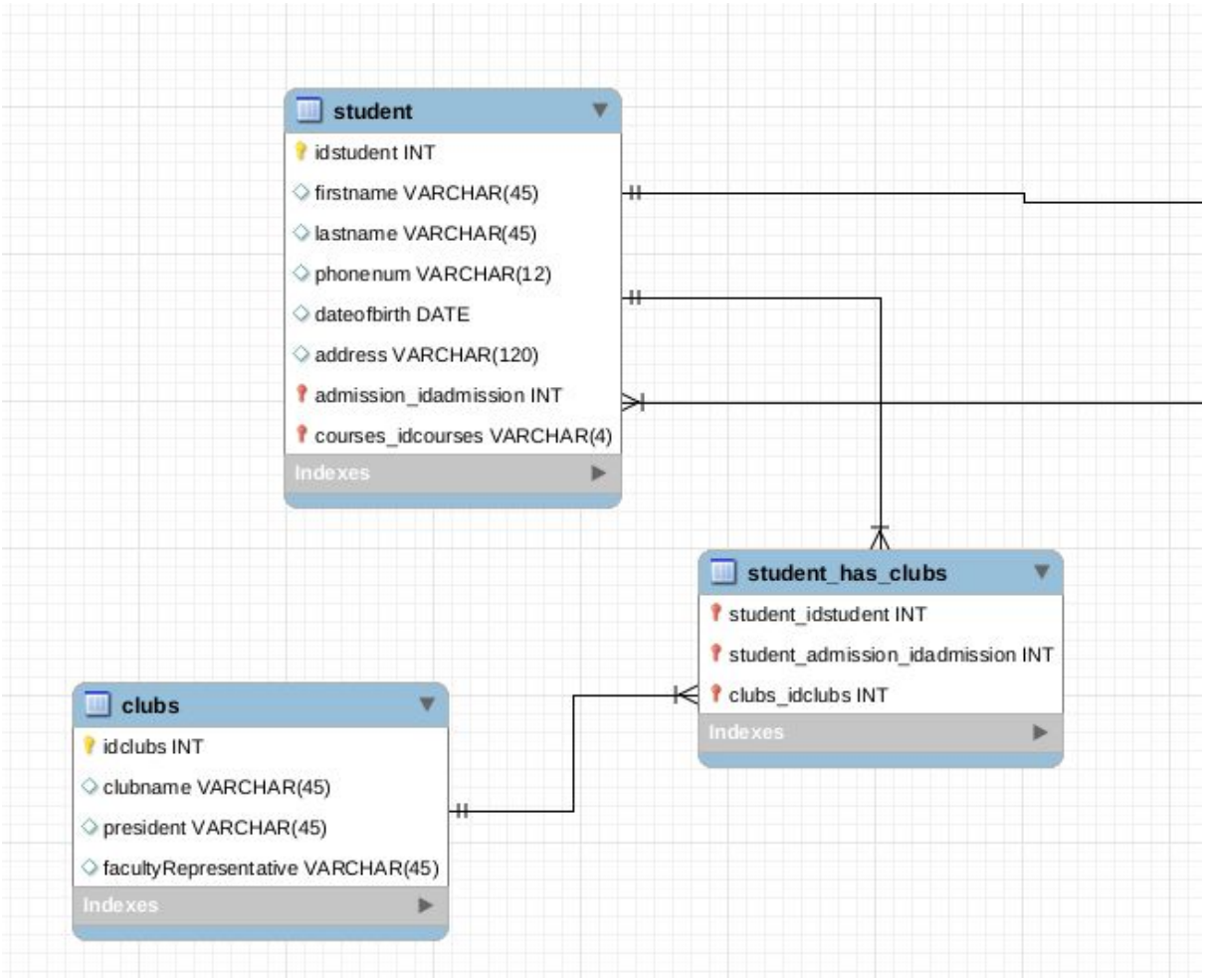
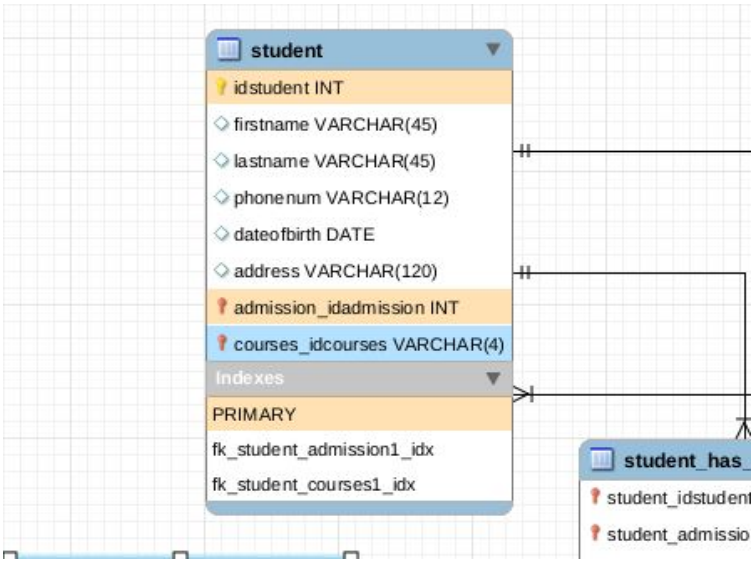
1. Showcase one Many-Many relation.

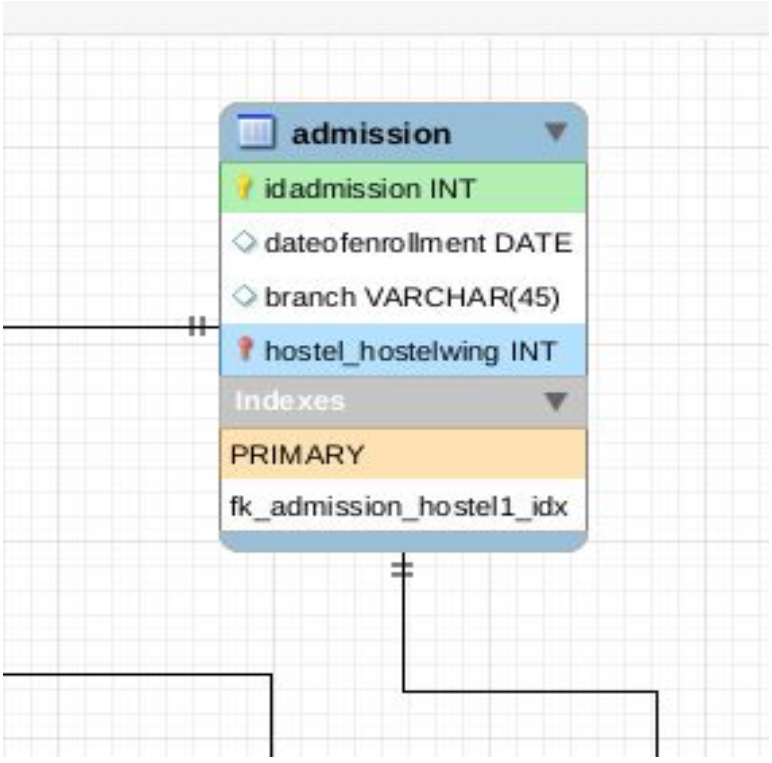


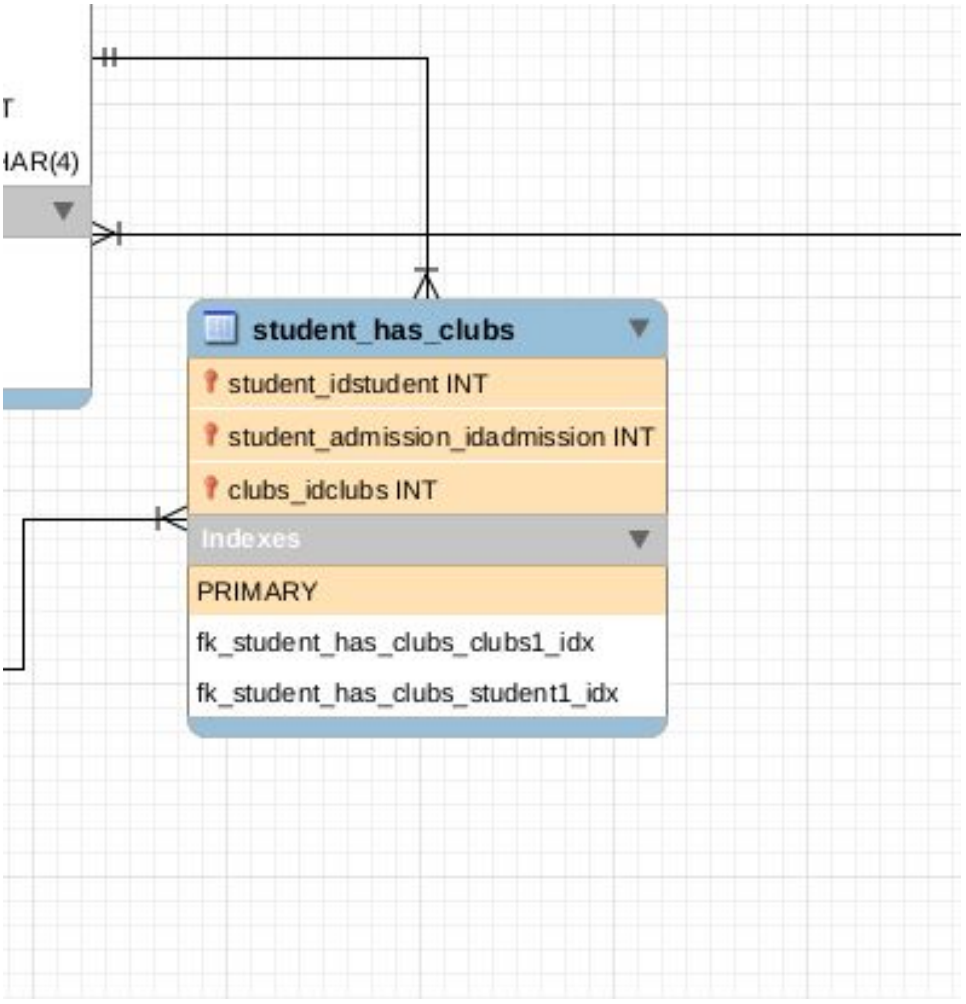
Student_has_clubs → students
Student_has_clubs → clubs

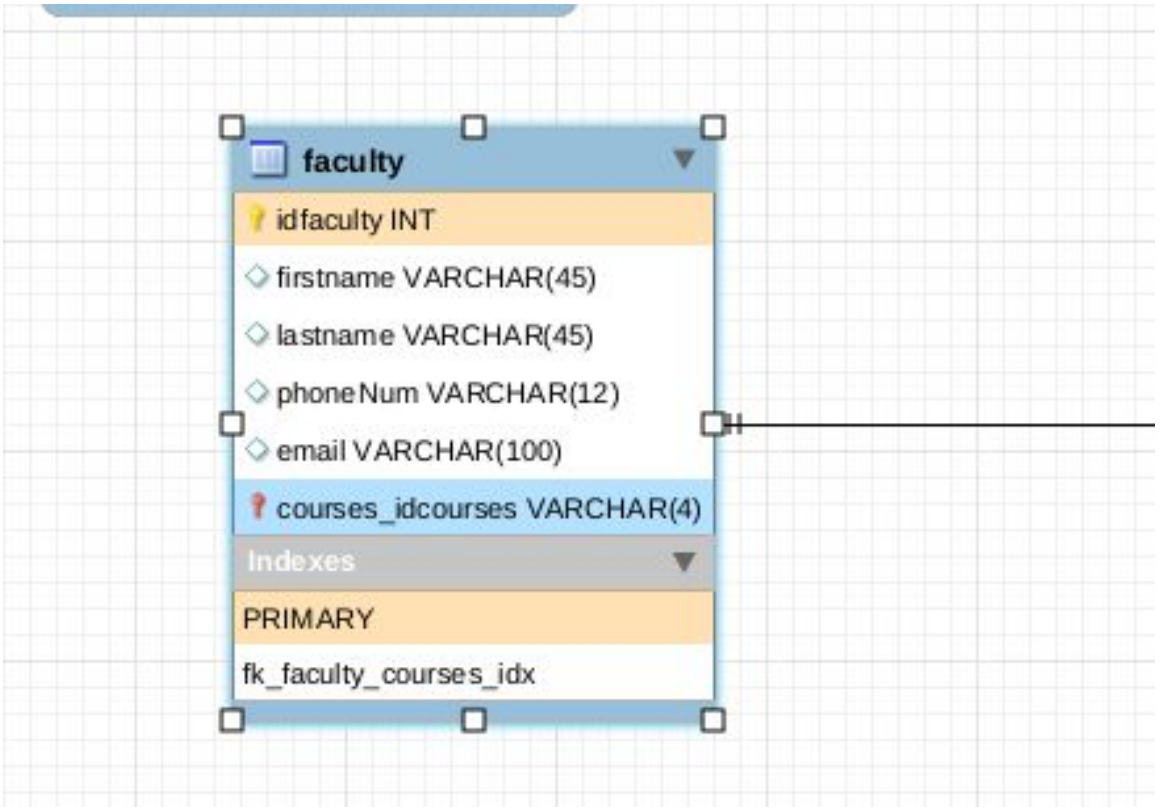
2. Represent Composite key and Weak Entity in your Database.

   Composite keys in student {idstudent, admission_idadmission, courses_idcourses}






student_has_clubs
student_idstudent INT
student_admission_idadmission INT
clubs_idclubs INT
Indexes
PRIMARY
fk_student_has_clubs_clubs1_idx
fk_student_has_clubs_student1_idx

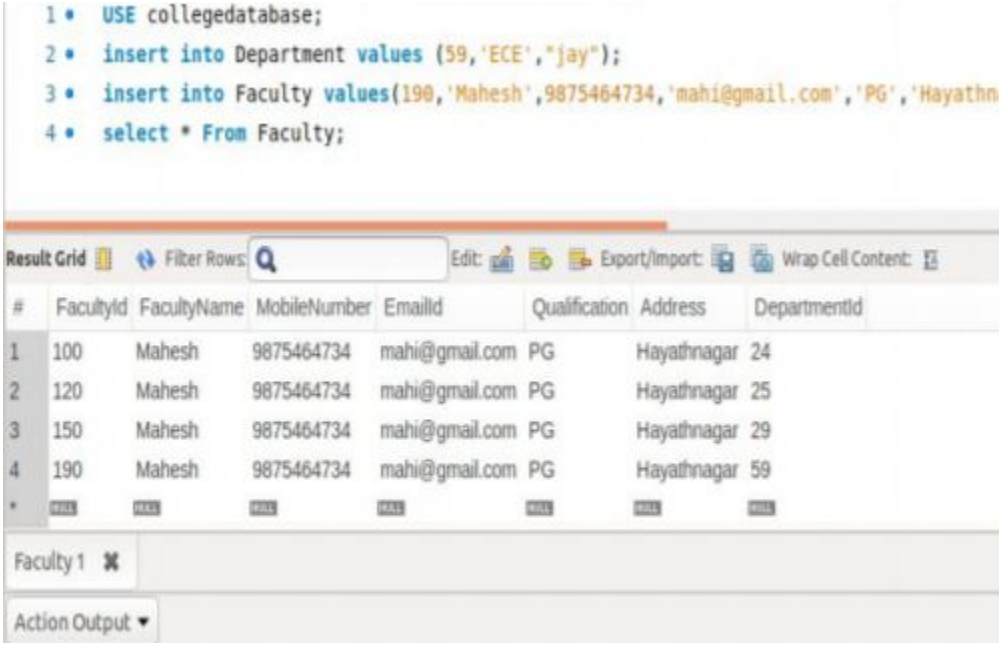

faculty
idfaculty INT
firstname VARCHAR(45)
lastname VARCHAR(45)
phoneNum VARCHAR(12)
email VARCHAR(100)
courses_idcourses VARCHAR(4)
Indexes
PRIMARY
fk_faculty_courses_idx

Composite keys list-

Table names	Attributes
student	{idstudent, admission_idadmission, courses_idcourses}
admission	{idadmission, hostel_hostelwing}
student_has_clubs	{student_idstudent, student_admission_idadmission, clubs_idclubs}
faculty	{idfaculty, courses_idcourses}

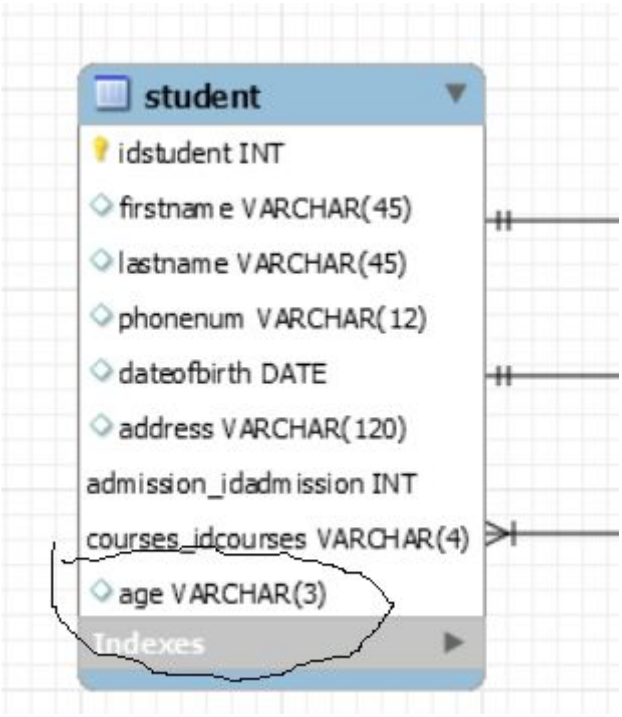
3.Violation of Primary Key, Unique Not Null and default key constraints through Insertion.

PRIMARY KEY-a key which uniquely identifies a row in a given table.It must have unique values and cannot contain nulls.
UNIQUE NOT NULL-all unique elements are present in that column and no duplicate values allowed and the value cannot be null.
DEFAULT:The DEFAULT constraint provides a default value to a column when there is no value provided while inserting a record into a table.



Inserting duplicate key into column AdmissionID which is a primary key.

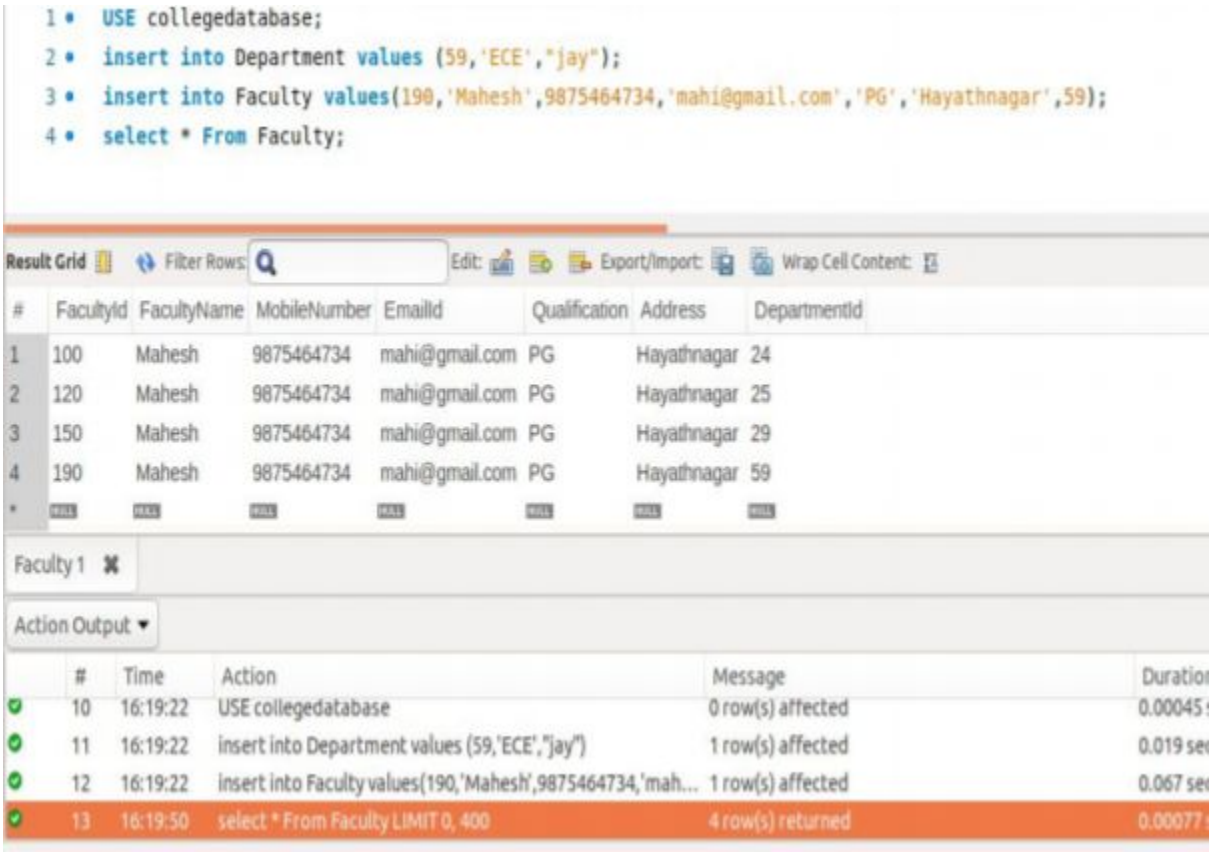
4.show a derived attribute in database design?



Age can be derived from the date of birth so there exists a derived attribute in the database.

5.Inserting Tuples into dependant tables first:

In entity Faculty, departmentId is the foreign key referenced from Department entity.
Inserting tuples into faculty without inserting into Department.



Inserting tuples into faculty after inserting into Department entity