



**AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH (AIUB)**

**INTRODUCTION TO DATABASE**

**Summer, 2021-2022**

**Section: C**

**Group: 05**

**CAR RENTAL MANAGEMENT SYSTEM**

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## Introduction

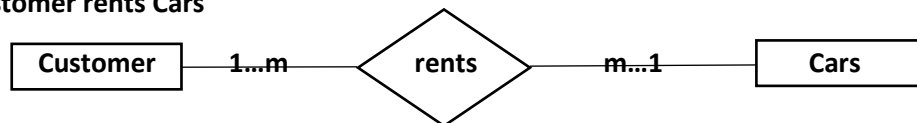
Our project is about a car rental management system (CRMS). It also improves the management visibility of cars, all information and data regarding the owner, manager, driver, mechanics, customers, reservation, payment etc. The database behind the collection of information is massive with complex data structures and security protecting sensitive data. By using this management system, we can save much of our time as it makes finding data easier than using pen and paper. By using our car rental management system, we can find the data very easily and save plenty of time.

## List of Tables

1. PERSON
2. CUSTOMER
3. OWNER
4. MANAGER
5. DRIVER
6. MECHANICS
7. RENTAL\_CENTER
8. CARS
9. CAR\_TYPE
10. INSURANCE
11. RESERVATION
12. PAYMENT
13. USER\_CREDENTIALS
14. CARD\_DETAILS
15. OFFER\_DETAILS

## Normalization

Entity: Customer rents Cars



**UNF:** CUSTOMER\_NAME, CUSTOMER\_ID, PHONE, ADDRESS, CAR\_NAME, CAR\_ID, CAR\_MODEL, COLOR

**1NF:** CUSTOMER\_ID, PHONE, CUSTOMER\_NAME, ADDRESS, CAR\_ID, CAR\_NAME, CAR\_MODEL, COLOR

**2NF:** Partial Dependency Found

Resolved Entities

- CUSTOMER\_ID, PHONE, CUSTOMER\_NAME, ADDRESS
- CAR\_ID, CAR\_NAME, CAR\_MODEL, COLOR

### 3NF: Transitive Dependency Found

#### Resolved Entities

- CUSTOMER\_ID, PHONE, CUSTOMER\_NAME, ADDRESS
- CUSTOMER\_ID, CAR\_ID, CAR\_NAME, CAR\_MODEL, COLOR

#### Final Table:

##### Customer rents Cars

###### CUSTOMER

Attributes- CUSTOMER\_ID, PHONE, CUSTOMER\_NAME, ADDRESS

###### CARS

Attributes- CUSTOMER\_ID, CAR\_ID, CAR\_NAME, CAR\_MODEL, COLOR

## Table Creation and Data Insertion

### PERSON TABLE:

```
CREATE TABLE PERSON(PERSON_NAME VARCHAR2(20),PERSON_ID NUMBER,PHONE NUMBER,ADDRESS  
VARCHAR2(50));
```

```
ALTER TABLE PERSON ADD CONSTRAINT CON14 PRIMARY KEY (PERSON_ID);
```

```
INSERT INTO PERSON VALUES('SAMIRA',111,0195293004,'BASHUNDHARA');
```

```
INSERT INTO PERSON VALUES('FARZANA',2,0175278907,'ADABOR');
```

```
INSERT INTO PERSON VALUES('MALIHA',3,0179293676,'KURIL');
```

```
INSERT INTO PERSON VALUES('KAMAL',33333,01692036762,'GOPALGANJ');
```

```
INSERT INTO PERSON VALUES('KHULNA',44,01392909047,'DAULATPUR');
```

```
SELECT * FROM PERSON;
```

PERSON_NAME	PERSON_ID	PHONE	ADDRESS
SAMIRA	111	195293004	BASHUNDHARA
FARZANA	2	175278907	ADABOR
MALIHA	3	179293676	KURIL
KAMAL	33333	1692036762	GOPALGANJ
KHULNA	44	1392909047	DAULATPUR

### CUSTOMER TABLE:

```
CREATE TABLE CUSTOMER(CUSTOMER_NAME VARCHAR2(20),CUSTOMER_ID NUMBER,PHONE  
NUMBER,ADDRESS VARCHAR2(50));
```

```
ALTER TABLE CUSTOMER ADD CONSTRAINT CON01 PRIMARY KEY (CUSTOMER_ID);
```

```
INSERT INTO CUSTOMER VALUES('NOSHIN',1,0175293004,'MOHAMMADPUR');
```

```
INSERT INTO CUSTOMER VALUES('FARZANA',2,0175278907,'ADABOR');
```

```
INSERT INTO CUSTOMER VALUES('MALIHA',3,0179293676,'KURIL');
```

```
INSERT INTO CUSTOMER VALUES('ZARIN',4,0175278904,'DHANMONDI');
```

```
INSERT INTO CUSTOMER VALUES('SARA',5,0175293004,'LALMATIA');
```

```
SELECT * FROM CUSTOMER;
```

CUSTOMER_NAME	CUSTOMER_ID	PHONE	ADDRESS
NOSHIN	1	175293004	MOHAMMADPUR
FARZANA	2	175278907	ADABOR
MALIHA	3	179293676	KURIL
ZARIN	4	175278904	DHANMONDI
SARA	5	175293004	LALMATIA

**OWNER TABLE:**

```
CREATE TABLE OWNER(OWNER_NAME VARCHAR2(20),OWNER_ID NUMBER,PHONE NUMBER,ADDRESS  
VARCHAR2(50));
```

```
ALTER TABLE OWNER ADD CONSTRAINT CON02 PRIMARY KEY (OWNER_ID);
```

```
INSERT INTO OWNER VALUES('SAMIRA',111,0195293004,'BASHUNDHARA');
```

```
SELECT * FROM OWNER;
```

OWNER_NAME	OWNER_ID	PHONE	ADDRESS
SAMIRA	111	195293004	BASHUNDHARA

### **MANAGER TABLE:**

```
CREATE TABLE MANAGER(MANAGER_NAME VARCHAR2(20),MANAGER_ID NUMBER,PHONE  
NUMBER,ADDRESS VARCHAR2(50),SALARY NUMBER);
```

```
ALTER TABLE MANAGER ADD CONSTRAINT CON03 PRIMARY KEY (MANAGER_ID);
```

```
INSERT INTO MANAGER VALUES('ANIKA',123,0165193004,'SHEKHERTEK',20000);
```

```
SELECT * FROM MANAGER;
```

MANAGER_NAME	MANAGER_ID	PHONE	ADDRESS	SALARY
ANIKA	123	165193004	SHEKHERTEK	20000

### DRIVER TABLE:

```
CREATE TABLE DRIVER(DRIVER_NAME VARCHAR2(20), DRIVER_ID NUMBER,PHONE NUMBER,ADDRESS  
VARCHAR2(50),SALARY NUMBER);
```

```
ALTER TABLE DRIVER ADD CONSTRAINT CON04 PRIMARY KEY (DRIVER_ID);
```

```
INSERT INTO DRIVER VALUES('ANIK',1111,0175293008,'DHAKA',10000);
```

```
INSERT INTO DRIVER VALUES('RIAZ',2222,0195298907,'RAJSHAHI',7000);
```

```
INSERT INTO DRIVER VALUES('RAHIM',3333,0169203676,'KUSHTIA',9000);
```

```
INSERT INTO DRIVER VALUES('SADEK',4444,0179278904,'MANIKGANJ',7000);
```

```
INSERT INTO DRIVER VALUES('TAPOSH',5555,0170293004,'CHITTAGONG',7000);
```

```
SELECT * FROM DRIVER;
```

DRIVER_NAME	DRIVER_ID	PHONE	ADDRESS	SALARY
ANIK	1111	175293008	DHAKA	10000
RIAZ	2222	195298907	RAJSHAHI	7000
RAHIM	3333	169203676	KUSHTIA	9000
SADEK	4444	179278904	MANIKGANJ	7000
TAPOSH	5555	170293004	CHITTAGONG	7000



### MECHANICS TABLE:

```
CREATE TABLE MECHANICS(MECHANIC_NAME VARCHAR2(20),MECHANIC_ID NUMBER,PHONE  
NUMBER,ADDRESS VARCHAR2(50));
```

```
ALTER TABLE MECHANICS ADD CONSTRAINT CON05 PRIMARY KEY (MECHANIC_ID);
```

```
INSERT INTO MECHANICS VALUES('TOMAL',11111,01752780708,'RANGPUR');
```

```
INSERT INTO MECHANICS VALUES('RIFAT',22222,01952009071,'RAJSHAHI');
```

```
INSERT INTO MECHANICS VALUES('KAMAL',33333,01692036762,'GOPALGANJ');
```

```
INSERT INTO MECHANICS VALUES('RIFAT',44444,01792999047,'BOGURA');
```

```
INSERT INTO MECHANICS VALUES('TANVIR',55555,01702890045,'SYLHET');
```

```
SELECT * FROM MECHANICS;
```

MECHANIC_NAME	MECHANIC_ID	PHONE	ADDRESS
TOMAL	11111	1752780708	RANGPUR
RIFAT	22222	1952009071	RAJSHAHI
KAMAL	33333	1692036762	GOPALGANJ
RIFAT	44444	1792999047	BOGURA
TANVIR	55555	1702890045	SYLHET

### RENTAL\_CENTER TABLE:

```
CREATE TABLE RENTAL_CENTER(CENTER_NAME VARCHAR2(20),CENTER_ID NUMBER,PHONE  
NUMBER,ADDRESS VARCHAR2(50));
```

```
ALTER TABLE RENTAL_CENTER ADD CONSTRAINT CON06 PRIMARY KEY (CENTER_ID);
```

```
INSERT INTO RENTAL_CENTER VALUES('DHAKA',11,01952788708,'ADABOR');
```

```
INSERT INTO RENTAL_CENTER VALUES('CHITTAGONG',22,01652109071,'SHAPLAPUR');
```

```
INSERT INTO RENTAL_CENTER VALUES('RAJSHAHI',33,01792036762,'DURGAPUR');
```

```
INSERT INTO RENTAL_CENTER VALUES('KHULNA',44,01392909047,'DAULATPUR');
```

```
INSERT INTO RENTAL_CENTER VALUES('BARISAL',55,01802890045,'KAZIRHUT');
```

```
SELECT * FROM RENTAL_CENTER;
```

CENTER_NAME	CENTER_ID	PHONE	ADDRESS
DHAKA	11	1952788708	ADABOR
CHITTAGONG	22	1652109071	SHAPLAPUR
RAJSHAHI	33	1792036762	DURGAPUR
KHULNA	44	1392909047	DAULATPUR
BARISAL	55	1802890045	KAZIRHUT

### CARS TABLE:

```
CREATE TABLE CARS(CAR_NAME VARCHAR2(20),CAR_ID NUMBER,CAR_MODEL VARCHAR2(30),COLOR  
VARCHAR2(10),CUSTOMER_ID NUMBER);
```

```
ALTER TABLE CARS ADD CONSTRAINT CON07 PRIMARY KEY (CAR_ID);
```

```
ALTER TABLE CARS ADD CONSTRAINT FK1 FOREIGN KEY(CUSTOMER_ID) REFERENCES  
CUSTOMER(CUSTOMER_ID);
```

```
INSERT INTO CARS VALUES('AUDI',1234,509,'RED',1);
```

```
INSERT INTO CARS VALUES('AUDI',5678,706,'BLUE',2);
```

```
INSERT INTO CARS VALUES('TOYOTA',9101,281,'WHITE',3);
```

```
INSERT INTO CARS VALUES('ALLION',1213,896,'BLACK',4);
```

```
INSERT INTO CARS VALUES('ALLION',1415,145,'BLACK',5);
```

```
SELECT * FROM CARS;
```

CAR_NAME	CAR_ID	CAR_MODEL	COLOR	CUSTOMER_ID
AUDI	1234	509	RED	1
AUDI	5678	706	BLUE	2
TOYOTA	9101	281	WHITE	3
ALLION	1213	896	BLACK	4
ALLION	1415	145	BLACK	5

### CAR\_TYPE TABLE:

```
CREATE TABLE CAR_TYPE(UNIQUE_ID NUMBER,CAR_TYPE_MODEL VARCHAR2(30),CAR_ID NUMBER);
```

```
ALTER TABLE CAR_TYPE ADD CONSTRAINT CON08 PRIMARY KEY (UNIQUE_ID);
```

```
ALTER TABLE CAR_TYPE ADD CONSTRAINT FK2 FOREIGN KEY(CAR_ID) REFERENCES CARS(CAR_ID);
```

```
INSERT INTO CAR_TYPE VALUES(56,'A8',1234);
```

```
INSERT INTO CAR_TYPE VALUES(57,'A6',5678);
```

```
INSERT INTO CAR_TYPE VALUES(58,'A7',9101);
```

```
INSERT INTO CAR_TYPE VALUES(59,'R34',1213);
```

```
INSERT INTO CAR_TYPE VALUES(66,'A9',1415);
```

```
SELECT * FROM CAR_TYPE;
```

UNIQUE_ID	CAR_TYPE_MODEL	CAR_ID
56	A8	1234
57	A6	5678
58	A7	9101
59	R34	1213
66	A9	1415

### INSURANCE TABLE:

```
CREATE TABLE INSURANCE(INSURANCE_ID NUMBER,INSURANCE_TYPE VARCHAR2(30));
```

```
ALTER TABLE INSURANCE ADD CONSTRAINT CON09 PRIMARY KEY (INSURANCE_ID);
```

```
INSERT INTO INSURANCE VALUES(26,'BODY_COVERAGE');
```

```
INSERT INTO INSURANCE VALUES(27,'MEDICAL_COVERAGE');
```

```
INSERT INTO INSURANCE VALUES(28,'MEDICAL_COVERAGE');
```

```
INSERT INTO INSURANCE VALUES(29,'BODY_COVERAGE');
```

```
INSERT INTO INSURANCE VALUES(36,'MEDICAL_COVERAGE');
```

```
SELECT * FROM INSURANCE;
```

INSURANCE_ID	INSURANCE_TYPE
26	BODY_COVERAGE
27	MEDICAL_COVERAGE
28	MEDICAL_COVERAGE
29	BODY_COVERAGE
36	MEDICAL_COVERAGE

### **RESERVATION TABLE:**

```
CREATE TABLE RESERVATION(RESERVATION_ID NUMBER,DROPPING_LOCATION  
VARCHAR2(50),RESERVATION_DATE VARCHAR2(10));
```

```
ALTER TABLE RESERVATION ADD CONSTRAINT CON10 PRIMARY KEY (RESERVATION_ID);
```

```
INSERT INTO RESERVATION VALUES(116,'DHAKA','21-05-22');
```

```
INSERT INTO RESERVATION VALUES(117,'KHULNA','02-06-22');
```

```
INSERT INTO RESERVATION VALUES(118,'BARISAL','03-04-22');
```

```
INSERT INTO RESERVATION VALUES(119,'DHAKA','12-09-22');
```

```
INSERT INTO RESERVATION VALUES(216,'KHULNA','13-07-22');
```

```
SELECT * FROM RESERVATION;
```

RESERVATION_ID	DROPPING_LOCATION	RESERVATION_DATE
116	DHAKA	21-05-22
117	KHULNA	02-06-22
118	BARISAL	03-04-22
119	DHAKA	12-09-22
216	KHULNA	13-07-22

### **PAYMENT TABLE:**

```
CREATE TABLE PAYMENT(PAYMENT_ID NUMBER,TOTAL_AMOUNT NUMBER,PAYMENT_DATE  
VARCHAR2(10));
```

```
ALTER TABLE PAYMENT ADD CONSTRAINT CON011 PRIMARY KEY (PAYMENT_ID);
```

```
INSERT INTO PAYMENT VALUES(1167,1900,'21-05-22');
```

```
INSERT INTO PAYMENT VALUES(1178,2000,'02-06-22');
```

```
INSERT INTO PAYMENT VALUES(1189,2300,'03-04-22');
```

```
INSERT INTO PAYMENT VALUES(1191,5000,'12-09-22');
```

```
INSERT INTO PAYMENT VALUES(2162,1200,'13-07-22');
```

```
SELECT * FROM PAYMENT;
```

PAYMENT_ID	TOTAL_AMOUNT	PAYMENT_DATE
1167	1900	21-05-22
1178	2000	02-06-22
1189	2300	03-04-22
1191	5000	12-09-22
2162	1200	13-07-22

### USER\_CREDENTIALS TABLE:

```
CREATE TABLE USER_CREDENTIALS(LOGIN_ID NUMBER, YEAR_OF_MEMBERSHIP NUMBER, PASSWORD  
VARCHAR2(20));
```

```
ALTER TABLE USER_CREDENTIALS ADD CONSTRAINT CON12 PRIMARY KEY (LOGIN_ID);
```

```
INSERT INTO USER_CREDENTIALS VALUES(11678,1,'ABCD5');
```

```
INSERT INTO USER_CREDENTIALS VALUES(11789,2,'ANHUY3');
```

```
INSERT INTO USER_CREDENTIALS VALUES(11891,3,'ABCR7');
```

```
INSERT INTO USER_CREDENTIALS VALUES(11912,1,'ANSFAE');
```

```
INSERT INTO USER_CREDENTIALS VALUES(21623,2,'TYUI9');
```

```
SELECT * FROM USER_CREDENTIALS;
```

LOGIN_ID	YEAR_OF_MEMBERSHIP	PASSWORD
11678	1	ABCD5
11789	2	ANHUY3
11891	3	ABCR7
11912	1	ANSFAE
21623	2	TYUI9



### CARD\_DETAILS TABLE:

```
CREATE TABLE CARD_DETAILS(CARD_NUMBER NUMBER,EXPIRE_DATE VARCHAR2(10),NAME_ON_CARD  
VARCHAR2(30));
```

```
ALTER TABLE CARD_DETAILS ADD CONSTRAINT CON13 PRIMARY KEY (CARD_NUMBER);
```

```
INSERT INTO CARD_DETAILS VALUES(116781,'21-01-26','NOSHIN');
```

```
INSERT INTO CARD_DETAILS VALUES(117892,'09-02-26','FARZANA');
```

```
INSERT INTO CARD_DETAILS VALUES(118913,'21-01-28','MALIHA');
```

```
INSERT INTO CARD_DETAILS VALUES(119124,'11-11-26','ZARIN');
```

```
INSERT INTO CARD_DETAILS VALUES(216235,'21-06-26','SARA');
```

```
SELECT * FROM CARD_DETAILS;
```

CARD_NUMBER	EXPIRE_DATE	NAME_ON_CARD
116781	21-01-26	NOSHIN
117892	09-02-26	FARZANA
118913	21-01-28	MALIHA
119124	11-11-26	ZARIN
216235	21-06-26	SARA

**OFFER\_DETAILS TABLE:**

```
CREATE TABLE OFFER_DETAILS(PROMO_CODE NUMBER,DISCOUNT_AMOUNT NUMBER);
```

```
ALTER TABLE OFFER_DETAILS ADD CONSTRAINT CON16 PRIMARY KEY (PROMO_CODE);
```

```
INSERT INTO OFFER_DETAILS VALUES(7869,100);
```

```
INSERT INTO OFFER_DETAILS VALUES(5469,150);
```

```
INSERT INTO OFFER_DETAILS VALUES(3469,200);
```

```
INSERT INTO OFFER_DETAILS VALUES(4469,250);
```

```
INSERT INTO OFFER_DETAILS VALUES(7865,300);
```

```
SELECT * FROM OFFER_DETAILS;
```

PROMO_CODE	DISCOUNT_AMOUNT
7869	100
5469	150
3469	200
4469	250
7865	300

## Joining

### Equijoin

Show CUSTOMER\_NAME,CAR\_NAME,CAR\_ID from CUSTOMER and CARS table using equijoin.

```
=> SELECT CUSTOMER_NAME,CAR_NAME,CAR_ID FROM CUSTOMER M,CARS N WHERE  
M.CUSTOMER_ID=N.CUSTOMER_ID;
```

CUSTOMER_NAME	CAR_NAME	CAR_ID
NOSHIN	AUDI	1234
FARZANA	AUDI	5678
MALIHA	TOYOTA	9101
ZARIN	ALLION	1213
SARA	ALLION	1415

### Outerjoin

Show the CUSTOMER\_NAME,CAR\_NAME,CAR\_MODEL from CUSTOMER and CARS table also ascending order CAR\_NAME using outerjoin.

```
=> SELECT CUSTOMER_NAME,CAR_NAME,CAR_MODEL FROM CUSTOMER FULL OUTER JOIN CARS ON  
CARS.CUSTOMER_ID=CUSTOMER.CUSTOMER_ID ORDER BY CARS.CAR_NAME;
```

CUSTOMER_NAME	CAR_NAME	CAR_MODEL
SARA	ALLION	145
ZARIN	ALLION	896
NOSHIN	AUDI	509
FARZANA	AUDI	706
MALIHA	TOYOTA	281

### Selfjoin

Show all the information from CARS table whose CUSTOMER\_ID is same.

=> SELECT \* FROM CARS A,CARS B WHERE A.CUSTOMER\_ID=B.CUSTOMER\_ID;

CAR_NAME	CAR_ID	CAR_MODEL	COLOR	CUSTOMER_ID	CAR_NAME	CAR_ID	CAR_MODEL	COLOR	CUSTOMER_ID
AUDI	1234	509	RED	1	AUDI	1234	509	RED	1
AUDI	5678	706	BLUE	2	AUDI	5678	706	BLUE	2
TOYOTA	9101	281	WHITE	3	TOYOTA	9101	281	WHITE	3
ALLION	1213	896	BLACK	4	ALLION	1213	896	BLACK	4
ALLION	1415	145	BLACK	5	ALLION	1415	145	BLACK	5

## Queries

1. Write a query to display the name and address for all customers.

```
=> SELECT CUSTOMER_NAME, ADDRESS FROM CUSTOMER;
```

2. Create a query to display the name and driver id of drivers earning 7000 taka.

```
=> SELECT DRIVER_NAME, DRIVER_ID FROM DRIVER WHERE SALARY=7000;
```

3. Create a query to display the name and salary of drivers earning less than 10000 taka.

```
=> SELECT DRIVER_NAME, SALARY FROM DRIVER WHERE SALARY<10000;
```

4. Find the average, maximum, and minimum salary of the drivers.

```
=> SELECT AVG(SALARY), MAX(SALARY), MIN(SALARY) FROM DRIVER;
```

5. Display the name, phone of all mechanics where the second letter of their name is an A.

```
=> SELECT MECHANIC_NAME, PHONE FROM MECHANICS WHERE MECHANIC_NAME LIKE '_A%';
```

6. Display the center name of all rental center which have two As in their name and are located in kazirhut.

```
=> SELECT CENTER_NAME FROM RENTAL_CENTER WHERE CENTER_NAME LIKE '%A%A%' AND ADDRESS='KAZIRHUT';
```

7. Display the car name, car model and color for all cars in black. Order the query by car id.

```
=> SELECT CAR_NAME, CAR_MODEL, COLOR FROM CARS WHERE COLOR='BLACK' ORDER BY CAR_ID;
```

8. Write a query to list the reservation id from reservation table where dropping location is Khulna or reservation id is 116.

```
=> SELECT RESERVATION_ID FROM RESERVATION WHERE DROPPING_LOCATION='KHULNA' OR RESERVATION_ID=116;
```

9. Write a query that produces the following: ID number <payment id> paid <total amount> taka on <payment date>. Label the column as Paid Amount.

```
=> SELECT 'ID number ' || PAYMENT_ID || ' paid ' || TOTAL_AMOUNT || ' taka on ' || PAYMENT_DATE AS "Paid Amount" FROM PAYMENT;
```

10. Display the login id from user credentials which have 11 in their id. Order by year of membership.

```
=> SELECT LOGIN_ID FROM USER_CREDENTIALS WHERE LOGIN_ID LIKE '11%' ORDER BY YEAR_OF_MEMBERSHIP;
```

11. Write a query that will display the name on card with the first letter capitalized and all other letters lowercase and the length of their name. Label the column as Name and Length of Name.

```
=> SELECT INITCAP(NAME_ON_CARD) "Name", LENGTH(NAME_ON_CARD) "Length of Name" FROM CARD_DETAILS;
```

## Views

1. CREATE VIEW SIMPLE\_VIEW AS SELECT CUSTOMER\_NAME,CUSTOMER\_ID FROM CUSTOMER;

SELECT \* FROM SIMPLE\_VIEW;

CUSTOMER_NAME	CUSTOMER_ID
NOSHIN	1
FARZANA	2
MALIHA	3
ZARIN	4
SARA	5

2. CREATE VIEW SIMPLE\_VIEW2 AS SELECT RESERVATION\_ID,RESERVATION\_DATE FROM RESERVATION WHERE DROPPING\_LOCATION ='DHAKA';

SELECT \* FROM SIMPLE\_VIEW2;

RESERVATION_ID	RESERVATION_DATE
116	21-05-22
119	12-09-22

3. CREATE VIEW SIMPLE\_VIEW3 AS SELECT PERSON\_NAME,PERSON\_ID FROM PERSON WHERE ADDRESS='KURIL';

SELECT \* FROM SIMPLE\_VIEW3;

PERSON_NAME	PERSON_ID
MALIHA	3

4. CREATE VIEW SIMPLE\_VIEW4 AS SELECT CAR\_NAME,CAR\_MODEL FROM CARS;

SELECT \* FROM SIMPLE\_VIEW4;

CAR_NAME	CAR_MODEL
AUDI	509
AUDI	706
TOYOTA	281
ALLION	896
ALLION	145

5. CREATE VIEW COMPLEX\_VIEW(CUSTOMER\_NAME,CAR\_NAME,CAR\_ID) AS SELECT  
M.CUSTOMER\_NAME,N.CAR\_NAME,N.CAR\_ID FROM CUSTOMER M,CARS N WHERE  
M.CUSTOMER\_ID=N.CUSTOMER\_ID;

SELECT \* FROM COMPLEX\_VIEW;

CUSTOMER_NAME	CAR_NAME	CAR_ID
NOSHIN	AUDI	1234
FARZANA	AUDI	5678
MALIHA	TOYOTA	9101
ZARIN	ALLION	1213
SARA	ALLION	1415



## **Sequence**

### **Sequence 1:**

//Create a sequence CUSTOMER\_CUSTOMERID to be used for the primary key of the CUSTOMER table.

```
CREATE SEQUENCE CUSTOMER_CUSTOMERID INCREMENT BY 1 START WITH 5 MAXVALUE 100  
NOCACHE NOCYCLE;
```

//Show the next available sequence value of CUSTOMER\_CUSTOMERID.

```
SELECT CUSTOMER_CUSTOMERID.NEXTVAL FROM DUAL;
```

// Insert a new Customer using sequence.

```
INSERT INTO CUSTOMER(CUSTOMER_NAME, CUSTOMER_ID,  
PHONE,ADDRESS)VALUES('NOSHIN',CUSTOMER_CUSTOMERID.NEXTVAL,'0175293004','RAJSHAH');
```

```
INSERT INTO CUSTOMER(CUSTOMER_NAME, CUSTOMER_ID,  
PHONE,ADDRESS)VALUES('MALIHA',CUSTOMER_CUSTOMERID.NEXTVAL,'0179293676','RAJSHAH');
```

//Change the maximum value of the CUSTOMER\_CUSTOMERID sequence.

```
ALTER SEQUENCE CUSTOMER_CUSTOMERID MAXVALUE 2000;
```

//Show the current value for the CUSTOMER\_CUSTOMERID sequence.

```
SELECT CUSTOMER_CUSTOMERID.CURRVAL FROM DUAL;
```

## **Sequence 2:**

//Create a sequence INSURANCE\_INSURENCEID to be used for the primary key of the INSURANCE table.

```
CREATE SEQUENCE INSURANCE_INSURENCEID INCREMENT BY 5 START WITH 35 MAXVALUE 1000  
NOCACHE NOCYCLE;
```

//Show the next available sequence value of INSURANCE\_INSURENCEID.

```
SELECT INSURANCE_INSURENCEID.NEXTVAL FROM DUAL;
```

// Insert a new insurance using sequence.

```
INSERT INTO  
INSURANCE(INSURANCE_ID,INSURANCE_TYPE)VALUES(INSURANCE_INSURENCEID.NEXTVAL,'MEDICAL_  
COVERAGE');
```

```
INSERT INTO  
INSURANCE(INSURANCE_ID,INSURANCE_TYPE)VALUES(INSURANCE_INSURENCEID.NEXTVAL,'BODY_COV  
ERAGE');
```

//Change the increment value of the INSURANCE\_INSURENCEID sequence.

```
ALTER SEQUENCE INSURANCE_INSURENCEID INCREMENT BY 10;
```

//Show the current value for the INSURANCE\_INSURENCEID sequence.

```
SELECT INSURANCE_INSURENCEID.CURRVAL FROM DUAL;
```

**Sequence 3:**

//Create a sequence MANAGER\_MANAGERID to be used for the primary key of the MANAGER table.

```
CREATE SEQUENCE MANAGER_MANAGERID INCREMENT BY 15 START WITH 130 MAXVALUE 1000  
NOCACHE NOCYCLE;
```

//Show the next available sequence value of MANAGER\_MANAGERID.

```
SELECT MANAGER_MANAGERID.NEXTVAL FROM DUAL;
```

// Insert a new manager using sequence.

```
INSERT INTO MANAGER (MANAGER_NAME  
,MANAGER_ID)VALUES('NOSHIN',MANAGER_MANAGERID.NEXTVAL);
```

```
INSERT INTO MANAGER (MANAGER_NAME  
,MANAGER_ID)VALUES('ZARIN',MANAGER_MANAGERID.NEXTVAL);
```

//Change the incre value of the MANAGER\_MANAGERID sequence.

```
ALTER SEQUENCE MANAGER_MANAGERID INCREMENT BY 25;
```

//Show the current value for the MANAGER\_MANAGERID sequence.

```
SELECT MANAGER_MANAGERID.CURRVAL FROM DUAL;
```

#### **Sequence 4:**

//Create a sequence RESERVATION\_RESERVATIONID to be used for the primary key of the RESERVATION table.

```
CREATE SEQUENCE RESERVATION_RESERVATIONID INCREMENT BY 5 START WITH 130 MAXVALUE 300  
NOCACHE NOCYCLE;
```

//Show the next available sequence value of RESERVATION\_RESERVATIONID.

```
SELECT RESERVATION_RESERVATIONID.NEXTVAL FROM DUAL;
```

//Insert a new reservation using sequence.

```
INSERT INTO  
RESERVATION(RESERVATION_ID,DROPPING_LOCATION,RESERVATION_DATE)VALUES(RESERVATION_RE  
SERVATIONID.NEXTVAL,'RAJSHAHI','03-07-22');
```

```
INSERT INTO  
RESERVATION(RESERVATION_ID,DROPPING_LOCATION,RESERVATION_DATE)VALUES(RESERVATION_RE  
SERVATIONID.NEXTVAL,'DHAKA','10-08-22');
```

//Change the maxvalue of the RESERVATION\_RESERVATIONID sequence.

```
ALTER SEQUENCE RESERVATION_RESERVATIONID MAXVALUE 450;
```

//Show the current value for the RESERVATION\_RESERVATIONID sequence.

```
SELECT RESERVATION_RESERVATIONID.CURRVAL FROM DUAL;
```

### **Sequence 5:**

//Create a sequence PAYMENT\_PAYMENTID to be used for the primary key of the PAYMENT table.

```
CREATE SEQUENCE PAYMENT_PAYMENTID INCREMENT BY 30 START WITH 1126 MAXVALUE 9999  
NOCACHE NOCYCLE;
```

//Show the next available sequence value of PAYMENT\_PAYMENTID.

```
SELECT PAYMENT_PAYMENTID.NEXTVAL FROM DUAL;
```

//Insert a new payment using sequence.

```
INSERT INTO  
PAYMENT(PAYMENT_ID,TOTAL_AMOUNT,PAYMENT_DATE)VALUES(PAYMENT_PAYMENTID.NEXTVAL,'5  
000','20-07-22');
```

```
INSERT INTO  
PAYMENT(PAYMENT_ID,TOTAL_AMOUNT,PAYMENT_DATE)VALUES(PAYMENT_PAYMENTID.NEXTVAL,'6  
000','20-04-22');
```

//Change the increment of the PAYMENT\_PAYMENTID sequence.

```
ALTER SEQUENCE PAYMENT_PAYMENTID INCREMENT BY 40;
```

//Show the current value for the PAYMENT\_PAYMENTID sequence.

```
SELECT PAYMENT_PAYMENTID.CURRVAL FROM DUAL;
```

## **User Creation**

```
GRANT CREATE TABLE, CREATE SEQUENCE, CREATE VIEW TO SCOTT;
```