NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR

Cachar, Assam

B.Tech. Vth Sem

Subject Code: CS-312

Subject Name: Database Management System

Submitted By:

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Branch : CSE – B

1. **From the following problem statement identify the possible entity sets, their attributes, and relationships:**

   SE VLabs Inc. is a young company with a few departments spread across the country. As of now, the company has a strength of 200+ employees. Each employee works in a department. While joining, a person has to provide a lot of personal and professional details including name, address, phone #, mail address, date of birth, and so on. Once all these information are furnished, a unique ID is generated for each employee. He is then assigned a department in which he will work. There are around ten departments in the company. Unfortunately, two departments were given same names. However, departments too have ID's, which are unique.

   Note: Try to use the features of the interface provided to capture as much details as possible.

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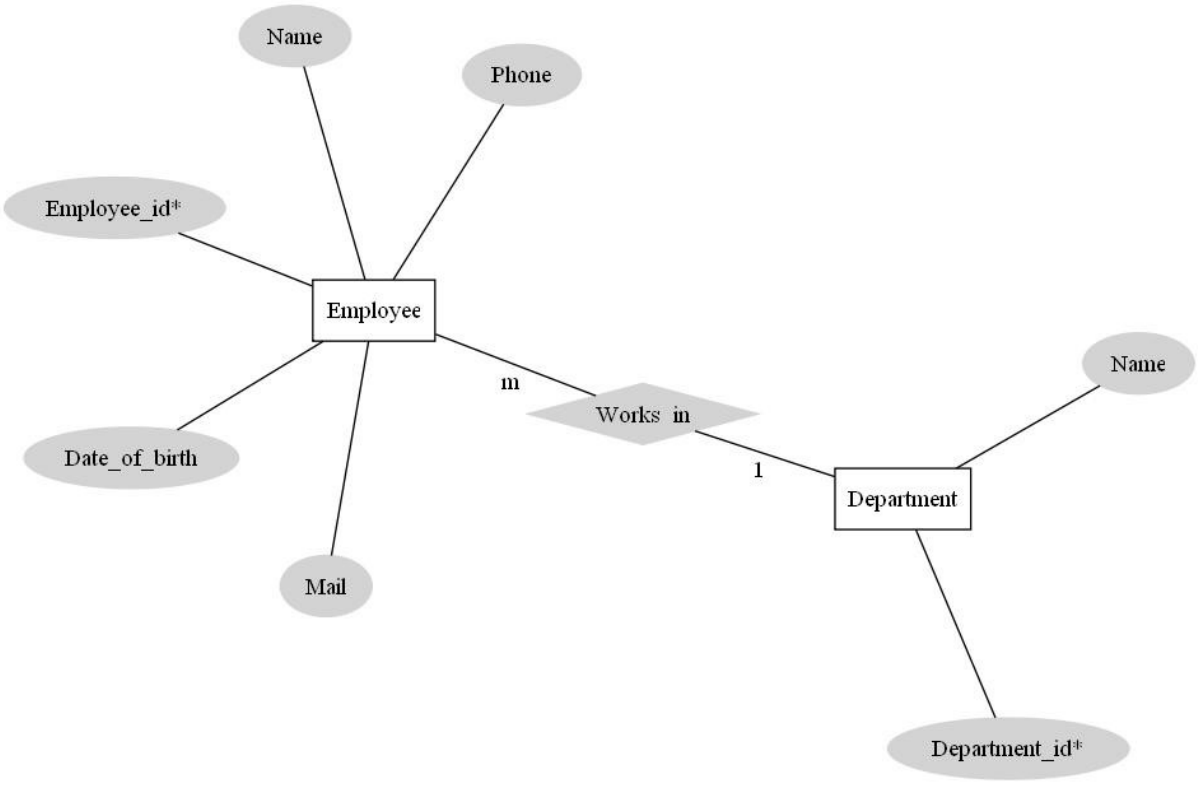
Table #4: Entities and their attributes

Entity	Attributes	Weak
Employee	• Name • Phone • Mail • Date_of_birth • Employee_id	No
Department	• Department_id • Name	No

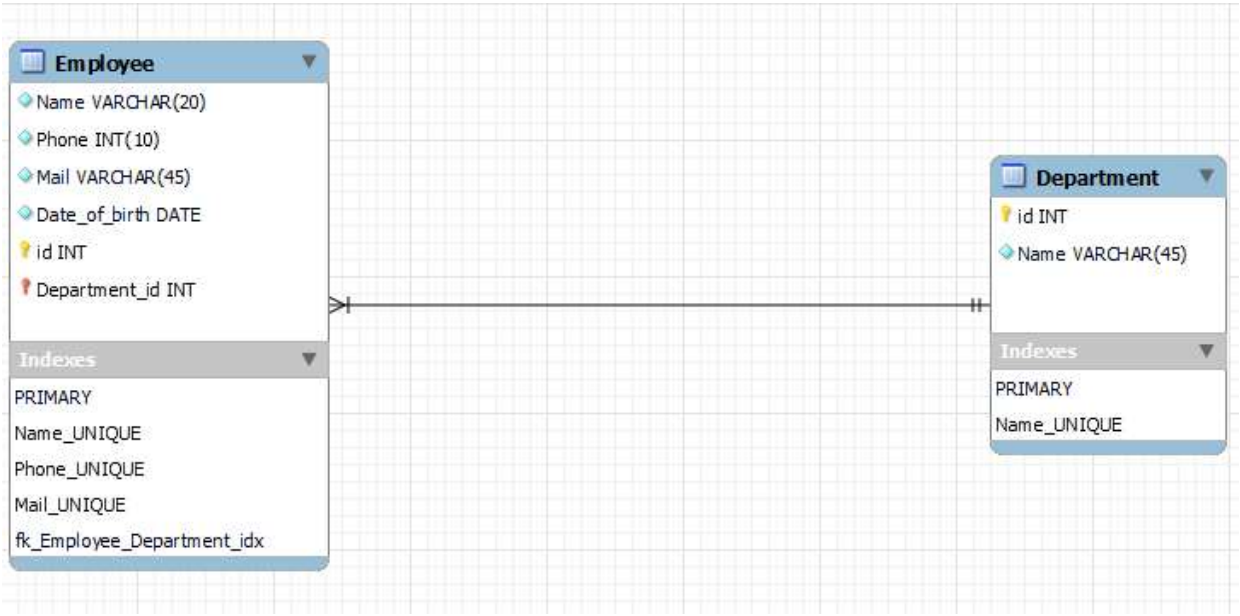
Table #5: Relationships between entities

Entity	Relation	Entity	Constraint Type	Remove
Employee	Works_in	Department	Many To One	

ER DIAGRAM SOLUTION FROM IITKGP WEBSITE:



ER DIAGRAM MADE ON MySQL WORKBENCH



2. Draw an ER diagram for the following problem:

The latest cab services agency in the city has approached you to develop a Cab Management System for them. They would be using this software to efficiently manage and track different cabs that are operated by them. Cabs are solely owned by the agency. They hire people in contracts to drive the cabs. A cab can be uniquely identified by, like any other vehicle in the country, its license plate. A few different categories of cars are available from different manufacturers. And a few of them are AC cars. Cab drivers are given an identification card while joining. The ID card contains his name, permanent address, phone number, date of joining and duration of contract. Also, a unique alphanumeric code is assigned to each number. The agency provides service from 8 AM to 8 PM. Whenever any passenger books a cab, an available cab is allocated for him. The booking receipt given to the passenger contains the car #, source and destination places. Once he reaches the destination, he signs on a duplicate copy of the receipt and gives back to the driver. Driver must submit this duplicate copy signed by the passenger at the agency for confirmation. To evaluate their quality of service, the agency also wants a (optional) customer satisfaction survey, where passengers can provide feedback about their journey through the agency's website.

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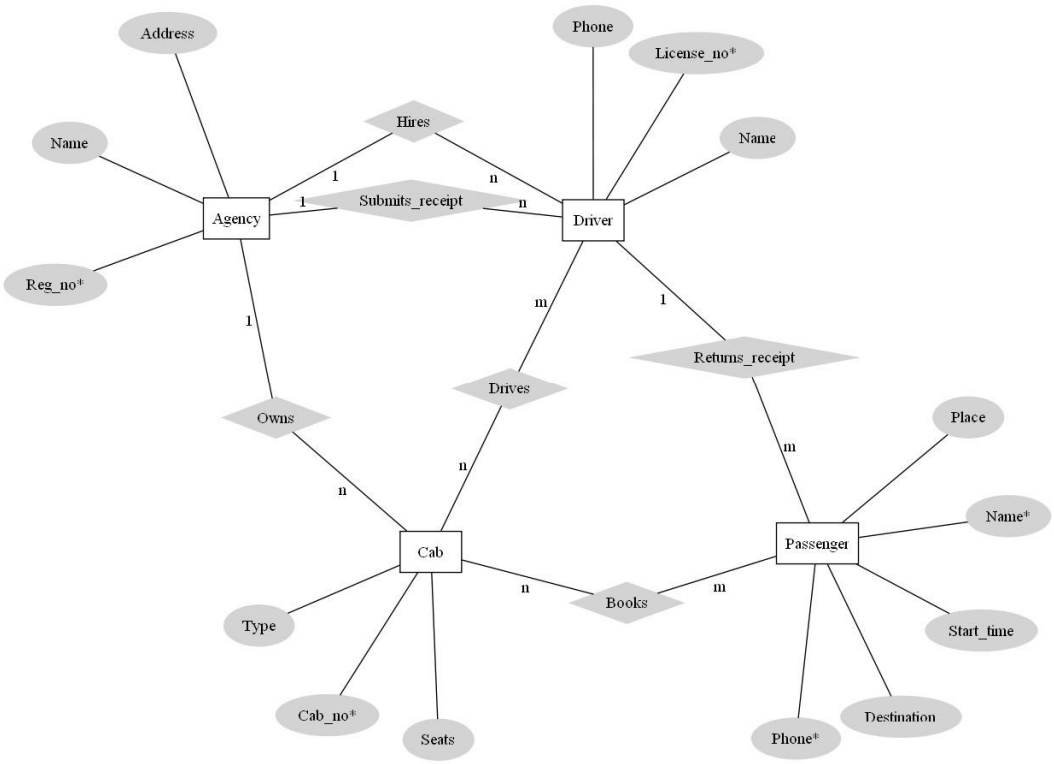
Table #4: Entities and their attributes

Entity	Attributes	Weak
Agency	• Reg_no • Name • Address	No
Cab	• Cab_no • Type • Seats	No
Passenger	• Name • Phone • Start_time • Place • Destination	No
Driver	• License_no • Name • Phone	No

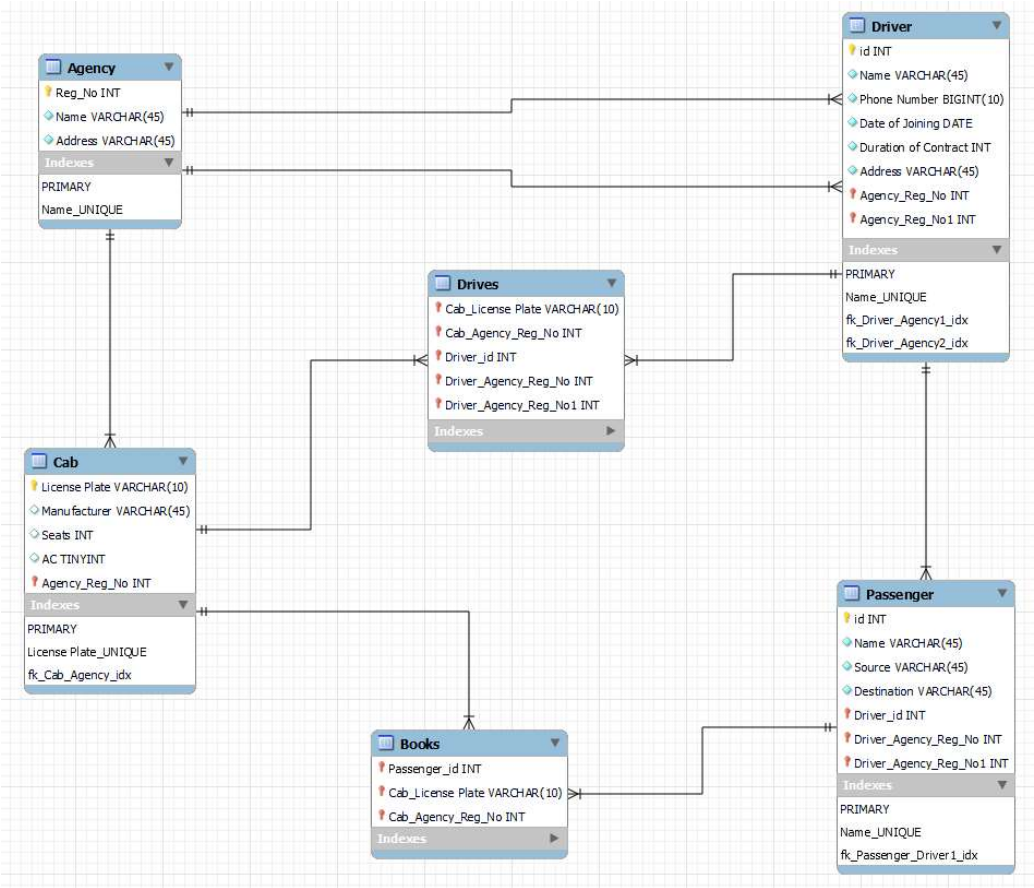
Table #5: Relationships between entities

Entity	Relation	Entity	Constraint Type	Remove
Agency	Owns	Cab	One To Many	
Agency	Hires	Driver	One To Many	
Agency	Submits_receipt	Driver	One To Many	
Driver	Drives	Cab	Many To Many	
Driver	Returns_receipt	Passenger	One To Many	
Passenger	Books	Cab	Many To Many	

ER DIAGRAM SOLUTION FROM IITKGP WEBSITE:



ER DIAGRAM MADE ON MySQL WORKBENCH



3. Create the following tables with the given structures and insert data as specified:

A. STUDENTS

S_id	number (4)
S_name	varchar2 (10)
Course	varchar2 (10)
City	varchar2 (10)
State	varchar2 (10)
Mark	number (7, 2)

B. TEACHERS

T_id	number (4)
T_name	varchar2 (10)
City	varchar2 (10)
State	varchar2 (10)

C. GUIDED

G_Id	number (4)
G_date	date
G_year	number (4)
S_id	number (4)
T_id	number (4)

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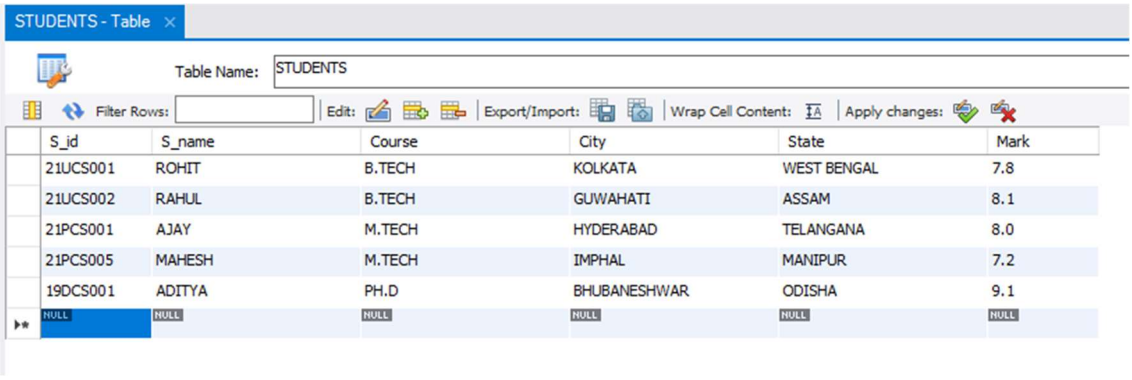
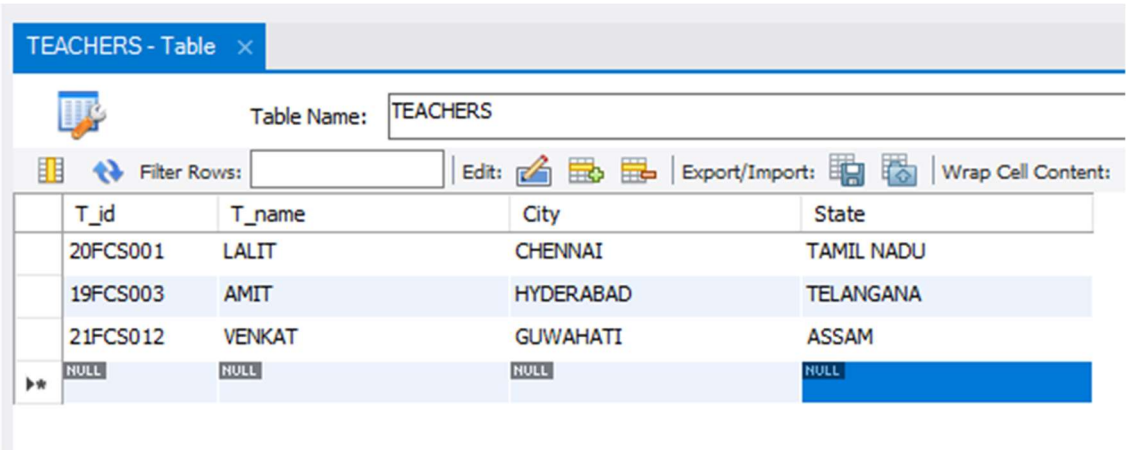


S_id	S_name	Course	City	State	Mark
21UCS001	ROHIT	B.TECH	KOLKATA	WEST BENGAL	7.8
21UCS002	RAHUL	B.TECH	GUWAHATI	ASSAM	8.1
21PCS001	AJAY	M.TECH	HYDERABAD	TELANGANA	8.0
21PCS005	MAHESH	M.TECH	IMPHAL	MANIPUR	7.2
19DCS001	ADITYA	PH.D	BHUBANESHWAR	ODISHA	9.1
NULL	NULL	NULL	NULL	NULL	NULL



T_id	T_name	City	State
20FCS001	LALIT	CHENNAI	TAMIL NADU
19FCS003	AMIT	HYDERABAD	TELANGANA
21FCS012	VENKAT	GUWAHATI	ASSAM
NULL	NULL	NULL	NULL

GUIDED - Table

Table Name: GUIDED

Filter Rows: Edit: Export/Import: Wrap C

G_id	G_date	G_year	S_id	T_id
21CS01	2-FEB-2021	2021	21UCS001	20FCS001
19CS01	19-JUN-2019	2019	19DCS001	19FCS003
21CS02	2-JUN-2021	2021	21UCS002	21FCS012
21CS03	2-JUN-2021	2021	21UCS003	20FCS001
21CS04	2-JULY-2021	2021	21PCS001	21FCS012
21CS05	2-FEB-2021	2021	21PCS005	19FCS003
NULL	NULL	NULL	NULL	NULL

ER DIAGRAM