# HACKATHON

## CS310 DBMS

Name :- Prathamesh P Pai

Roll no:- 20BCS103

Date:- 4th Feb,2022

# Q1)

# Schema:-

**20BCS103Classes** {

Lessonindex : INT ,

Level : INT,

Pool : INT,

Instructor : INT ,

SectionID : INT ,

Semester : INT,

Days : TEXT(20) ,

Time : DATETIME ,

Limit : INT ,

Enrolled : INT ,

Price : INT ,

}

**20BCS103Enrollment** {

LessonIndex : INT ,

SID : INT ,

Status : TEXT(30) ,

Charged : BIT ,

AmountPaid : INT ,

DateEnrolled : DATETIME ,

}

**20BCS103Students** {

SID : INT ,

FirstName : TEXT(20) ,

MiddleInitial : TEXT(3) ,

LastName : TEXT(30) ,

Suffix : TEXT (3) ,

Birthday : DATETIME ,

LocalStreet : TEXT(30) ,

LocalCity : TEXT(20) ,

LocalPostalCode : TEXT(6) ,

LocalPhone : INT ,

}

**20BCS103Staff** {

StaffID : INT ,

FirstName : TEXT(20) ,

MiddleInitial : TEXT(3) ,

LastName : TEXT(20) ,

Suffix : TEXT(3) ,

Salaried : BIT ,

PayAmount : INT ,

}

**20BCS103Pool** {

Pool : INT ,

PoolName : TEXT(25) ,

Location : TEXT (20) ,

}

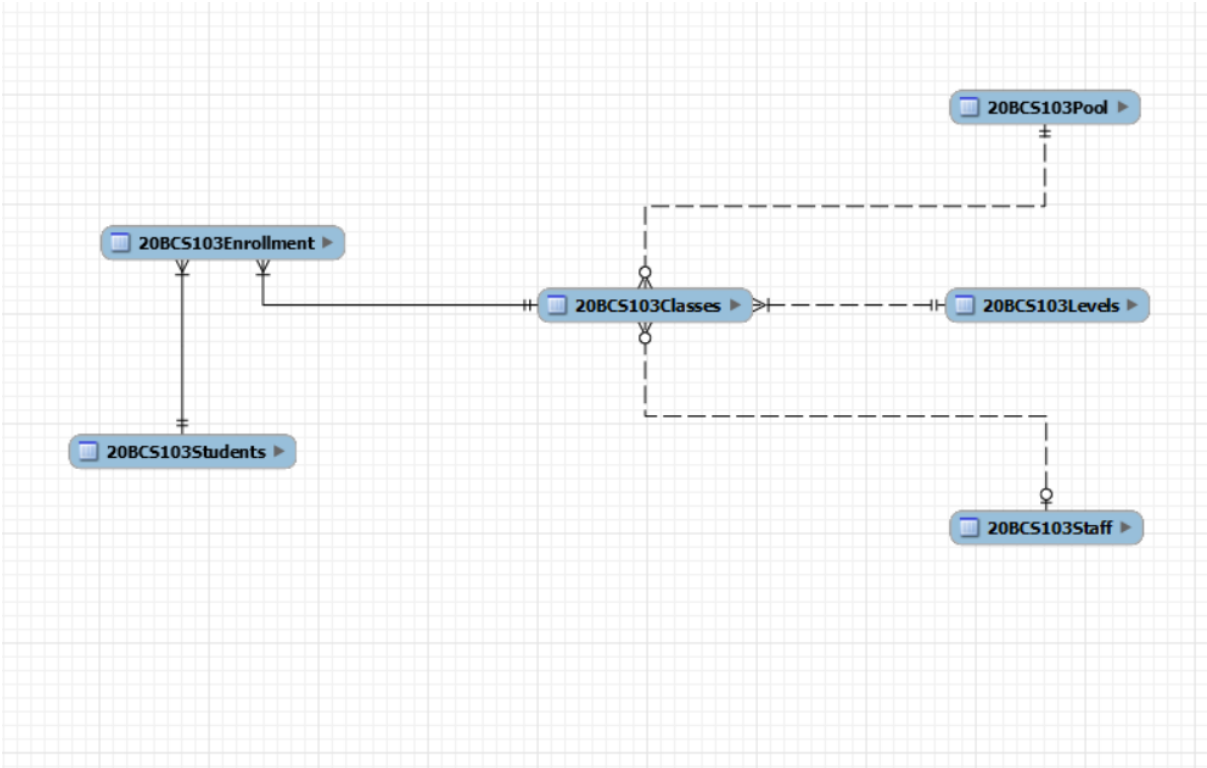
**20BCS103Levels** {

Level : INT ,

ClassName : TEXT(25) ,

}

# Conceptual Diagram : -



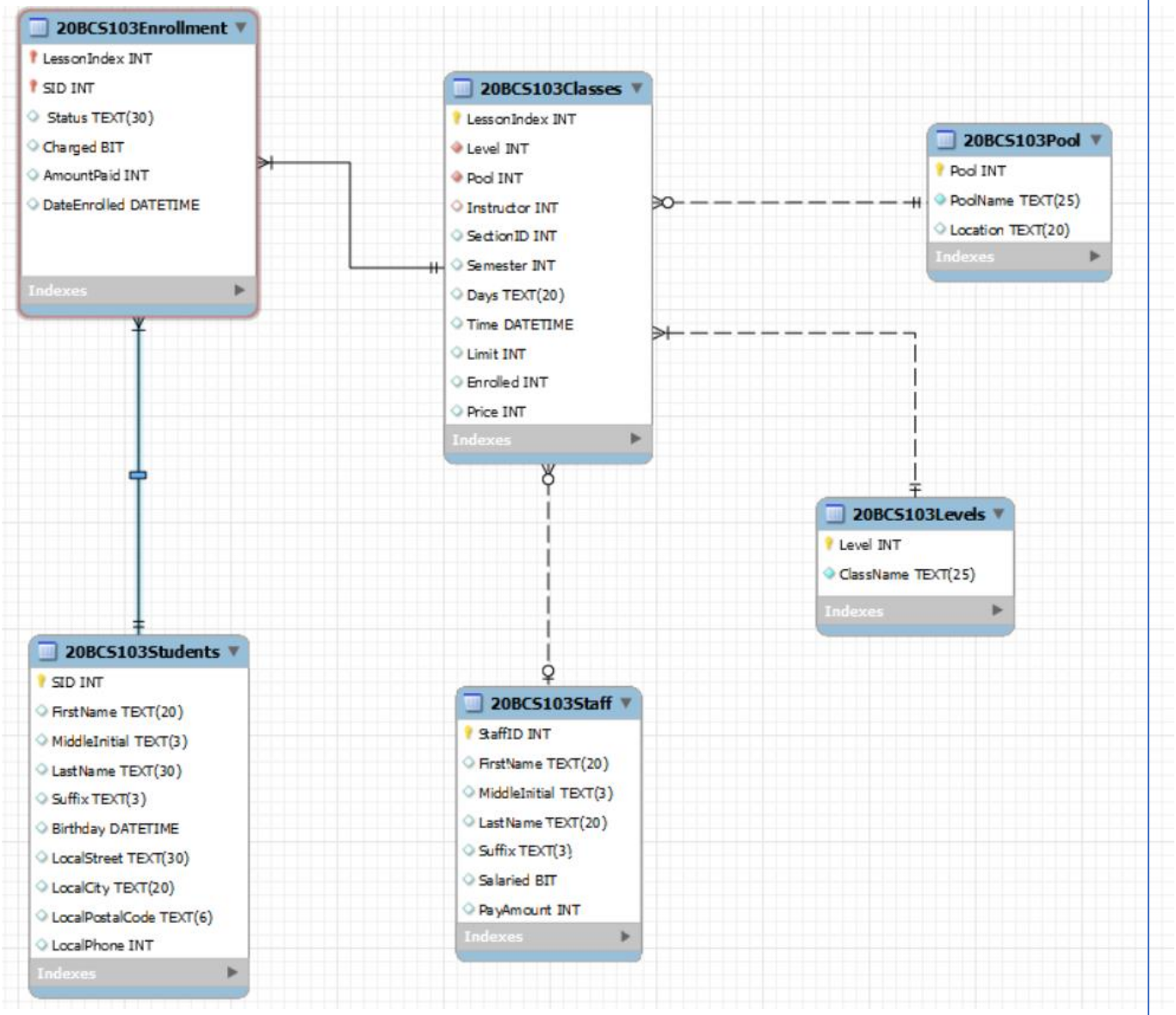
# Q2) Cardinality

| | | |
|---|---|---|
| 20BCS103Classes | Mandatory 1 – Mandatory Many | 20BCS103Enrollment |
| 20BCS103Enrollment | Mandatory Many – Mandatory 1 | 20BCS103Students |
| 20BCS103Staff | Optional 1 – Optional Many | 20BCS103Classes |
| 20BCS103Pool | Mandatory 1 – Optional Many | 20BCS103Classes |
| 20BCS103Levels | Mandatory 1 – Mandatory Many | 20BCS103Classes |

# Degree

| Relation | Degree |
|---|---|
| Classes | 11 |
| Enrollment | 6 |
| Staff | 7 |
| Pool | 3 |
| Levels | 2 |
| Students | 10 |

# Q3 Physical Data Model



# Q4 Weak Entities

20BCS103Enrollment is a weak entity because it does not have a primary key , It forms weak relationships which is denoted by straight lines .

It forms a M:N relation between 20BCS103_Students and 20BCS103_Classes, This entity cannot be made strong since it is an associative entity and already has a composite key , there wouldn’t be a need to add a primary key of its own.

# Q5 Data redundancy

There is no data redundancy in the Database architecture since no two different tables have same data attributes.