

**American International University – Bangladesh**

**Course Name: Introduction to Database[F]**

**Course Code: CSC 2107**

**Project Final**

**A Database Management System**

**Of**

**A Car Dealing Company**

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**PART A**

**Project overview:**

* This database system will give the car company information and also their customers entries like car model, employee’s name, employee’s salary, customer name, customer address etc. information.

**Technical database summarization:**

* If a company with this database management system wants to know about its worker and sell information then they can easily do it using customer id, car id and employee id.
* Company owner can know which car sold from which branch, who sold it to which customer along with the information of the customer.
* Using this project the owner of the car company can know about his company very easily.

**Project justification:**

* The purpose of this project is to help a car dealer company to store some common data for their data section.

**Scenario**

**Car Dealing Company Database Management**

**Car Dealing Company Database Management Requirements**

Connecting the branch office:

* Every branch office has a id which is named as branch id. Branch office has an address which is called branch address. Phone number named branch phone number.
* Employees works in branch office. And employees has their employee name, id and salary.
* Employees are salesman, manager, cleaner and manager has his phone number and cleaner has his address.

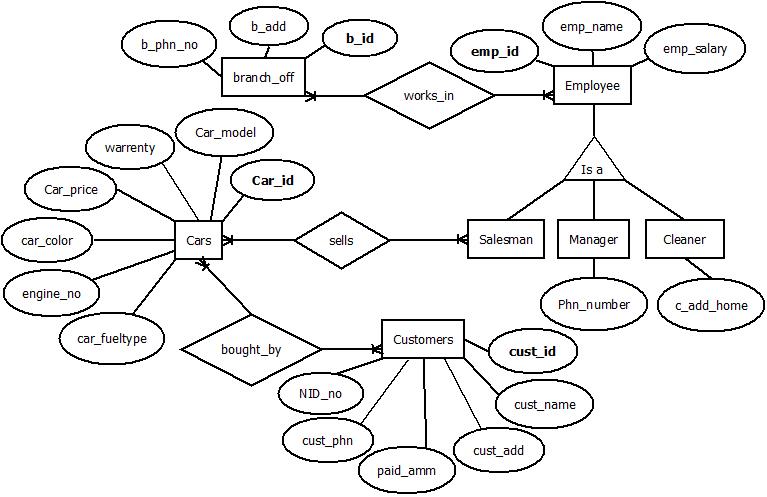
Connecting the cars:

* Salesman sells cars and cars has a car id, car model, car price and car color .
* Car has a minimum warranty engine number and car fuel type.

Connecting the customers:

* Customers bought the cars. When customer has a id named customer id. Each customer has a name which is named customer name. Customer has a customer address, customer phone number and NID number. Each customer have to paid an amount for buying the cars.

**Entity Relationship Diagram(ER diagram) for a car dealer Company**

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# **Bold** letters are denoted as **Primary Key**

**Normalization**

**Works­\_in**

UNF: b\_phn\_no, b\_add, **b\_id, emp\_id,** emp\_name, emp\_salary.

1NF:

Branch Office: **b\_id,** b\_phn\_no, b\_add.

Employee: **emp\_id,** emp\_name, emp\_salary.

2NF:

Branch Office: b\_phn\_no, **b\_id.**

Employee: **emp\_id,** emp\_name, emp\_salary, b\_id.

3NF:

Branch Office: **b\_id,** b\_phn\_no.

Employee: **emp\_id,** emp\_name, emp\_salary.

**Is s**

UNF: **emp\_id,** emp\_name, emp\_salary, salesman, manager, cleaner.

1NF:

Employee: **emp\_id,** emp\_name, emp\_salary.

Salesman: **emp\_id**, salesman.

Manager: **emp\_id**, manager, phn\_number.

Cleaner: **emp\_id**, cleaner, c\_add\_home.

2NF:

Is not needed for this. Because it is same as 1NF.

3NF:

Employee: **emp\_id**, emp\_name.

Salesman: emp\_name.

Manager: emp\_name, phn\_number.

Cleaner: emp\_name, c\_add\_home.

**Sells**

UNF: salesman, **Car\_id**, car\_model, warrenty, car\_price, car\_price, car\_color, engine\_no, car\_fueltype.

1NF:

Salesman: **emp\_id**, emp\_name, salesman.

Cars: **car\_id**, car model, warrenty, car\_price, car\_color, engine\_no, car\_ fueltype.

2NF:

Salesman: **emp\_id**, emp\_name.

Cars: **cars\_id**, cars­\_model, car\_price, warrenty, car\_color, engine\_no, car\_fueltype, emp\_id.

3NF:

Salesman: emp\_name.

Cars: **car\_id**, car\_model, warrenty, emp\_id.

Cars1: car\_model, car\_price, car\_color, engine\_no, car\_fueltype.

**Bought\_by**

UNF: **car\_id**, car\_model, warrenty, car\_price, car\_price, car\_color, engine\_no, car\_fueltype, **cust\_id**, cust\_name, cust\_add, paid\_amm, cust\_phn, NID\_no.

1NF:

Cars: **car\_id**, car model, warrenty, car\_price, car\_color, engine\_no, car\_ fueltype.

Customers: **cust\_id**, cust\_name, cust\_add, paid\_amm, cust\_phn, NID\_no.

2NF:

Cars: **cars\_id**, cars­\_model, car\_price, warrenty, car\_color, engine\_no, car\_fueltype, emp\_id.

Customers: **cust\_id**, cust\_name, cust\_add, paid\_amm, cust\_phn, NID\_no, cars\_id.

3NF:

Cars: **car\_id**, car\_model, warrenty, emp\_id.

Cars1: car\_model, car\_price, car\_color, engine\_no, car\_fueltype.

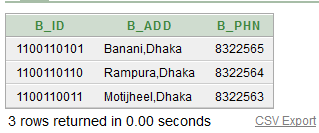
Customers: cust\_id, Nid\_no, paid\_amm, car\_id.

Customers1: Nid\_no, cust\_name, cust\_name, cust\_phn.

**Screen Shots of Sample Data**

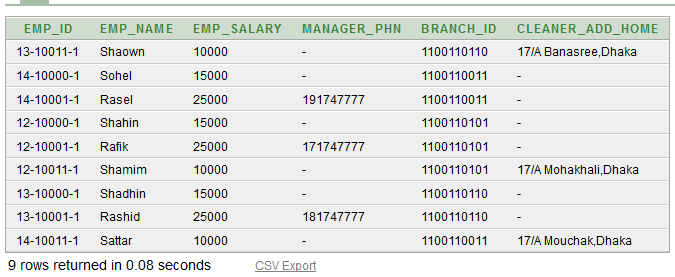
Branch\_off Table:

SELECT \* FROM branch\_off;



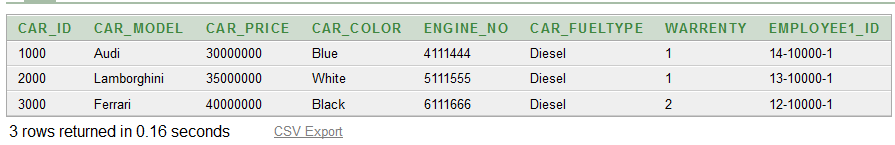
Employee Table:

SELECT \* FROM employee1;



Cars Table:

SELECT \* FROM cars;



Customers Table:

SELECT \* FROM customers;



**SQL command for creating Table**

Branch Office

create table branch\_off(

b\_id number(10) primary key,

b\_add varchar(200) not null,

b\_phn number(12) not null

);

Employee

create table employee1

(

emp\_id varchar(10) primary key,

emp\_name varchar(100) not null,

emp\_salary number(10) not null,

manager\_phn number(10),

branch\_id number(10),

cleaner\_add\_home varchar(100)

);

Cars

create table cars

(

car\_id number(10) primary key,

car\_model varchar(30) not null,

car\_price number(10) not null,

car\_color varchar(10) not null,

engine\_no number(10) not null,

car\_fueltype varchar(10) not null,

warrenty number(2),

employee1\_id varchar(10) not null

);

Customers

create table customers

(

cust\_id number(10) primary key,

cust\_name varchar(100) not null,

cust\_add varchar(100),

paid\_amm number(10),

cust\_phn number(15),

nid\_num number(16) not null,

car\_id number(10) not null

)

**SQL command for data entries**

**Branch info :**

insert into branch\_off values (1100110101, 'Banani,Dhaka', 8322565);

insert into branch\_off values (1100110110, 'Rampura,Dhaka', 8322564);

insert into branch\_off values (1100110011, 'Motijheel,Dhaka', 8322563);

**Employee1 Info :**

insert into employee1 values ('12-10000-1', 'Shahin', '15000',null,1100110101,null);

insert into employee1 values ('12-10001-1','Rafik','25000',0171747777,1100110101,null);

insert into employee1 values ('12-10011-1', 'Shamim', '10000',null,1100110101,'17/A Mohakhali,Dhaka');

insert into employee1 values ('13-10000-1', 'Shadhin', '15000',null,1100110110,null);

insert into employee1 values ('13-10001-1','Rashid','25000',0181747777,1100110110,null);

insert into employee1 values ('13-10011-1', 'Shaown', '10000',null,1100110110,'17/A Banasree, Dhaka');

insert into employee1 values ('14-10000-1', 'Sohel', '15000',null,1100110011,null);

insert into employee1 values ('14-10001-1','Rasel','25000',0191747777,1100110011,null);

insert into employee1 values ('14-10011-1', 'Sattar', '10000',null,1100110011,'17/A Mouchak, Dhaka');

**Cars Info :**

insert into cars values (1000,'Audi', 30000000, 'Blue', 4111444, 'Diesel', 1, '14-10000-1')

insert into cars values (2000,'Lamborghini', 35000000, 'White', 5111555, 'Diesel', 1, '13-10000-1')

insert into cars values (3000,'Ferrari', 40000000, 'Black', 6111666, 'Diesel', 2, '12-10000-1')

**Customer Info :**

insert into customers values (1, 'ARNAB', '12/A,Nikunjo', 30000000, 01875009183, 1960000003, '1000')

insert into customers values (2, 'FARHAN', '11/C, Agargaw', 35000000, 01676518531, 1960000002, '2000')

insert into customers values (3, 'PRANTO', 'Sec-7,Uttara', 40000000, 01720532282, 1960000001, '3000')

**SQL command for creating view:**

create view Bills1

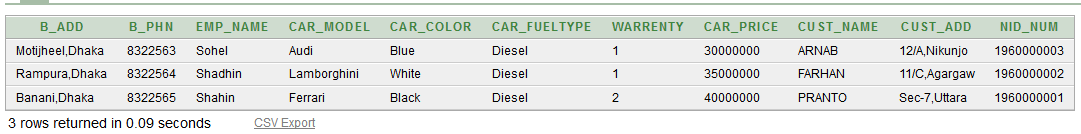
as(select b.b\_add,b.b\_phn,e.emp\_name,c.car\_model,c.car\_color,c.car\_fueltype,c.warrenty,c.car\_price,cs.cust\_name,cs.cust\_add,cs.nid\_num

from branch\_off b,employee1 e,cars c, customers cs

where b.b\_id=e.branch\_id and e.emp\_id=c.employee1\_id and c.car\_id=cs.c\_id);

select \*

from Bills1;



**Sample Questions :**

1.Show all the customers informations.

Ans: select \*

from customers;

2.Show all the employee name from Branch number 1100110011.

Ans: select emp\_name

from employee1

Where branch\_id=1100110011;

3. Show the employee name & branch number for all employees whose name contains the letter s.

Ans: select e.emp\_name,e.branch\_id

from employee1 e

join employee1 n

on e.branch\_id=n.branch\_id

and n.emp\_name like '%s%' ;

4. Show the employee name, salary and branch number for all employees who work in the branch as employee number 13-10001-1.

Ans: select emp\_name,emp\_salary,branch\_id

from employee1

where branch\_id=(select branch\_id

from employee1

where emp\_id='13-10001-1')

5. Display the car number, model and price for the customer whose name is PRANTO.

Ans: select car\_id, car\_model, car\_price

from cars

where car\_id=(select car\_id

from customers

where cust\_name='PRANTO');

**Conclusion:**

The purpose of this car dealer company database management system is to store all the information about the company’s car and the information of the employer of this company.

**PART B**

**Learning Experience**:

This project has been a rewarding experience in more than one way. The entire project work has enlightened us in the following areas.

* Digital car dealership solutions for Sales and Service .
* Customer information available on every terminal device, securely from the Cloud.
* Data synchronization with the Dealer-Management-System.
* Efficient processes for a digital customer experience.

**Problems Faced :**

* Increasing Competitive Pressures.
* Service Pressures.
* Finding more qualified leads.
* Competing with a lower-priced competitor whose promises won't hold up over time.

Despite our best effort there might be some faults in our developed database. We hope to learn from our mistakes and apply the knowledge that we gained from this project in the future to craete more professional level database.