RAILWAYS DATABASE MANAGEMENT SYSTEM

TEAM:

NAME: PULLURU SUPRAJ
ROLL NUMBER: 21CSB0A45
SECTION: A
EMAIL ID: ps21csb0a45@student.nitw.ac.in

NAME: TERLI SAI JAYA CHANDRA
ROLL NUMBER: 21CSB0A60
SECTION: A
EMAIL ID: ts21csb0a60@student.nitw.ac.in

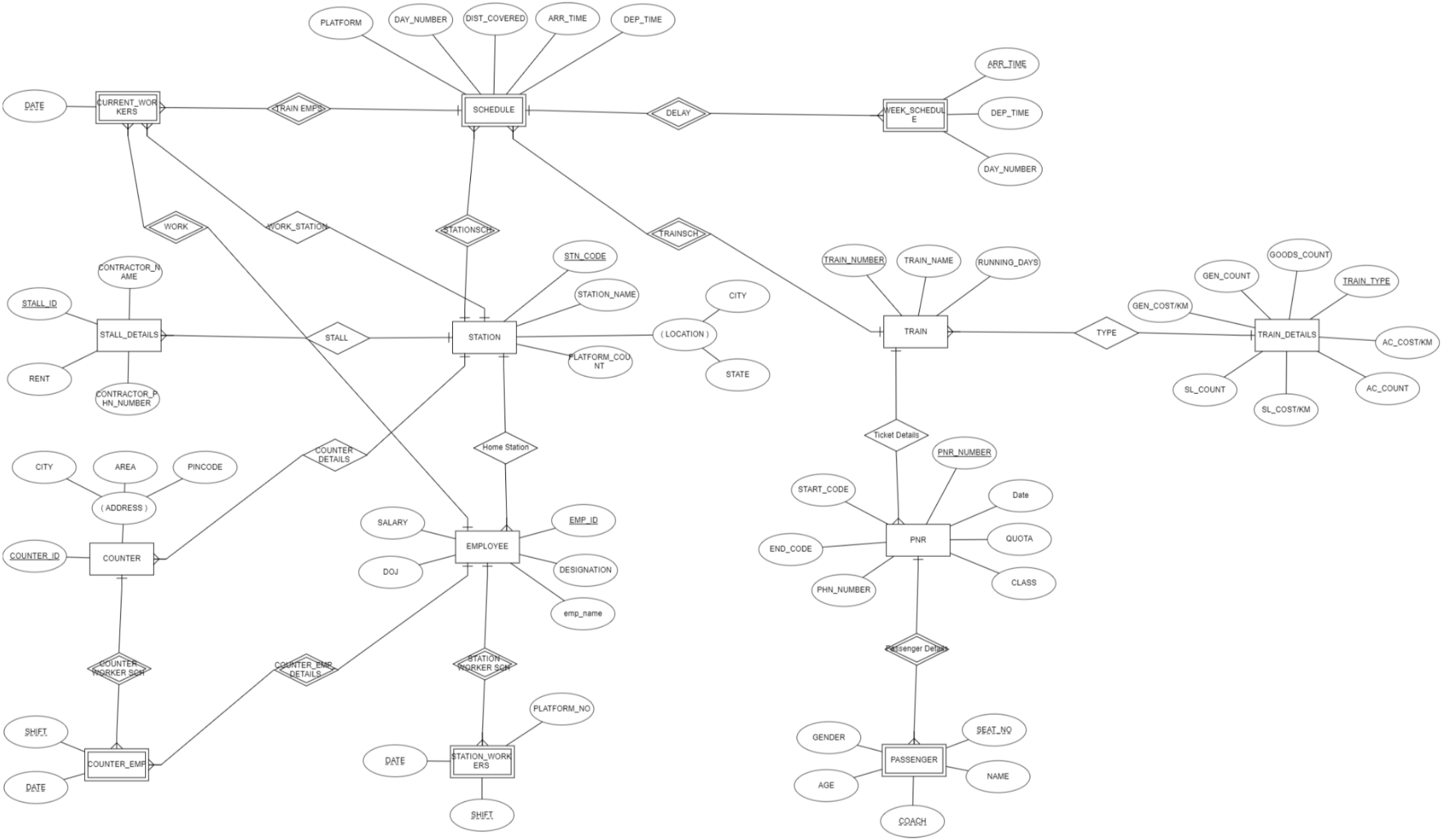
PROBLEM DEFINITION

This Railways System Database is modeled such that we can access the details of stations, trains, train schedules, employees, ticket details, stalls and counters present in railway stations related information quickly.

PROBLEM ANALYSIS

- The Railway System needs to maintain a lot of information regarding tickets , stalls , counters and employees.
- For maintaining this information we need to create an efficient database.
- We analyzed some data of Indian Railways and made a database.
- We need to store various information like details of stations , trains, details about the trains, schedules of trains, stalls and counters working under different stations, various employees working under a station, in a train, delay that a train makes on arrival.
- For example a ticket consists of data like start station, destination station , train number, seat number.

ER MODEL


PLATFORM
DAY_NUMBER
DIST_COVERED
ARR_TIME
DEP_TIME
DATE
CURRENT_WORKERS
TRAIN EMPS
SCHEDULE
DELAY
WEEK_SCHEDULE
ARR_TIME
DEP_TIME
DAY_NUMBER
WORK
WORK_STATION
STATIONSCH
TRAINSCH
CONTRACTOR_NAME
STALL_ID
STALL_DETAILS
RENT
CONTRACTOR_PHN_NUMBER
STALL
STN_CODE
STATION_NAME
STATION
PLATFORM_COUNT
(LOCATION)
CITY
STATE
TRAIN_NUMBER
TRAIN_NAME
RUNNING_DAYS
TRAIN
TYPE
GOODS_COUNT
GEN_COUNT
TRAIN_TYPE
GEN_COST/KM
TRAIN_DETAILS
AC_COST/KM
SL_COUNT
AC_COUNT
SL_COST/KM
CITY
AREA
PINCODE
(ADDRESS)
COUNTER_ID
COUNTER
COUNTER DETAILS
Home Station
SALARY
EMP_ID
EMPLOYEE
DOJ
DESIGNATION
emp_name
Ticket Details
PNR_NUMBER
START_CODE
Date
END_CODE
PNR
QUOTA
PHN_NUMBER
CLASS
COUNTER WORKER SCH
COUNTER_EMP DETAILS
STATION WORKER SCH
Passenger Details
PLATFORM_NO
SHIFT
COUNTER_EMP
DATE
DATE
STATION_WORKERS
SHIFT
GENDER
SEAT_NO
PASSENGER
AGE
NAME
COACH

RELATIONAL MODEL

1. TRAIN	2. TRAIN_DETAILS	3. STATION	4. PNR
➢ TRAIN_NUMBER ➢ RUNNING_DAYS ➢ TRAIN_NAME ➢ TRAIN_TYPE(FK)	➢ TRAIN_TYPE ➢ GOODS_COUNT ➢ GEN_COUNT ➢ GEN_COST/KM ➢ SL_COUNT ➢ SL_COST/KM ➢ AC_COUNT ➢ AC_COST/KM	➢ STN_CODE ➢ STATION_NAME ➢ CITY ➢ STATE ➢ PLATFORM_COUNT	➢ PNR_NUMBER ➢ DATE ➢ TRAIN_NUMBER (FK) ➢ START_CODE ➢ END_CODE ➢ CLASS ➢ QUOTA ➢ PHN_NUMBER

5. PASSENGER	6. EMPLOYEE	7. COUNTER	8. STALL_DETAILS
➢ PNR NUMBER (FK) ➢ SEAT_NO ➢ COACH ➢ NAME ➢ AGE ➢ GENDER	➢ EMP_ID ➢ EMP_NAME ➢ DESIGNATION ➢ SALARY ➢ DOJ ➢ HOME_STN_CODE (FK)	➢ COUNTER_ID ➢ STN_CODE (FK) ➢ CITY ➢ AREA ➢ PINCODE	➢ STALL_ID ➢ STN_CODE (FK) ➢ RENT ➢ CONTRACTOR_NAME ➢ CONTRACTOR_PHN_NUMBER

9. STATION_WORKERS	10. COUNTER_EMP	11. SCHEDULE	12. WEEK_SCHEDULE
➢ EMP_ID (FK) ➢ DATE ➢ SHIFT ➢ PLATFORM_NO	➢ COUNTER_ID (FK) ➢ SHIFT ➢ DATE ➢ EMP_ID (FK)	➢ TRAIN_NUMBER (FK) ➢ STN_CODE (FK) ➢ ARR_TIME ➢ DEP_TIME ➢ DAY_NUMBER ➢ DIST_COVERED	➢ TRAIN_NUMBER (FK) ➢ STN_CODE (FK) ➢ ARR_TIME ➢ DEP_TIME ➢ DAY_NUMBER

13. CURRENT_WORKERS

- TRAIN_NUMBER (FK)
- START_STN_CODE (FK)
- DATE
- EMP_ID (FK)
- END_STN_CODE (FK)

NORMALIZATION

Function Dependencies for each relation :

1.TRAIN

TRAIN_NUMBER → RUNNING_DAYS,TRAIN_NAME,TRAIN_TYPE

TRAIN_NAME → TRAIN_TYPE

2.TRAIN_DETAILS

TRAIN_TYPE → GOODS_COUNT,GEN_COUNT,GEN_COST/KM, SL_COUNT,SL_COST/KM,AC_COUNT,AC_COST/KM

3.STATION

STN_CODE → STATION_NAME,CITY,STATE, PLATFORM_COUNT

4.PNR

PNR_NUMBER → DATE,TRAIN_NUMBER,START_CODE,END_CODE,CLASS,QUOTA,PHN_NUMBER

5.PASSEGNER

PNR NUMBER,COACH, SEAT_NO → NAME, AGE,GENDER

6.EMPLOYEE

EMP_ID → EMP_NAME , DESIGNATION,SALARY,DOJ,HOME_STN_CODE

7.COUNTER

COUNTER_ID → STN_CODE, CITY,AREA,PINCODE

8.STALL_DETAILS

STALL_ID → STN_CODE, RENT,CONTRACTOR_NAME,CONTRACTOR_PHN_NUMBER

9.STATION_WORKERS

EMP_ID ,DATE,SHIFT → PLATFORM_NO

10.COUNTER_EMP

COUNTER_ID,SHIFT, DATE → EMP_ID

11.SCHEDULE

TRAIN_NUMBER , STN_CODE →ARR_TIME,DEP_TIME, DAY_NUMBER,DIST_COVERED

12.WEEK_SCHEDULE

TRAIN_NUMBER , STN_CODE ,ARR_TIME →DEP_TIME, DAY_NUMBER

13.CURRENT_WORKERS

TRAIN_NUMBER , START_STN_CODE ,DATE, EMP_ID → END_STN_CODE

1NF :

- ➔ All attributes are atomic.
- ➔ It is in table format.
- ➔ There is a unique name for every attribute/column.
- ➔ There are no derived attributes.
- ➔ Relations are in 1 NF.

2 NF :

- ➔ There are no partial dependencies.
- ➔ Relations are in 2 NF.

3 NF :

- ➔ There is one transitive dependency in Relation 1
- ➔ We are decomposing it as below :

1. TRAIN ➢ TRAIN_NUMBER ➢ RUNNING_DAYS ➢ TRAIN_NAME (FK)	14. TRAIN_TYPE ➢ TRAIN_NAME ➢ TYPE (FK)

➔ Now both the relations are in 3NF.

MODIFIED FD's:

1.TRAIN

TRAIN_NUMBER → RUNNING_DAYS,TRAIN_NAME,TRAIN_TYPE

14. TRAIN_TYPE :

TRAIN_NAME → TRAIN_TYPE

IMPLEMENTATION IN SQL

CREATION OF TABLES :

```
--1.TRAIN RELATION
CREATE TABLE TRAIN(
    TRAIN_NUMBER NUMBER,
    RUNNING_DAYS CHAR(7),
    TRAIN_NAME VARCHAR(255),
    PRIMARY KEY (TRAIN_NUMBER),
    FOREIGN KEY (TRAIN_NAME) REFERENCES TRAIN_TYPE
);

--2.TRAIN_DETAILS RELATION
CREATE TABLE TRAIN_DETAILS(
    TRAIN_TYPE VARCHAR(255),
    GOODS_COUNT INT,
    GEN_COUNT INT,
    GEN_COST_KM FLOAT,
    SL_COUNT INT,
    SL_COST_KM FLOAT,
    AC_COUNT INT,
    AC_COST_KM FLOAT,
    PRIMARY KEY (TRAIN_TYPE)
);

--14.TRAIN_TYPE RELATION
CREATE TABLE TRAIN_TYPE(
    TRAIN_NAME VARCHAR(255),
    TYPE VARCHAR(255),
    PRIMARY KEY (TRAIN_NAME),
    FOREIGN KEY (TYPE) REFERENCES TRAIN_DETAILS
);
```

```
--3.STATION RELATION
CREATE TABLE STATION(
    STATION_CODE VARCHAR(255),
    STATION_NAME VARCHAR(255),
    CITY VARCHAR(255),
    STATE VARCHAR(255),
    PLATFORM_COUNT NUMBER,
    PRIMARY KEY (STATION_CODE)
);

--4.PNR RELATION
CREATE TABLE PNR(
    PNR_NUMBER NUMBER,
    JDATE DATE,
    TRAIN_NUMBER NUMBER ,
    START_CODE VARCHAR(255),
    END_CODE VARCHAR(255),
    JCLASS CHAR(2),
    JQUOTA VARCHAR(255),
    PHN_NUMBER NUMBER,
    PRIMARY KEY(PNR_NUMBER),
    FOREIGN KEY (TRAIN_NUMBER) REFERENCES TRAIN,
    FOREIGN KEY (START_CODE) REFERENCES STATION,
    FOREIGN KEY (END_CODE) REFERENCES STATION
);

--5.PASSENGER RELATION
CREATE TABLE PASSENGER(
    PNR_NUMBER NUMBER,
    SEAT_NO INT,
    PNAME VARCHAR(255),
    AGE NUMBER,
    GENDER CHAR(1),
    COACH VARCHAR(255),
    PRIMARY KEY(PNR_NUMBER,SEAT_NO,COACH),
    FOREIGN KEY (PNR_NUMBER) REFERENCES PNR
);
```

```
--6.EMPLOYEE RELATION
CREATE TABLE EMPLOYEE(
    EMP_ID NUMBER,
    emp_name varchar(255),
    DESIGNATION VARCHAR(255),
    SALARY NUMBER,
    DOJ DATE,
    STATION_CODE VARCHAR(255),
    PRIMARY KEY (EMP_ID),
    FOREIGN KEY (STATION_CODE) REFERENCES STATION
);

--7.COUNTER RELATION
CREATE TABLE COUNTER(
    COUNTER_ID NUMBER,
    STN_CODE VARCHAR(255),
    CITY VARCHAR(255),
    AREA VARCHAR(255),
    PINCODE NUMBER,
    PRIMARY KEY (COUNTER_ID),
    FOREIGN KEY (STN_CODE) REFERENCES STATION
);

--8.STALL_DETAILS relation
CREATE TABLE STALL_DETAILS (
    STALL_ID NUMBER,
    STN_CODE VARCHAR(255),
    RENT FLOAT,
    CONTRACTOR_NAME VARCHAR(255),
    CONTRACTOR_PHN_NUMBER NUMBER,
    PRIMARY KEY (STALL_ID),
    FOREIGN KEY (STN_CODE) REFERENCES STATION
);
```

```
--9.STATION_WORKERS relation
CREATE TABLE STATION_WORKERS (
    EMP_ID NUMBER,
    WDATE DATE,
    SHIFT CHAR(1),
    PLATFORM_NO INT,
    PRIMARY KEY (EMP_ID,WDATE,SHIFT),
    FOREIGN KEY (EMP_ID) REFERENCES EMPLOYEE
);

--10.COUNTER_EMP relation
CREATE TABLE COUNTER_EMP (
    COUNTER_ID NUMBER,
    SHIFT CHAR(1),
    WDATE DATE,
    EMP_ID NUMBER,
    PRIMARY KEY (COUNTER_ID,SHIFT,WDATE),
    FOREIGN KEY (COUNTER_ID) REFERENCES COUNTER,
    FOREIGN KEY (EMP_ID) REFERENCES EMPLOYEE
);

--11.SCHEDULE relation
CREATE TABLE SCHEDULE(
    TRAIN_NUMBER NUMBER,
    STN_CODE VARCHAR(255),
    ARR_TIME TIMESTAMP,
    DEP_TIME TIMESTAMP,
    DAY_NUMBER NUMBER,
    DIST_COVERED NUMBER,
    PRIMARY KEY (TRAIN_NUMBER,STN_CODE),
    FOREIGN KEY (TRAIN_NUMBER) REFERENCES TRAIN,
    FOREIGN KEY (STN_CODE) REFERENCES STATION
);
```

```
--12.WEEK_SCHEDULE relation
CREATE TABLE WEEK_SCHEDULE(
    TRAIN_NUMBER NUMBER,
    STN_CODE VARCHAR(255),
    ARR_TIME TIMESTAMP,
    DEP_TIME TIMESTAMP,
    DAY_NUMBER NUMBER,
    PRIMARY KEY (TRAIN_NUMBER,STN_CODE,ARR_TIME),
    FOREIGN KEY (TRAIN_NUMBER) REFERENCES TRAIN,
    FOREIGN KEY (STN_CODE) REFERENCES STATION
);
```

```
--13.CURRENT_WORKERS SCHEDULE
CREATE TABLE CURRENT_WORKERS(
    TRAIN_NUMBER NUMBER,
    START_STN_CODE VARCHAR(255),
    WDATE DATE,
    EMP_ID NUMBER,
    END_STN_CODE VARCHAR(255),
    PRIMARY KEY (TRAIN_NUMBER,START_STN_CODE,WDATE,EMP_ID),
    FOREIGN KEY (TRAIN_NUMBER) REFERENCES TRAIN,
    FOREIGN KEY (START_STN_CODE) REFERENCES STATION,
    FOREIGN KEY (END_STN_CODE) REFERENCES STATION,
    FOREIGN KEY (EMP_ID) REFERENCES EMPLOYEE
);
```

DATA INSERTION FOR TESTING :

- For testing our database we have taken a small portion of data
- It consists of 6 trains covering different types of trains, their schedule, actual arrival, actual departure, employees and passengers in train for one day.
- It consists of details of 8 stations , counters under them ,stalls under them, employees working in them.

```
--1.TRAIN RELATION
INSERT INTO TRAIN VALUES(12713,'1010101','SHATAVAHANA');
INSERT INTO TRAIN VALUES(12728,'1111111','GODAVARI');
INSERT INTO TRAIN VALUES(12727,'1111111','GODAVARI');
INSERT INTO TRAIN VALUES(22691,'1001010','RAJADHANI');
INSERT INTO TRAIN VALUES(15389,'1111111','HYD_KZP_GOODS');
INSERT INTO TRAIN VALUES(12805,'1111111','JANMABHOOMI');

--2.TRAIN_DETAILS RELATION
INSERT INTO TRAIN_DETAILS VALUES('EXPRESS',2,10,2,13,3,8,4);
INSERT INTO TRAIN_DETAILS VALUES('GOODS',20,0,0,0,0,0,0);
INSERT INTO TRAIN_DETAILS VALUES('AC',3,0,0,0,0,10,10);
INSERT INTO TRAIN_DETAILS VALUES('SUPER FAST',4,5,2,15,5,8,7);
INSERT INTO TRAIN_DETAILS VALUES('GENERAL',2,30,1,0,0,0,0);

--14.TRAIN_TYPE RELATION
INSERT INTO TRAIN_TYPE VALUES('SHATAVAHANA' ,'EXPRESS');
INSERT INTO TRAIN_TYPE VALUES('GODAVARI','SUPER FAST');
INSERT INTO TRAIN_TYPE VALUES('RAJADHANI','AC');
INSERT INTO TRAIN_TYPE VALUES('HYD_KZP_GOODS','GOODS');
INSERT INTO TRAIN_TYPE VALUES('JANMABHOOMI','GENERAL');

--3.STATION RELATION
INSERT INTO STATION VALUES ('SC','SECUNDERABAD','HYDERABAD','TS',10);
INSERT INTO STATION VALUES('KZP','KAZIPET','WARANGAL','TS',3);
INSERT INTO STATION VALUES('BZA','VIJAYAWADA','VIJAYAWADA','AP',6);
INSERT INTO STATION VALUES('HYB','HYD_DEC_NAM','HYDERABAD','TS',8);
INSERT INTO STATION VALUES('VSKP','VISHAKAPATNAM','VISHAKAPATNAM','AP',12);
INSERT INTO STATION VALUES('KSRB','KSR BANGALORE','BANGALORE','KARNATAKA',7);
INSERT INTO STATION VALUES('NZM','HAZRAT NIZAMUDDIN','NEW DELHI','NEW DELHI',15);
INSERT INTO STATION VALUES('LNG','LINGAMPALLY','HYDERABAD','TS',2);

--4.PNR RELATION
INSERT INTO PNR VALUES(23874915,'08-MAY-2023',12713,'KZP','SC','SL','GN',8765439218);
INSERT INTO PNR VALUES(89256347,'08-MAY-2023',12713,'BZA','KZP','AC','GN',9846512374);
```

```
INSERT INTO PNR VALUES(41598623,'08-MAY-2023',12728,'SC','VSKP','SL','TATKAL',8456127893);
INSERT INTO PNR VALUES(67491258,'08-MAY-2023',12728,'BZA','VSKP','AC','GN',7845961235);
INSERT INTO PNR VALUES(32675891,'08-MAY-2023',12727,'VSKP','HYB','SL','GN',8462159753);
INSERT INTO PNR VALUES(87145963,'08-MAY-2023',12727,'VSKP','BZA','AC','TATKAL',9842136574);
INSERT INTO PNR VALUES(59368241,'08-MAY-2023',22691,'KSRB','NZM','AC','GN',6541872390);
INSERT INTO PNR VALUES(45617982,'08-MAY-2023',22691,'SC','NZM','AC','TATKAL',6248713905);
INSERT INTO PNR VALUES(91837526,'08-MAY-2023',12805,'VSKP','LNG','2S','GN',8462017935);
INSERT INTO PNR VALUES(72543918,'08-MAY-2023',12805,'SC','LNG','2S','GN',8896658937);

--5.PASSENGER RELATION
INSERT INTO PASSENGER VALUES (23874915,20,'SUMANTH',23,'M','S2');
INSERT INTO PASSENGER VALUES (89256347,30,'SRINU',40,'M','A1');
INSERT INTO PASSENGER VALUES (41598623,32,'NIDHI',30,'F','S1');
INSERT INTO PASSENGER VALUES (41598623,42,'VIJAYA',54,'F','S2');
INSERT INTO PASSENGER VALUES (67491258,56,'KUMAR',38,'M','A2');
INSERT INTO PASSENGER VALUES (32675891,20,'VISHWAJITH',19,'M','S1');
INSERT INTO PASSENGER VALUES (87145963,18,'VATSAV',26,'M','A3');
INSERT INTO PASSENGER VALUES (59368241,06,'HASINI',22,'F','A2');
INSERT INTO PASSENGER VALUES (45617982,12,'SHIVANI',42,'F','A1');
INSERT INTO PASSENGER VALUES (91837526,36,'DEVENDAR',60,'M','D1');
INSERT INTO PASSENGER VALUES (72543918,54,'SUNITHA',49,'F','D3');

--6.EMPLOYEE RELATION
INSERT INTO EMPLOYEE VALUES(00001,'rithuraj','TC',40000,'20 APR 2004','SC');
INSERT INTO EMPLOYEE VALUES(00002,'vishwa','SM',60000,'03 JAN 2001','SC');
INSERT INTO EMPLOYEE VALUES(00003,'ganesh','POLICE',30000,'04 AUG 1996','SC');
INSERT INTO EMPLOYEE VALUES(00004,'varsini','CLEANER',10000,'15 AUG 1998','SC');
INSERT INTO EMPLOYEE VALUES(00005,'vatsav','CW',20000,'12 SEP 2000','SC');
INSERT INTO EMPLOYEE VALUES(00006,'mukesh','TD',50000,'25 DEC 1996','SC');
INSERT INTO EMPLOYEE VALUES(00069,'YESHWANTH','TD',50000,'25 DEC 1996','SC');
INSERT INTO EMPLOYEE VALUES(00014,'shashidar','PW',5000,'12 SEP 2000','SC');
INSERT INTO EMPLOYEE VALUES(00057,'HANUMANTHARAO','POLICE',30000,'04 AUG 1996','SC');
INSERT INTO EMPLOYEE VALUES(00065,'RAJU','CW',20000,'12 SEP 2000','SC');

INSERT INTO EMPLOYEE VALUES(00007,'saketh','TD',50000,'21 FEB 2013','KZP');
INSERT INTO EMPLOYEE VALUES(00008,'pramod','PW',5000,'09 SEP 1993','KZP');
INSERT INTO EMPLOYEE VALUES(00009,'shivani','TC',40000,'05 MAR 2005','KZP');
INSERT INTO EMPLOYEE VALUES(00010,'sanjana','CLEANER',10000,'16 NOV 2016','KZP');
INSERT INTO EMPLOYEE VALUES(00011,'supraj','SM',60000,'20 APR 2004','KZP');
INSERT INTO EMPLOYEE VALUES(00012,'vishal','CW',20000,'03 JAN 2001','KZP');
INSERT INTO EMPLOYEE VALUES(00013,'srinivasa rao','POLICE',30000,'04 AUG 1996','KZP');
```

```
INSERT INTO EMPLOYEE VALUES(00058,'RAVI','POLICE',30000,'04 AUG 1996','KZP');

INSERT INTO EMPLOYEE VALUES(00015,'manikanta','TD',50000,'25 DEC 1996','BZA');
INSERT INTO EMPLOYEE VALUES(00016,'kamal','PW',5000,'21 FEB 2013','BZA');
INSERT INTO EMPLOYEE VALUES(00017,'sanjay','TC',40000,'09 SEP 1993','BZA');
INSERT INTO EMPLOYEE VALUES(00018,'abhishek','CLEANER',10000,'15 AUG 1998','BZA');
INSERT INTO EMPLOYEE VALUES(00019,'bhuvanesh','SM',60000,'05 MAR 2005','BZA');
INSERT INTO EMPLOYEE VALUES(00020,'saikiran','CW',20000,'16 NOV 2016','BZA');
INSERT INTO EMPLOYEE VALUES(00021,'AASHRITH','POLICE',30000,'04 AUG 1996','BZA');
INSERT INTO EMPLOYEE VALUES(00059,'TEJA','POLICE',30000,'04 AUG 1996','BZA');

INSERT INTO EMPLOYEE VALUES(00022,'PARVESH','TD',50000,'25 DEC 1996','HYB');
INSERT INTO EMPLOYEE VALUES(00023,'SAJJAN','PW',5000,'21 FEB 2013','HYB');
INSERT INTO EMPLOYEE VALUES(00024,'SUNITHA','TC',40000,'09 SEP 1993','HYB');
INSERT INTO EMPLOYEE VALUES(00025,'RAJINI','CLEANER',10000,'15 AUG 1998','HYB');
INSERT INTO EMPLOYEE VALUES(00026,'KIRAN','SM',60000,'05 MAR 2005','HYB');
INSERT INTO EMPLOYEE VALUES(00027,'RAJESH','CW',20000,'16 NOV 2016','HYB');
INSERT INTO EMPLOYEE VALUES(00028,'VARSHINI','POLICE',30000,'04 AUG 1996','HYB');
INSERT INTO EMPLOYEE VALUES(00064,'UTKARSH','POLICE',30000,'04 AUG 1996','HYB');
INSERT INTO EMPLOYEE VALUES(00066,'RAGHU','CW',20000,'12 SEP 2000','HYB');

INSERT INTO EMPLOYEE VALUES(00029,'Trishul','TD',50000,'25 DEC 1996','VSKP');
INSERT INTO EMPLOYEE VALUES(00030,'Raga','PW',5000,'21 FEB 2013','VSKP');
INSERT INTO EMPLOYEE VALUES(00031,'Pavan','TC',40000,'09 SEP 1993','VSKP');
INSERT INTO EMPLOYEE VALUES(00032,'Uma','CLEANER',10000,'15 AUG 1998','VSKP');
INSERT INTO EMPLOYEE VALUES(00033,'Rohit','SM',60000,'05 MAR 2005','VSKP');
INSERT INTO EMPLOYEE VALUES(00034,'Abhiram','CW',20000,'16 NOV 2016','VSKP');
INSERT INTO EMPLOYEE VALUES(00035,'Hanuman','POLICE',30000,'04 AUG 1996','VSKP');
INSERT INTO EMPLOYEE VALUES(00060,'JAYA','POLICE',30000,'04 AUG 1996','VSKP');
INSERT INTO EMPLOYEE VALUES(00068,'SHARMA','CW',20000,'12 SEP 2000','VSKP');

INSERT INTO EMPLOYEE VALUES(00036,'KARTHIK','TD',50000,'25 DEC 1996','KSRB');
INSERT INTO EMPLOYEE VALUES(00037,'RAHUL','PW',5000,'21 FEB 2013','KSRB');
INSERT INTO EMPLOYEE VALUES(00038,'HASINI','TC',40000,'09 SEP 1993','KSRB');
INSERT INTO EMPLOYEE VALUES(00039,'VYSHNAVI','CLEANER',10000,'15 AUG 1998','KSRB');
INSERT INTO EMPLOYEE VALUES(00040,'MANOJ','SM',60000,'05 MAR 2005','KSRB');
INSERT INTO EMPLOYEE VALUES(00041,'SRIRAM','CW',20000,'16 NOV 2016','KSRB');
INSERT INTO EMPLOYEE VALUES(00042,'ANEESH','POLICE',30000,'04 AUG 1996','KSRB');
INSERT INTO EMPLOYEE VALUES(00061,'CHANDRA','POLICE',30000,'04 AUG 1996','KSRB');

INSERT INTO EMPLOYEE VALUES(00043,'Anil','TD',50000,'25 DEC 1996','NZM');
```

```
INSERT INTO EMPLOYEE VALUES(00044,'Mohan','PW',5000,'21 FEB 2013','NZM');
INSERT INTO EMPLOYEE VALUES(00045,'Jagadish','TC',40000,'09 SEP 1993','NZM');
INSERT INTO EMPLOYEE VALUES(00046,'Raju','CLEANER',10000,'15 AUG 1998','NZM');
INSERT INTO EMPLOYEE VALUES(00047,'Charishma','SM',60000,'05 MAR 2005','NZM');
INSERT INTO EMPLOYEE VALUES(00048,'Sahithi','CW',20000,'16 NOV 2016','NZM');
INSERT INTO EMPLOYEE VALUES(00049,'Hanvitha','POLICE',30000,'04 AUG 1996','NZM');
INSERT INTO EMPLOYEE VALUES(00062,'HARSHA','POLICE',30000,'04 AUG 1996','NZM');
INSERT INTO EMPLOYEE VALUES(00067,'ROHITH','CW',20000,'12 SEP 2000','NZM');

INSERT INTO EMPLOYEE VALUES(00050,'ANURAG','TD',50000,'25 DEC 1996','LNG');
INSERT INTO EMPLOYEE VALUES(00051,'VISHNU','PW',5000,'21 FEB 2013','LNG');
INSERT INTO EMPLOYEE VALUES(00052,'VARSHA','TC',40000,'09 SEP 1993','LNG');
INSERT INTO EMPLOYEE VALUES(00053,'MOKSHAVI','CLEANER',10000,'15 AUG 1998','LNG');
INSERT INTO EMPLOYEE VALUES(00054,'RAKESH','SM',60000,'05 MAR 2005','LNG');
INSERT INTO EMPLOYEE VALUES(00055,'RISHIN','CW',20000,'16 NOV 2016','LNG');
INSERT INTO EMPLOYEE VALUES(00056,'BHARATH','POLICE',30000,'04 AUG 1996','LNG');
INSERT INTO EMPLOYEE VALUES(00063,'PRANAV','POLICE',30000,'04 AUG 1996','LNG');

--7.COUNTER RELATION
INSERT INTO COUNTER VALUES (1234,'SC','HYDERABAD','KOTHAPET',500035);
INSERT INTO COUNTER VALUES (2345,'SC','HYDERABAD','NAGOLE',500039);
INSERT INTO COUNTER VALUES (5678,'HYB','HYDERABAD','NAMPALLY',500095);
INSERT INTO COUNTER VALUES (3456,'NZM','NEW DELHI','NIZAMUDDIN',110013);
INSERT INTO COUNTER VALUES (4567,'HYB','HYDERABAD','MALAKPET',500036);
INSERT INTO COUNTER VALUES (6789,'NZM','NEW DELHI','SIDDARATH NAGAR',110013);
INSERT INTO COUNTER VALUES (7890,'VSKP','VISHAKAPATNAM','BALNAGAR',123456);
INSERT INTO COUNTER VALUES (8901,'VSKP','VISHAKAPATNAM','BEACH COLONY',234567);
INSERT INTO COUNTER VALUES (9012,'LNG','HYDERABAD','LINGAMPALLI',345678);
INSERT INTO COUNTER VALUES (0123,'BZA','VIJAYAWADA','JAGADAMBA CENTER',456789);
INSERT INTO COUNTER VALUES (0246,'KZP','KAZIPET','NITW',567890);
INSERT INTO COUNTER VALUES (1357,'KSRB','BANGLORE','CHINNASWAMY STADIUM',678901);

--8.STALL_DETAILS relation
INSERT INTO STALL_DETAILS VALUES (1,'SC',4500,'RAJU',9647851282);
INSERT INTO STALL_DETAILS VALUES (2,'SC',6000,'AKHIL',7451986035);
INSERT INTO STALL_DETAILS VALUES (3,'BZA',2000,'GANESH',8456903722);
INSERT INTO STALL_DETAILS VALUES (4,'BZA',3000,'VISHWA',6572931450);
INSERT INTO STALL_DETAILS VALUES (5,'VSKP',5000,'MUKESH',8462974530);
INSERT INTO STALL_DETAILS VALUES (6,'VSKP',10000,'CHANDU',7759138460);
INSERT INTO STALL_DETAILS VALUES (7,'KZP',3900,'SAI',8460913574);
INSERT INTO STALL_DETAILS VALUES (8,'LNG',7000,'SUNNY',9946137586);
```

```
--9.STATION_WORKERS relation
INSERT INTO STATION_WORKERS VALUES(00002,'08 MAY 2023','D',1);
INSERT INTO STATION_WORKERS VALUES(00003,'08 MAY 2023','N',2);
INSERT INTO STATION_WORKERS VALUES(00004,'08 MAY 2023','D',1);

INSERT INTO STATION_WORKERS VALUES(00011,'08 MAY 2023','N',2);
INSERT INTO STATION_WORKERS VALUES(00013,'08 MAY 2023','D',1);
INSERT INTO STATION_WORKERS VALUES(00010,'08 MAY 2023','N',2);

INSERT INTO STATION_WORKERS VALUES(00019,'08 MAY 2023','D',1);
INSERT INTO STATION_WORKERS VALUES(00021,'08 MAY 2023','D',2);
INSERT INTO STATION_WORKERS VALUES(00018,'08 MAY 2023','N',2);

INSERT INTO STATION_WORKERS VALUES(00026,'08 MAY 2023','D',2);
INSERT INTO STATION_WORKERS VALUES(00028,'08 MAY 2023','N',2);
INSERT INTO STATION_WORKERS VALUES(00025,'08 MAY 2023','N',1);


INSERT INTO STATION_WORKERS VALUES(00033,'08 MAY 2023','D',2);
INSERT INTO STATION_WORKERS VALUES(00035,'08 MAY 2023','N',1);
INSERT INTO STATION_WORKERS VALUES(00032,'08 MAY 2023','N',2);


INSERT INTO STATION_WORKERS VALUES(00040,'08 MAY 2023','N',1);
INSERT INTO STATION_WORKERS VALUES(00042,'08 MAY 2023','D',1);
INSERT INTO STATION_WORKERS VALUES(00039,'08 MAY 2023','D',1);


INSERT INTO STATION_WORKERS VALUES(00047,'08 MAY 2023','N',1);
INSERT INTO STATION_WORKERS VALUES(00049,'08 MAY 2023','D',2);
INSERT INTO STATION_WORKERS VALUES(00046,'08 MAY 2023','N',1);


INSERT INTO STATION_WORKERS VALUES(00054,'08 MAY 2023','D',2);
INSERT INTO STATION_WORKERS VALUES(00056,'08 MAY 2023','D',1);
INSERT INTO STATION_WORKERS VALUES(00053,'08 MAY 2023','D',1);

--10.COUNTER_EMP relation
INSERT INTO COUNTER_EMP VALUES(1234,'D','08 MAY 2023',00005);
INSERT INTO COUNTER_EMP VALUES(2345,'N','08 MAY 2023',00065);
```

```
INSERT INTO COUNTER_EMP VALUES(5678,'D','08 MAY 2023',00027);
INSERT INTO COUNTER_EMP VALUES(4567,'N','08 MAY 2023',00066);
INSERT INTO COUNTER_EMP VALUES(3456,'D','08 MAY 2023',00048);
INSERT INTO COUNTER_EMP VALUES(6789,'N','08 MAY 2023',00067);
INSERT INTO COUNTER_EMP VALUES(7890,'D','08 MAY 2023',00068);
INSERT INTO COUNTER_EMP VALUES(8901,'N','08 MAY 2023',00034);
INSERT INTO COUNTER_EMP VALUES(9012,'D','08 MAY 2023',00055);
INSERT INTO COUNTER_EMP VALUES(0123,'N','08 MAY 2023',00020);
INSERT INTO COUNTER_EMP VALUES(0246,'D','08 MAY 2023',00012);
INSERT INTO COUNTER_EMP VALUES(1357,'N','08 MAY 2023',00041);

--11.SCHEDULE relation
INSERT INTO SCHEDULE VALUES (12713,'BZA',NULL,'08-05-2023 06:25:00 AM',1,0);
INSERT INTO SCHEDULE VALUES (12713,'KZP','08-05-2023 09:33:00 AM','08-05-2023 09:35:00 AM',1,216);
INSERT INTO SCHEDULE VALUES (12713,'SC','08-05-2023 11:55:00 AM',NULL,1,348);

INSERT INTO SCHEDULE VALUES (12728,'HYB',NULL,'08-05-2023 05:05:00 PM',1,0);
INSERT INTO SCHEDULE VALUES (12728,'SC','08-05-2023 05:25:00 PM','08-05-2023 05:30:00 PM',1,7);
INSERT INTO SCHEDULE VALUES (12728,'KZP','08-05-2023 07:13:00 PM','08-05-2023 07:15:00 PM',1,139);
INSERT INTO SCHEDULE VALUES (12728,'BZA','08-05-2023 10:50:00 PM','08-05-2023 11:05:00 PM',1,356);
INSERT INTO SCHEDULE VALUES (12728,'VSKP','09-05-2023 05:35:00 AM',NULL,2,706);

INSERT INTO SCHEDULE VALUES (12727,'VSKP',NULL,'08-05-2023 05:20:00 PM',1,0);
INSERT INTO SCHEDULE VALUES (12727,'BZA','08-05-2023 11:25:00 PM','08-05-2023 11:40:00 PM',1,350);
INSERT INTO SCHEDULE VALUES (12727,'KZP','09-05-2023 02:55:00 AM','09-05-2023 02:57:00 AM',2,566);
INSERT INTO SCHEDULE VALUES (12727,'SC','09-05-2023 05:10:00 PM','09-05-2023 05:15:00 AM',2,698);
INSERT INTO SCHEDULE VALUES (12727,'HYB','09-05-2023 06:15:00 AM',NULL,2,706);

INSERT INTO SCHEDULE VALUES (22691,'KSRB',NULL,'08-05-2023 08:00:00 PM',1,0);
INSERT INTO SCHEDULE VALUES (22691,'SC','09-05-2023 07:05:00 AM','09-05-2023 07:15:00 AM',2,706);
INSERT INTO SCHEDULE VALUES (22691,'KZP','09-05-2023 08:48:00 AM','09-05-2023 08:50:00 AM',2,837);
INSERT INTO SCHEDULE VALUES (22691,'NZM','10-05-2023 05:30:00 AM',NULL,3,2374);

INSERT INTO SCHEDULE VALUES (15389,'SC',NULL,'08-05-2023 10:00:00 AM',1,0);
INSERT INTO SCHEDULE VALUES (15389,'KZP','08-05-2023 01:30:00 PM',NULL,1,132);

INSERT INTO SCHEDULE VALUES (12805,'VSKP',NULL,'08-05-2023 06:20:00 AM',1,0);
INSERT INTO SCHEDULE VALUES (12805,'BZA','08-05-2023 11:55:00 AM','08-05-2023 12:00:00 PM',1,349);
INSERT INTO SCHEDULE VALUES (12805,'SC','08-05-2023 06:15:00 PM','08-05-2023 06:20:00 PM',1,689);
INSERT INTO SCHEDULE VALUES (12805,'LNG','08-05-2023 07:40:00 PM',NULL,1,712);
```

```
--12.WEEK_SCHEDULE relation
INSERT INTO WEEK_SCHEDULE VALUES (12713,'BZA','08-05-2023 07:00:00 AM','08-05-2023 07:00:00 AM',1);
INSERT INTO WEEK_SCHEDULE VALUES (12713,'KZP','08-05-2023 10:04:00 AM','08-05-2023 10:15:00 AM',1);
INSERT INTO WEEK_SCHEDULE VALUES (12713,'SC','08-05-2023 12:48:00 PM','08-05-2023 12:48:00 PM',1);

INSERT INTO WEEK_SCHEDULE VALUES (12728,'HYB','08-05-2023 05:05:00 PM','08-05-2023 05:05:00 PM',1);
INSERT INTO WEEK_SCHEDULE VALUES (12728,'SC','08-05-2023 05:22:00 PM','08-05-2023 06:17:00 PM',1);
INSERT INTO WEEK_SCHEDULE VALUES (12728,'KZP','08-05-2023 07:51:00 PM','08-05-2023 07:56:00 PM',1);
INSERT INTO WEEK_SCHEDULE VALUES (12728,'BZA','08-05-2023 11:32:00 PM','08-05-2023 11:40:00 PM',1);
INSERT INTO WEEK_SCHEDULE VALUES (12728,'VSKP','09-05-2023 06:16:00 AM','09-05-2023 06:16:00 AM',2);

INSERT INTO WEEK_SCHEDULE VALUES (12727,'VSKP','08-05-2023 05:30:00 PM','08-05-2023 05:30:00 PM',1);
INSERT INTO WEEK_SCHEDULE VALUES (12727,'BZA','09-05-2023 12:14:00 AM','09-05-2023 12:25:00 AM',2);
INSERT INTO WEEK_SCHEDULE VALUES (12727,'KZP','09-05-2023 04:38:00 AM','09-05-2023 04:46:00 AM',2);
INSERT INTO WEEK_SCHEDULE VALUES (12727,'SC','09-05-2023 07:10:00 PM','09-05-2023 07:39:00 AM',2);
INSERT INTO WEEK_SCHEDULE VALUES (12727,'HYB','09-05-2023 07:55:00 AM','09-05-2023 07:55:00 AM',2);

INSERT INTO WEEK_SCHEDULE VALUES (22691,'KSRB','08-05-2023 08:03:00 PM','08-05-2023 08:03:00 PM',1);
INSERT INTO WEEK_SCHEDULE VALUES (22691,'SC','09-05-2023 08:02:00 AM','09-05-2023 08:17:00 AM',2);
INSERT INTO WEEK_SCHEDULE VALUES (22691,'KZP','09-05-2023 10:14:00 AM','09-05-2023 10:20:00 AM',2);
INSERT INTO WEEK_SCHEDULE VALUES (22691,'NZM','10-05-2023 06:02:00 AM','10-05-2023 06:02:00 AM',3);

INSERT INTO WEEK_SCHEDULE VALUES (15389,'SC','08-05-2023 10:00:00 AM','08-05-2023 10:00:00 AM',1);
INSERT INTO WEEK_SCHEDULE VALUES (15389,'KZP','08-05-2023 01:00:00 PM','08-05-2023 01:00:00 PM',1);

INSERT INTO WEEK_SCHEDULE VALUES (12805,'VSKP','08-05-2023 06:20:00 AM','08-05-2023 06:20:00 AM',1);
INSERT INTO WEEK_SCHEDULE VALUES (12805,'BZA','08-05-2023 12:45:00 PM','08-05-2023 01:01:00 PM',1);
INSERT INTO WEEK_SCHEDULE VALUES (12805,'SC','08-05-2023 07:29:00 PM','08-05-2023 07:44:00 PM',1);
INSERT INTO WEEK_SCHEDULE VALUES (12805,'LNG','08-05-2023 08:47:00 PM','08-05-2023 08:47:00 PM',1);

--13.CURRENT_WORKERS SCHEDULE
--tc td POLICE PW
INSERT INTO CURRENT_WORKERS VALUES (12713,'BZA','08 MAY 2023',00017,'SC');
INSERT INTO CURRENT_WORKERS VALUES (12713,'BZA','08 MAY 2023',00015,'SC');
INSERT INTO CURRENT_WORKERS VALUES (12713,'BZA','08 MAY 2023',00059,'SC');
INSERT INTO CURRENT_WORKERS VALUES (12713,'BZA','08 MAY 2023',00016,'SC');

INSERT INTO CURRENT_WORKERS VALUES (12728,'HYB','08 MAY 2023',00024,'KZP');
INSERT INTO CURRENT_WORKERS VALUES (12728,'HYB','08 MAY 2023',00022,'KZP');
INSERT INTO CURRENT_WORKERS VALUES (12728,'HYB','08 MAY 2023',00064,'KZP');
INSERT INTO CURRENT_WORKERS VALUES (12728,'HYB','08 MAY 2023',00023,'KZP');
```

```
INSERT INTO CURRENT_WORKERS VALUES (12728,'KZP','08 MAY 2023',00009,'VSKP');
INSERT INTO CURRENT_WORKERS VALUES (12728,'KZP','08 MAY 2023',00007,'VSKP');
INSERT INTO CURRENT_WORKERS VALUES (12728,'KZP','08 MAY 2023',00058,'VSKP');
INSERT INTO CURRENT_WORKERS VALUES (12728,'KZP','08 MAY 2023',00008,'VSKP');

INSERT INTO CURRENT_WORKERS VALUES (12727,'VSKP','08 MAY 2023',00031,'BZA');
INSERT INTO CURRENT_WORKERS VALUES (12727,'VSKP','08 MAY 2023',00029,'BZA');
INSERT INTO CURRENT_WORKERS VALUES (12727,'VSKP','08 MAY 2023',00068,'BZA');
INSERT INTO CURRENT_WORKERS VALUES (12727,'VSKP','08 MAY 2023',00030,'BZA');

INSERT INTO CURRENT_WORKERS VALUES (12727,'BZA','08 MAY 2023',00045,'HYB');
INSERT INTO CURRENT_WORKERS VALUES (12727,'BZA','08 MAY 2023',00043,'HYB');
INSERT INTO CURRENT_WORKERS VALUES (12727,'BZA','08 MAY 2023',00062,'HYB');
INSERT INTO CURRENT_WORKERS VALUES (12727,'BZA','08 MAY 2023',00044,'HYB');

INSERT INTO CURRENT_WORKERS VALUES (22691,'KSRB','08 MAY 2023',00038,'SC');
INSERT INTO CURRENT_WORKERS VALUES (22691,'KSRB','08 MAY 2023',00036,'SC');
INSERT INTO CURRENT_WORKERS VALUES (22691,'KSRB','08 MAY 2023',00042,'SC');
INSERT INTO CURRENT_WORKERS VALUES (22691,'KSRB','08 MAY 2023',00037,'SC');
INSERT INTO CURRENT_WORKERS VALUES (22691,'SC','08 MAY 2023',00069,'NZM');
INSERT INTO CURRENT_WORKERS VALUES (22691,'SC','08 MAY 2023',00001,'NZM');
INSERT INTO CURRENT_WORKERS VALUES (22691,'SC','08 MAY 2023',00003,'NZM');
INSERT INTO CURRENT_WORKERS VALUES (22691,'SC','08 MAY 2023',00014,'NZM');

INSERT INTO CURRENT_WORKERS VALUES (12805,'VSKP','08 MAY 2023',00052,'LNG');
INSERT INTO CURRENT_WORKERS VALUES (12805,'VSKP','08 MAY 2023',00050,'LNG');
INSERT INTO CURRENT_WORKERS VALUES (12805,'VSKP','08 MAY 2023',00063,'LNG');
INSERT INTO CURRENT_WORKERS VALUES (12805,'VSKP','08 MAY 2023',00051,'LNG');

INSERT INTO CURRENT_WORKERS VALUES (15389,'SC','08 MAY 2023',00006,'KZP');
```

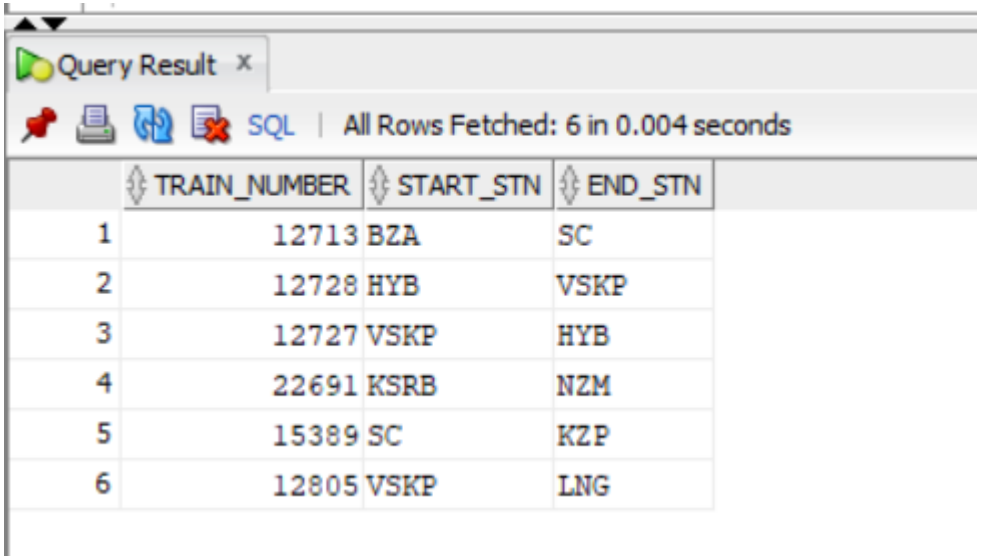
SQL QUERIES (Testing various requirements of data) :

1.Extract starting and ending point of each train

SQL Query :

```
select *
from (select  train_number,stn_code as start_stn from schedule where arr_time is null) natural join (select  train_number,stn_code as end_Stn from schedule
where dep_time is null);
```

OUTPUT :


Query Result

SQL | All Rows Fetched: 6 in 0.004 seconds

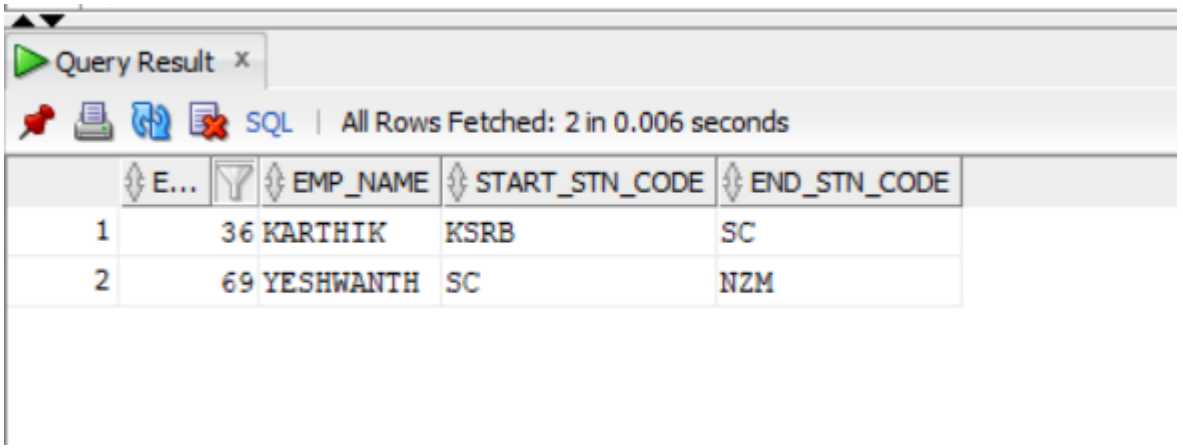
	TRAIN_NUMBER	START_STN	END_STN
1	12713	BZA	SC
2	12728	HYB	VSKP
3	12727	VSKP	HYB
4	22691	KSRB	NZM
5	15389	SC	KZP
6	12805	VSKP	LNG

2.Display train driver names of RAJDHANI train and his boarding station,leaving station.

SQL Query :

```
select emp_id,emp_name,start_stn_code,end_stn_code
from current_workers natural join employee
where train_number=(select train_number from train where train_name='RAJADHANI') and designation='TD';
```

OUTPUT :



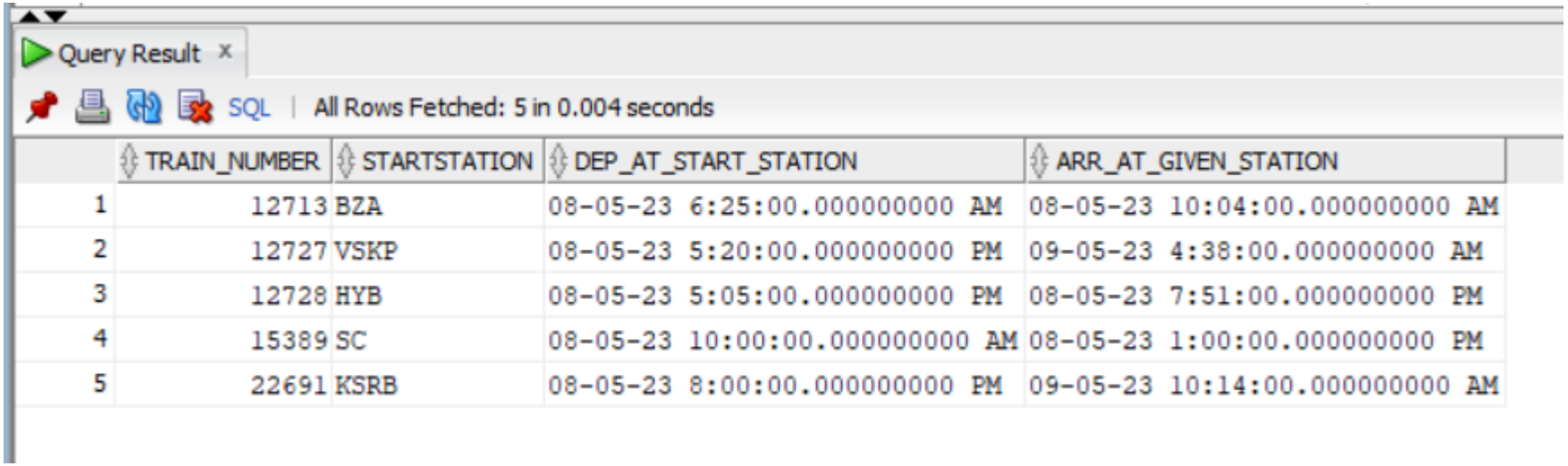
	E...	EMP_NAME	START_STN_CODE	END_STN_CODE
1	36	KARTHIK	KSRB	SC
2	69	YESHWANTH	SC	NZM

3.EXTRACT ALL THE TRAINS WHICH ARRIVE AT A GIVEN STATION ALONG WITH THEIR START STATION INFORMATION .

SQL Query :

```
SELECT A.TRAIN_NUMBER,B.STN_CODE AS STARTSTATION,B.DEP_TIME AS DEP_AT_START_STATION,A.ARR_TIME AS ARR_AT_GIVEN_STATION
FROM WEEK_SCHEDULE A , SCHEDULE B
WHERE (A.stn_code=(select station_code from station where station_name='&A')) AND A.TRAIN_NUMBER=B.TRAIN_NUMBER AND B.ARR_TIME IS NULL;
```

OUTPUT :



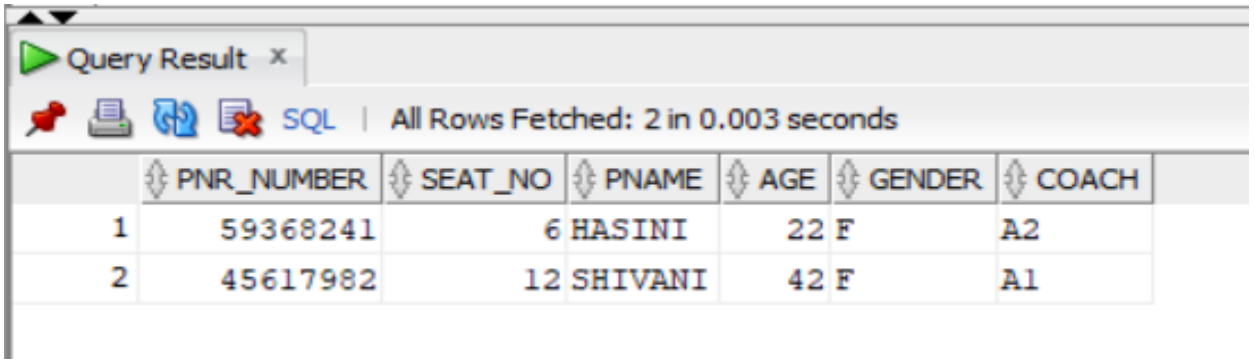
	TRAIN_NUMBER	STARTSTATION	DEP_AT_START_STATION	ARR_AT_GIVEN_STATION
1	12713	BZA	08-05-23 6:25:00.000000000 AM	08-05-23 10:04:00.000000000 AM
2	12727	VSKP	08-05-23 5:20:00.000000000 PM	09-05-23 4:38:00.000000000 AM
3	12728	HYB	08-05-23 5:05:00.000000000 PM	08-05-23 7:51:00.000000000 PM
4	15389	SC	08-05-23 10:00:00.000000000 AM	08-05-23 1:00:00.000000000 PM
5	22691	KSRB	08-05-23 8:00:00.000000000 PM	09-05-23 10:14:00.000000000 AM

4.DISPLAY ALL PASSENGERS WHO BOOKED A TICKET FOR GIVEN INPUT TRAIN NAME ON A ON A PARTICULAR DATE

SQL Query :

```
SELECT B.*
FROM PNR A,PASSENGER B
WHERE A.PNR_NUMBER=B.PNR_NUMBER AND A.TRAIN_NUMBER=(SELECT TRAIN_NUMBER FROM TRAIN WHERE TRAIN_NAME='&A') AND
A.JDATE='&B';
```

Output :


Query Result

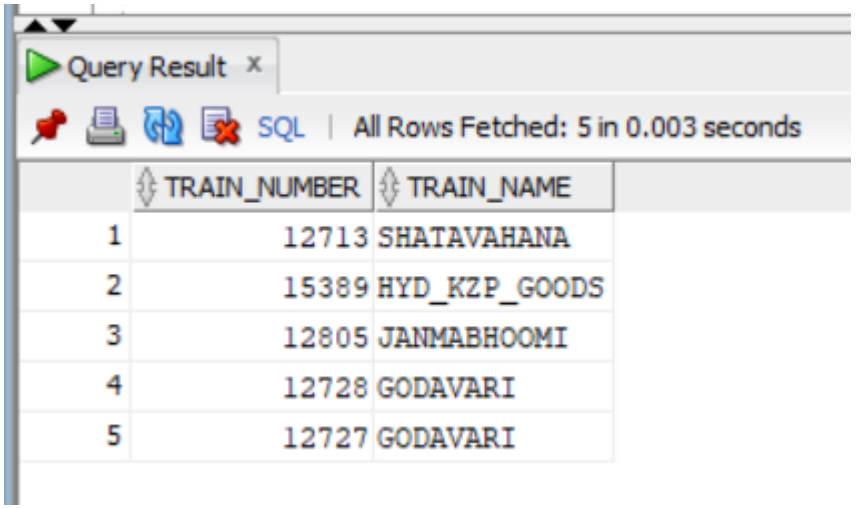
SQL | All Rows Fetched: 2 in 0.003 seconds

	PNR_NUMBER	SEAT_NO	PNAME	AGE	GENDER	COACH
1	59368241	6	HASINI	22	F	A2
2	45617982	12	SHIVANI	42	F	A1

5.EXTRACT ALL TRAINS INFO WHICH RUN ON MONDAY AND SUNDAY

SQL Query :

```
SELECT TRAIN_NUMBER,TRAIN_NAME
FROM TRAIN
WHERE RUNNING_DAYS LIKE '1_____1';
```



	TRAIN_NUMBER	TRAIN_NAME
1	12713	SHATAVAHANA
2	15389	HYD_KZP_GOODS
3	12805	JANMABHOOMI
4	12728	GODAVARI
5	12727	GODAVARI

6.Find the cost of ticket by taking PNR number as input

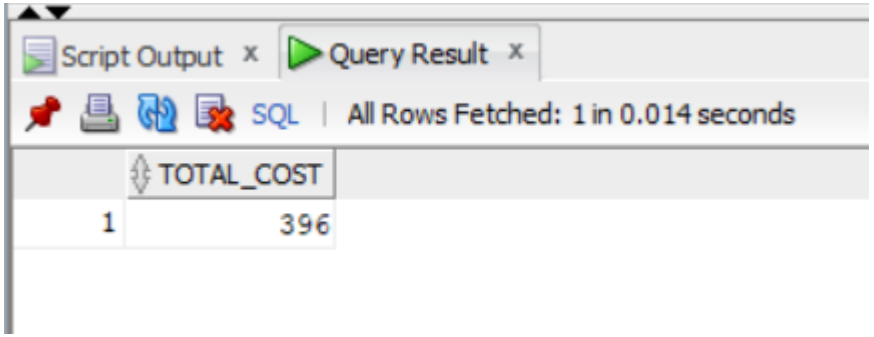
SQL Query :

```
SELECT DISTANCE*COST*COUNT AS TOTAL_COST
FROM
(SELECT (MAX(DIST_COVERED)-MIN(DIST_COVERED)) AS DISTANCE
FROM PNR A,PASSENGER B,TRAIN C,TRAIN_DETAILS D,TRAIN_TYPE E,SCHEDULE F
WHERE A.PNR_NUMBER=&P AND A.PNR_NUMBER=B.PNR_NUMBER AND A.TRAIN_NUMBER=C.TRAIN_NUMBER AND
C.TRAIN_NAME=E.TRAIN_NAME AND D.TRAIN_TYPE=E.TYPE AND A.TRAIN_NUMBER=F.TRAIN_NUMBER AND (A.START_CODE=F.STN_CODE OR
A.END_CODE=F.STN_CODE))
,

(SELECT DISTINCT(CASE
        WHEN A.JCLASS='SL' THEN D.SL_COST_KM
        WHEN A.JCLASS='AC' THEN D.AC_COST_KM
        WHEN A.JCLASS='2S' THEN D.GEN_COST_KM
        END
        ) AS COST
FROM PNR A,PASSENGER B,TRAIN C,TRAIN_DETAILS D,TRAIN_TYPE E,SCHEDULE F
WHERE A.PNR_NUMBER=&P AND A.PNR_NUMBER=B.PNR_NUMBER AND A.TRAIN_NUMBER=C.TRAIN_NUMBER AND
C.TRAIN_NAME=E.TRAIN_NAME AND D.TRAIN_TYPE=E.TYPE AND A.TRAIN_NUMBER=F.TRAIN_NUMBER AND (A.START_CODE=F.STN_CODE OR
A.END_CODE=F.STN_CODE))
```

,

```
(SELECT (COUNT(*)/2) AS COUNT
FROM PNR A,PASSENGER B,TRAIN C,TRAIN_DETAILS D,TRAIN_TYPE E,SCHEDULE F
WHERE A.PNR_NUMBER=&P AND A.PNR_NUMBER=B.PNR_NUMBER AND A.TRAIN_NUMBER=C.TRAIN_NUMBER AND
C.TRAIN_NAME=E.TRAIN_NAME AND D.TRAIN_TYPE=E.TYPE AND A.TRAIN_NUMBER=F.TRAIN_NUMBER AND (A.START_CODE=F.STN_CODE OR
A.END_CODE=F.STN_CODE));
```

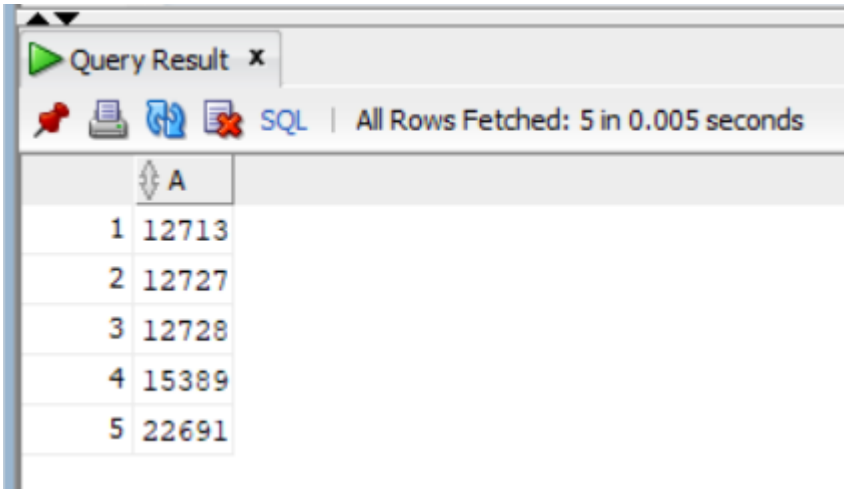


7.DISPLAY THE TRAIN NUMBERS OF ALL TRAINS THAT CROSS TWO GIVEN STATIONS IN THEIR PATH OF JOURNEY.

SQL Query :

```
(select train_number AS A
from schedule
where stn_code=(select station_code from station where station_name='&A'))
INTERSECT
(SELECT TRAIN_NUMBER AS B
FROM SCHEDULE
WHERE STN_CODE=(SELECT STATION_CODE FROM STATION WHERE STATION_NAME='&B'));
```

OUTPUT:



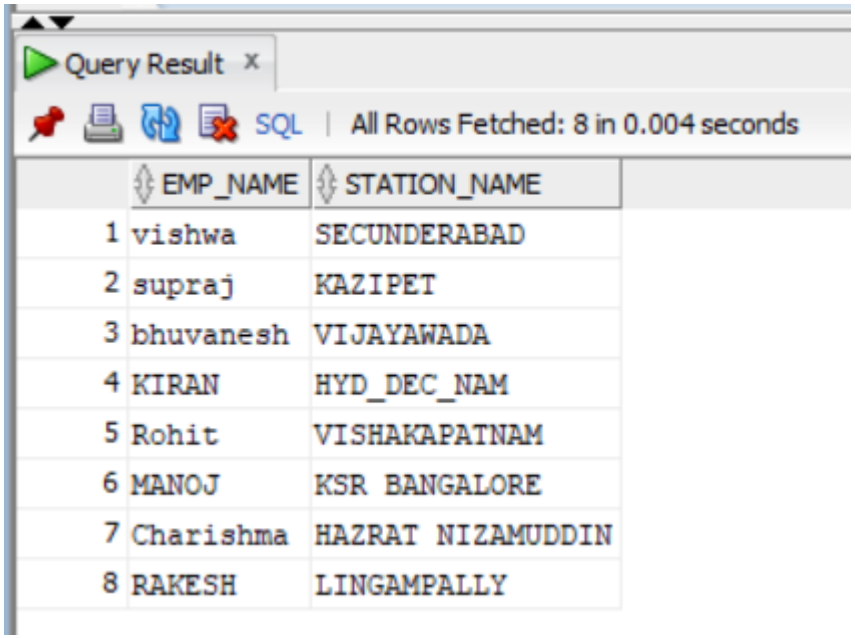
	A
1	12713
2	12727
3	12728
4	15389
5	22691

8.Write the details of all the station master and name of the station they handle

SQL QUERY:

```
SELECT B.EMP_NAME,C.STATION_NAME
FROM STATION_WORKERS A,EMPLOYEE B,STATION C
WHERE A.EMP_ID=B.EMP_ID AND B.DESIGNATION='SM' AND B.STATION_CODE=C.STATION_CODE;
```

OUTPUT:



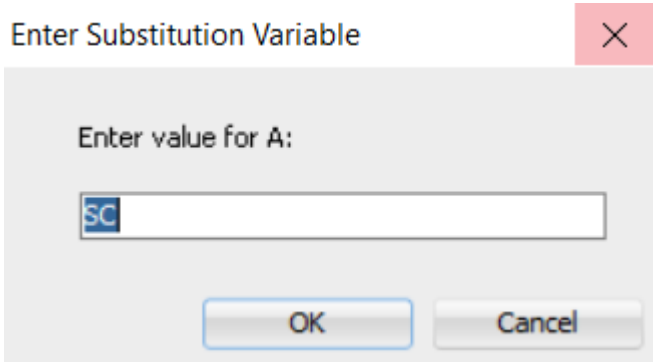
	EMP_NAME	STATION_NAME
1	vishwa	SECUNDERABAD
2	supraj	KAZIPET
3	bhuvanesh	VIJAYAWADA
4	KIRAN	HYD_DEC_NAM
5	Rohit	VISHAKAPATNAM
6	MANOJ	KSR BANGALORE
7	Charishma	HAZRAT NIZAMUDDIN
8	RAKESH	LINGAMPALLY

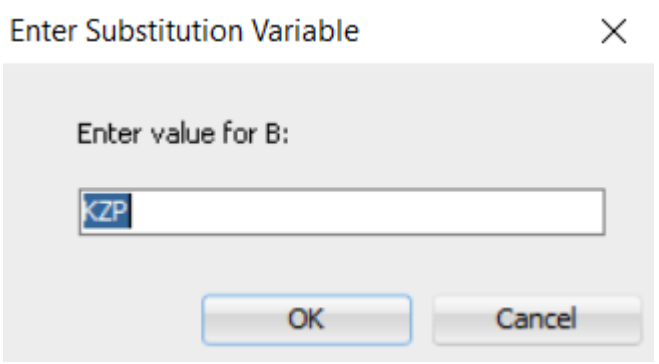
9.DISPLAY ALL TRAIN NUMBERS WHICH ARE PASSING THROUGH 2 GIVEN STATIONS IN THAT ORDER.

SQL QUERY:

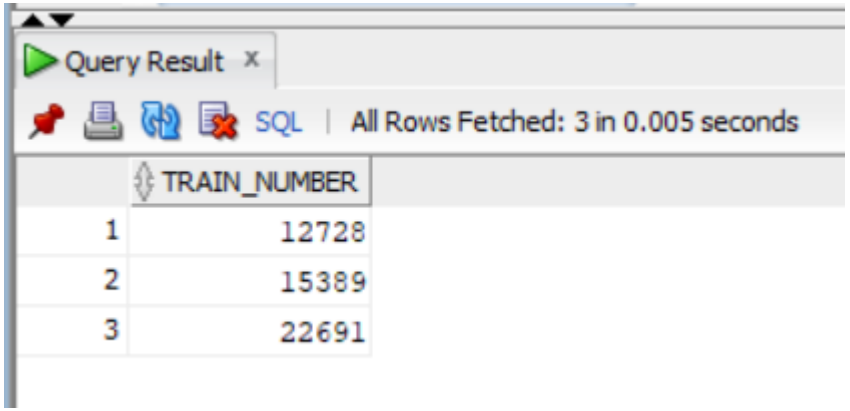
```
SELECT TRAIN_NUMBER
FROM (select train_number,arr_time as A
        from schedule
        where stn_code='&A') C natural join (select train_number,arr_time as B
                                                from schedule
                                                where stn_code='&B') D
 WHERE (A IS NULL) OR (A < B);
```

INPUT:





OUTPUT:

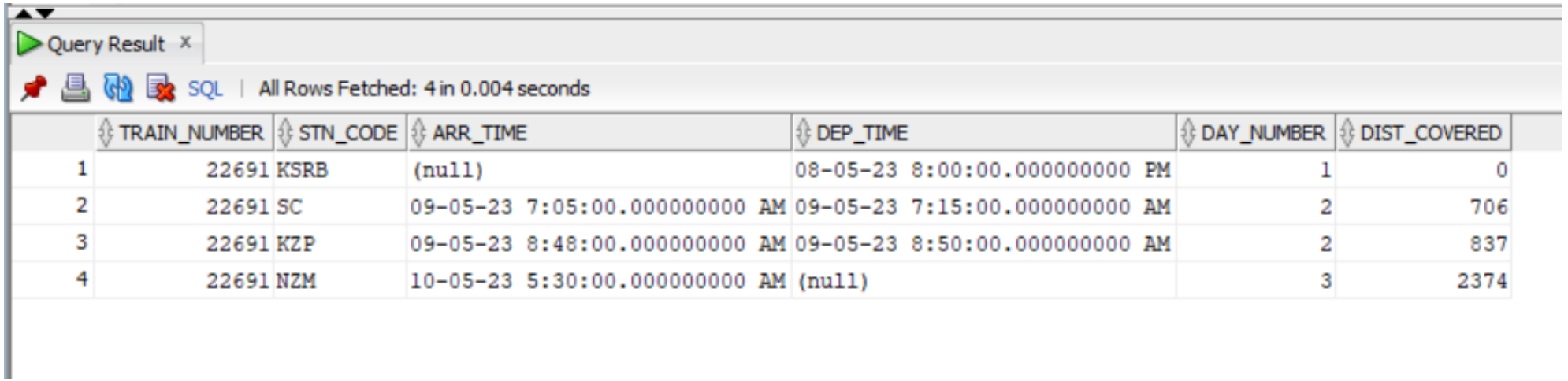


10. WRITE THE DETAILED SCHEDULE OF THE TRAIN WITH TRAIN NUMBER TAKEN AS INPUT.

SQL QUERY:

```
SELECT *
FROM SCHEDULE
WHERE TRAIN_NUMBER=&T
ORDER BY DIST_COVERED;
```

OUTPUT:



Query Result

SQL | All Rows Fetched: 4 in 0.004 seconds

	TRAIN_NUMBER	STN_CODE	ARR_TIME	DEP_TIME	DAY_NUMBER	DIST_COVERED
1	22691	KSRB	(null)	08-05-23 8:00:00.000000000 PM	1	0
2	22691	SC	09-05-23 7:05:00.000000000 AM	09-05-23 7:15:00.000000000 AM	2	706
3	22691	KZP	09-05-23 8:48:00.000000000 AM	09-05-23 8:50:00.000000000 AM	2	837
4	22691	NZM	10-05-23 5:30:00.000000000 AM	(null)	3	2374