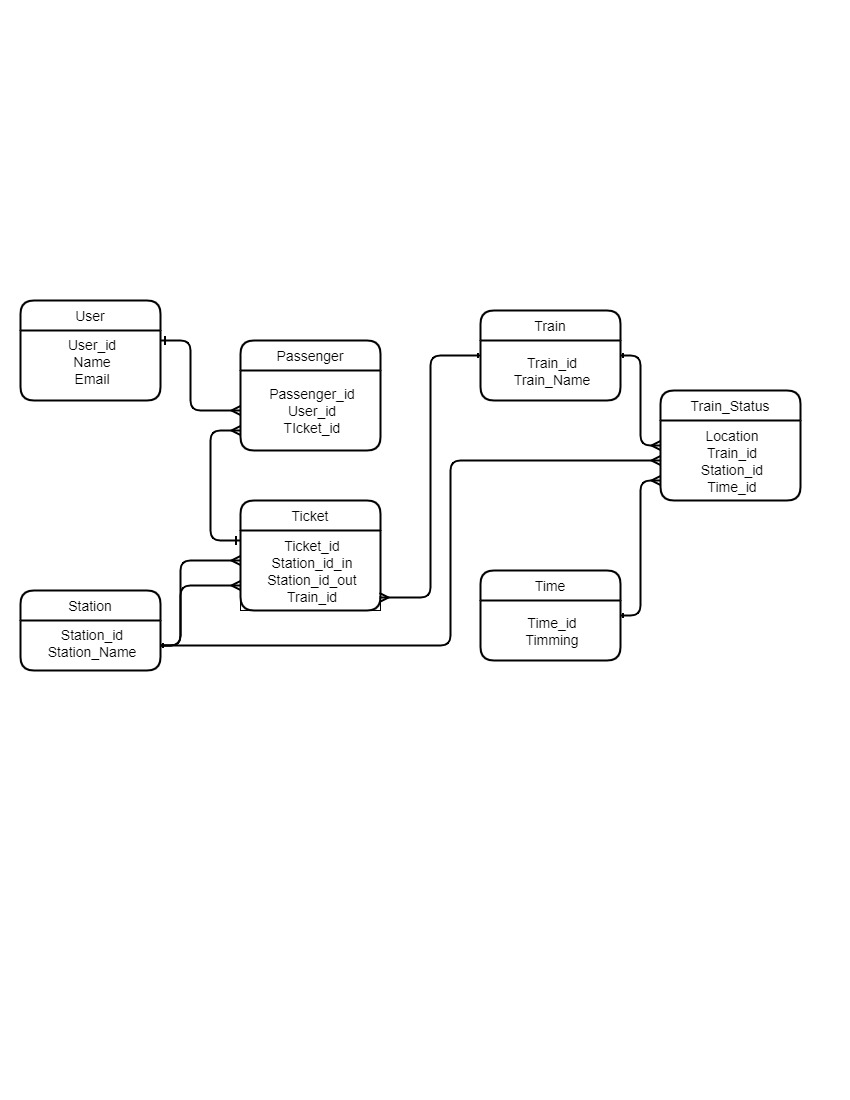
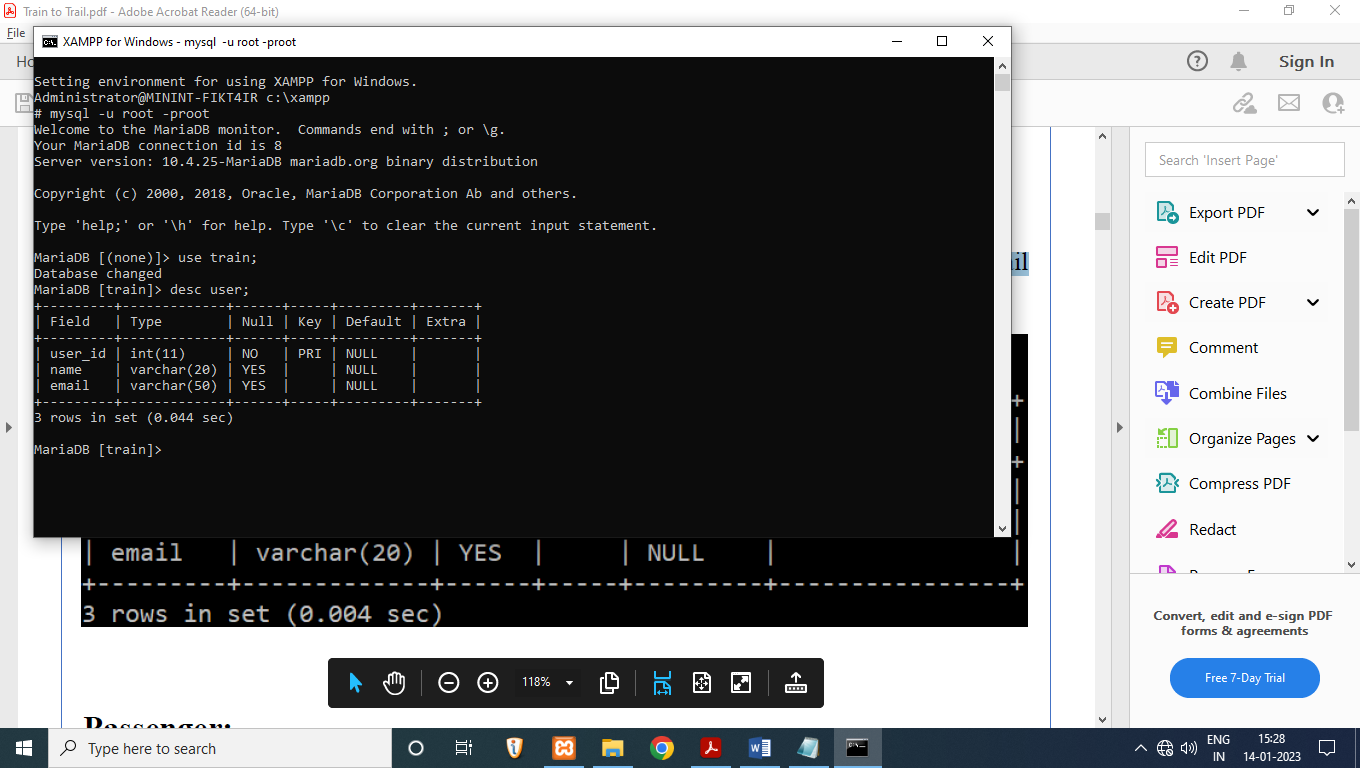
**ER Diagram**

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**Structure of Tables**

**User :**

create table user (user\_id int primary key(11), name varchar(20), email varchar(50));

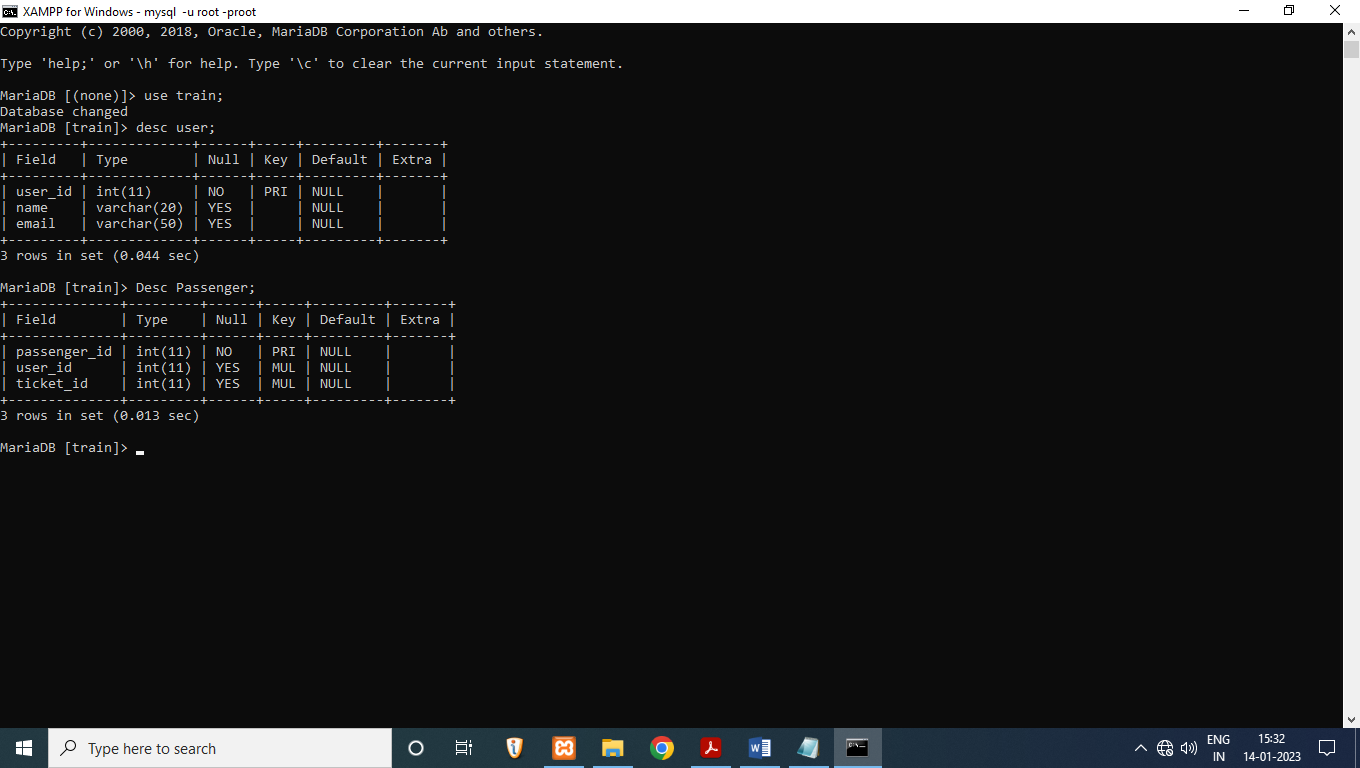


**Passenger :**

create table passenger (passenger\_id int(11) primary key, user\_id int(11), ticket\_id int(11));

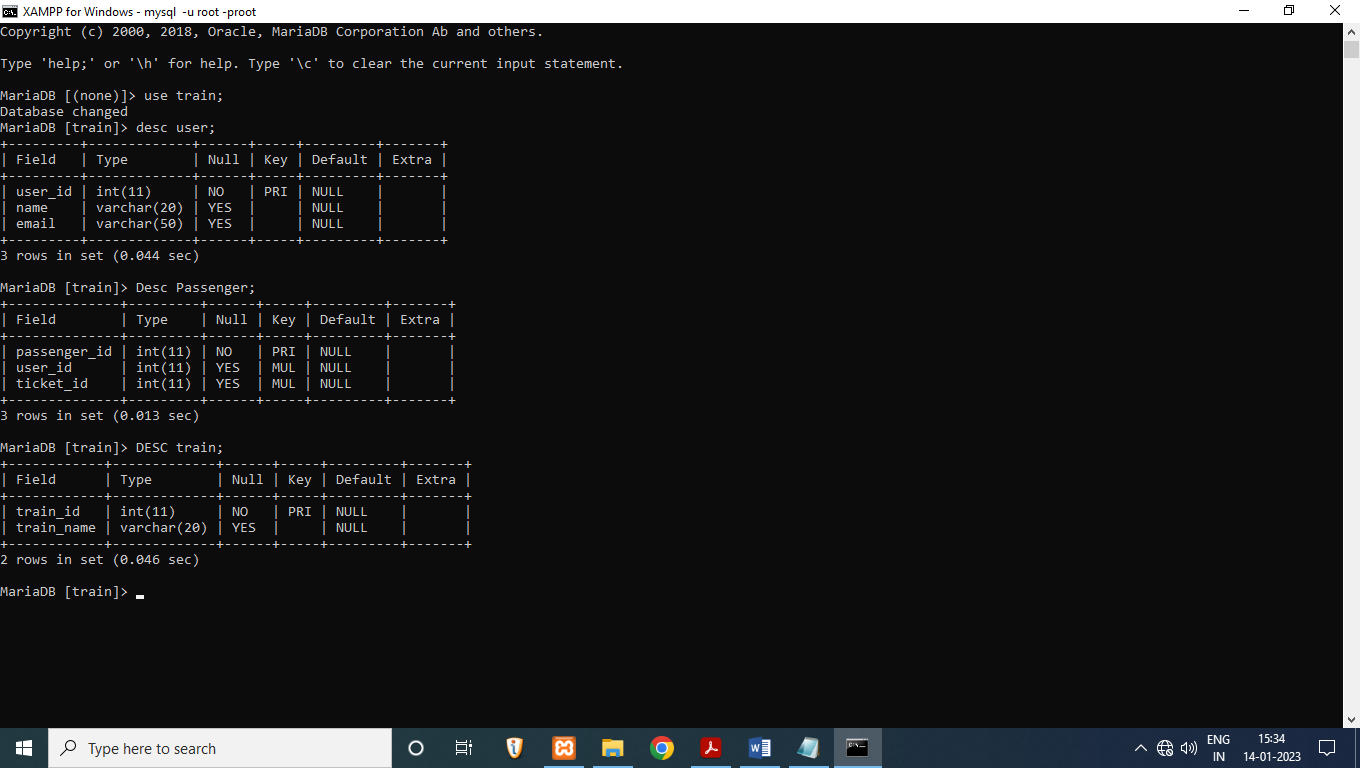
alter table passenger add constraint fk\_userid foreign key (user\_id) references user(user\_id);

alter table passenger add constraint fk\_ticketid foreign key (ticket\_id) references ticket(ticket\_id);



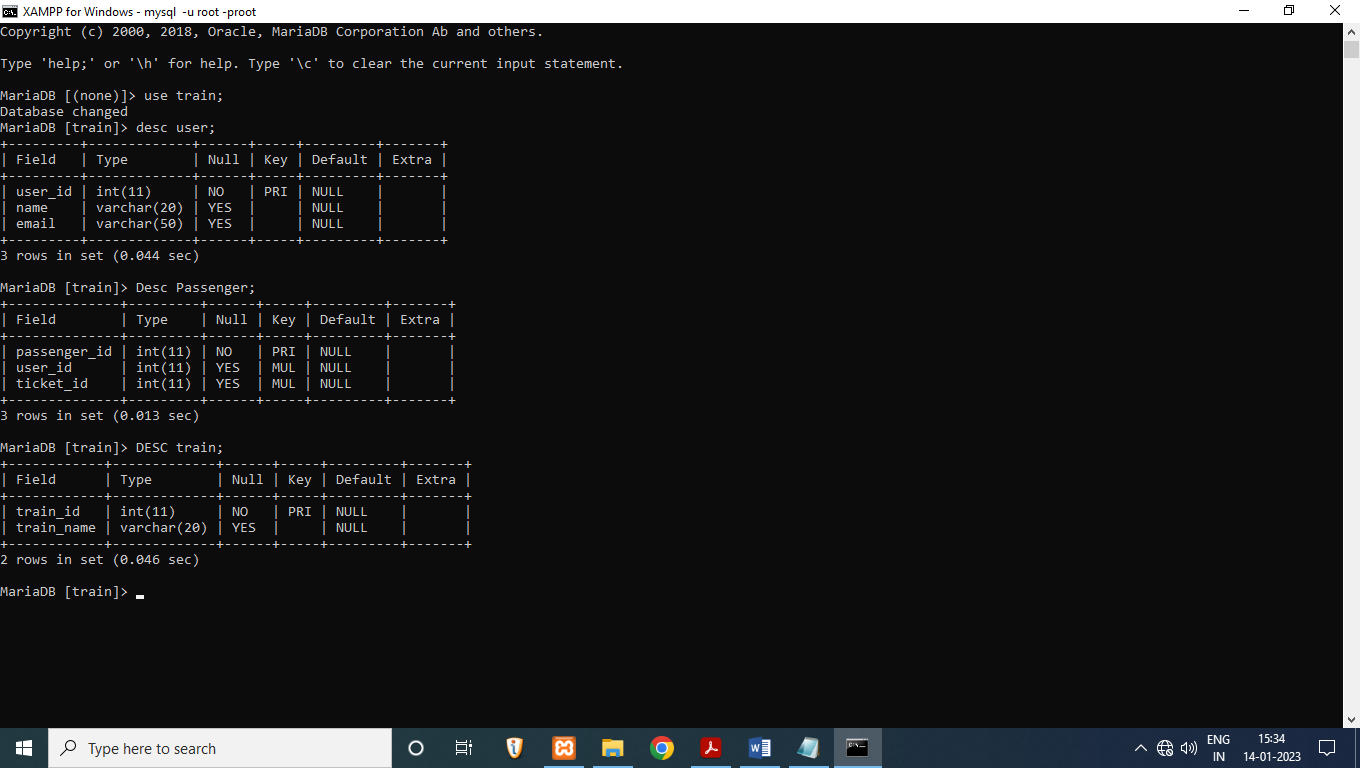
**Station :**

create table station (station\_id int(11) primary key, station\_name varchar(20));



**Train:**

create table train (train\_id int(11) primary key, train\_name varchar(20));



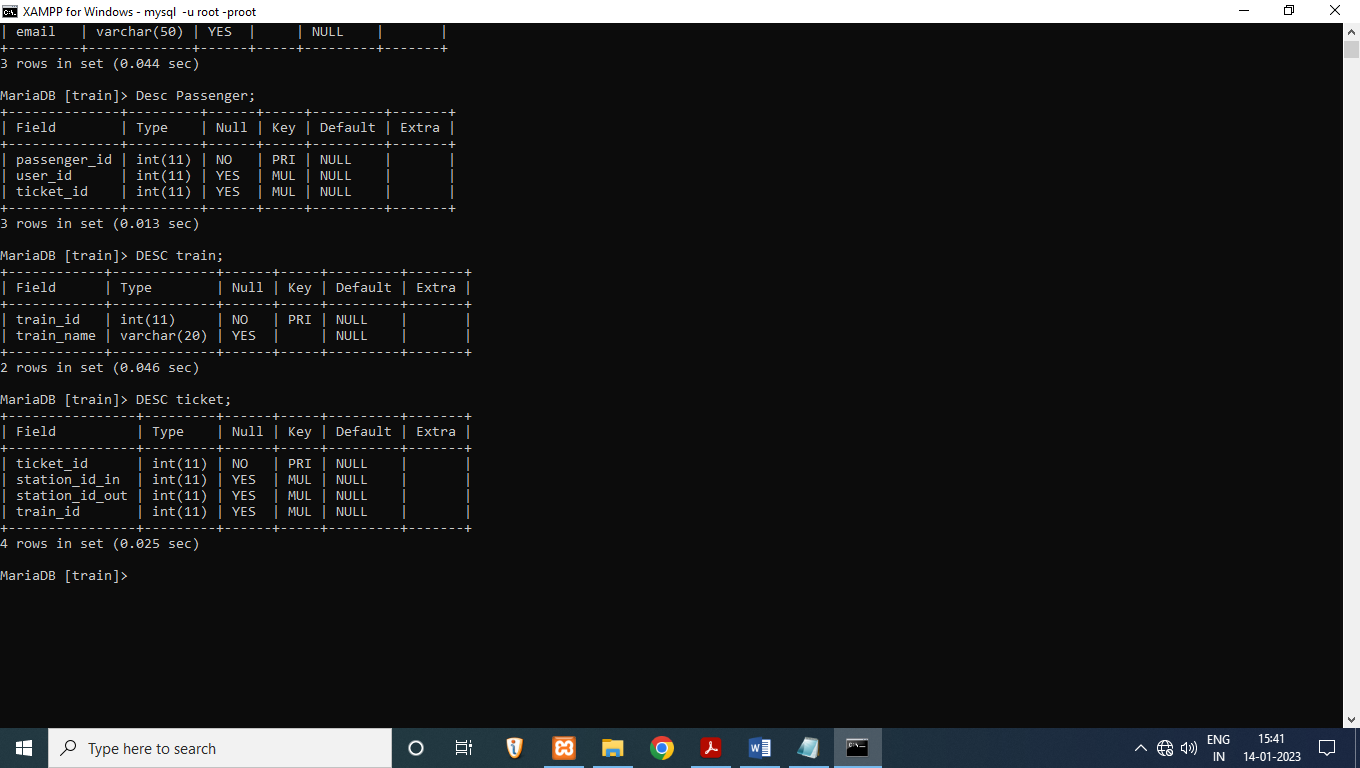
**Ticket:**

create table ticket (ticket\_id int(11) primary key, station\_id\_in int(11), station\_id\_out int(11), train\_id int(11));

alter table ticket add constraint fk\_stationid foreign key (station\_id\_in) references station(station\_id);

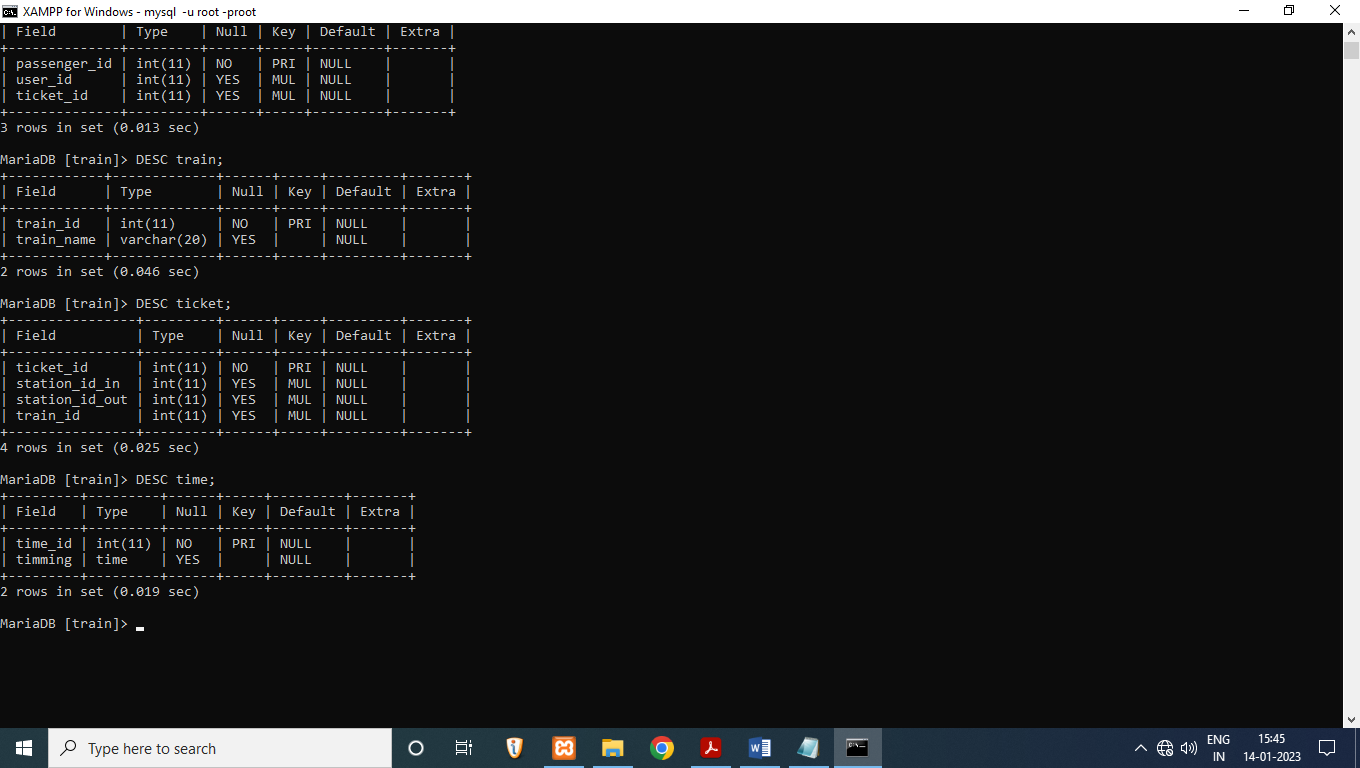
alter table ticket add constraint fk\_stationid2 foreign key (station\_id\_out) references station(station\_id);

alter table ticket add constraint fk\_trainid foreign key (train\_id) references train(train\_id);



**Time:**

create table time (time\_id int(11) primary key, timming time);



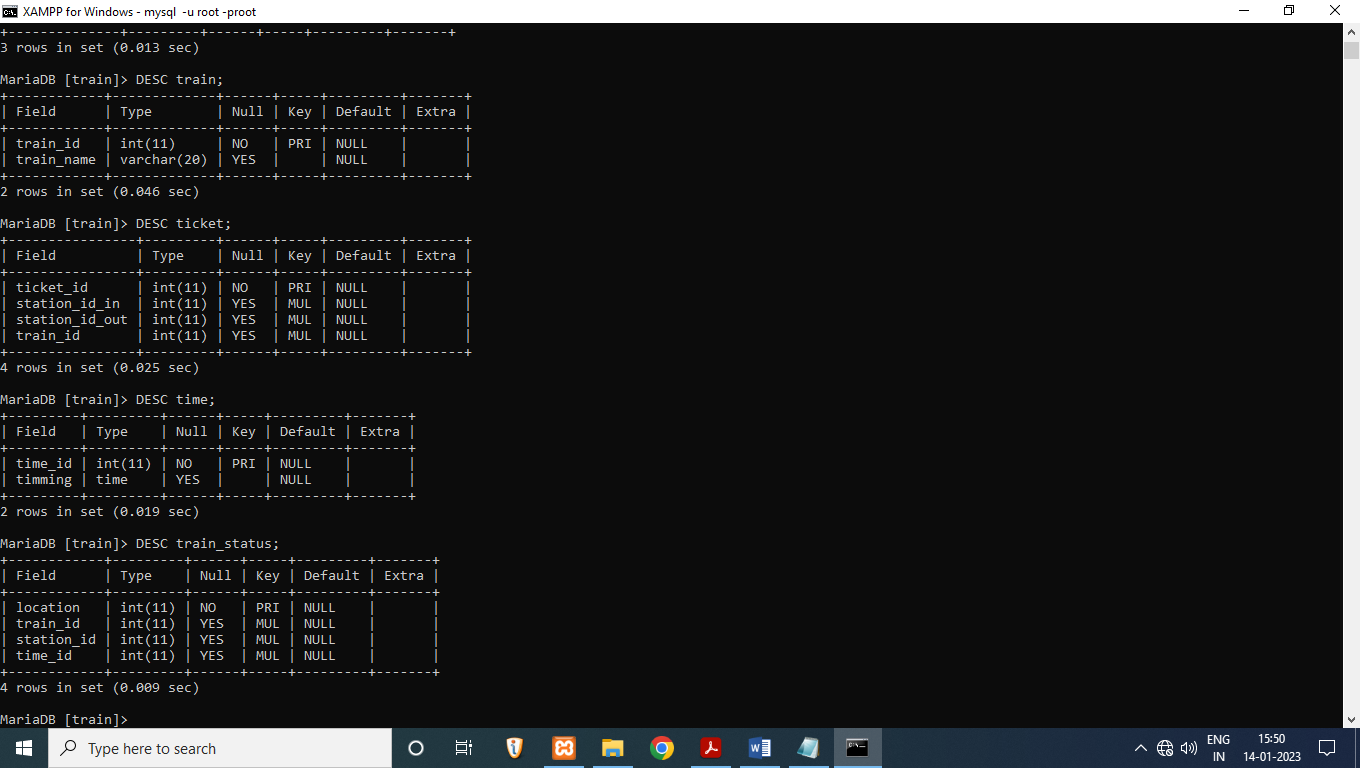
**Train\_status:**

create table train\_status (location int(11) primary key, train\_id int(11), station\_id int(11), time\_id int(11));

alter table train\_status add constraint fk\_trainid foreign key (train\_id) references train(train\_id);

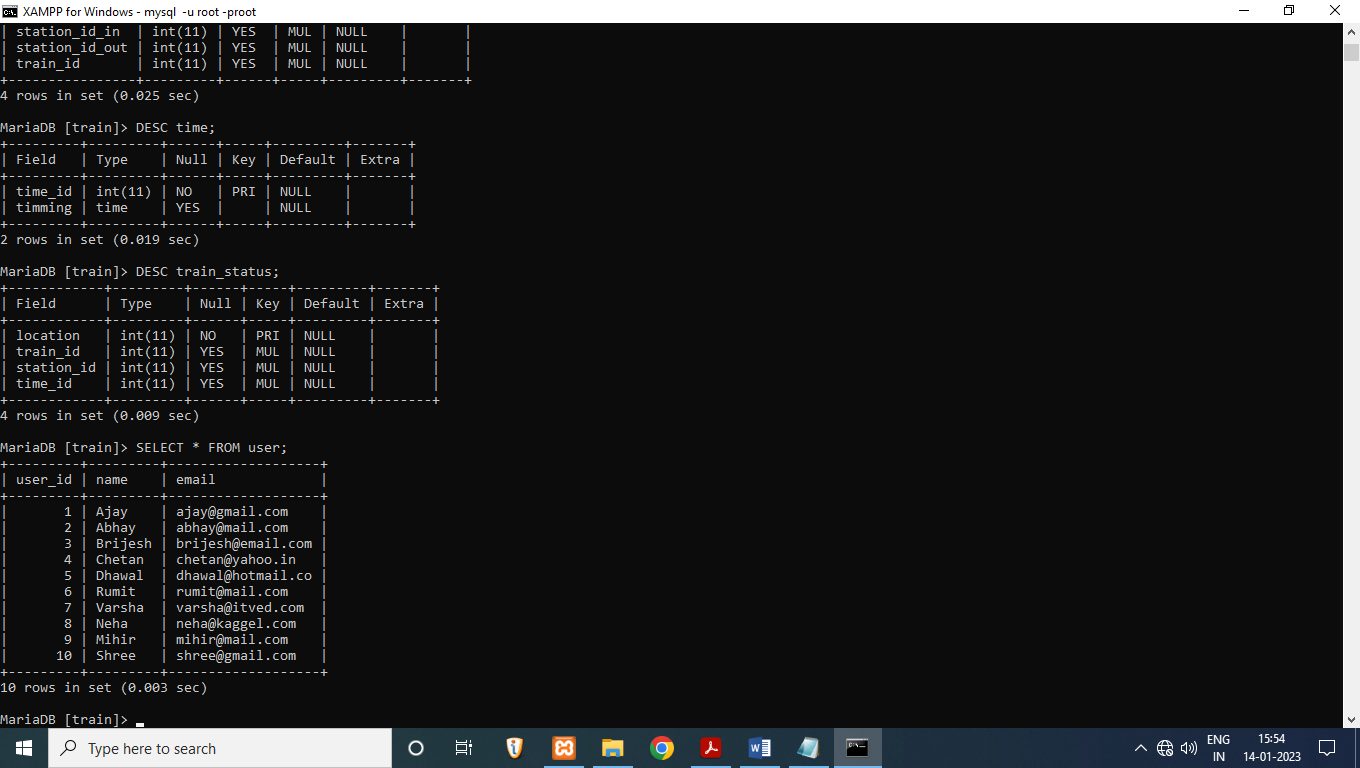
alter table train\_status add constraint fk\_stationid1 foreign key (station\_id) references station(station\_id);

alter table train\_status add constraint fk\_timeid foreign key (time\_id) references time(time\_id);

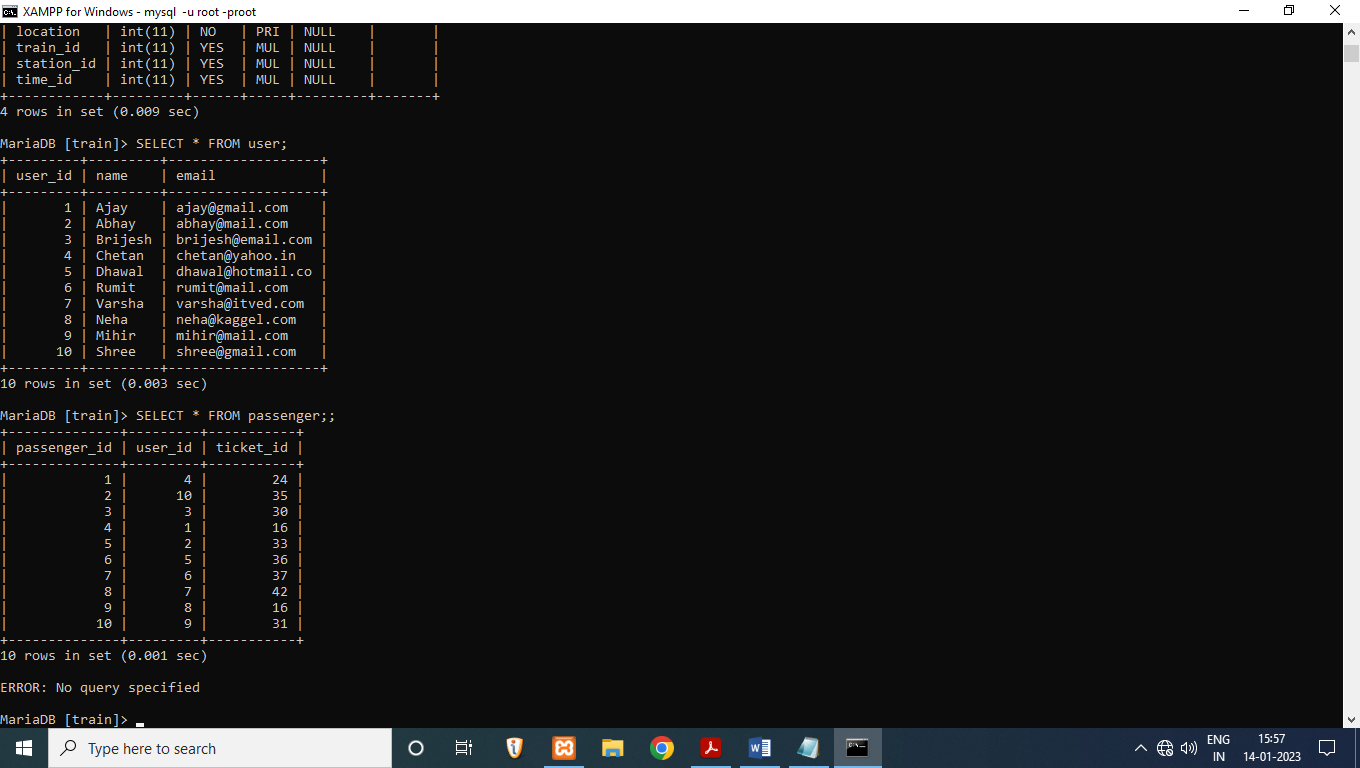


**Content of Tables**

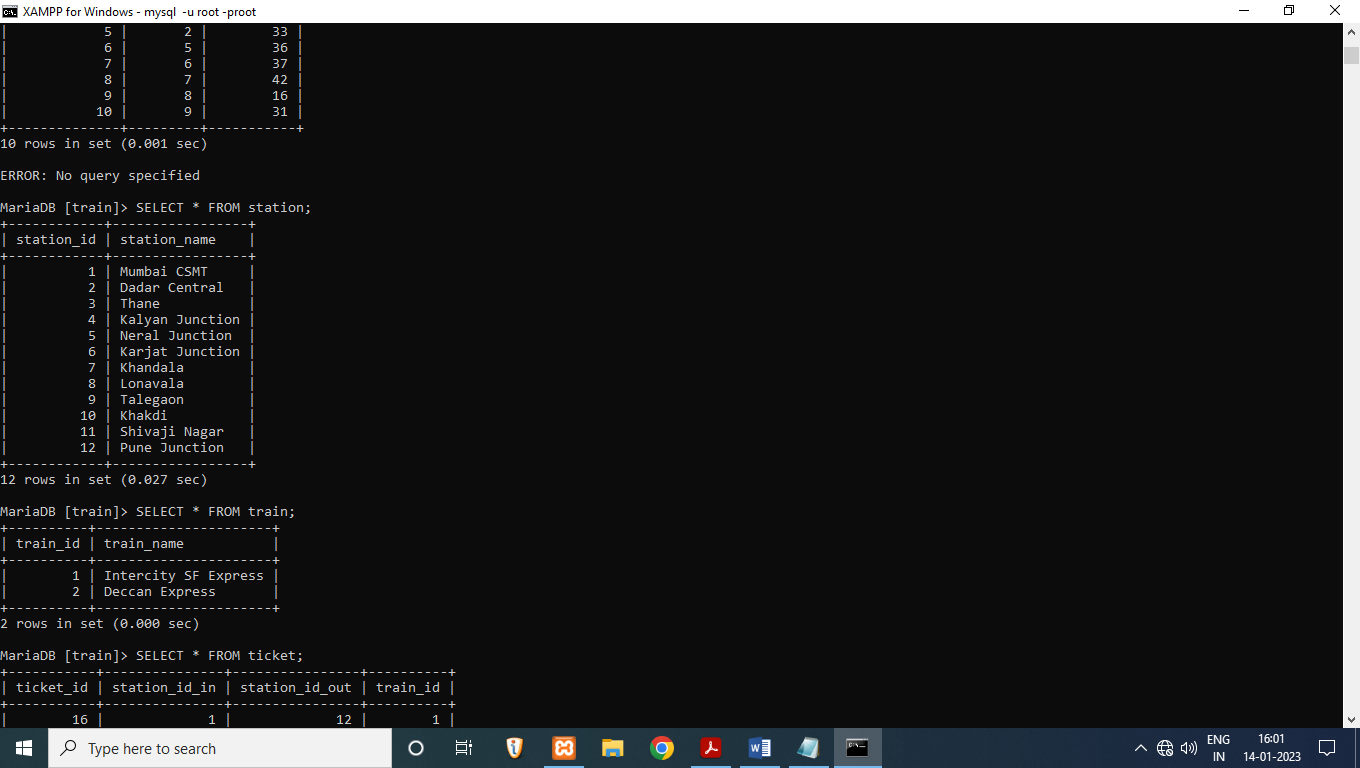
**User :**



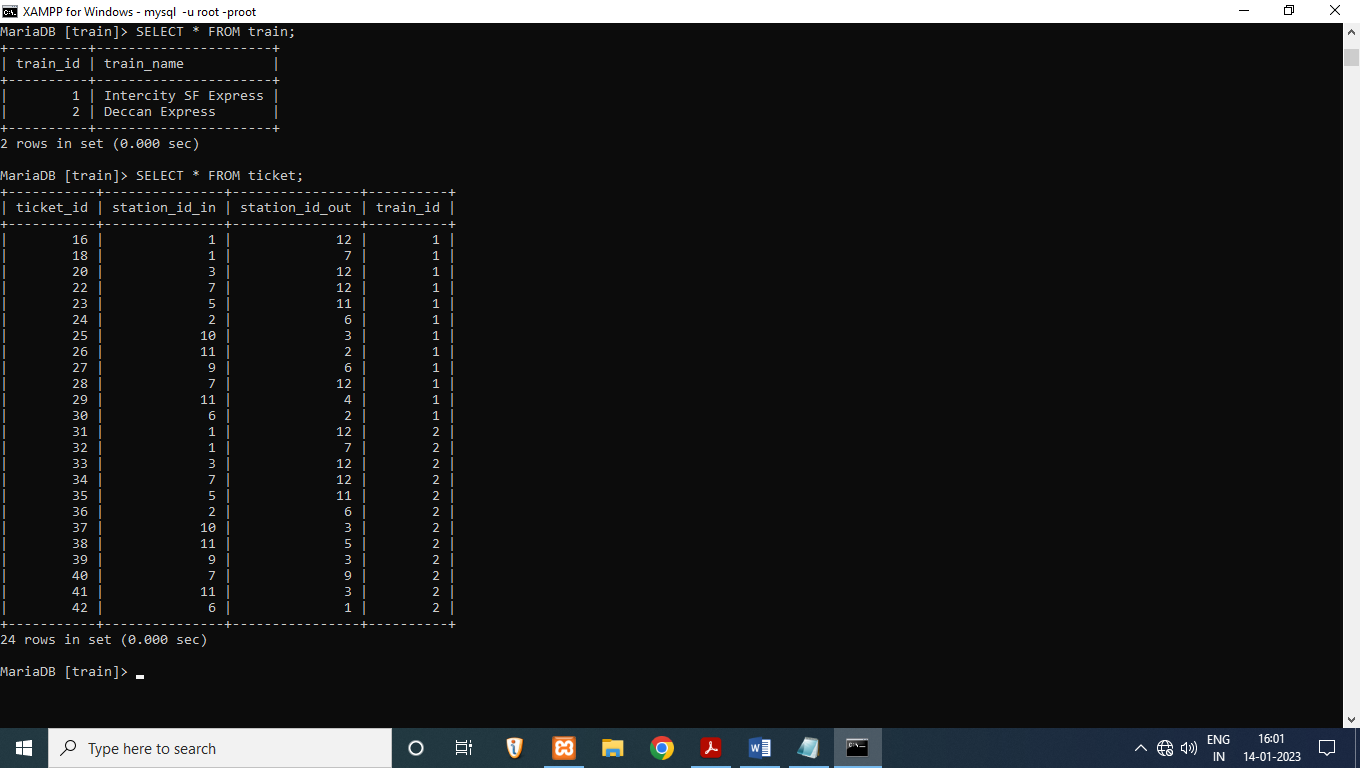
**Passenger :**

****

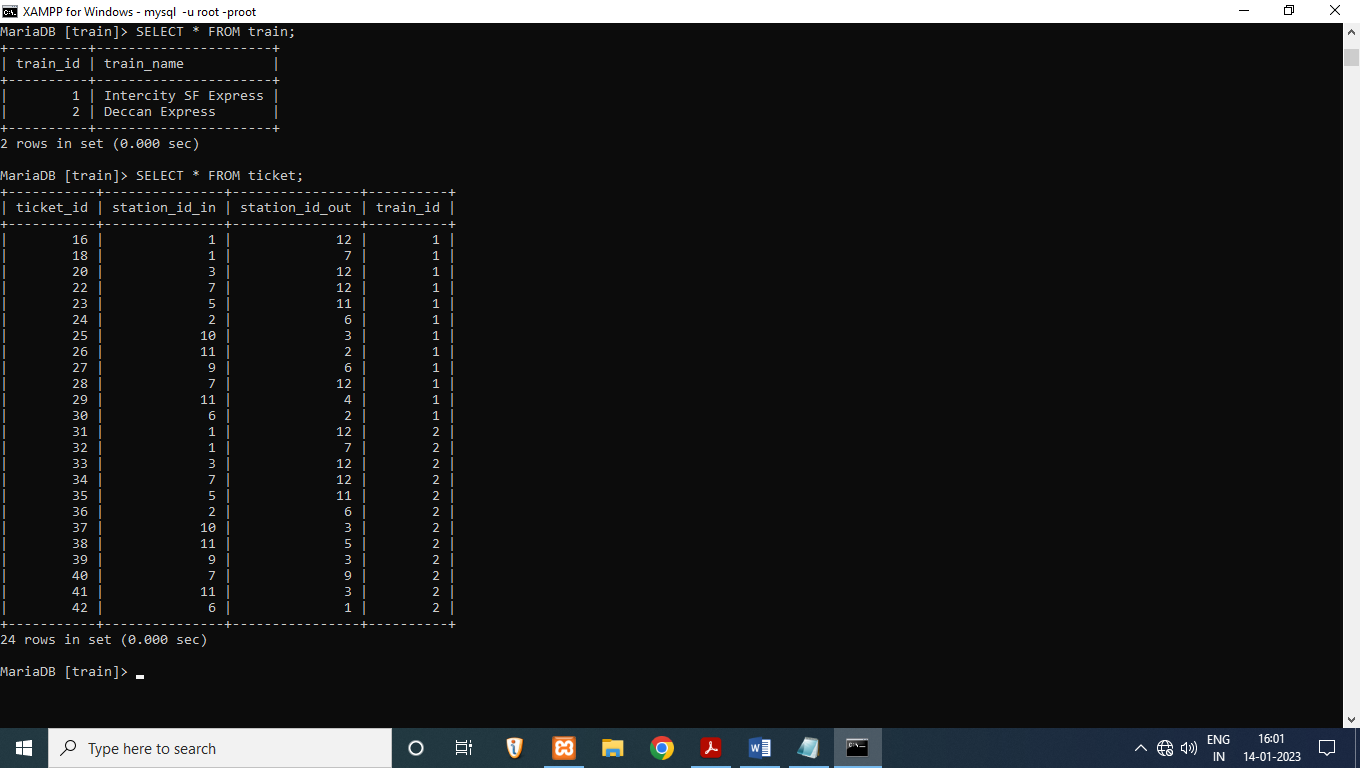
**Station :**

****

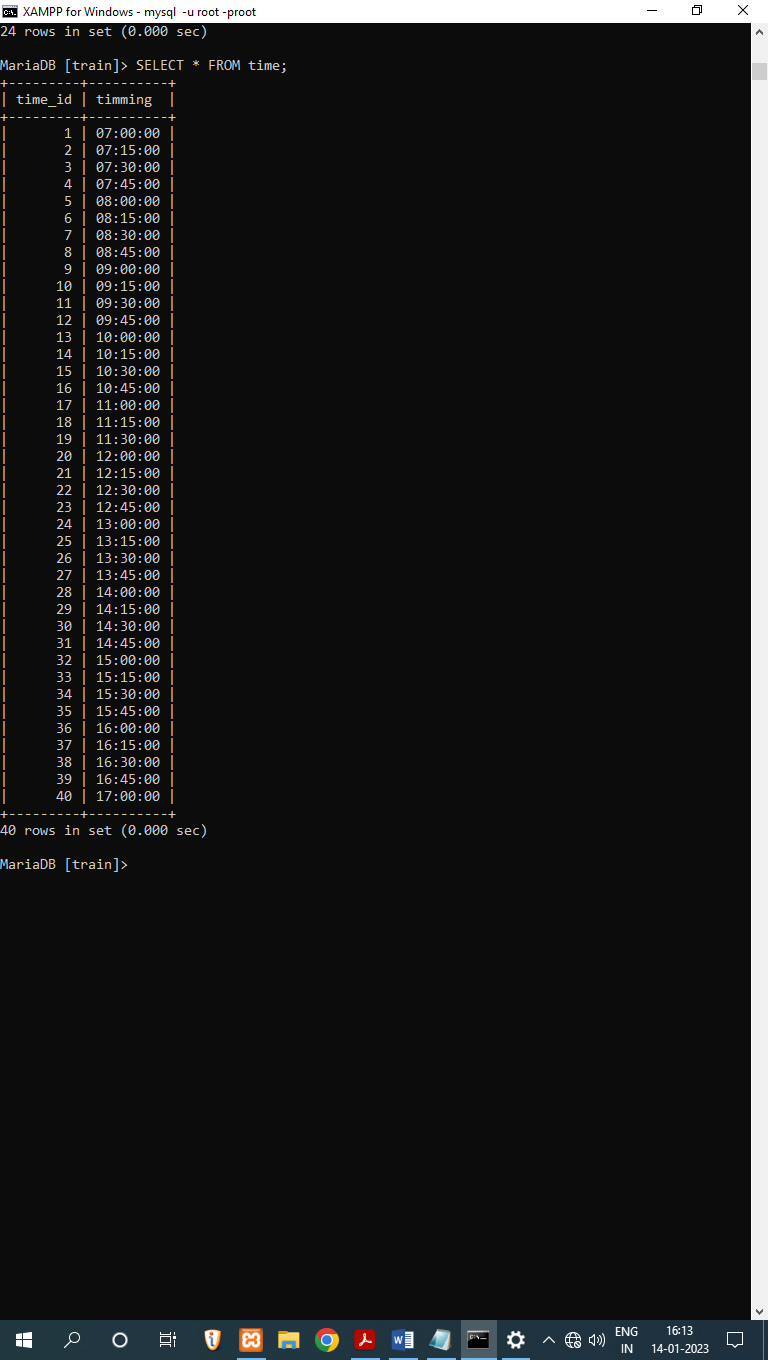
**Train :**

****

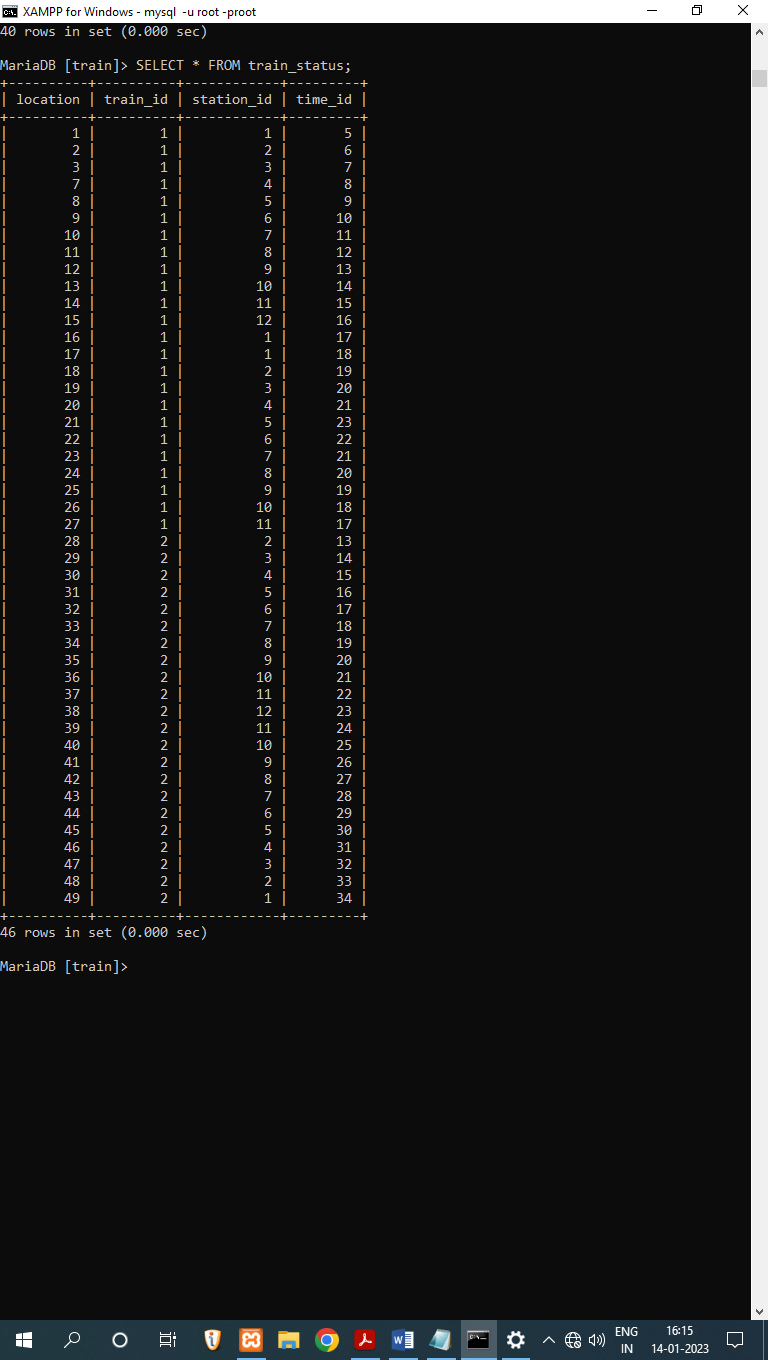
**Ticket :**

****

**Time :**

****

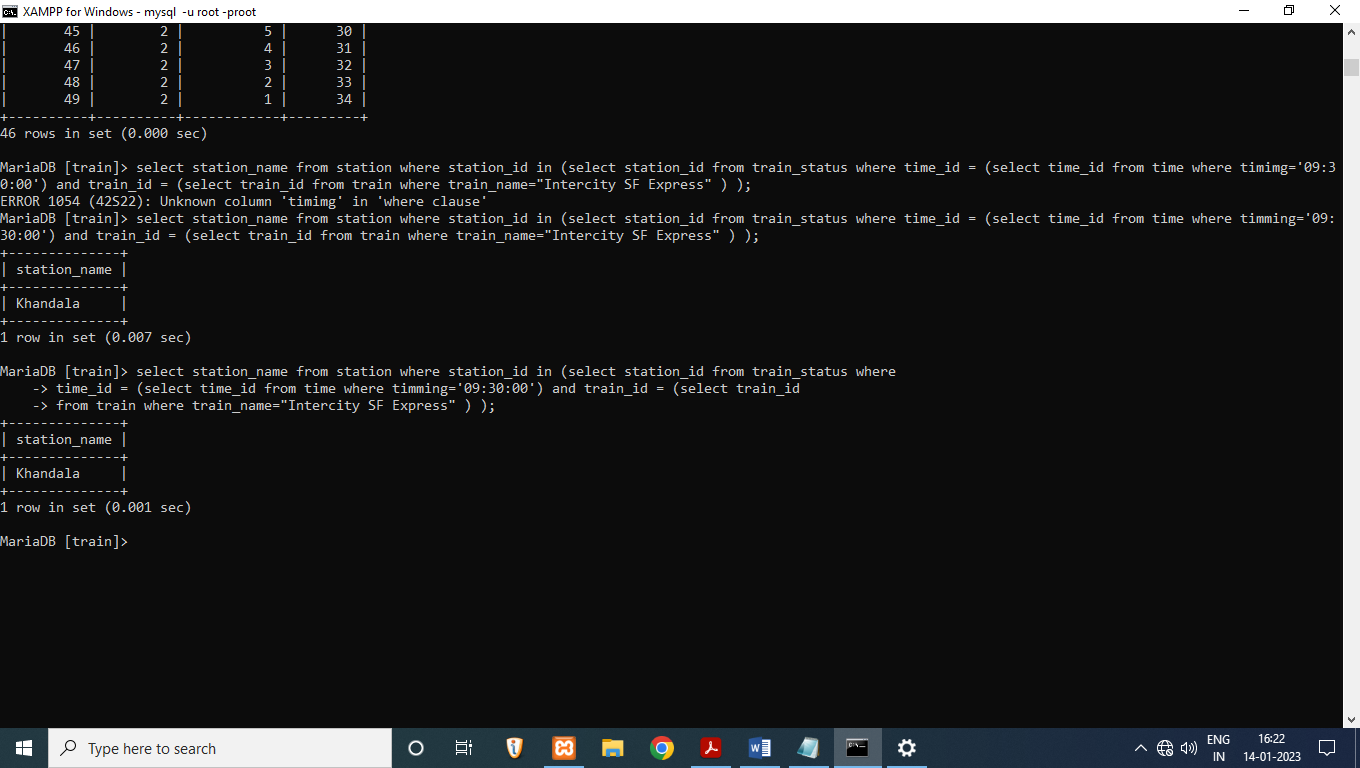
**Train\_Status :**

****

**Subqueries**

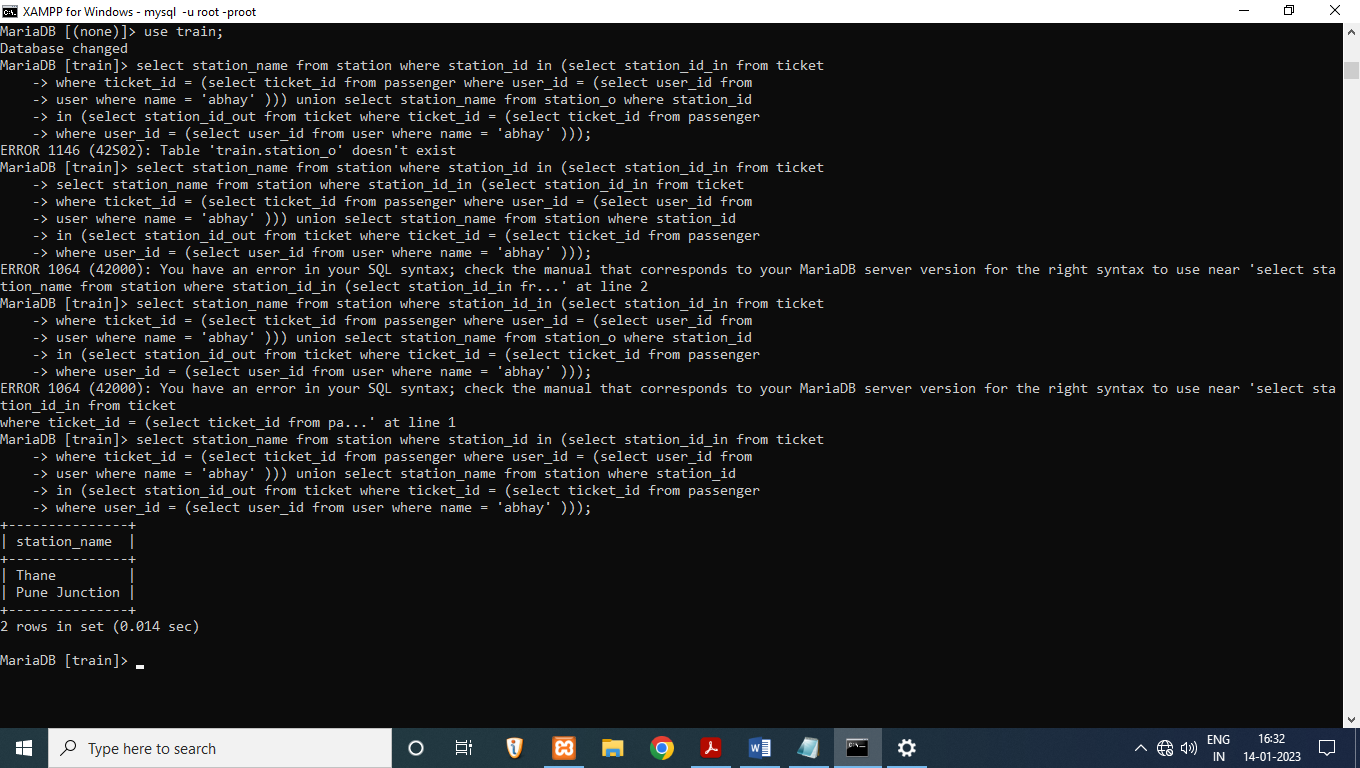
**Locate the train at a particular time:**

select station\_name from station where station\_id in (select station\_id from train\_status where time\_id = (select time\_id from time where timimg='09:30:00') and train\_id = (select train\_id from train where train\_name="Intercity SF Express" ) );



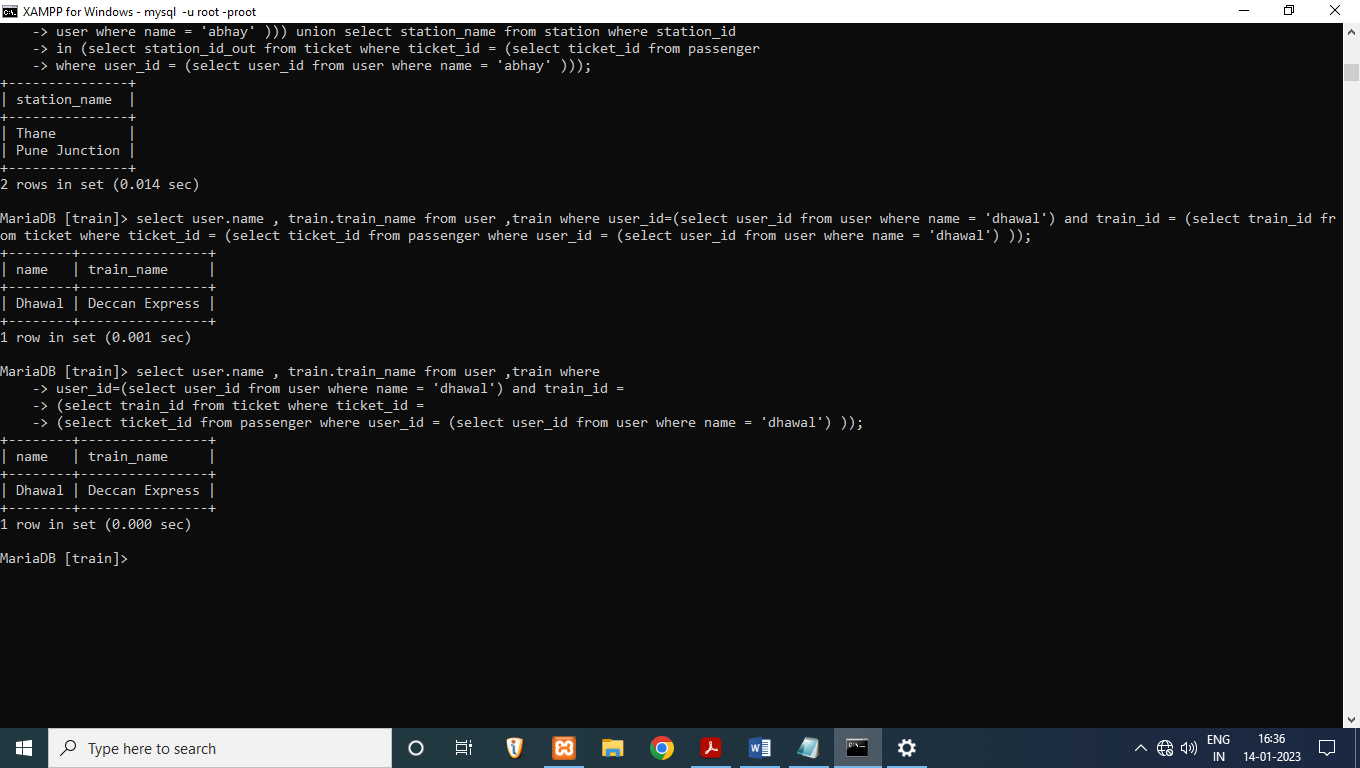
**Location from where the individual is travelling:**

select station\_name from station where station\_id in (select station\_id\_in from ticket where ticket\_id = (select ticket\_id from passenger where user\_id = (select user\_id from user where name = 'abhay' ))) union select station\_name from station where station\_id in (select station\_id\_out from ticket where ticket\_id = (select ticket\_id from passenger where user\_id = (select user\_id from user where name = 'abhay' )));



**Name of the train from which user is travelling:**

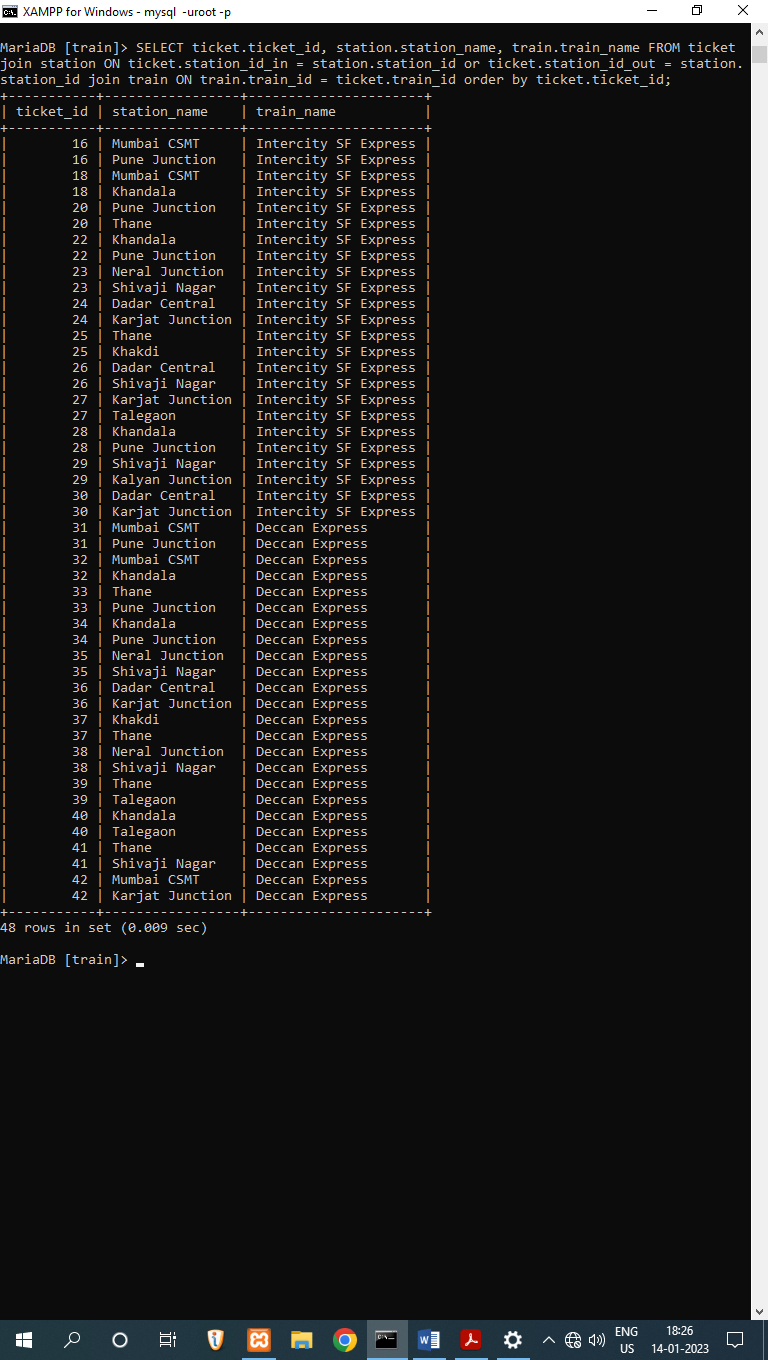
select user.name , train.train\_name from user ,train where user\_id=(select user\_id from user where name = 'dhawal') and train\_id = (select train\_id from ticket where ticket\_id = (select ticket\_id from passenger where user\_id = (select user\_id from user where name = 'dhawal') ));



**Joins**

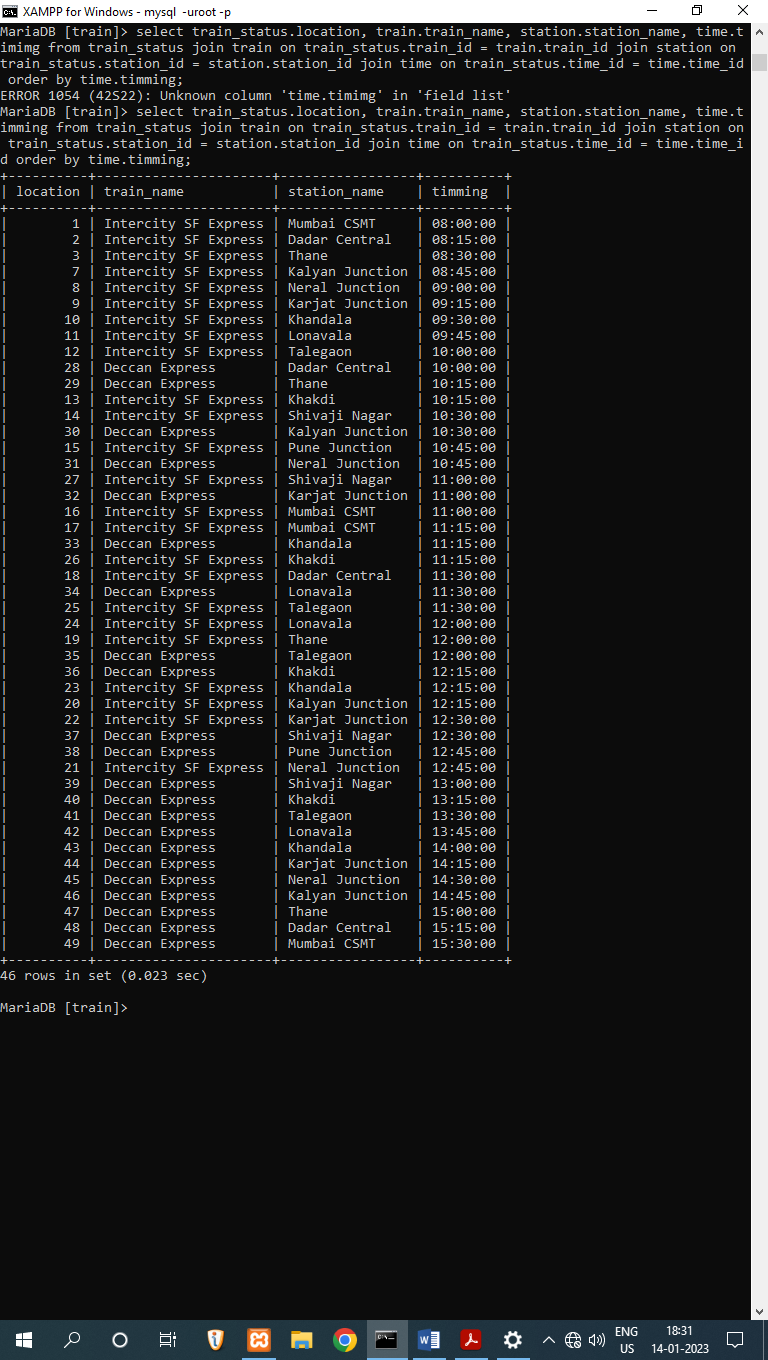
**Joining ticket with train and station name to understand where passengers are travelling and by which train:**

SELECT ticket.ticket\_id, station.station\_name, train.train\_name FROM ticket join station ON ticket.station\_id\_in = station.station\_id or ticket.station\_id\_out = station.station\_id join train ON train.train\_id = ticket.train\_id order by ticket.ticket\_id;



**Joining train\_status to train location, train, and it’s time to understand train schedule according to train location and train name:**

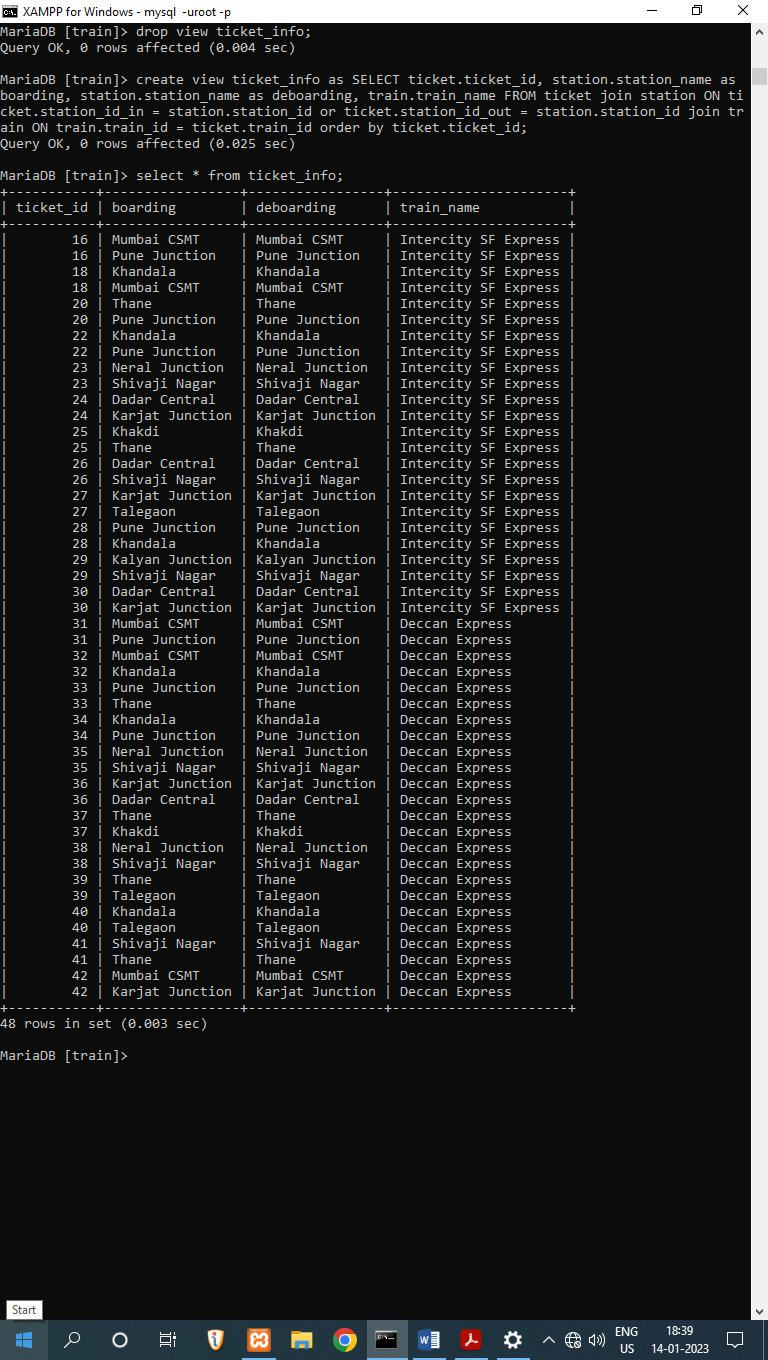
select train\_status.location, train.train\_name, station.station\_name, time.timimg from train\_status join train on train\_status.train\_id = train.train\_id join station on train\_status.station\_id = station.station\_id join time on train\_status.time\_id = time.time\_id order by time.timming;



**Views**

**Using views to store above joined tables for future references:**

create view ticket\_info as SELECT ticket.ticket\_id, station.station\_name as boarding, station.station\_name as deboarding, train.train\_name FROM ticket join station ON ticket.station\_id\_in = station.station\_id or ticket.station\_id\_out = station\_o.station\_id join train ON train.train\_id = ticket.train\_id order by ticket.ticket\_id;



create view schedule as select train\_status.location, train.train\_name, station.station\_name, time.timming from train\_status join train on train\_status.train\_id = train.train\_id join station on train\_status.station\_id = station.station\_id join time on train\_status.time\_id = time.time\_id order by time.timming;

