DBMS FIRST TEST (CS310)

Name: Amit Appanna Talawar
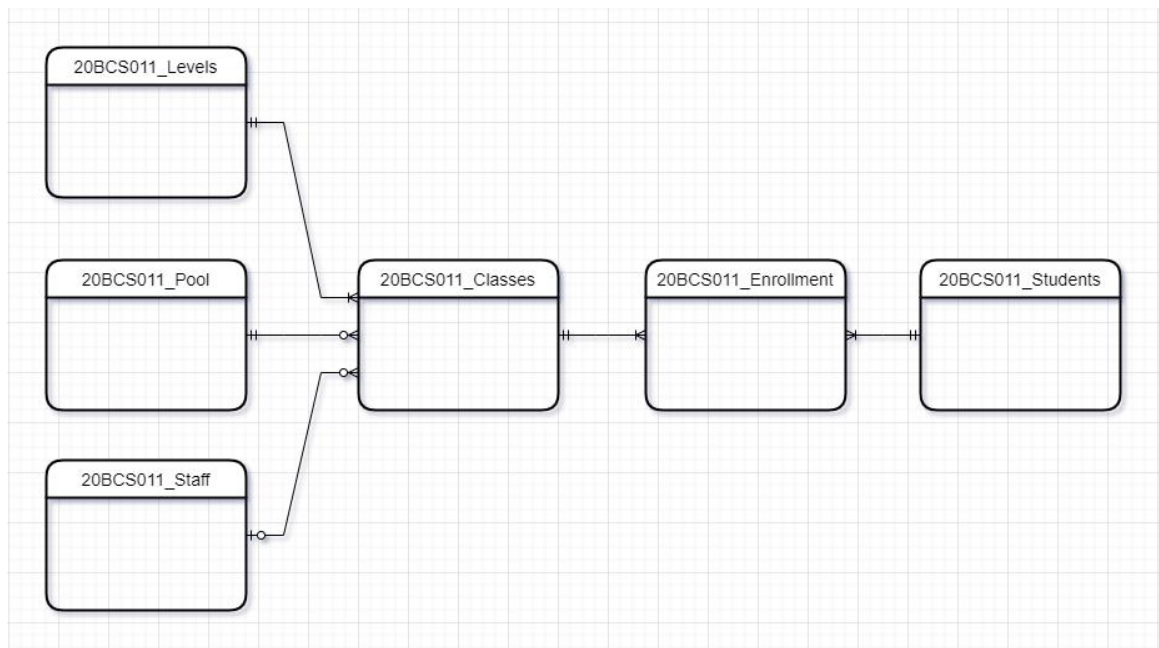
Roll No.: 20BCS011

1.

1.1 Schema:

- 20BCS011Levels(Level, ClassName).
- 20BCS011Pool(Pool, PoolName, Location).
- 20BCS011Staff(StaffID, FirstName, MiddleInitial, LastName, Suffix, Salaried, PayAmount).
- 20BCS011Classes(LessonIndex, Level, Pool, Instructor, SectionID, Semester, Days, Time, Limit, Enrolled, Price).
- 20BCS011Enrollment(LessonIndex, SID, Status, Charged, AmountPaid, DateEnrolled).
- 20BCS011Students(SID, FirstName, MiddleInitial, LastName, Suffix, Birthday, LocalStreet, LocalCity, LocalPostalCode, LocalPhone).
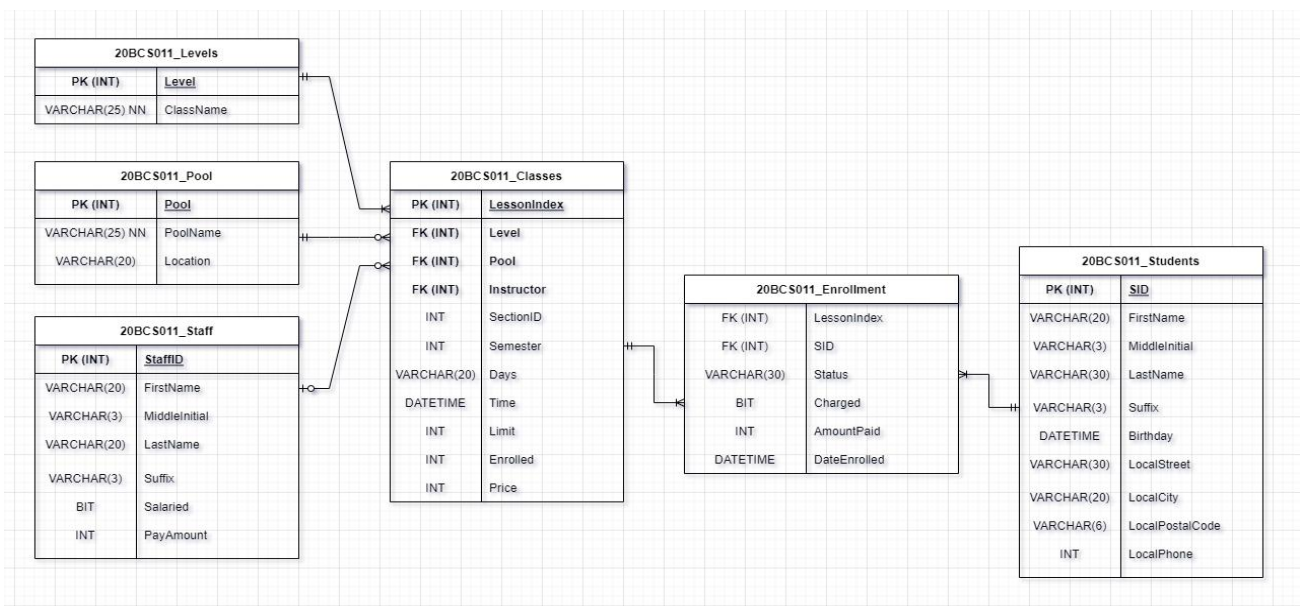
1.2 Conceptual Data Model

2. Degree and Cardinality:

- 20BCS011_Staff   **[Optional 1-Optional Many]**   20BCS011_Classes
- 20BCS011_Pool   **[Mandatory 1-Optional Many]**   20BCS011_Classes
- 20BCS011_Levels   **[Mandatory 1-Mandatory Many]**   20BCS011_Classes
- 20BCS011_Classes   **[Mandatory 1-Mandatory Many]**   20BCS011_Enrollment
- 20BCS011_Enrollment   **[Mandatory Many- Mandatory 1]**   20BCS011_Students

3. Physical Data Model

4. Weak Entity:

Enrollment relation is a Weak Entity as it doesn't identify itself without an instance of 20BCS011_Classes and 20BCS011_Students, more so it also lacks a Primary key of its own. It has composite key acting as Primary key with combination of LessonIndex of 20BCS011_Classes and SID of 20BCS011_Students.

Conversion to Strong Entity of 20BCS011_Enrollment destroys the purpose of this entity as an Associative Entity and by adding a primary key and converting it into Strong entity increases the data redundancy with an unnecessary key affecting the Normalization of the Database.

5. There is no instance of Data Redundancy in the Schema.