



AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH

(AIUB)

Project Name : **Car Transport Management System**

Course Name : Introduction to Database

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INTRODUCTION:

Database Management system (DBMS) is a collection of programs for managing data and simultaneously it support different type of users to create, manage, retrieve, update and store information. The vital functions of the database are that it not only manages database engine which is used to access the data but also the database schema which is used to define the logical structure of a database.

We used the concept of DBMS in our project (Car Transport Management System).

SCENARIO:

A car transport company wants to create a database management system which is CTMS. CTMS is required to store `ctms_id`, `ctms_name`, `ctms_address`, `ctms_email`, `ctms_phone` number (multivalued). CTMS manages user. Many users are managed by a `ctms`. To identify the user system also stores `user_id`, `user_name`, `user_type` (multivalued) and password. Users are two types. One is driver and another one is customer. Exactly one user has one driver. Driver is identified by `driver_id`, `driver_name`, `driver_gender`, `driver_address`, `driver_phone` number (multivalued), `license_number`, `driver date_of_birth`. Exactly one user has one customer. Customer is identified by `customer_id`, `customer_name`, `customer_gender`, `customer_address`, `customer_phone` number (multivalued) and `customer date-of_birth`. Every driver takes salary. Many drivers take many salaries. CTMS manage many salaries. The system also stores `salary_id` and `salary_amount`. Driver works for different shifts. To identify the shift `shift_id` and `shift_type`(multivalued) are also stored. Driver selects ride. One driver can select one ride. `Ride_id`, `pickup_location`, `drop_location`, `ride_time`, `fare`, `rating`, `distance` are also stored in the system. Customers book ride. Only one customer can book one ride. Car is chosen for ride. Car is identified by `car_id`, `registration_number`, `seating_capacity`, `color`, `type`. Only one car is suitable for one ride. Driver owns car. One driver can own many cars. Car needs repair. To identify the repairing process `repair_id`, `repair amount` (multivalued), `repair_type` (multivalued) are also stored. Driver manages repair. One driver manages many kinds of repair. Customer pays for ride. Many customers pay for many rides. In different occasion CTMS manages many offers. Customer takes offers. Many customer can take many offer. To identify the offers `offer_id` and `offer_types` (multivalued) are also stored.



NORMALIZATION:

CTMS-----1-----MANAGE-----*-----USER

UNF:

Manage(ctms_phone,ctms_name,ctms_id,ctms_address,ctms_email,u_id,password,u_name,u_type)

1NF:

Ctms_phone and u_type are multivalued attribute.

1.ctms_phone,ctms_name,ctms_id,ctms_address,ctms_email,u_id,password,u_name,u_type.

2NF:

1. ctms_id,ctms_phone,ctms_name, ctms_address,ctms_email.

2. u_id,password,u_name,u_type.

3NF: No transitive dependency.

1. ctms_id,ctms_phone,ctms_name, ctms_address,ctms_email.

2. u_id,password,u_name,u_type.

Table Creation:

1. ctms_id, ctms_phone,ctms_name, ctms_address,ctms_email.

2. u_id,password,u_name,u_type, **ctms_id,ctms_phone.**

USER-----1-----HAS-----1----- DRIVER

UNF:has(u_id,password,u_name,u_type,d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no)

1NF:

u_type and d_phone are multivalued attribute.

1.u_id,password,u_name,u_type,d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no.

2NF:

1. u_id,password,u_name,u_type.

2.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no

3NF:

No transitive dependency.

1. u_id,password,u_name,u_type.

2.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no

Table Creation:

1. u_id,password,u_name, u_type.

2.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no,u_id,u_type.

USER-----1-----MANAGE-----1-----CUSTOMER

UNF:has(u_id,password,u_name,u_type,c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone)

1NF:

u_type and c_phone are multivalued attribute.

1.u_id,password,u_name,u_type,c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

2NF:

1. u_id,password,u_name,u_type.

2.c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

3NF:

No transitive dependency.

1. u_id,password,u_name,u_type.

2. c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

Table Creation:

1. u_id,password,u_name,u_type.

2.c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone,**u_id,u_type**

CUSTOMER-----1-----BOOKS-----1-----RIDE

UNF:books(c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone,r_id,pickup_location,drop_location,r_time,fare,rating,distance).

1NF:

c_phone is a multivalued attribute.

1.c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone,r_id,pickup_location,drop_location,r_time,fare,rating,distance.

2NF:

1. c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

2.r_id,pickup_location,drop_location,r_time,fare,rating,distance.

3NF:

No transitive dependency.

1. c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

2.r_id,pickup_location,drop_location,r_time,fare,rating,distance.

Table Creation:

1.c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone,r_id.

2.r_id,pickup_location,drop_location,r_time,fare,rating,distance.

CUSTOMER-----*-----PAYS FOR-----*-----RIDE

UNF: pays_for(c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone,r_id,pickup_location,drop_location,r_time,fare,rating,distance).

1NF:

c_phone is a multivalued attribute.

1.c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone,r_id,pickup_location,drop_location,r_time,fare,rating,distance.

2NF:

1.c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

2.r_id,pickup_location,drop_location,r_time,fare,rating,distance.

3NF:

No transitive dependency.

1.c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

2.r_id,pickup_location,drop_location,r_time,fare,rating,distance.

Table Creation:

1.c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

2.r_id,pickup_location,drop_location,r_time,fare,rating,distance.

3.c_id,c_phone,r_id.

RIDE -----1-----CHOSEN FOR-----1-----CAR

UNF:chosen

for(r_id,pickup_location,drop_location,r_time,fare,rating,distance,
ca_id,reg_no,seating_capacity,color,type).

1NF:

There is no multivalued attribute.

1.r_id,pickup_location,drop_location,r_time,fare,rating,distance,
ca_id,reg_no,seating_capacity,color,type.

2NF:

1.r_id,pickup_location,drop_location,r_time,fare,rating,distance.

2.ca_id,reg_no,seating_capacity,color,type.

3NF:

No transitive dependency.

1.r_id,pickup_location,drop_location,r_time,fare,rating,distance.

2.ca_id,reg_no,seating_capacity,color,type.

Table Creation:

1.r_id,pickup_location,drop_location,r_time,fare,rating,distance.

2.ca_id,reg_no,seating_capacity,color,type,**r_id** .

CAR-----1-----NEEDS-----*-----REPAIR

UNF:

Needs(ca_id,reg_no,seating_capacity,color,type,re_id,re_amount,re_type)

1NF:

re_type and re_amount are multivalued attribute.

1. ca_id,reg_no,seating_capacity,color,type,re_id,re_amount,re_type.

2NF:

1. ca_id,reg_no,seating_capacity,color,type.

2. re_id,re_amount,re_type.

3NF:

No transitive dependency.

1. ca_id,reg_no,seating_capacity,color,type

2. re_id,re_amount,re_type.

Table Creation:

1. ca_id,reg_no,seating_capacity,color,type

2. re_id,re_amount,re_type,**ca_id**.

DRIVER-----*-----TAKE-----*-----SALARY

UNF:take(d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no,s_id,s_amount)

1NF:

d_phone is multivalued attribute.

1.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no,
2.s_id,s_amount.

2NF:

1.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no
2.s_id,s_amount.

3NF:

No transitive dependency.

1.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no
2.s_id,s_amount.

Table Creation:

1.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no
2.s_id,s_amount.

3. d_id, d_phone, d_id.

DRIVER-----1-----WORKS_FOR-----*-----SHIFT

UNF:works_for(d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no,sh_id,shift_type)

1NF:

d_phone and shift_type is multivalued attribute.

1.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no,
sh_id,shift_type.

2NF:

1.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no
2.sh_id,shift_type.

3NF:

No transitive dependency.

1.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no
2.sh_id,shift_type.

Table Creation:

1.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no
2.sh_id , shift_type , **d_id** , **d_phone**

DRIVER-----1-----MANAGE-----*-----REPAIR

UNF:manage(d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no,re_id,re_amount,re_type)

1NF:

d_phone and re_type , re_amount are multivalued attribute.

1.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no,re_id,re_amount,re_type.

2NF:

1.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no

2.re_id,re_amount,re_type.

3NF:

No transitive dependency.

1.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no

2.re_id,re_amount,re_type.

Table Creation:

1.d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no

2.re_id,re_amount,re_type, **d_id , d_phone.**

DRIVER-----1-----OWNS-----*-----CAR

UNF:

Owns(d_id,d_name,d_gender,d_address,type,d_date_of_birth,d_phone,license_no,ca_id,reg_no,seating_capacity,color,type.)

1NF:

d_phone is a multivalued attribute.

1.d_id,d_name,d_gender,d_address,type,d_date_of_birth,d_phone,license_no,ca_id,reg_no,seating_capacity,color,type.

2NF:

1.d_id,d_name,d_gender,d_address,type,d_date_of_birth,d_phone,license_no.

2.ca_id,reg_no,seating_capacity,color,type.

3NF:

No transitive dependency.

1.d_id,d_name,d_gender,d_address,type,d_date_of_birth,d_phone,license_no.

2.ca_id,reg_no,seating_capacity,color,type.

Table Creation:

1.d_id,d_name,d_gender,d_address,type,d_date_of_birth,d_phone,license_no.

2.ca_id,reg_no,seating_capacity,color,type,**d_id,d_phone.**

DRIVER-----1-----SELECTED-----1-----RIDE

UNF:

selected(d_id,d_name,d_gender,d_address,type,d_date_of_birth,d_phone,license_no,r_id,pickup_location,drop_location,r_time,fare,rating,distance)

1NF:

d_phone is a multivalued attribute.

1.d_id,d_name,d_gender,d_address,type,d_date_of_birth,d_phone,license_no,r_id,pickup_location,drop_location,r_time,fare,rating,distance.

2NF:

1.d_id,d_name,d_gender,d_address,type,d_date_of_birth,d_phone,license_no.

2.r_id,pickup_location,drop_location,r_time,fare,rating,distance.

3NF:

No transitive dependency.

1.d_id,d_name,d_gender,d_address,type,d_date_of_birth,d_phone,license_no.

2.r_id,pickup_location,drop_location,r_time,fare,rating,distance.

Table Creation:

1.d_id,d_name,d_gender,d_address,type,d_date_of_birth,d_phone,license_no,r_id

2.r_id,pickup_location,drop_location,r_time,fare,rating,distance.

CUSTOMER-----*-----TAKE-----*-----OFFERS

UNF:take(c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone,
o_id,o_type)

1NF:

c_phone and o_type are multivalued attribute.

1.c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone,
o_id,o_type.

2NF:

1. c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

2. o_id,o_type.

3NF:

No transitive dependency.

1. c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

2. o_id,o_type.

Table Creation:

1. c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

2. o_id,o_type.

3. c_id, c_phone, o_id, o_type.

CTMS-----1-----MANAGE-----*-----OFFERS

UNF: manage(ctms_id,ctms_name,ctms_phone,o_id,o_type,ctms_email,ctms_address)

1NF:

ctms_phone and o_type are multivalued attribute.

1. ctms_id,ctms_name,ctms_phone,o_id,o_type,ctms_email,ctms_address.

2NF:

1. ctms_id,ctms_name,ctms_phone, ctms_email, ctms_address.

2. o_id,o_type.

3NF:

No transitive dependency.

1. ctms_id,ctms_name,ctms_phone, ctms_email, ctms_address.

2. o_id,o_type.

Table Creation:

1. ctms_id,ctms_name,ctms_phone, ctms_email, ctms_address.

2. o_id,o_type,ctms_id ,ctms_phone.

CTMS-----1-----MANAGE-----*-----SALRY

UNF:manage(ctms_id,ctms_name,ctms_phone,ctms_email,ctms_address,s_id,s_amount)

1NF:

ctms_phone is multivalued attribute.

1.ctms_id,ctms_name,ctms_phone,ctms_email,ctms_address,s_id,s_amount.

2NF:

1. ctms_id,ctms_name,ctms_phone,ctms_email,ctms_address.

2. s_id,s_amount.

3NF:

No transitive dependency.

1. ctms_id,ctms_name,ctms_phone, ctms_email, ctms_address.

2. s_id,s_amount.

Table Creation:

1. ctms_id,ctms_name,ctms_phone, ctms_email, ctms_address.

2. s_id,s_amount,**ctms_id** ,**ctms_phone**.

TABLE SORTING:

1.ctms_id, ctms_phone,ctms_name, ctms_address,ctms_email.

2.u_id,password,u_name,u_type, **ctms_id,ctms_phone**.

3.~~u_id,password,u_name,u_type~~.

4.

d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no,**u_id,u_type**.

5. ~~u_id,password,u_name,u_type~~.

6.c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone,**u_id,u_type**

7.c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone,**r_id**.

8. ~~r_id,pickup_location,drop_location,r_time,fare,rating,distance~~.

9.c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

10. r_id,pickup_location,drop_location,r_time,fare,rating,distance.

11. **c_id ,c_phone,r_id .**

12. ~~r_id,pickup_location,drop_location,r_time,fare,rating,distance~~.

13. ca_id,reg_no,seating_capacity,color,type,**r_id**

14. ~~ea_id,reg_no,seating_capacity,color,type~~.

15. re_id,re_amount,re_type,**ca_id**.

16.~~d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_n~~

ø

17. s_id,s_amount.

18. d_id, d_phone, d_id.

19.

d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no

20. sh_id , shift_type , d_id , d_phone

21.

d_id,d_name,d_gender,d_address,type,d_date_of_birth,d_phone,license_no

22. re_id,re_amount,re_type,d_id,d_phone.

23.

d_id,d_name,d_gender,d_date_of_birth,d_address,d_phone,license_no

24. re_id,re_amount,re_type.

25.

d_id,d_name,d_gender,d_address,type,d_date_of_birth,d_phone,license_no,r_id

26. r_id,pickup_location,drop_location,r_time,fare,rating,distance.

27. c_id,c_name,c_gender,c_date_of_birth,c_address,c_phone.

28. o_id,o_type.

29. c_id, c_phone, o_id, o_type.

30. ctms_id,ctms_name,ctms_phone, ctms_email, ctms_address.

31. o_id,o_type,ctms_id ,ctms_phone

32. ctms_id,ctms_name,ctms_phone, ctms_email, ctms_address.

33. s_id,s_amount,ctms_id ,ctms_phone.

FINAL TABLE:

1. Ctms_id, ctms_name, ctms_phone, ctms_address, ctms_email
2. U_id, password, u_name, u_type, **ctms_id**, **ctms_phone**
3. d_id, d_name, d_gender, d_address, d_date_of_birth, d_phone, license_no, **u_id**, **u_type**, **r_id**
4. c_id, c_name, c_gender, c_date_of_birth, c_address, c_phone, **u_id**, **u_type**, **r_id**
5. r_id, pickup_location, drop_location, r_time, fare, rating, distance
6. **c_id**, **c_phone**, **r_id**
7. ca_id, reg_no, sating_capacity, color, type, **r_id**, **d_id**, **d_phone**
8. re_id, re_amount, re_type, **ca_id**, **d_id**, **d_phone**
9. s_id, s_amount, **ctms_id**, **ctms_phone**
10. **d_id**, **d_phone**, **s_id**
11. sh_id, shift_type, **d_id**, **d_phone**
12. s_id, s_amount, **ctms_id**, **ctms_phone**
13. **c_id**, **c_phone**, **o_id**, **o_type**

CREATE TABLE QUERY:

Ctms:

```
create table ctms(ctms_id number(20),ctms_name
varchar2(50),ctms_phone number(11),ctms_address
varchar2(500),ctms_email varchar2(500),constraint pk1 primary
key(ctms_id,ctms_phone));
```

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CTMS	CTMS_ID	Number	-	20	0	1	-	-	-
	CTMS_NAME	Varchar2	50	-	-	-	✓	-	-
	CTMS_PHONE	Number	-	11	0	2	-	-	-
	CTMS_ADDRESS	Varchar2	500	-	-	-	✓	-	-
	CTMS_EMAIL	Varchar2	500	-	-	-	✓	-	-
1 - 5									

Ctmsuser:

```
create table ctmsuser(u_id number(20),password varchar2(500),u_name
varchar2(50),u_type varchar2(500),ctms_id number(20),ctms_phone
number(11),constraint pk5 primary key(u_id,u_type),constraint fk1
foreign key(ctms_id,ctms_phone) references
ctms(ctms_id,ctms_phone));
```


Object Type **TABLE** Object **CTMSUSER**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
<u>CTMSUSER</u>	<u>U_ID</u>	Number	-	20	0	1	-	-	-
	<u>PASSWORD</u>	Varchar2	500	-	-	-	✓	-	-
	<u>U_NAME</u>	Varchar2	50	-	-	-	✓	-	-
	<u>U_TYPE</u>	Varchar2	500	-	-	2	-	-	-
	<u>CTMS_ID</u>	Number	-	20	0	-	✓	-	-
	<u>CTMS_PHONE</u>	Number	-	11	0	-	✓	-	-
1 - 6									

Driver:

```
create table driver(d_id number(20),d_name varchar2(50),d_gender
varchar(50)check(d_gender='male' or d_gender='female'),d_address
varchar2(500),d_date_of_birth date,d_phone number(11),license_no
varchar2(50),u_id number(20),u_type
varchar2(500),r_idnumber(20),constraint pk6 primary
key(d_id,d_phone),constraint fk6 foreign key(u_id,u_type) references
ctmsuser(u_id,u_type));
```

```
alter table driver add constraint fk9 foreign key(r_id) references
ride(r_id);
```

Object Type **TABLE** Object DRIVER

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
<u>DRIVER</u>	<u>D_ID</u>	Number	-	20	0	1	-	-	-
	<u>D_NAME</u>	Varchar2	50	-	-	-	✓	-	-
	<u>D_GENDER</u>	Varchar2	50	-	-	-	✓	-	-
	<u>D_ADDRESS</u>	Varchar2	500	-	-	-	✓	-	-
	<u>D_DATE_OF_BIRTH</u>	Date	7	-	-	-	✓	-	-
	<u>D_PHONE</u>	Number	-	11	0	2	-	-	-
	<u>LICENSE_NO</u>	Varchar2	50	-	-	-	✓	-	-
	<u>U_ID</u>	Number	-	20	0	-	✓	-	-
	<u>U_TYPE</u>	Varchar2	500	-	-	-	✓	-	-
	<u>R_ID</u>	Number	-	20	0	-	✓	-	-
1 - 10									

Customer:

```
create table customer(c_id number(20),c_name varchar2(50),c_gender
varchar(50)check(c_gender='male' or
c_gender='female'),c_date_of_birth date,c_address
varchar2(500),c_phone number(11),u_id number(20),u_type
```

varchar2(500),r_id number(20),payment_no number(10),constraint pk7
primary key(c_id,c_phone),constraint fk7 foreign key(u_id,u_type)
references ctmsuser(u_id,u_type));

alter table customer add constraint fk8 foreign key(r_id) references
ride(r_id);

[Results](#) [Explain](#) [Describe](#) [Saved SQL](#) [History](#)

Object Type **TABLE** Object **CUSTOMER**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
<u>CUSTOMER</u>	<u>C_ID</u>	Number	-	20	0	1	-	-	-
	<u>C_NAME</u>	Varchar2	50	-	-	-	✓	-	-
	<u>C_GENDER</u>	Varchar2	50	-	-	-	✓	-	-
	<u>C_DATE OF BIRTH</u>	Date	7	-	-	-	✓	-	-
	<u>C_ADDRESS</u>	Varchar2	500	-	-	-	✓	-	-
	<u>C_PHONE</u>	Number	-	11	0	2	-	-	-
	<u>U_ID</u>	Number	-	20	0	-	✓	-	-
	<u>U_TYPE</u>	Varchar2	500	-	-	-	✓	-	-
	<u>R_ID</u>	Number	-	20	0	-	✓	-	-
									1 - 9

Ride:

```
create table ride(r_id number(20)primary key,pickup_location
varchar2(500),drop_location varchar2(500),r_time varchar2(50),fare
number(15),rating number(15),distance varchar2(50),payment_no
number(10));
```

[Results](#)[Explain](#)[Describe](#)[Saved SQL](#)[History](#)

Object Type **TABLE** Object **RIDE**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
<u>RIDE</u>	<u>R_ID</u>	Number	-	20	0	1	-	-	-
	<u>PICKUP_LOCATION</u>	Varchar2	500	-	-	-	✓	-	-
	<u>DROP_LOCATION</u>	Varchar2	500	-	-	-	✓	-	-
	<u>R_TIME</u>	Varchar2	50	-	-	-	✓	-	-
	<u>FARE</u>	Number	-	15	0	-	✓	-	-
	<u>RATING</u>	Number	-	15	0	-	✓	-	-
	<u>DISTANCE</u>	Varchar2	50	-	-	-	✓	-	-
1 - 7									

Cr:

```
create table cr(c_id number(20),c_phone number(11),r_id
number(20),constraint pk8 primary key(c_id,c_phone,r_id),constraint
```

fk10 foreign key(c_id,c_phone) references
 customer(c_id,c_phone),constraint fk11 foreign key(r_id) references
 ride(r_id));



[Results](#)[Explain](#)[Describe](#)[Saved SQL](#)[History](#)

Object Type **TABLE** Object **CR**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CR	C_ID	Number	-	20	0	1	-	-	-
	C_PHONE	Number	-	11	0	2	-	-	-
	R_ID	Number	-	20	0	3	-	-	-
									1 - 3

Car:

create table car(ca_id number(20)primary key,reg_no
 number(20),seating_capacity number(10),color varchar2(10),type
 varchar2(10),r_id number(20),d_id number(20),d_phone
 number(11),constraint fk12 foreign key(r_id) references
 ride(r_id),constraint fk13 foreign key(d_id,d_phone) references
 driver(d_id,d_phone));

alter table car add constraint ch check(type='car plus' or type='premium');

[Results](#)[Explain](#)[Describe](#)[Saved SQL](#)[History](#)

Object Type **TABLE** Object **CAR**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
<u>CAR</u>	<u>CA_ID</u>	Number	-	20	0	1	-	-	-
	<u>REG_NO</u>	Number	-	20	0	-	✓	-	-
	<u>SEATING_CAPACITY</u>	Number	-	10	0	-	✓	-	-
	<u>COLOR</u>	Varchar2	10	-	-	-	✓	-	-
	<u>TYPE</u>	Varchar2	10	-	-	-	✓	-	-
	<u>R_ID</u>	Number	-	20	0	-	✓	-	-
	<u>D_ID</u>	Number	-	20	0	-	✓	-	-
	<u>D_PHONE</u>	Number	-	11	0	-	✓	-	-
									1 - 8

Repair:

```
create table repair(re_id number(20),re_amount number(10),re_type
varchar2(50),ca_id number(20),d_id number(20),d_phone
number(11),constraint pk9 primary
key(re_id,re_amount,re_type),constraint fk14 foreign key(ca_id)
references car(ca_id),constraint fk15 foreign key(d_id,d_phone)
references driver(d_id,d_phone));
```

[Results](#) [Explain](#) [Describe](#) [Saved SQL](#) [History](#)

Object Type **TABLE** Object **REPAIR**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
<u>REPAIR</u>	<u>RE_ID</u>	Number	-	20	0	1	-	-	-
	<u>RE_A MOU NT</u>	Number	-	10	0	2	-	-	-
	<u>RE_T YPE</u>	Varchar2	50	-	-	3	-	-	-
	<u>CA_ID</u>	Number	-	20	0	-	✓	-	-
	<u>D_ID</u>	Number	-	20	0	-	✓	-	-
	<u>D_P HONE</u>	Number	-	11	0	-	✓	-	-
									1 - 6

Salary:

```
create table salary(s_id number(20)primary key,s_amount
number(10),ctms_id number(20),ctms_phone number(11),constraint
fk16 foreign key(ctms_id,ctms_phone) references
ctms(ctms_id,ctms_phone));
```

[Results](#)[Explain](#)[Describe](#)[Saved SQL](#)[History](#)

Object Type **TABLE** Object **SALARY**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
<u>SALARY</u>	<u>S_ID</u>	Number	-	20	0	1	-	-	-
	<u>S_AMOUNT</u>	Number	-	10	0	-	✓	-	-
	<u>CTMS_ID</u>	Number	-	20	0	-	✓	-	-
	<u>CTMS_PHONE</u>	Number	-	11	0	-	✓	-	-
1 - 4									

Ds:

```
create table ds(d_id number(20),d_phone number(11),s_id
number(20),constraint pk10 primary key(d_id,d_phone,s_id),constraint
fk17 foreign key(d_id,d_phone) references
driver(d_id,d_phone),constraint fk18 foreign key(s_id) references
salary(s_id));
```

[Results](#)[Explain](#)[Describe](#)[Saved SQL](#)[History](#)

Object Type **TABLE** Object **DS**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
<u>DS</u>	<u>D_ID</u>	Number	-	20	0	1	-	-	-
	<u>D_PHONE</u>	Number	-	11	0	2	-	-	-
	<u>S_ID</u>	Number	-	20	0	3	-	-	-

Shift:

```
create table shift(sh_id number(20),shift_type varchar2(10),d_id
number(20),d_phone number(11),constraint pk11 primary
key(sh_id,shift_type),constraint fk19 foreign key(d_id,d_phone)
references driver(d_id,d_phone));
```

```
alter table shift add constraint ch1 check(shift_type='day' or
shift_type='night');
```

[Results](#)[Explain](#)[Describe](#)[Saved SQL](#)[History](#)

[Object Type](#) **TABLE** [Object](#) **SHIFT**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
<u>SHIFT</u>	<u>SH I</u> <u>D</u>	Number	-	20	0	1	-	-	-
	<u>SHIF</u> <u>T T</u> <u>YPE</u>	Varchar2	10	-	-	2	-	-	-
	<u>D I</u> <u>D</u>	Number	-	20	0	-	✓	-	-
	<u>D P</u> <u>HO</u> <u>NE</u>	Number	-	11	0	-	✓	-	-
1 - 4									

Offer:

```
create table offer(o_id number(20),o_type varchar2(20),ctms_id
number(20),ctms_phone number(11),constraint pk12 primary
key(o_id,o_type),constraint fk20 foreign key(ctms_id,ctms_phone)
references ctms(ctms_id,ctms_phone));
```

[Results](#)[Explain](#)[Describe](#)[Saved SQL](#)[History](#)

[Object Type](#) **TABLE** [Object](#) **OFFER**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
OFFER	O_ID	Number	-	20	0	1	-	-	-
	O_TYPE	Varchar2	20	-	-	2	-	-	-
	CTMS_ID	Number	-	20	0	-	✓	-	-
	CTMS_PHONE	Number	-	11	0	-	✓	-	-
1 - 4									

Co:

```
create table co(c_id number(20),c_phone number(11),o_id
number(20),o_type varchar2(20),constraint pk13 primary
key(c_id,c_phone,o_id,o_type),constraint fk21 foreign
key(c_id,c_phone) references customer(c_id,c_phone),constraint fk22
foreign key(o_id,o_type) references offer(o_id,o_type));
```

[Results](#)[Explain](#)[Describe](#)[Saved SQL](#)[History](#)

Object Type **TABLE** Object **CO**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
<u>CO</u>	<u>C_ID</u>	Number	-	20	0	1	-	-	-
	<u>C_PHONE</u>	Number	-	11	0	2	-	-	-
	<u>O_ID</u>	Number	-	20	0	3	-	-	-
	<u>O_TYPE</u>	Varchar2	20	-	-	4	-	-	-
1 - 4									

INSERT QUERY:

Ctms:

```
insert into ctms  
values('12300789333','MAST','01788184097','Gazipur,Dhaka','mast@yahoo.com')  
;
```

```
insert into ctms  
values('12300789333','MAST','01788184098','Gazipur,Dhaka','mast@yahoo.com')  
;
```

Ctmsuser:

```
insert into ctmsuser values('1834653','9999','akash  
khan','customer','12300789333','01788184097');
```

```
insert into ctmsuser values('1834653','9999','akash  
khan','driver','12300789333','01788184097');
```

```
insert into ctmsuser values('1834654','10000','Md  
ridy','driver','12300789333','01788184097');
```

```
insert into ctmsuser values('1834655','10001','kamal  
rahman','customer','12300789333','01788184097');
```

```
insert into ctmsuser values('1834656','10002','shathi  
begum','customer','12300789333','01788184097');
```

```
insert into ctmsuser values('1834657','10003','jony  
khan','driver','12300789333','01788184097');
```

Driver:

```
insert into driver values('111','akash khan','male','kuratoli,dhaka','23-JAN-1995','01721520776','AB78892','1834653','driver','311');
```

```
insert into driver values('112','Md ridy','male','gazipur,dhaka','23-JAN-1997','01721520369','AB78888','1834654','driver','312');
```

```
insert into driver values('113','akash khan','male','kuratoli,dhaka','23-JAN-1995','01721520776','AB78892','1834653','driver','313');
```

```
insert into driver values('114','akash khan','male','kuratoli,dhaka','23-JAN-1995','01721520776','AB78892','1834653','driver','314');
```

```
insert into driver values('115','jony khan','male','pallabi,dhaka','02-DEC-1995','01721429837','AB78801','1834657','driver','315');
```

```
insert into driver values('116','jony khan','male','pallabi,dhaka','02-DEC-1995','01721429837','AB78801','1834657','driver','316');
```

Customer:

```
insert into customer values('211','kamal Rahman','male','12-JUN-2002','savar,dhaka','01754468966','1834655','customer','311');
```

```
insert into customer values('212','kamal Rahman','male','12-JUN-2002','savar,dhaka','01754468966','1834655','customer','313');
```

```
insert into customer values('213','shathi begum','female','10-AUG-2002','bashundhara,dhaka','01818309886','1834656','customer','314');
```

```
insert into customer values('214','shathi begum','female','10-AUG-2002','bashundhara,dhaka','01818309886','1834656','customer','315');
```

```
insert into customer values('215','akash khan','male','23-JAN-1995','kuratoli,dhaka','01818309886','1834656','customer','314');
```

Ride:

```
insert into ride values('311','dhanmondi','kurateoli','1hr','350','8.9','13.2km');
```

```
insert into ride values('312','gazipur','kurateoli','2hr','350','8.9','22.2km');
```

```
insert into ride values('313','dhanmondi','savar','2.5hr','500','8.9','24.2km');
```

```
insert into ride values('314','kurateoli','mirpur','1.8hr','250','8.5','7.2km');
```

```
insert into ride values('315','mirpur','airpoort','30min','150','8.9','4.2km');
```

```
insert into ride values('316','komlapur','kurateoli','1hr','290','8.9','11.2km');
```

Cr:

```
insert into cr values('211','01754468966','311');
```

```
insert into cr values('212','01754468966','313');
```

```
insert into cr values('213','01818309886','314');
```

```
insert into cr values('214','01818309886','315');
```

```
insert into cr values('215','01721520776','312');
```

```
insert into cr values('215','01721520776','312');
```

Car:

```
insert into car values('411','112233','4','red','car plus','311','111','01721520776');
```

```
insert into car
```

```
values('412','112232','4','white','premium','313','113','01721520776');
```

```
insert into car values('413','112233','4','red','car plus','314','114','01721520776');
```

```
insert into car values('414','112234','4','white','car  
plus','312','112','01721520369');
```

```
insert into car values('415','112235','4','black','car  
plus','315','115','01721429837');
```

```
insert into car values('416','112235','4','black','car  
plus','316','116','01721429837');
```

Repair:

```
insert into repair values('511','1000','fuel','411','111','01721520776');
```

```
insert into repair values('512','10000','tyre','411','111','01721520776');
```

```
insert into repair values('513','5000','fuel','412','113','01721520776');
```

```
insert into repair values('514','1000','fuel','413','114','01721520776');
```

```
insert into repair values('515','1000','fuel','414','112','01721520369');
```

```
insert into repair values('516','1000','fuel','415','115','01721429837');
```

```
insert into repair values('517','15000','clean','416','116','01721429837');
```

Salary:

```
insert into salary values('611','20000','12300789333','01788184097');
```

```
insert into salary values('612','17000','12300789333','01788184097');
```

```
insert into salary values('613','16500','12300789333','01788184097');
```

Ds:

```
insert into ds values('111','01721520776','611');
```

```
insert into ds values('113','01721520776','611');
```

```
insert into ds values('114','01721520776','611');
```

```
insert into ds values('112','01721520369','612');
```

```
insert into ds values('115','01721429837','613');
```

```
insert into ds values('116','01721429837','613');
```

Shift:

```
insert into shift values('711','day','111','01721520776');
```

```
insert into shift values('712','day','113','01721520776');
```

```
insert into shift values('713','night','114','01721520776');
```

```
insert into shift values('714','day','112','01721520369');
```

```
insert into shift values('715','day','115','01721429837');
```

```
insert into shift values('716','night','116','01721429837');
```

Offer:

```
insert into offer values('811','NULL','12300789333','01788184097');
```

```
insert into offer values('812','eid offer','12300789333','01788184097');
```

```
insert into offer values('813','cupon','12300789333','01788184097');
```

```
insert into offer values('814','cash back','12300789333','01788184097');
```


Co:

```
insert into co values('211','01754468966','811','NULL');
```

```
insert into co values('212','01754468966','812','eid offer');
```

```
insert into co values('213','01818309886','812','eid offer');
```

```
insert into co values('214','01818309886','811','NULL');
```

```
insert into co values('215','01721520776','813','cupon');
```

```
insert into co values('216','01721520776','814','cash back');
```

SINGLE-ROW FUNCTIONS:

1. select distinct c_name,LENGTH(c_name),INSTR(c_name,'a') from customer where c_gender='male';

C_NAME	LENGTH(C_NAME)	INSTR(C_NAME,'A')
akash khan	10	1
kamal Rahman	12	2

2. select distinct d_name,d_gender,d_date_of_birth from driver where LOWER(d_name)='jony khan';

D_NAME	D_GENDER	D_DATE_OF_BIRTH
jony khan	male	02-DEC-95

GROUP FUNCTION:

1. select avg(fare),max(fare),min(fare) from ride where r_id like '3%';

AVG(FARE)	MAX(FARE)	MIN(FARE)
315	500	150

2. select count(*) from ride where fare='500';

COUNT(*)
1

SUBQUERY:

1. select r_id,pickup_location,drop_location from ride where fare<(select fare from ride where r_id='313');

R_ID	PICKUP_LOCATION	DROP_LOCATION
314	kuratoli	mirpur
315	mirpur	airpoort
316	komlapur	kuratoli
311	dhanmondi	kuratoli
312	gazipur	kuratoli

2. select u_id,u_type from ctmsuser where u_name=(select u_name from ctmsuser where u_name='shathi begum');

U_ID	U_TYPE
1834656	customer

JOINING:

1. select customer.c_name,ride.pickup_location,ride.drop_location from customer,ride where customer.r_id=ride.r_id;

C_NAME	PICKUP_LOCATION	DROP_LOCATION
kamal Rahman	dhanmondi	savar
shathi begum	kuratoli	mirpur
shathi begum	mirpur	airpoort
akash khan	komlapur	kuratoli
kamal Rahman	dhanmondi	kuratoli
akash khan	gazipur	kuratoli

2. select driver.d_name,shift.shift_type from driver,shift where driver.d_id=shift.d_id;

D_NAME	SHIFT_TYPE
akash khan	day
akash khan	day
akash khan	night
Md ridy	day
jony khan	day
jony khan	night

CONCLUSION:

The project gave us the opportunity to try our new skills in practice. While doing this project we also gained deeper understanding on database design and how it can be implemented in real life situation. We believe we can use our database designing skills also in our future working field.