DBMS Hackathon First-Test

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20BCS106

1)Relational Schema-

20BCS106_Levels(Level, ClassName)

20BCS106_Pool(Pool, PoolName, Location)

20BCS106_Staff(StaffID, FirstName, MiddleInitial, LastName, Suffix, Salaried, PayAmount)

20BCS106_Classes(LessonIndex, Level, SectionID, Semester, Days, Time, Pool, Instructor, Limit, Enrolled, Price)

20BCS106_Enrollment(LessonIndex, SID, Status, Charged, AmountPaid, DateEnrolled)

20BCS106_Students(SID, FirstName, MiddleInitial, LastName, Suffix, Birthday, LocalStreet, LocalCity, LocalPostalCode, LocalPhone)

Conceptual Data Model ERD-
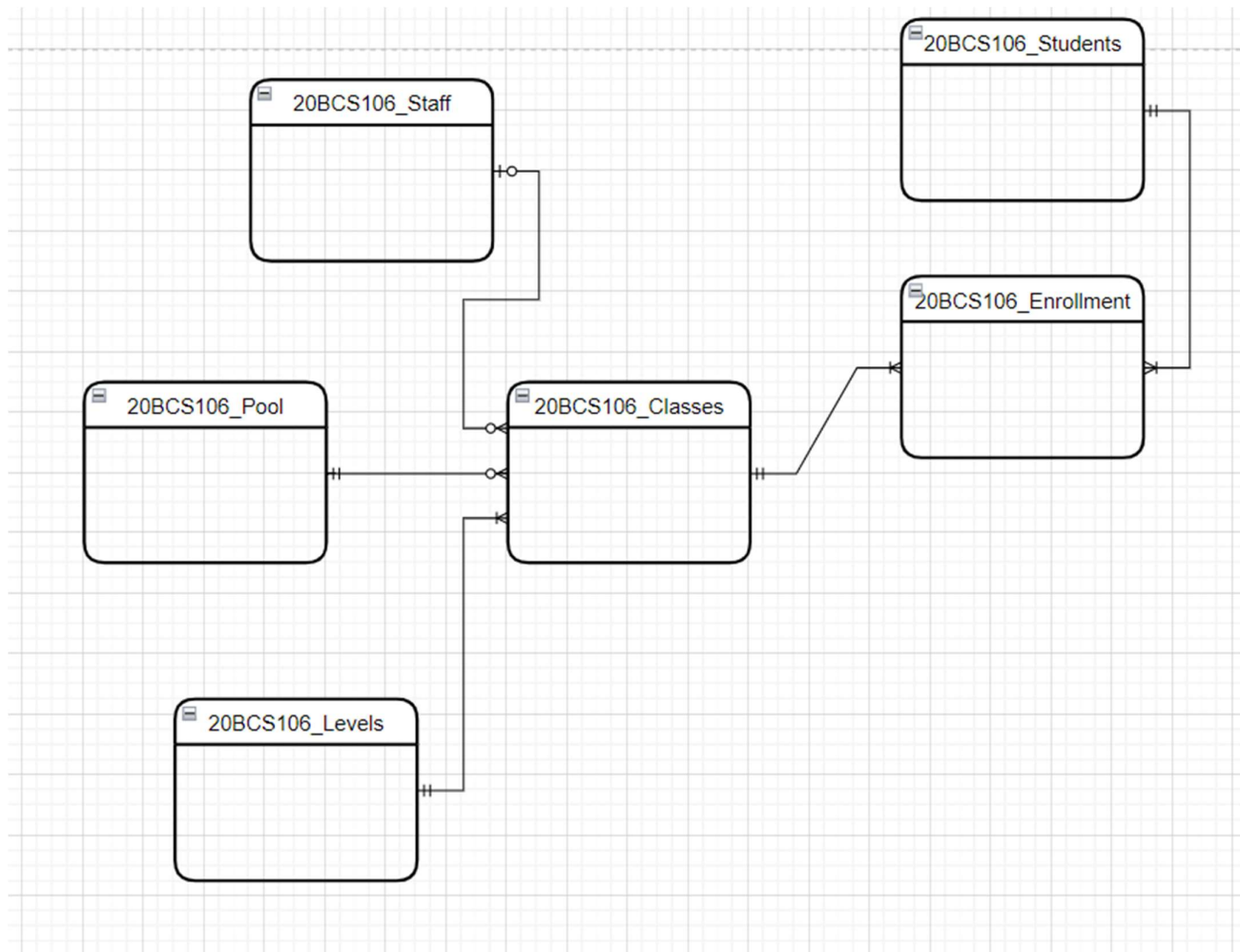
2)Cardinality-

20BCS106_Staff (Optional 1-Optional Many) 20BCS106_Classes
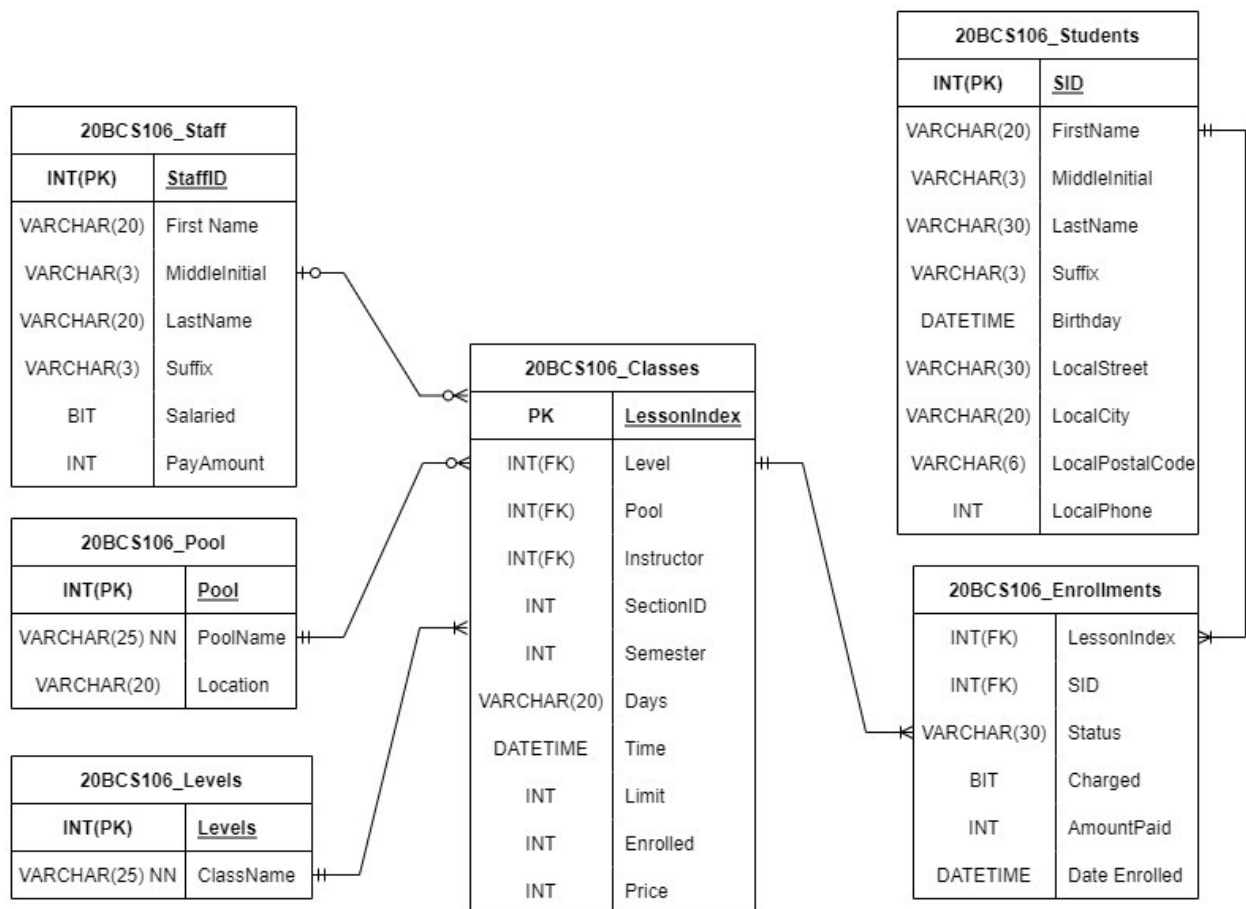
20BCS106_Pool (Mandatory 1-Optional Many) 20BCS106_Classes

20BCS106_Levels (Mandatory 1-Mandatory Many) 20BCS106_Classes

20BCS106_Classes (Mandatory 1-Mandatory Many) 20BCS106_Enrollment

20BCS106_Enrollment (Mandatory Many- Mandatory 1) 20BCS106_Students

3) Physical Data Model ERD-

4)Weak Entity-

20BCS106_Enrollment is a weak entity because it needs an instance of parent entity(20BCS106_Classes and 20BCS106_Students) to exist and it does not have a primary key. It has two foreign keys namely LessonIndex and SID which acts as a composite primary key.

We can make 20BCS106_Enrollment a strong entity by adding an extra attribute and making it a primary key, but this approach results in the redundant storage of primary key.

5)Data Redundancy-

There is no data redundancy present as there are no repeated instances between the entities except the foreign keys.