**DATA BASE MANAGEMENT PROJECT REPORT**

**ON**

**ONLINE RAILWAY RESERVATION SYSTEM**

**THAPAR INSTITUTE OF ENGINEERING AND TECHNOLOGY**



**SUBMITTED BY-**

**SAKSHI SHARMA (101603296)**

**SHIVAM MITTAL (101603316)**

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**ONLINE RAILWAY RESERVATION SYSTEM**

**SUBMITTED TO :**

**Ms. ANIKA**

**COMPUTER SCIENCE AND ENGINEERING DEPARTMENT**

**THAPAR INSTITUTE OF ENGINEERING AND TECHNOLOGY**



**CERTIFICATE**

This is to certify the project entitled “Online Railway Reservation System” is an original work carried under my supervision of in particular fullfilment for the award of the degree of bachelor of engineering from Thapar University ,Patiala ,Punjab during the month of Nov 2017.

The project report has been approved by me as, it satisfies the academic requirement in the respect of project work prescribed for the bachelor of degree .

**Ms. Anika**

**ACKNOWLEDGEMENT**

We have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and teachers. We would like to extend our sincere thanks to all of them.

We are highly indebted to Ms. Anika for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in completing the project.

We would like to express our gratitude towards our parents for their kind co-operation and encouragement which helped us in completion of this project.

Our thanks and appreciations also go to our colleagues in developing the project and people who have willingly helped us out with their abilities.

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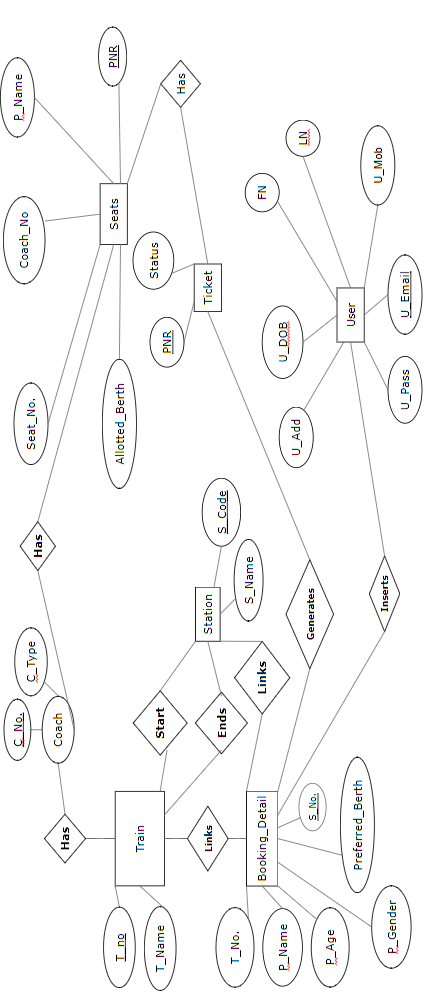
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**REQUIREMENT ANALYSIS**

Online Railways Reservation system is a great boon to all of us. Nowadays it is very easy to book a ticket within few seconds. Given below is an analysis of a part of **Indian Railway Catering and Tourism Corporation**, with the help of which we are going to work on this **DBMS** project **“Online Railways Reservation System.” CASE STUDY**

Major bullet points associated with this project is mentioned below.

* Train has a unique Train\_No. and Train\_Name.
* A train has Different Coaches.
* Coach has its Type, Number and Rate Per Seat.
* Train starts from a particular station & ends at a particular station, but many trains can start from a particular station and many trains can end at a particular station.
* A station has a unique ID and a Name.
* User has a Unique ID (e-mail), a Password, a name (first and last name), can have more than one contact numbers, Address, Date of Birth.
* A user inserts booking details.
* A user can book ticket for many passengers.
* Booking details have Name, Gender, Age, Berth Preference, Train no, Boarding station and destination station.
* A ticket is generated with the entered booking details.
* Ticket will have a unique PNR and it status (i.e. CNF/WL/RAC etc...)
* A ticket can have more than one seats reserved according to the respective booking details.
* A ticket has seats allotted to passengers with Allotted Berth, Coach No., P name and Seat no.
* Berth is allocated by checking the gender and age of respective passengers.

**ENTITY RELATIONSHIP DIAGRAM**

**ER TO TABLE (Normalized final table)**

|  |  |  |
| --- | --- | --- |
| **Train table** |  |  |
| **Column** | **Datatype** | **Constraints** |
| T\_no | number(6) | Primary Key |
| T\_name | Varchar2 (100) | not null |
|  |  |  |
| **Station table** | |  |
| **Column** | **Datatype** | **Constraints** |
| S\_code | Varchar2 (5) | Primary Key |
| S\_name | Varchar2 (50) | not null |
|  |  |  |
|  |  |  |
|  |  |  |
| **Coach\_table** |  |  |
| **Column** | **Datatype** | **Constraints** |
| C\_no | Varchar2 (3) | Primary Key |
| C\_type | Varchar2 (2) | not null |
|  |  |  |
|  |  |  |
| **User table** |  |  |
| **Column** | **Datatype** | **Constraints** |
| U\_email | Varchar2 (100) | Primary Key |
| U\_pass | Varchar2 (16) | not null |
| U\_Fn | Varchar2 (50) | not null |
| U\_Ln | Varchar2 (50) | not null |
| U\_mob | number (11) | unique |
| U\_add | Varchar2 (500) | not null |
| U\_DOB | Date | not null |
|  |  |  |
|  |  |  |
| **Booking\_Details** | |  |
| **Column** | **Datatype** | **Constraints** |
| Sno | number (3) | Artificial Key |
| T\_no | number (6) | Foreign key |
| P\_name | Varchar2 (100) | not null |
| P\_gender | Varchar2 (1) | not null |
| P\_age | number(3) | not null |
| P\_Berth, | Varchar2 (2) |  |
| B\_Station | Varchar2 (5) | Foreign key |
| D\_Station | Varchar2 (5) | Foreign key |
|  |  |  |
|  |  |  |
| **Ticket table** |  |  |
| **Column** | **Datatype** | **Constraints** |
| PNR | number(15) | Primary Key |
| Status | Varchar2 (3) | not null |
|  |  |  |
|  |  |  |
| **Seats table** |  |  |
| **Column** | **Datatype** | **Constraints** |
| PNR | number(15) | Primary Key |
| P\_name | Varchar2 (100) | not null |
| C\_no | Varchar2 (3) | not null |
| S\_no | number(3) | not null |
| A\_Berth | Varchar2 (2) | not null |

**SQL CODE**

create table Train (T\_No NUMBER (6) PRIMARY KEY,

T\_name VARCHAR2(100) NOT NULL);

create table Station (S\_code VARCHAR2(4) PRIMARY KEY,

S\_name VARCHAR2(50) NOT NULL);

create table Coach (C\_no VARCHAR (4) PRIMARY KEY,

C\_type VARCHAR2(6) NOT NULL);

create table Userm (U\_email VARCHAR2 (100) PRIMARY KEY,

U\_pass VARCHAR2 (16) NOT NULL,

U\_Fn VARCHAR2 (50) NOT NULL,

U\_Ln VARCHAR2 (50) NOT NULL);

create table Booking\_Details ( Sno NUMBER (3) PRIMARY KEY,

T\_no NUMBER (6) REFERENCES Train(T\_no),

P\_name VARCHAR2 (100) NOT NULL,

P\_gender VARCHAR2 (1) NOT NULL,

P\_age NUMBER (3) NOT NULL,

P\_Berth VARCHAR2 (2),

B\_Station VARCHAR2 (5) REFERENCES Station(S\_code),

D\_Station VARCHAR2 (5) REFERENCES Station(S\_code));

create table Ticket (PNR NUMBER (15) PRIMARY KEY,

Status VARCHAR2 (3) NOT NULL);

create table Seats (PNR NUMBER (15) PRIMARY KEY REFERENCES Ticket(PNR),

Sno NUMBER (3) REFERENCES Booking\_Details(Sno),

C\_no VARCHAR2 (3) REFERENCES Coach(C\_no),

S\_no NUMBER (3) NOT NULL,

A\_Berth VARCHAR2 (2) NOT NULL);

**DATA INSERTION**

insert into Train values (12955, 'BCT\_JP Express');

insert into Train values (12925, 'Paschim Express');

insert into Train values (12472, 'Swaraj Express');

insert into Train values (12951, 'Mumbai Rajdhani');

insert into Station values('UMB', 'Ambala Junction');

insert into Station values('PTA', 'Patiala Junction');

insert into Station values('NDLS', 'New Delhi');

insert into Station values('DLI', 'Old Delhi');

insert into Station values('KOTA', 'Kota');

insert into Station values('BCT', 'Mumbai Central');

insert into Station values('JP', 'Jaipur');

insert into Station values('BSB', 'Varanasi');

insert into Station values('BDTS', 'Bandra Termius');

insert into Coach values('B1', '3A');

insert into Coach values('B2', '3A');

insert into Coach values('B3', '3A');

insert into Coach values('B4', '3A');

insert into Coach values('B5', '3A');

insert into Coach values('B6', '3A');

insert into Coach values('B7', '3A');

insert into Coach values('B8', '3A');

insert into Coach values('B9', '3A');

insert into Coach values('B10', '3A');

insert into Coach values('B11', '3A');

insert into Coach values('B12', '3A');

insert into Coach values('B13', '3A');

insert into Coach values('A1', '2A');

insert into Coach values('A2', '2A');

insert into Coach values('A3', '2A');

insert into Coach values('A4', '2A');

insert into Coach values('A5', '2A');

insert into Coach values('A6', '2A');

insert into Coach values('A7', '2A');

insert into Coach values('A8', '2A');

insert into Coach values('A9', '2A');

insert into Coach values('A10', '2A');

insert into Coach values('A11', '2A');

insert into Coach values('A12', '2A');

insert into Coach values('A13', '2A');

insert into Coach values('H1', '1A');

insert into Coach values('H3', '1A');

insert into Coach values('H4', '1A');

insert into Coach values('H5', '1A');

insert into Coach values('H6', '1A');

insert into Userm values('harmanpreet@gmail.com', 'qwerty', 'harman', 'singh');

insert into Userm values('kirat@gmail.com', 'asdfgh', 'kirat', 'jain');

insert into Userm values('utkarsh@gmail.com', 'dfghfgh', 'utkarsh', 'khan');

insert into Userm values('siddhu@gmail.com', 'sdfgdfgh', 'siddhu', 'ahluwalia');

insert into Userm values('prashil@gmail.com', 'mnbvcvbj', 'prashil', 'gupta');

insert into Userm values('david@gmail.com', 'wefghnjh' ,'david', 'chadda');

insert into Userm values('martin@gmail.com', 'srtfghg' ,'martin', 'girish');

insert into Booking\_Details values(1, 12955, 'abhishek', 'M', 24, 'SL', 'NDLS', 'KOTA');

insert into Booking\_Details values(2, 12925, 'pranjay', 'M', 21, 'UB', 'UMB', 'PTA');

insert into Booking\_Details values(3, 12472, 'surbhit', 'M', 22, 'MB', 'BCT', 'DLI');

insert into Booking\_Details values(4, 12951, 'siddhant', 'M', 18, 'LB', 'JP', 'BDTS');

insert into Booking\_Details values(5, 12472, 'aayushi', 'F', 19, 'SU', 'NDLS', 'UMB');

insert into Booking\_Details values(6, 12955, 'chetna', 'F', 24, 'SL', 'KOTA', 'BSB');

insert into Booking\_Details values(7, 12951, 'shivang', 'M', 26, 'LB', 'BDTS', 'DLI');

insert into Ticket values(8964598645, 'CNF');

insert into Ticket values(7845454544, 'CNF');

insert into Ticket values(5485252321, 'CNF');

insert into Ticket values(2154585578, 'CNF');

insert into Ticket values(7985452587, 'CNF');

insert into Ticket values(2345678765, 'CNF');

insert into Ticket values(9876543456, 'CNF');

insert into Seats values(8964598645, 1, 'A2', 12, 'SL');

insert into Seats values(7845454544, 2, 'B5', 10, 'UB');

insert into Seats values(5485252321, 3, 'H1', 34, 'SL');

insert into Seats values(2154585578, 4, 'A6', 8, 'SU');

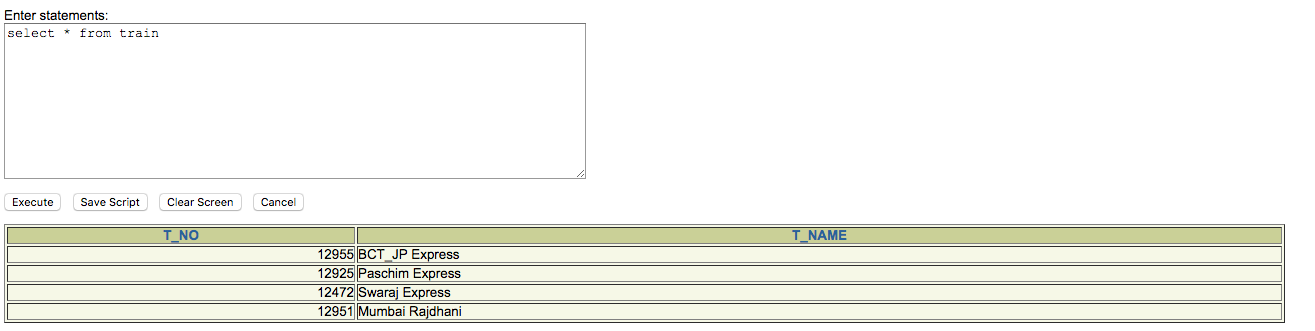
insert into Seats values(7985452587, 5, 'B2', 56, 'LB');

insert into Seats values(2345678765, 6, 'A1', 89, 'MB');

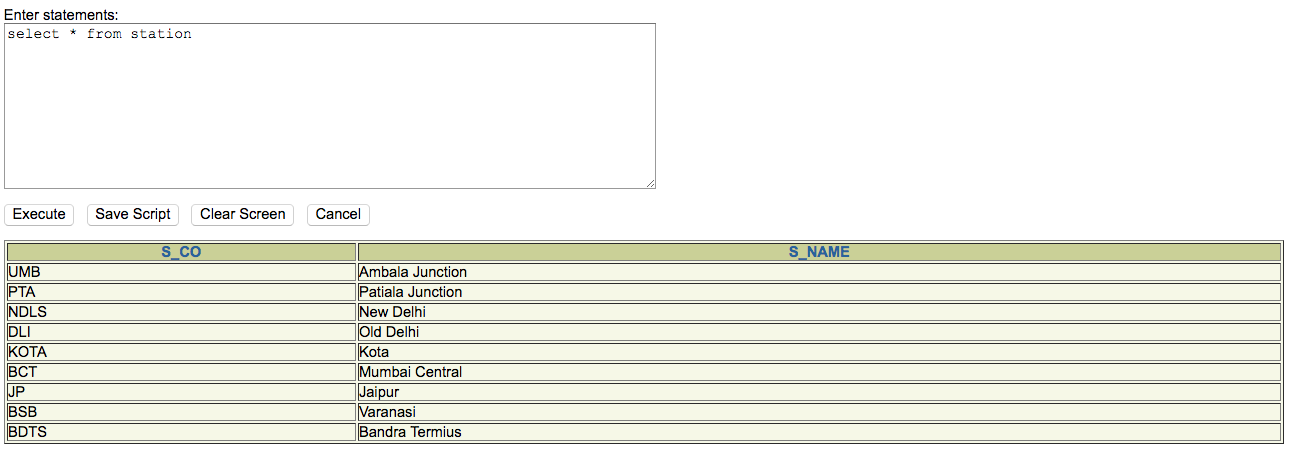
insert into Seats values(9876543456, 7, 'H3', 76, 'UB');

**SCREENSHOTS OF TABLES**

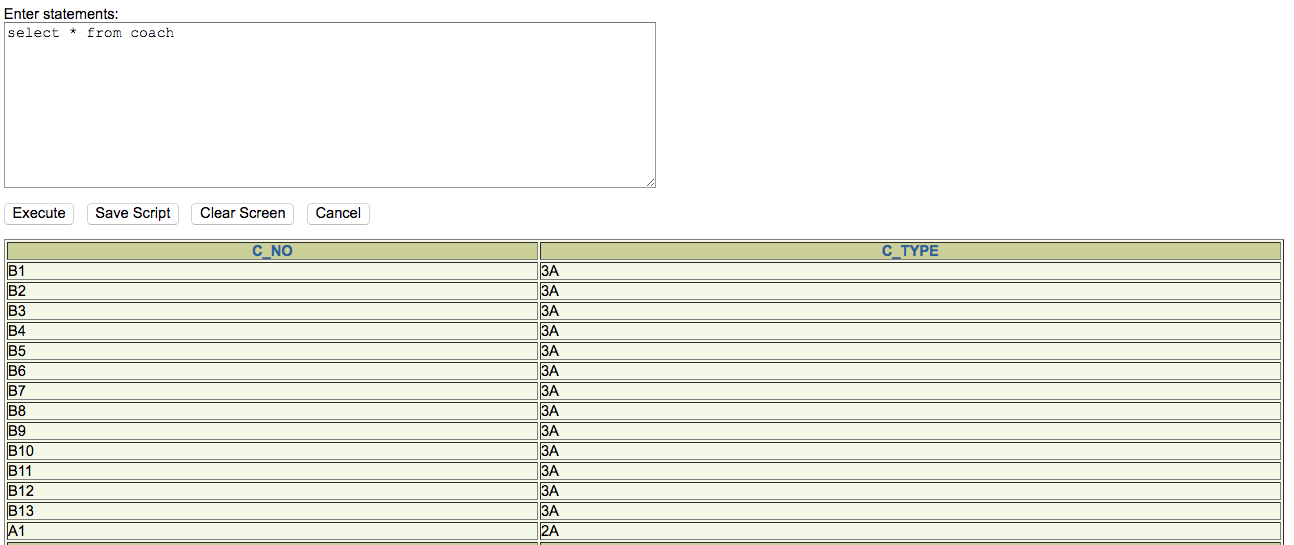
**TRAIN TABLE**



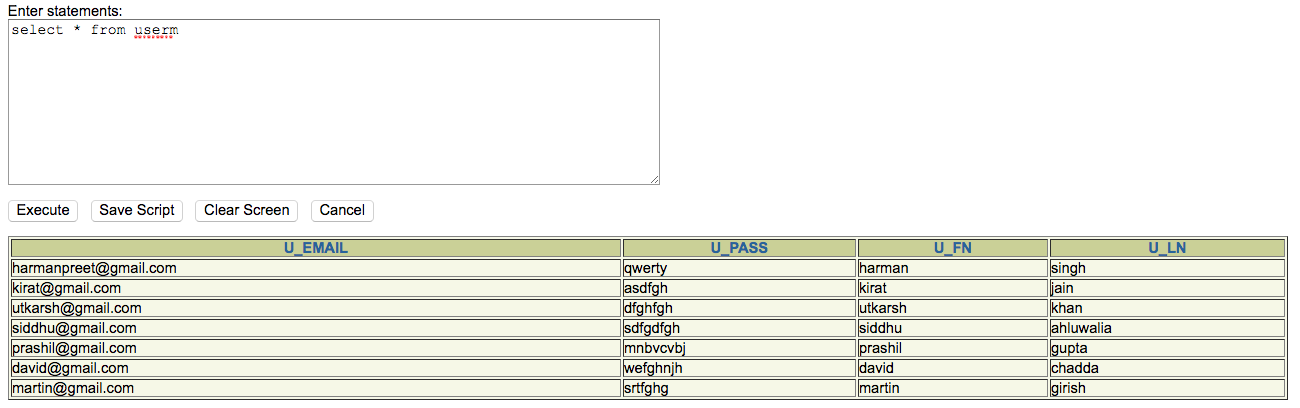
**STATION TABLE**



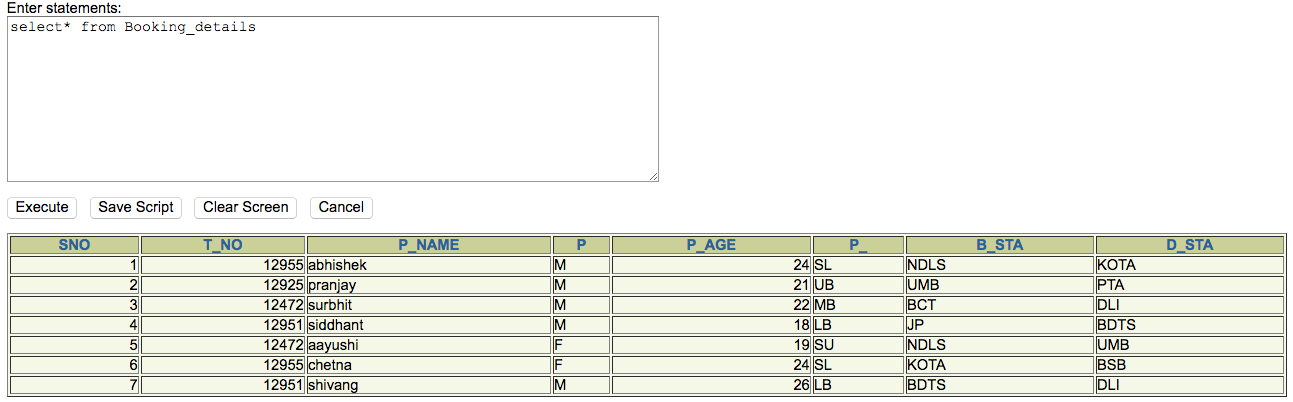
**COACH TABLE**



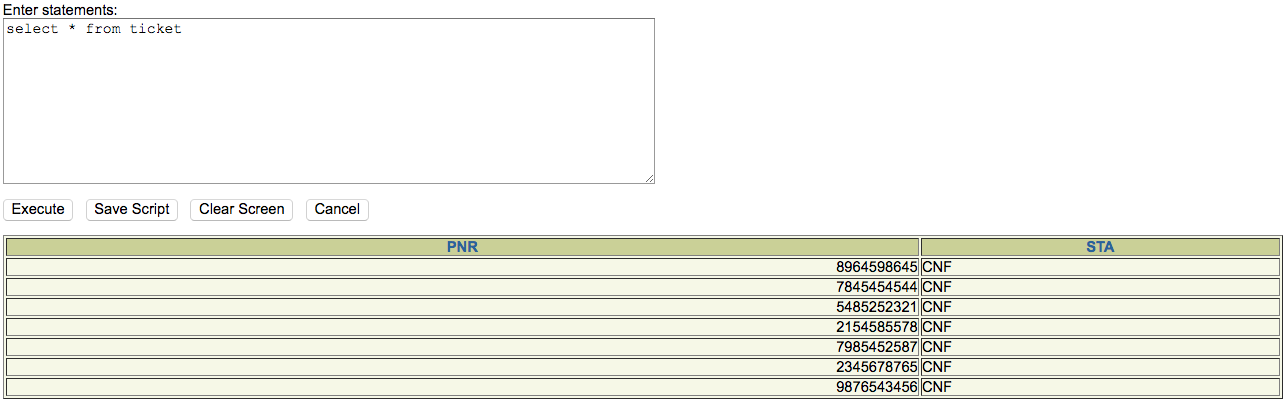
**USERM TABLE**



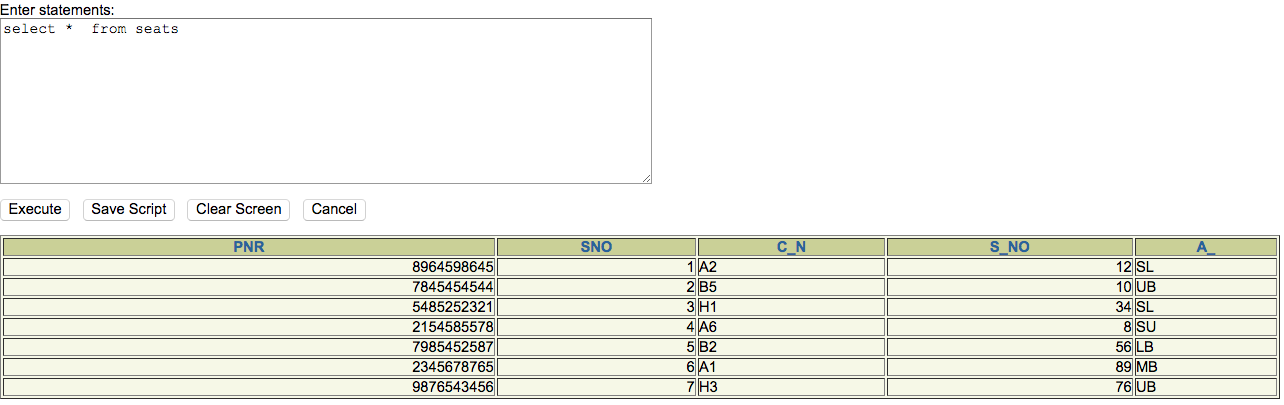
**BOOKING\_DETAILS TABLE**



**TICKET TABLE**



**SEATS TABLE**



**PL/SQL CODES**

Procedure: to update password

set serveroutput on;

declare

email Varchar2(100);

procedure passwd\_update(email in Varchar2)

as

begin

update Userm set U\_pass='&new\_password' where U\_email=email;

end;

begin

email:='&User\_email';

passwd\_update(email);

end;

Procedure: to insert into Booking\_Details:

create or replace procedure new\_Passenger(

Sno Booking\_details.Sno%type,

T\_no Booking\_details.T\_no%type,

P\_name Booking\_details.P\_name%type,

P\_gender Booking\_details.P\_gender%type,

P\_age Booking\_details.P\_age%type,

P\_Berth Booking\_details.P\_Berth%type,

B\_Station Booking\_details.B\_Station%type,

D\_Station Booking\_details.D\_Station%type)

is

begin

insert into Booking\_details (Sno, T\_no, P\_name, P\_gender, P\_age, P\_Berth, B\_Station, D\_Station )

values (Sno, T\_no, P\_name, P\_gender, P\_age, P\_Berth, B\_Station, D\_Station);

commit;

end;

begin

new\_Passenger(Sno => &Serial\_no,

T\_no => &Train\_no,

P\_name =>'&Name',

P\_gender => '&Gender',

P\_age => &age,

P\_Berth => '&Preferred\_Berth',

B\_Station => '&Boarding\_Station',

D\_Station => '&Destination\_Station');

end;

Procedure: to delete Booking\_Details details:

set serveroutput on;

declare

x1 Booking\_Details%rowtype;

cursor c1 is select \* from Booking\_Details where p\_name='&passenger\_name';

begin

open c1;

loop

fetch c1 into x1;

exit when c1%notfound;

delete from Booking\_Details where p\_name=x1.p\_name;

dbms\_output.put\_line('record deleted for p\_name ' || x1.p\_name);

end loop;

close c1;

end;

Cursor

Use pl/sql cursor to display name of all passenger of even sequence no.

Code:

DECLARE

cursor c1 is select \* from Booking\_Details ;

BEGIN

for Booking\_Details in c1 loop

if Booking\_Details.Sno in (2,4,6,8,10) then

dbms\_output.put\_line('Name is = '||Booking\_Details.P\_name);

end if;

end loop;

END;

Looping:

Use pl/sql loop statement to show names of all passengers having serial number between 1,4 inclusive.

Code:

set serveroutput on;

DECLARE

  name Booking\_Details.P\_name%type;

BEGIN

  for i in 1..4 loop

    select P\_name into name from Booking\_Details where Sno = i;

    dbms\_output.put\_line('name is = '||name);

  end loop;

END;

Triggers

A trigger on User table that prints a message whenever password of any user is updated;

Code:

CREATE OR REPLACE TRIGGER passwd\_trig after update or delete of U\_pass on Userm for each row

BEGIN

DBMS\_OUTPUT.PUT\_LINE('You have successfully changed your password');

END;

Exception Handling

Create a user defined exception, raise it and handle it using pl/sql construct.

Code:

DECLARE

trainno number;

no number;

T\_no\_out\_of\_database exception;

BEGIN

no := &train\_no;

select T\_no into trainno from train where T\_no = no;

if trainno not in (12955, 12925, 12472, 12951) then

raise T\_no\_out\_of\_database;

end if;

EXCEPTION

when T\_no\_out\_of\_database then

dbms\_output.put\_line ('Train not found, please enter valid train number!');

end;