

**MALIK ZOHAIB MUSTAFA**

**01-134192-030**

**BSCS-4B**

**SHAHZAIB IQBAL**

**01-134192-106**

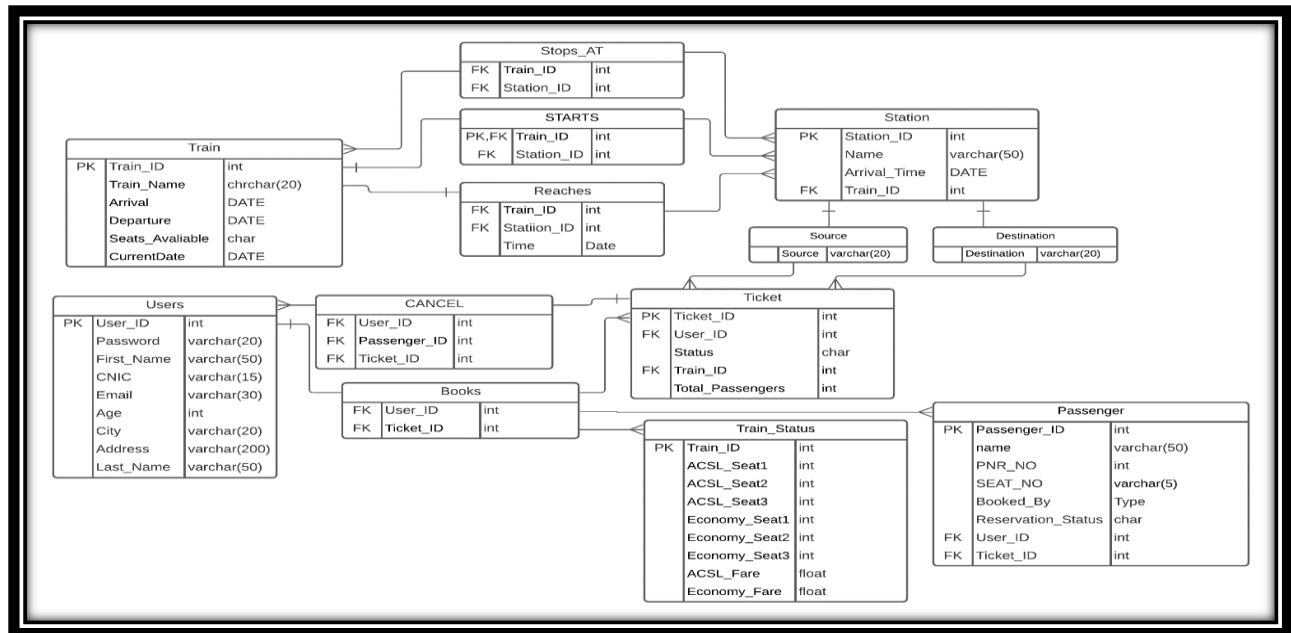
**BSCS-4B**

**KHIZER WAHEED**

**01-134192-056**

**BSCS-4B**

**SCREEN SHOTS ARE AT THE END**



**RELATIONSHIP TABLE:**

**STOPS\_AT**

Train_ID	Foreign key references to Train_id of Train Table
Station_ID	Foreign key references to Station_id of Station Table

**Starts**

Train_ID	Foreign key references to Train_id of Train Table
Station_ID	Foreign key references to Station_id of Station Table

### Reaches

Train_ID	Foreign key references to Train_id of Train Table
----------	---

### Cancel

User_ID	Foreign key references to User_id of Users Table
Passenger_ID	Foreign key references to Passenger_id of Passenger Table
Ticket_ID	Foreign key references to Ticket_id of Ticket Table

### Books

User_ID	Foreign key references to User_id of Users Table
Ticket_ID	Foreign key references to Ticket_id of Ticket Table

### **Identifying the relationships:-**

a. User can book many tickets.

Therefore the relations are 1.....N.

b. Trains are associated with each Train\_status

Therefore the relation is M.....1.

c. Trains can route from one route.

Therefore the relations are N.....1.

d. Station has a set of Route.

Therefore the relations are 1.....N.

## **Table Creation Queries:-**

### **TRAIN TABLE:-**

```
CREATE TABLE Train(  
  Train_ID int,  
  Train_Name varchar(20),  
  Arrival DATE,  
  Departure DATE,  
  Seats_Available varchar(10),  
  CurrentDate DATE,  
  PRIMARY KEY (Train_ID)  
);
```

### **USERS TABLE:-**

```
CREATE TABLE Users (  
  User_ID int,  
  Password varchar(20),  
  First_Name varchar(50),  
  CNIC varchar(15),  
  Email varchar(30),  
  Age int,  
  City varchar(20),  
  Address varchar(200),  
  Last_Name varchar(50),  
  PRIMARY KEY (User_ID)  
);
```

### **STATION TABLE:-**

```
create table station(  
  station_id int primary key,  
  name varchar(10),  
  Arrival_Time DATE,  
  Train_ID int,  
  CONSTRAINT FK_Train_ID FOREIGN KEY (Train_ID) REFERENCES train(Train_ID)  
);
```

### **TRAIN STATUS TABLE:-**

```
CREATE TABLE TRAIN_STATUS(  

```

```
Train_ID int Primary key,  
ACSL_Seat1 int,  
ACSL_Seat2 int ,  
ACSL_Seat3 int,  
Economy_Seat1 int ,  
Economy_Seat2 int,  
Economy_Seat3 int,  
ACSL_Fare float,  
Economy float  
);
```

### **TICKET TABLE:-**

```
CREATE TABLE TICKET(  
TICKET_ID INT PRIMARY KEY,  
User_ID int,  
status char,  
Train_ID int,  
Total_Passengers int,  
CONSTRAINT FK_TrainID FOREIGN KEY(TRAIN_ID)REFERENCES Train (Train_ID),  
CONSTRAINT FK_UserID FOREIGN KEY (User_ID) REFERENCES Users (User_ID)  
);
```

### **PASSENGER TABLE:-**

```
create table PASSENGER(  
PASSENGER_ID INT PRIMARY KEY,  
Name varchar(10),  
PNR_NO int,  
Seat_No VARCHAR(15),  
Booked_By varchar(10),  
Reservation_Status char,  
User_ID int ,  
Ticket_ID int,  
constraint FK_User_ID_P foreign key (User_ID) references USERS(User_ID),  
constraint FK_Ticket_ID_P foreign key (Ticket_ID) references TICKET(TICKET_ID)  
);
```

### **STARTS TABLE:-**

```
CREATE TABLE STARTS (  
Train_ID int Primary Key,  
Station_Id int ,  
constraint FK_Train_ID_ST foreign key (Train_ID) references Train (Train_ID),
```

```
constraint FK_Station_ID_ST foreign key(Station_Id) references
Station(Station_ID)
);
```

### **STOPS AT TABLE:-**

```
CREATE TABLE STOPS_AT(Train_ID int, Station_ID int,constraint FK_Train_ID_STP
foreign key(Train_ID) references Train(Train_ID),
constraint FK_Station_ID_STP foreign key(Station_Id) references Station(Station_ID));
```

### **REACHES TABLE:-**

```
CREATE TABLE REACHES(Train_ID int, Station_ID int,TimeNow DATE,constraint
FK_Train_ID_Re
foreign key(Train_ID) references Train(Train_ID),
constraint FK_Station_ID_Re foreign key(Station_Id) references Station(Station_ID));
```

### **BOOKS TABLE:-**

```
create table books(User_ID int,Ticket_ID,constraint FK_USER_ID_BO
foreign key (User_ID) references USERS(User_ID),
constraint FK_Ticket_ID_BO foreign key(Ticket_ID) references TICKET(TICKET_ID));
```

### **CANCEL TABLE:-**

```
CREATE TABLE CANCEL(
User_ID int,
Ticket_ID int,
Passenger_ID int,
constraint FK_USER_ID_CAN foreign key (User_ID) references USERS(User_ID),
constraint FK_Ticket_ID_CAN foreign key(Ticket_ID) references TICKET(TICKET_ID),
constraint FK_Passenger_ID_Can foreign key(Passenger_ID) references passenger
(PASSENGER_ID)
);
```

### **SOURCE TABLE:-**

```
CREATE TABLE SOURCE(
SourceName VARCHAR(10),
STATION_ID INT ,
Ticket_ID int,
constraint FK_Station_ID_Source foreign key(Station_Id) references Station(Station_ID),
constraint FK_Ticket_ID_Source foreign key(Ticket_ID) references TICKET(TICKET_ID)
);
```

### **DESTINATION TABLE:-**

```

CREATE TABLE DESTINATION(
DestinationName varchar(10),
STATION_ID INT ,
Ticket_ID int,
constraint FK_Station_ID_Dest foreign key(Station_Id) references Station(Station_ID),
constraint FK_Ticket_ID_Dest foreign key(Ticket_ID) references TICKET(TICKET_ID)
);

```

## **INSERTION Queries:-**

```

SQL> insert into station values(111,'RWP STAT',TO_DATE('22/02/2021 1:10:45','DD/MM/YYYY HH:MI:SS'),
1);
1 row created.

SQL> insert into station values(222,'LHR STAT',TO_DATE('16/05/2021 12:02:44','DD/MM/YYYY HH:MI:SS')
,2);
1 row created.

SQL> insert into station values(333,'MUX STAT',TO_DATE('20/07/2021 4:30:50','DD/MM/YYYY HH:MI:SS'),
3);
1 row created.

SQL> insert into station values(444,'KHI STAT',TO_DATE('10/09/2021 9:10:40','DD/MM/YYYY HH:MI:SS'),
4);
1 row created.

SQL> COMMIT;

Commit complete.

SQL> select * from staion;
select * from staion
*
ERROR at line 1:
ORA-00942: table or view does not exist

SQL> select * from station;

```

STATION_ID	NAME	ARRIVAL_T	TRAIN_ID
111	RWP STAT	22-FEB-21	1
222	LHR STAT	16-MAY-21	2
333	MUX STAT	20-JUL-21	3
444	KHI STAT	10-SEP-21	4

```

SQL> insert into passenger values(2001,'KHIZER','KHIZE02','ACSL_SEAT_2','KHIZER','R',101,1);
1 row created.

SQL> insert into passenger values(2002,'SHAHZAIB','SHAZE01','ACSL_SEAT_1','SHAHZAIB','C',102,2);
1 row created.

SQL> insert into passenger values(2003,'ZOHAI B','ZAIBI03','ACSL_SEAT_3','ZOHAI B','N',103,3);
1 row created.

SQL> insert into passenger values(2004,'SAMAMA','SAIMI04','ACSL_SEAT_4','SAMAMA','C',104,4);
1 row created.

SQL> COMMIT;

Commit complete.

SQL> select * from passenger;

```

PASSENGER_ID	NAME	PNR_NO	SEAT_NO	BOOKED_BY	R	USER_ID
-----						
TICKET_ID						
-----						
2001	KHIZER	KHIZE02	ACSL_SEAT_2	KHIZER	R	101
1						
2002	SHAHZAIB	SHAZE01	ACSL_SEAT_1	SHAHZAIB	C	102
2						
2003	ZOHAI B	ZAIBI03	ACSL_SEAT_3	ZOHAI B	N	103
3						
-----						
PASSENGER_ID	NAME	PNR_NO	SEAT_NO	BOOKED_BY	R	USER_ID
-----						
TICKET_ID						
-----						
2004	SAMAMA	SAIMI04	ACSL_SEAT_4	SAMAMA	C	104

```
SQL> insert into train_status values(1,2001,2002,2003,3001,3002,3003,5000,6000);
1 row created.
```

```
SQL> insert into train_status values(2,4001,4002,4003,5001,5002,5003,6000,7000);
1 row created.
```

```
SQL> insert into train_status values (3,8001,8002,8003,9001,9002,9003,2000,4000);
1 row created.
```

```
SQL> insert into (train_status values(4,1001,1002,1003,1201,1202,1203,2700,2500));
insert into (train_status values(4,1001,1002,1003,1201,1202,1203,2700,2500)
*
```

```
ERROR at line 1:
ORA-00928: missing SELECT keyword
```

```
SQL> insert into train_status values (4,1001,1002,1003,1201,1202,1203,2700,2500);
1 row created.
```

```
SQL> commit;
```

```
Commit complete.
```

```
SQL> desc train_status;
```

Name	Null?	Type
TRAIN_ID	NOT NULL	NUMBER(38)
ACSL_SEAT1		NUMBER(38)
ACSL_SEAT2		NUMBER(38)
ACSL_SEAT3		NUMBER(38)
ECONOMY_SEAT1		NUMBER(38)
ECONOMY_SEAT2		NUMBER(38)
ECONOMY_SEAT3		NUMBER(38)
ACSL_FARE		FLOAT(126)
ECONOMY		FLOAT(126)

```
SQL> select * from train_status;
```

TRAIN_ID	ACSL_SEAT1	ACSL_SEAT2	ACSL_SEAT3	ECONOMY_SEAT1	ECONOMY_SEAT2
1	2001	2002	2003	3001	3002
3003	5000	6000			
2	4001	4002	4003	5001	5002
5003	6000	7000			
3	8001	8002	8003	9001	9002
9003	2000	4000			
4	1001	1002	1003	1201	1202
1203	2700	2500			



```
SQL> insert into cancel values(101,1,2001);
```

```
1 row created.
```

```
SQL> insert into cancel values(102,2,2002);
```

```
1 row created.
```

```
SQL> insert into cancel values(103,3,2003);
```

```
1 row created.
```

```
SQL> insert into cancel values(104,4,2004);
```

```
1 row created.
```

```
SQL> select * from cancel;
```

USER_ID	TICKET_ID	PASSENGER_ID
101	1	2001
102	2	2002
103	3	2003
104	4	2004

```
SQL> commit;
```

```
Commit complete.
```

```
SQL> insert into books values ( 101,1);
```

```
1 row created.
```

```
SQL> insert into books values(102,2);
```

```
1 row created.
```

```
SQL> insert into books values(103,3);
```

```
1 row created.
```

```
SQL> insert into books values(104,4);
```

```
1 row created.
```

```
SQL> select * from books;
```

USER_ID	TICKET_ID
101	1
102	2
103	3
104	4

```
SQL> commit;
```

```
Commit complete.
```

```
SQL> insert into stops_at values(1,111);
```

```
1 row created.
```

```
SQL> insert into stops_at values(2,222);
```

```
1 row created.
```

```
SQL> insert into stops_at vaues(3,333);
```

```
insert into stops_at vaues(3,333)
```

```
*
```

```
ERROR at line 1:
```

```
ORA-00928: missing SELECT keyword
```

```
SQL> insert into stops_at values (3,333);
```

```
1 row created.
```

```
SQL> insert into stops_at values (4,444);
```

```
1 row created.
```

```
SQL> select * from stops_at;
```

TRAIN_ID	STATION_ID
1	111
2	222
3	333
4	444

```
SQL> commit;
```

```
SQL> insert into starts values(1,111);
```

```
1 row created.
```

```
SQL> insert into start values(2,222);
```

```
insert into start values(2,222)
```

```
*
```

```
ERROR at line 1:
```

```
ORA-00903: invalid table name
```

```
SQL> nsert into starts values(2,222);
```

```
SP2-0734: unknown command beginning "nsert into..." - rest of line ignored.
```

```
SQL> insert into starts values(2,222);
```

```
1 row created.
```

```
SQL> insert into starts values(3,333);
```

```
1 row created.
```

```
SQL> insert into starts values(4,444);
```

```
1 row created.
```

```
SQL> select * from start;
```

```
select * from start
```

```
*
```

```
ERROR at line 1:
```

```
ORA-00903: invalid table name
```

```
SQL> select * from starts;
```

TRAIN_ID	STATION_ID
1	111
2	222
3	333
4	444

```
SQL> insert into source values( 'RWP',111,1);
```

```
1 row created.
```

```
SQL> INSERT INTO SOURCE VALUES ( 'KAR',222,2);
```

```
1 row created.
```

```
SQL> INSERT INTO SOURCE VALUES ( 'LHR',333,3);
```

```
1 row created.
```

```
SQL> INSERT INTO SOURCE VALUES( 'FSL',444,4);
```

```
1 row created.
```

```
SQL> SELECT * FROM SOURCE;
```

SOURCENAME	STATION_ID	TICKET_ID
RWP	111	1
KAR	222	2
LHR	333	3
FSL	444	4

```
SQL> INSERT INTO DESTINATION VALUES('KAR',111,1);
```

```
1 row created.
```

```
SQL> INSERT INTO DESTINNATION VALUES('RWP',222,2);  
INSERT INTO DESTINNATION VALUES('RWP',222,2)
```

```
*
```

```
ERROR at line 1:
```

```
ORA-00942: table or view does not exist
```

```
SQL> INSERT INTO DESTINATION VALUES('RWP',222,2);
```

```
1 row created.
```

```
SQL> INSERT INTO DESTINATION VALUES('FSL',333,3);
```

```
1 row created.
```

```
SQL> INSERT INTO DESTINATION VALUES('LHR',444,4);
```

```
1 row created.
```

```
SQL> COMMIT;
```

```
Commit complete.
```

```
SQL> INSERT INTO REACHES VALUES(1,111,TO_DATE('05:00:00','HH:MI:SS'));
```

```
1 row created.
```

```
SQL> INSERT INTO REACHES VALUES(2,222,TO_DATE('08:00:00','HH:MI:SS'));
```

```
1 row created.
```

```
SQL> INSERT INTO REACHES VALUES(3,333,TO_DATE('10,  
2
```

```
SQL> INSERT INTO REACHES VALUES(3,333,TO_DATE('10:00:00','HH:MI:SS'));
```

```
1 row created.
```

```
SQL> INSERT INTO REACHES VALUES(4,444,TO_DATE('04:00:00','HH:MI:SS'));
```

```
1 row created.
```

```
SQL> COMMIT;
```

```
Commit complete.
```

## **DESC QUERY:**

SQL> DESC TRAIN;

Name	Null?	Type
TRAIN_ID	NOT NULL	NUMBER(38)
TRAIN_NAME		VARCHAR2(20)
ARRIVAL		DATE
DEPARTURE		DATE
SEATS_AVALIABLE		VARCHAR2(10)
CURRENTDATE		DATE

SQL> DESC USERS;

Name	Null?	Type
USER_ID	NOT NULL	NUMBER(38)
PASSWORD		VARCHAR2(5)
FIRST_NAME		VARCHAR2(10)
CNIC		VARCHAR2(15)
EMAIL		VARCHAR2(15)
AGE		NUMBER(38)
CITY		VARCHAR2(20)
ADDRESS		VARCHAR2(25)
LAST_NAME		VARCHAR2(10)

SQL> DESC STATION;

Name	Null?	Type
STATION_ID	NOT NULL	NUMBER(38)
NAME		VARCHAR2(10)
ARRIVAL_TIME		DATE
TRAIN_ID		NUMBER(38)

SQL> DESC TICKET;

Name	Null?	Type
TICKET_ID	NOT NULL	NUMBER(38)
USER_ID		NUMBER(38)
STATUS		CHAR(1)
TRAIN_ID		NUMBER(38)
TOTAL_PASSENGERS		NUMBER(38)

SQL> DESC PASSENGER;

Name	Null?	Type
PASSENGER_ID	NOT NULL	NUMBER(38)
NAME		VARCHAR2(10)
PNR_NO		VARCHAR2(7)
SEAT_NO		VARCHAR2(15)
BOOKED_BY		VARCHAR2(10)
RESERVATION_STATUS		CHAR(1)
USER_ID		NUMBER(38)
TICKET_ID		NUMBER(38)

SQL> DESC TRAIN\_STATUS;

Name	Null?	Type
TRAIN_ID	NOT NULL	NUMBER(38)
ACSL_SEAT1		NUMBER(38)
ACSL_SEAT2		NUMBER(38)
ACSL_SEAT3		NUMBER(38)
ECONOMY_SEAT1		NUMBER(38)
ECONOMY_SEAT2		NUMBER(38)
ECONOMY_SEAT3		NUMBER(38)
ACSL_FARE		FLOAT(126)
ECONOMY		FLOAT(126)

**SELECT QUERIES FOR DISPLAYING TABLES DATA:-**



SQL> SELECT \* FROM USERS;

USER_ID	PASSW	FIRST_NAME	CNIC	EMAIL	AGE
101	KHI	KHIZER	37405-631234-7	khizer@123	20
RAWALPINDI		H-229 ST#7 RWP		WAHEED	
102	SHA	SHAHZAIB	37405-3456789-1	sk19@gmail	19
RAWALPINDI		NE 1437 ST 21 DK RWP		IQBAL	
103	ZOH	ZOHAIB	37809-123456-7	malik11@gmail	21
RAWALPINDI		H J217 ST 7 RAWALPINDI		MALIK	

USER_ID	PASSW	FIRST_NAME	CNIC	EMAIL	AGE
104	SAM	SAMAMA	35678-098765-2	sam89@gmail	22
ISLAMABAD		G9/3 ISL		KHAN	

SQL> SELECT \* FROM TRAIN;

TRAIN_ID	TRAIN_NAME	ARRIVAL	DEPARTURE	SEATS_AVAL	CURRENTDA
1	PAKISTAN EXPRESS	03-JUN-21	02-JUN-21	YES	22-JUN-21
2	AWAMI EXPRESS	04-JUN-21	03-JUN-21	NO	22-JUN-21
3	GREEN LINE	05-JUN-21	04-JUN-21	YES	22-JUN-21
4	KHYBER MAIL	06-JUN-21	05-JUN-21	NO	22-JUN-21

SQL> SELECT \* FROM TRAIN;

TRAIN_ID	TRAIN_NAME	ARRIVAL	DEPARTURE	SEATS_AVAL	CURRENTDA
1	PAKISTAN EXPRESS	03-JUN-21	02-JUN-21	YES	22-JUN-21
2	AWAMI EXPRESS	04-JUN-21	03-JUN-21	NO	22-JUN-21
3	GREEN LINE	05-JUN-21	04-JUN-21	YES	22-JUN-21
4	KHYBER MAIL	06-JUN-21	05-JUN-21	NO	22-JUN-21

SQL> SELECT \* FROM STATION;

STATION_ID	NAME	ARRIVAL_T	TRAIN_ID
111	RWP STAT	22-FEB-21	1
222	LHR STAT	16-MAY-21	2
333	MUX STAT	20-JUL-21	3
444	KHI STAT	10-SEP-21	4

SQL> SELECT \* FROM STOPS\_AT;

TRAIN_ID	STATION_ID
1	111
2	222
3	333
4	444

SQL> SELECT \* FROM STARTS;

TRAIN_ID	STATION_ID
1	111
2	222
3	333
4	444

```
SQL> SELECT * FROM REACHES;
```

TRAIN_ID	STATION_ID	TIMENOW
1	111	01-JUN-21
2	222	01-JUN-21
3	333	01-JUN-21
4	444	01-JUN-21

```
SQL> SELECT * FROM TICKET;
```

TICKET_ID	USER_ID	S	TRAIN_ID	TOTAL_PASSENGERS
1	101	B	1	3
2	102	N	2	5
3	103	B	3	4
4	104	N	4	3

```
SQL> SELECT * FROM TRAIN_STATUS;
```

TRAIN_ID	ACSL_SEAT1	ACSL_SEAT2	ACSL_SEAT3	ECONOMY_SEAT1	ECONOMY_SEAT2	ECONOMY_SEAT3	ACSL_FARE	
1	2001	2002	2003	3001	3002	3003	5000	6000
2	4001	4002	4003	5001	5002	5003	6000	7000
3	8001	8002	8003	9001	9002	9003	2000	4000
4	1001	1002	1003	1201	1202	1203	2700	2500

```
SQL> SELECT * FROM PASSENGER;
```

PASSENGER_ID	NAME	PNR_NO	SEAT_NO	BOOKED_BY	R	USER_ID	TICKET_ID
2001	KHIZER	KHIZE02	ACSL_SEAT_2	KHIZER	R	101	1
2002	SHAHZAIB	SHAZE01	ACSL_SEAT_1	SHAHZAIB	C	102	2
2003	ZOHAIB	ZAIBI03	ACSL_SEAT_3	ZOHAIB	N	103	3
2004	SAMAMA	SAIMI04	ACSL_SEAT_4	SAMAMA	C	104	4

```
SQL> SELECT * FROM CANCEL;
```

USER_ID	TICKET_ID	PASSENGER_ID
101	1	2001
102	2	2002
103	3	2003
104	4	2004

```
SQL> SELECT * FROM BOOKS;
```

USER_ID	TICKET_ID
101	1
102	2
103	3
104	4

SQL> SELECT \* FROM SOURCE;

SOURCENAME	STATION_ID	TICKET_ID
RWP	111	1
KAR	222	2
LHR	333	3
FSL	444	4

SQL> SELECT \* FROM DESTINATION;

DESTINATIO	STATION_ID	TICKET_ID
KAR	111	1
RWP	222	2
FSL	333	3
LHR	444	4

SQL> SELECT \* FROM USERS WHERE FIRST\_NAME LIKE 'S%';

USER_ID	PASSW	FIRST_NAME	CNIC	EMAIL	AGE	CITY	ADDRESS	LAST_NAME
102	SHA	SHAHZAIB	37405-3456789-1	sk19@gmail	19	RAWALPINDI	NE 1437 ST 21 DK RWP	
104	SAM	SAMANA	35678-098765-2	sam89@gmail	22	ISLAMABAD	G9/3 ISL	KHAN

## **INNER, LEFT OUTER, RIGHT OUTER JOIN QUERIES ON OUR PROJECT:-**

```
SQL> SELECT USERS.USER_ID FROM USERS
2  INNER JOIN TICKET
3  ON USERS.USER_ID=TICKET.USER_ID;
```

USER_ID
101
102
103
104

```
SQL>
SQL>
SQL> SELECT USERS.USER_ID FROM USERS
2  LEFT OUTER JOIN PASSENGER
3  ON(PASSENGER.USER_ID=USERS.USER_ID);
```

USER_ID
101
102
103
104

```
SQL> SELECT USERS.USER_ID FROM USERS
2  RIGHT OUTER JOIN PASSENGER
3  ON(PASSENGER.USER_ID=USERS.USER_ID);
```

USER_ID
101
102
103
104

## **FULL Join Query:-**

```
SQL> SELECT USERS.USER_ID FROM USERS
2  FULL JOIN PASSENGER
3  ON(PASSENGER.USER_ID=USERS.USER_ID);
```

USER_ID
101
102
103
104

### **SELF Joins Query:-**

```
SQL> SELECT U1.USER_ID FROM USERS U1,  
2     USERS U2  
3     WHERE U1.USER_ID=U2.USER_ID ;
```

USER_ID
101
102
103
104

### **MESSAGE FOR YOU SIR!**

- **OTHER ALL ANY TYPE OF QUERY IS ALSO WORKING ON OUR PROJECT DUE TO TIME DEFICIENCY WE ARE NOT BE ABLE TO PASTE ALL SCREENSHOTS, REST WILL SHOW YOU IN VIVA DEPENDS ON YOU SIR.**

**THE END!**