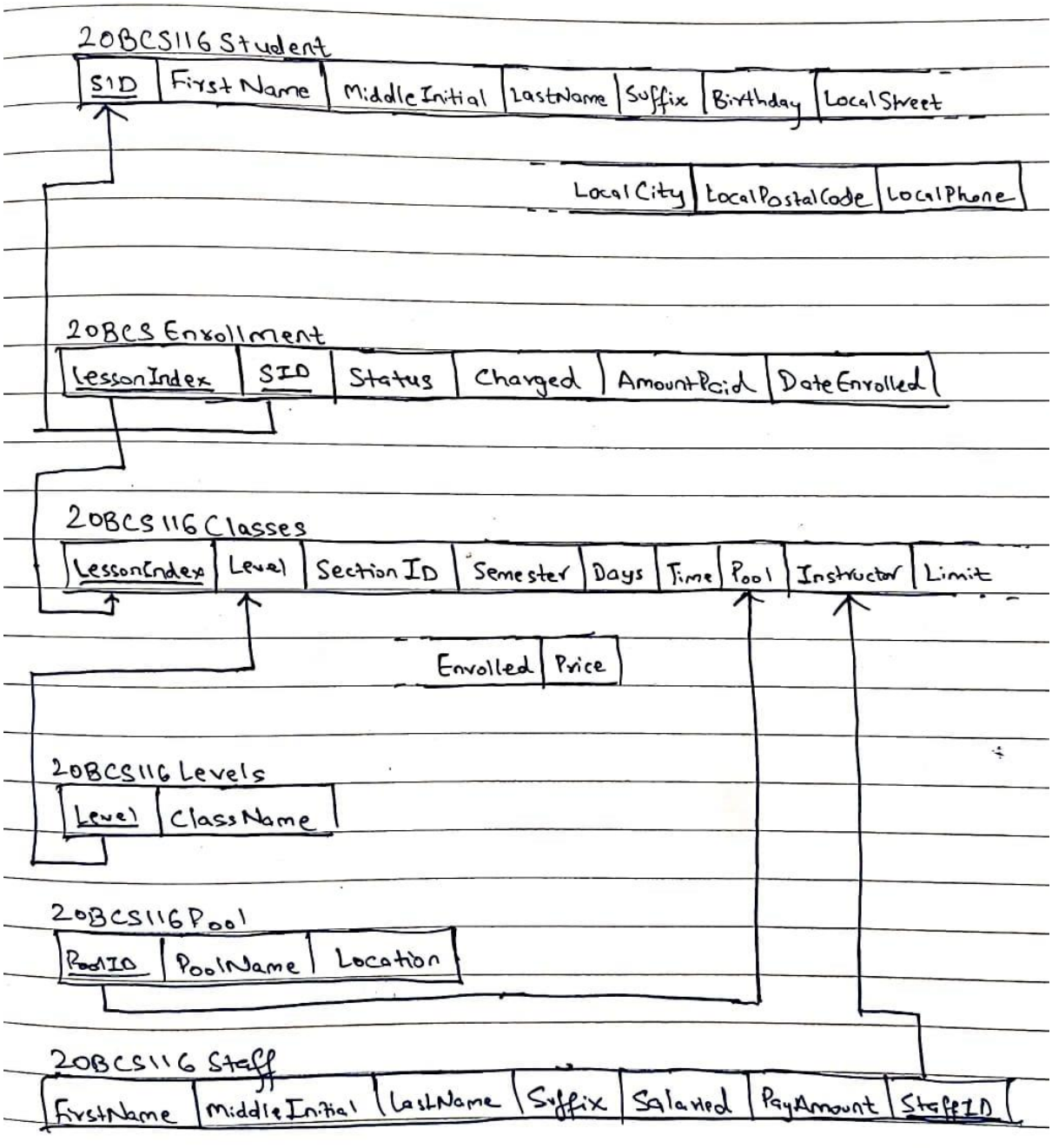
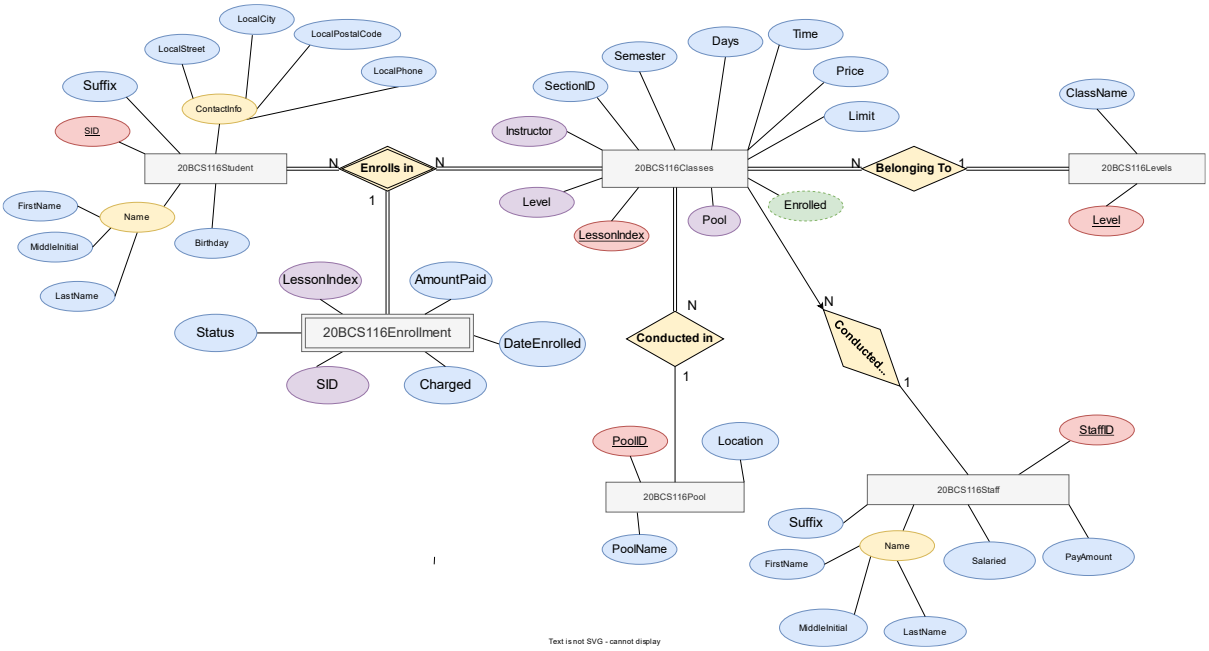
Roll no.: 20BCS116

Schema:



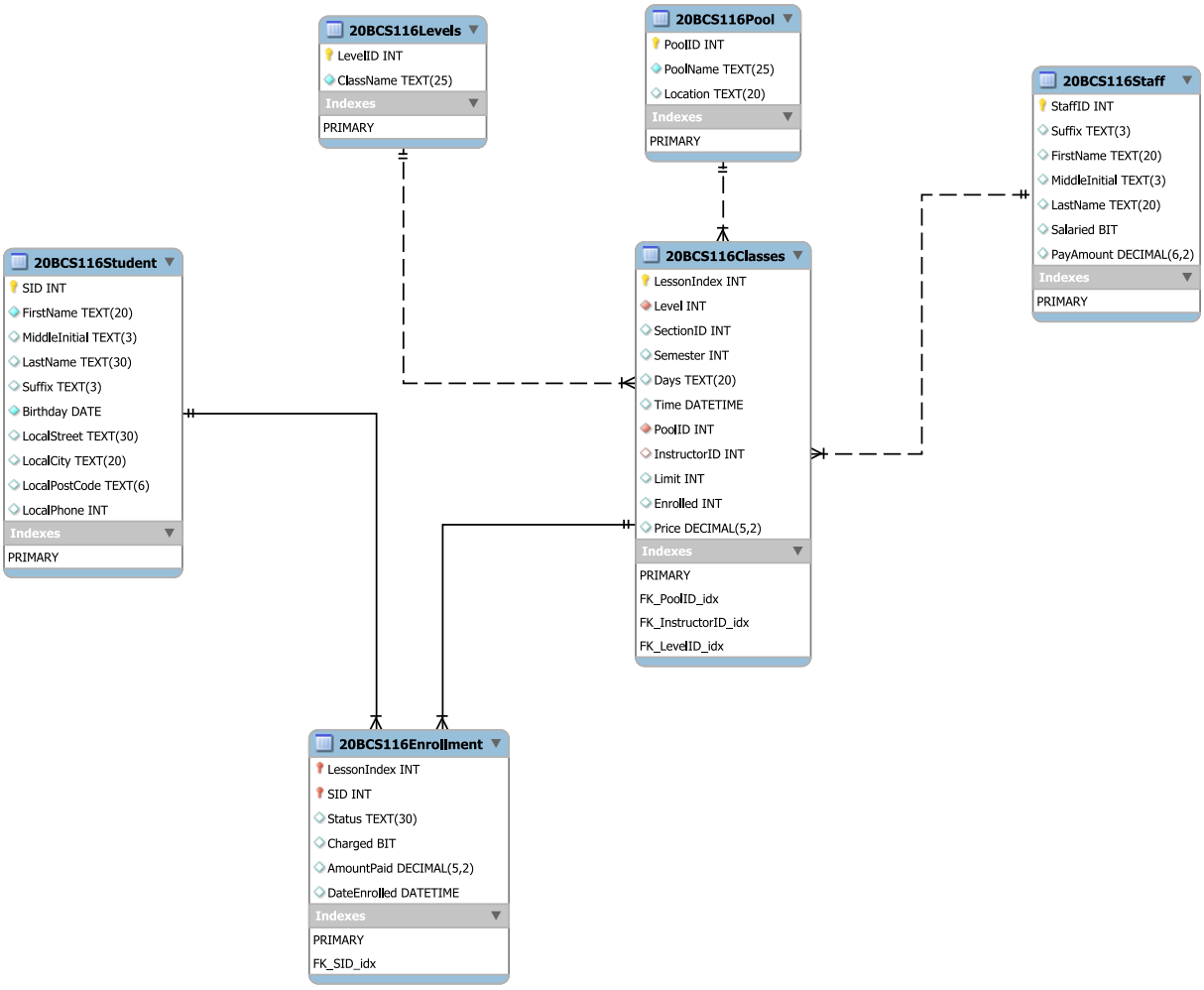
Conceptual Data Model:



"Enrolls in" is the only relationship with degree 3, rest all are 2.

1. **20BCS116Student** – Keeps a record of personal information all the students, all of whom must enroll in at least one class. It has a Primary Key "SID".
2. **20BCS116Classes** – Keeps a record of all the different swimming classes that are available for students to enroll in, and information pertaining to those classes. It has a Primary Key "LessonIndex" and derived attribute "Enrolled", which counts the number of students enrolled in the class.
3. **20BCS116Enrollment** – Keeps a log of all enrollments by students into the different classes that has taken place. It has a Primary Composite Key "LessonIndex" and "SID", which are also Foreign Keys present primarily in 20BCS116Classes and 20BCS116Students respectively.
4. **20BCS116Levels** – Keeps a record of the different levels. Has a Primary Key "LevelID".
5. **20BCS116Pool** – Keeps a record of all the pools available in the facility. Has a Primary Key "PoolID".
6. **20BCS116Staff** – Keeps a track of all the different instructors available to teach swimming and their personal information. Has "StaffID" as Primary Key.

Physical Data Model:



The only weak entity in this model is 20BCS116Enrollment.
This is because it does not have a Primary Key consisting of attributes of its own, but has 2 Foreign Keys taken together as its Primary Key. Therefore, the entity's existence depends on the existence of the other 2 entities.
Remaining all entities are strong.

There is no data redundancy occurring in this model.
All the tables have the necessary and *relevant* information stored in them, and where there is a need, foreign keys are made use to reference data in other relations.