**DBMS-Class Hackathon**

Name:Neha Porwal

Roll No: 20BCS092

Entity-Relationship Diagram:

All the relationships in the above ERD diagram are binary relationships. The cardinality of these relationships is as follows:

• Students-Enrollment : One to Many

• Enrollment-Classes: Many to One

• Classes-Staff: Many to One

• Classes-Pool: Many to One

• Classes-Level: Many to One

A screenshot of a computer

Description automatically generated

As we can see from the diagram above, an instructor can take multiple courses, but it is mandatory for each class to have an instructor (staff) while staff participation is optional, i.e. no instructor is required class specified for it. Likewise, a pool can be used to animate multiple courses but it is required for the course must take place inside a swimming pool. Maybe there's a swimming pool where there's no classroom is performed, so its participation in the relationship is optional. A course must be at a certain level (beginner, intermediate, advanced, etc.) There will be at least one class for each level. In the above diagram, we can see that registration is a weak entity because it has no unique primary key. A student can register for several classes and some Students can register for the same class. Therefore, we cannot use student cards or class IDs to registration determination. Therefore, we use a composite key consisting of two foreign keys SID and LessonIndex and assign it as primary key. So we can give everyone save a unique identifier and convert it to a strong entity using two powerful entities. Since a student must register and a class must have a student registered, we can infer that a class will have at least one student. It may happen that a lesson takes place more than once a day for the same group of students. Maybe due to time conflict these lessons are delivered by the same instructor in different groups or by by different instructors in different groups or by different instructors in different groups Pool. In any case, there will be multiple records of this class with a change in only two or three fields. For this reason, any update on the record can be complicated. This can be solved by creating another entity which can be identified by combination of instructor ID and lesson ID.