Experiment 4

NORMALIZATION OF TABLES

Aim: Apply the database Normalization techniques for designing relational database tables to minimize duplication of information.

Normalization: Normalization is the process of reorganizing data in a database so that it meets two basic requirements: (1) There is no redundancy of data (all data is stored in only one place), and (2) data dependencies are logical (all related data items are stored together). Normalization is important for many reasons, but chiefly because it allows databases to take up as little disk space as possible, resulting in increased performance.

Normalization is also known as data normalization.

The three main types of normalization are listed below.

Note: "NF" refers to "normal form."

- 1NF
- 2NF
- 3NF

The following three NFs exist but are rarely used:

- BCNF
- 4NF
- 5NF

BUS:

Bus_no	Source	Destination

Passenger:

Pnr_No	Ticket_no	Name	Age	Sex	PPNO

Reservation:

Pnr_No	Journey_date	No_of_seats	Address	Contact_No	Status

Cancellation:

Pnr_No	Journey_date	No_of_seats	Address	Contact_No	Status

Ticket:

Ticket_No	Journey_date	Age	sex	source	Destination	Dep_time

Experiment 5

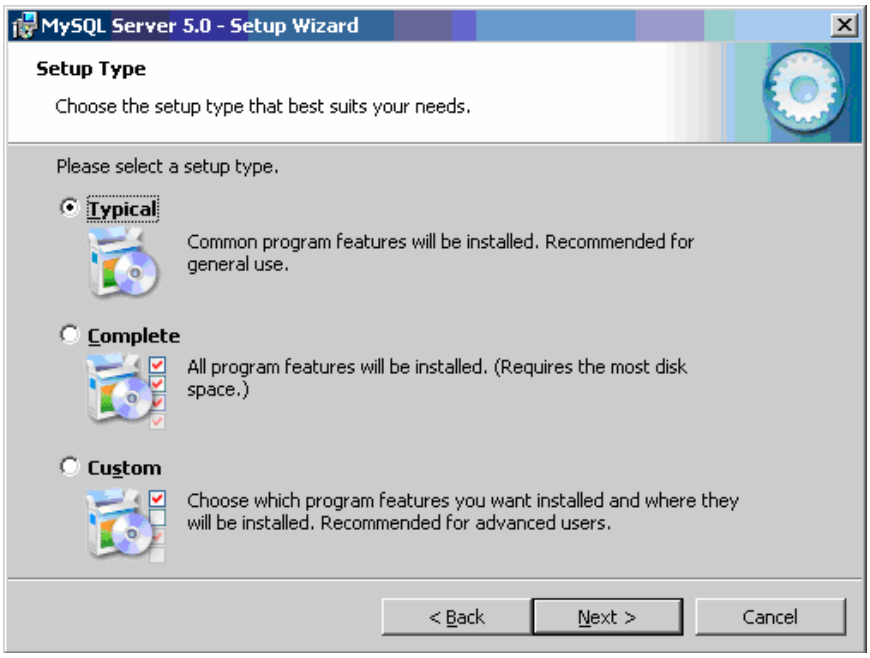
Aim: Installation of MySQL and practicing DDL commands.

1. Steps for installing MySQL

Step 1
Make sure you already downloaded the **MySQL essential 5.0.45 win32.msi file**. Double click on the .msi file.

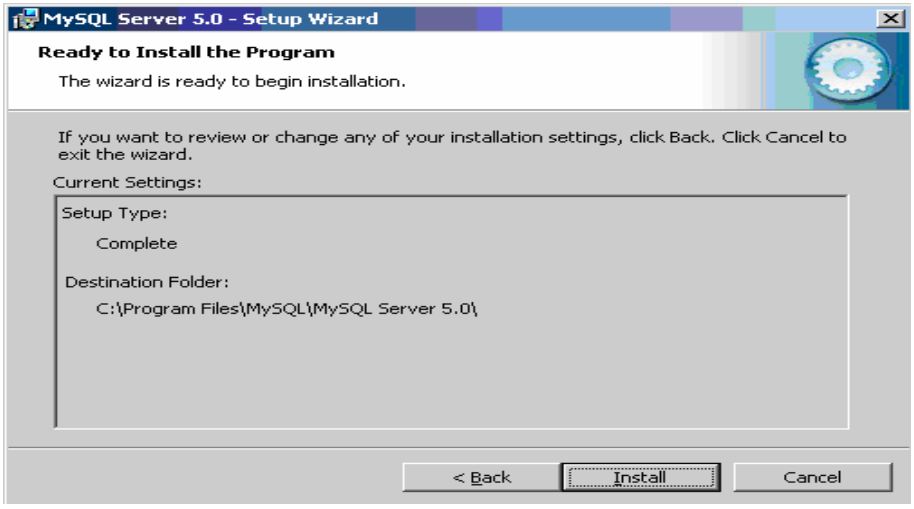
Step 2
This is MySQL Server 5.0 setup wizard. The setup wizard will install MySQL Server 5.0 release 5.0.45 on your computer. To continue, click **next.**

Step 3
Choose the setup type that best suits your needs. For common program features select ***Typical*** and it's recommended for general use. To continue, click **next**.

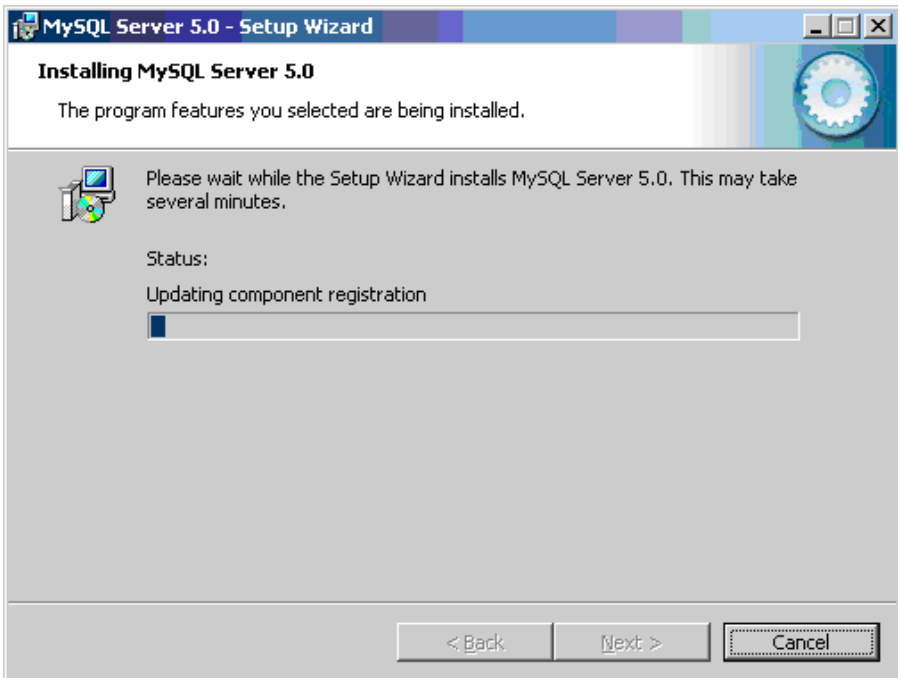


Step 4

This wizard is ready to begin installation. Destination folder will be in **C:\Program Files\MySQL\MySQL Server 5.0**. To continue, click **next**.

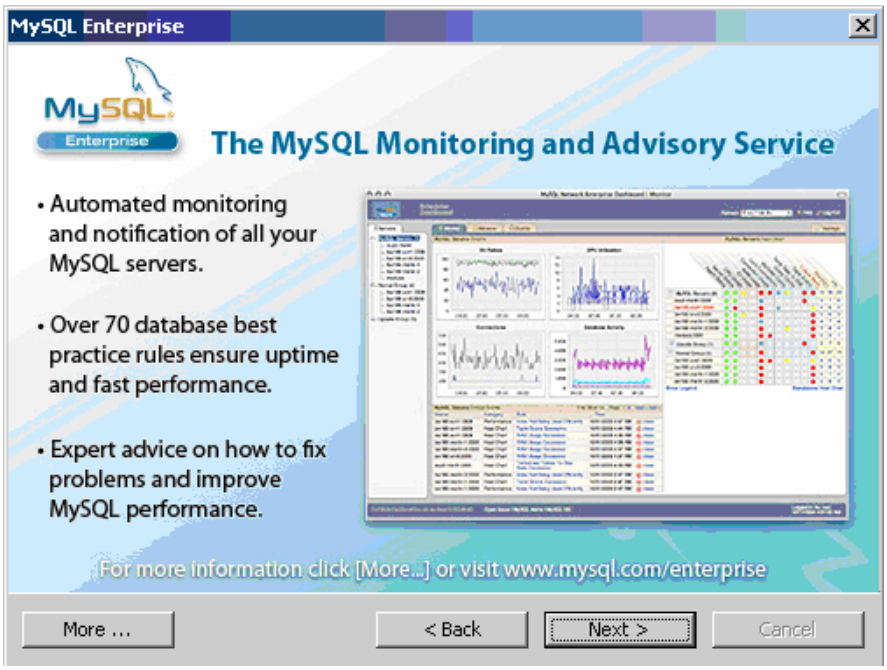


Step 5
The program features you selected are being installed. Please wait while the setup wizard installs MySQL 5.0. This may take several minutes.



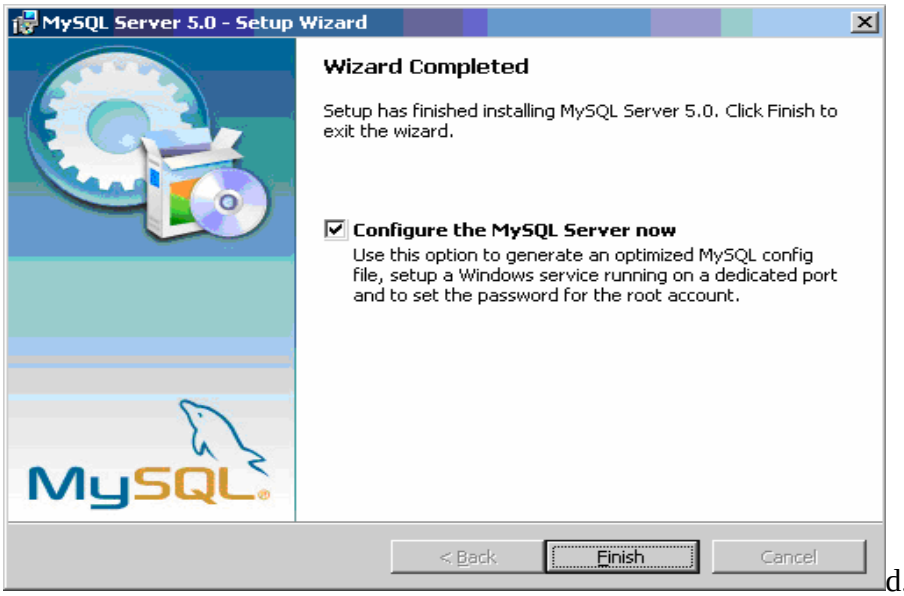
Step 6
To continue, click **next**.

Step 7
To continue, click **next**.



Step 8

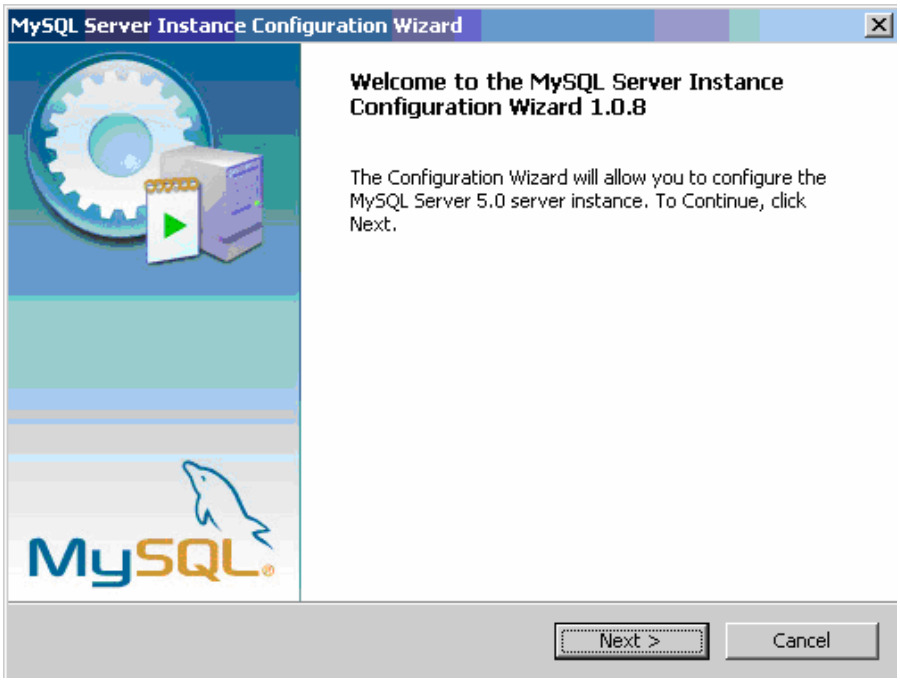
Wizard Completed. Setup has finished installing MySQL 5.0. **Check** the configure the MySQL server now to continue. Click **Finish** to exit the wizard



d.

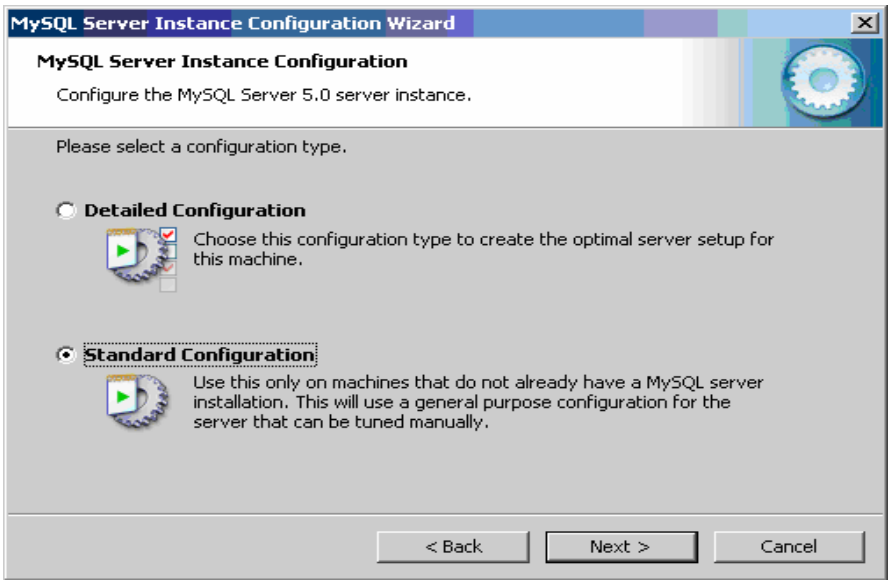
Step 9

The configuration wizard will allow you to configure the MySQL Server 5.0 server instance. To continue, click **next**.



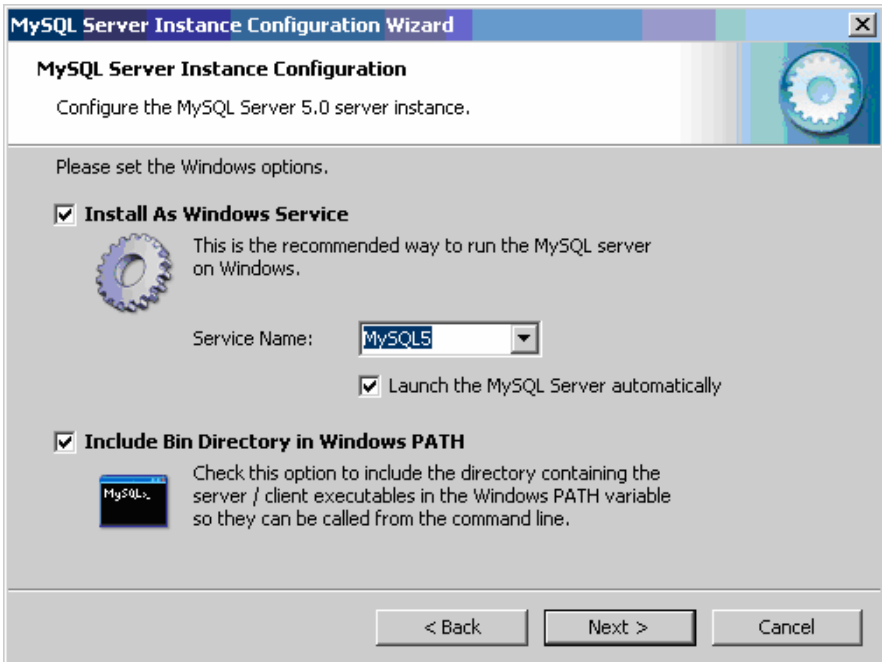
Step 10

Select a **standard configuration** and this will use a general purpose configuration for the server that can be tuned manually. To continue, click **next**.

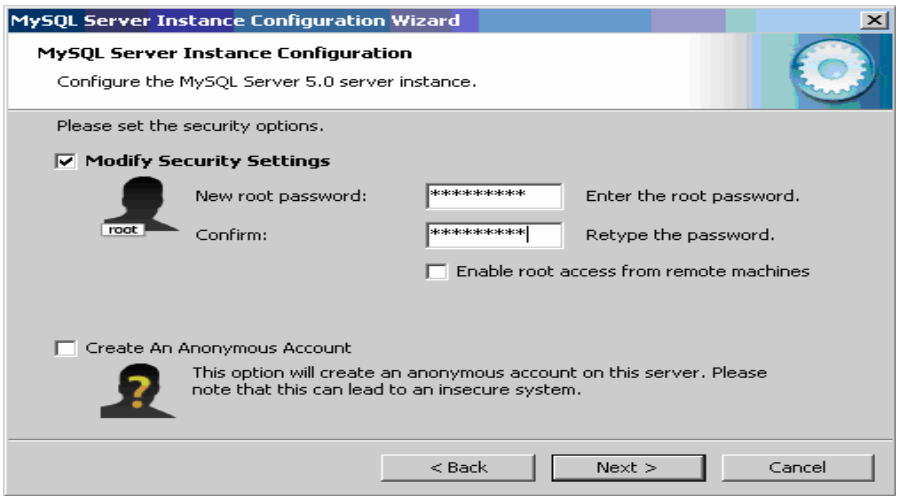


Step 11

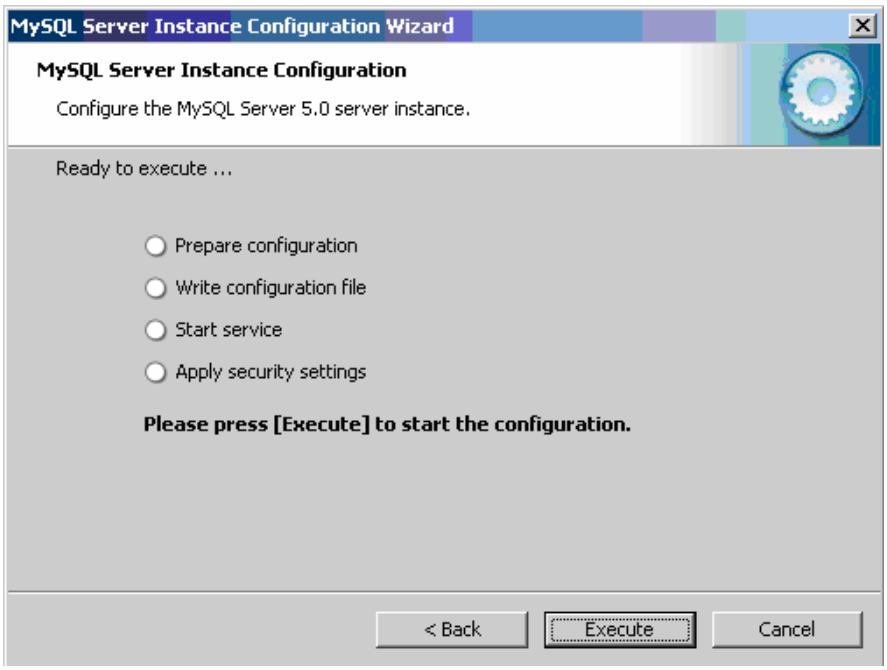
Check on the **install as windows service** and **include bin directory in windows path**. To continue, click **next**.



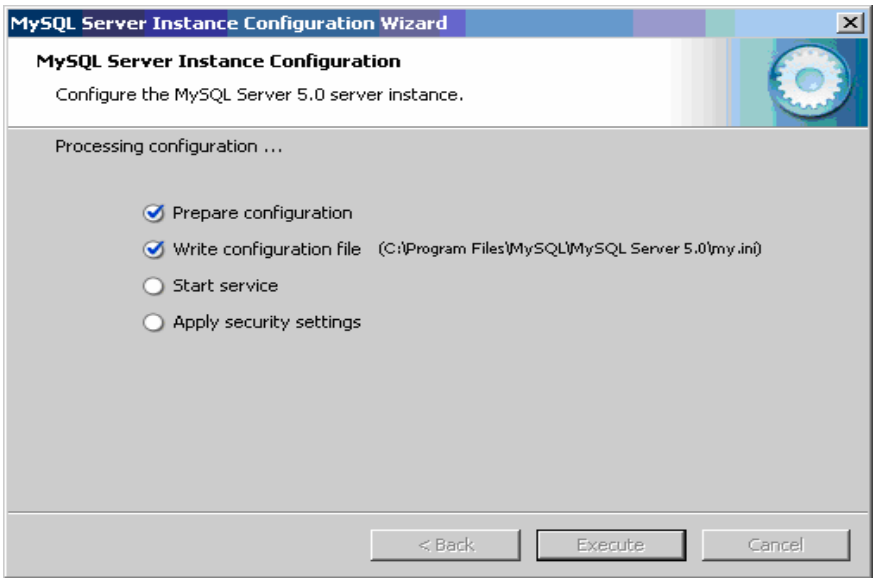
Step 12
Please set the security options by entering the root password and confirm retype the password. To continue, click next.



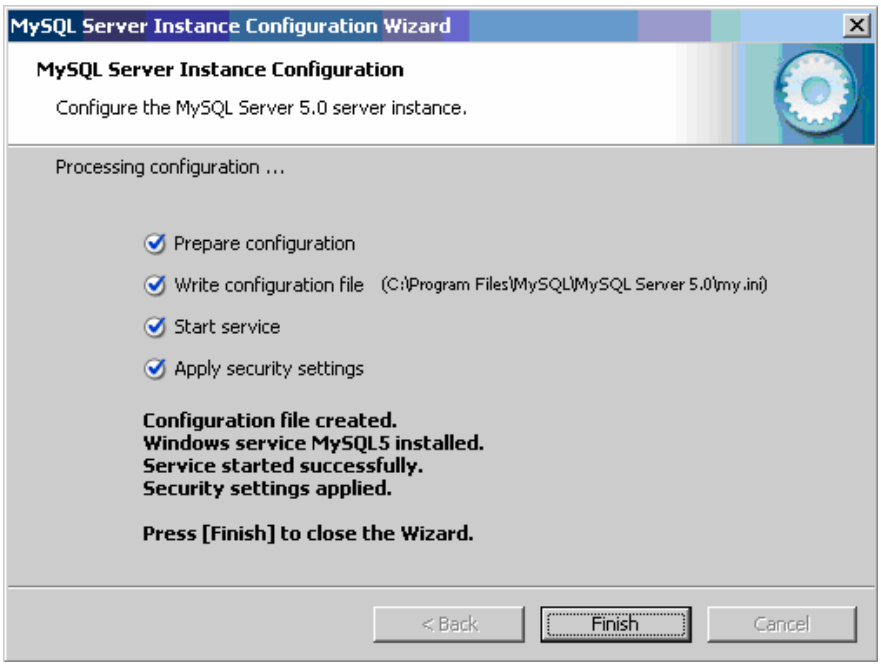
Step 13
Ready to execute? Clicks **execute** to continue.



Step 14
Processing configuration in progress.



Step 15
Configuration file created. Windows service MySQL5 installed. Press **finish** to close the wizard.


MySQL Server Instance Configuration Wizard
MySQL Server Instance Configuration
Configure the MySQL Server 5.0 server instance.
Processing configuration ...
Prepare configuration
Write configuration file (C:\Program Files\MySQL\MySQL Server 5.0\my.ini)
Start service
Apply security settings
Configuration file created.
Windows service MySQL5 installed.
Service started successfully.
Security settings applied.
Press [Finish] to close the Wizard.
< Back
Finish
Cancel

Experiment 6

2.Practicing DDL commands

1.1 CREATE Table

a) Passenger Table

SQL> create table Passenger(PNR_NO Integer primary key , Ticket_NO Integer, Name varchar(20), Age Integer, Sex char(10), PPNO varchar(15));

Table created.

SQL> desc passenger

Name	Null?	Type
PNR_NO	NOT NULL	INTEGER
TICKET_NO		INTEGER
NAME		VARCHAR2(20)
AGE		INTEGER
SEX		CHAR(10)
PPNO		VARCHAR2(15)

b) Reservation Table

SQL> create table Reservation(PNR_NO Integer, No_of_seats Integer, Address varchar(50), Contact_No Integer, Status char(3));

Table created.

SQL> desc Reservation

Name	Null?	Type
PNR_NO		INTEGER
NO_OF_SEATS		INTEGER
ADDRESS		VARCHAR2(50)

CONTACT_NO	INTEGER
STATUS	CHAR(3)

c) Bus Table

SQL> create table Bus(Bus_No varchar(5) primary key, source varchar(20), destination varchar(20));

Table created.

SQL> desc bus;

Name	Null?	Type
BUS_NO	NOT NULL	VARCHAR2(5)
SOURCE		VARCHAR2(20)
DESTINATION		VARCHAR2(20)

d) Cancellation Table

SQL> create table Cancellation(PNR_NO Integer, No_of_seats Integer, Address varchar(50), Contact_No integer, Status char(3));

Table created.

SQL> desc Cancellation

Name	Null?	Type
PNR_NO		INTEGER
NO_OF_SEATS		INTEGER
ADDRESS		VARCHAR2(50)
CONTACT_NO		INTEGER
STATUS		CHAR(3)

e) Ticket Table

SQL> create table Ticket(Ticket_No Integer primary key, age Integer, sex char(4) Not

null, source varchar(2), destination varchar(20), dep_time varchar(4));

Table created.

SQL> desc Ticket

Name	Null?	Type
TICKET_NO	NOT NULL	INTEGER
AGE		INTEGER
SEX	NOT NULL	CHAR(4)
SOURCE		VARCHAR2(2)
DESTINATION		VARCHAR2(20)
DEP_TIME		VARCHAR2(4)

1.2 ALTER Table

SQL> ALTER TABLE Reservation ADD FOREIGN KEY (PNR_NO) REFERENCES Passenger(PNR_NO);

Table altered.

SQL> ALTER TABLE Cancellation ADD FOREIGN KEY (PNR_NO) REFERENCES Passenger(PNR_NO);

Table altered.

SQL> alter table Ticket add constraint check_age check(age>18);

Table altered.

1.3 INSERT

SQL> insert into Passenger (PNR_NO,TICKET_NO, 'Name', Age, Sex, PPNO) values(1,1,’SACHIN’,12,’m’,sd1234);

Enter value for pnr_no: 1
Enter value for ticket_no: 1
Enter value for name: SACHIN
Enter value for age: 12
Enter value for sex: m
Enter value for ppno: sd1234

```
old   1: insert into Passenger (PNR_NO,TICKET_NO, 'Name', Age, Sex, PPNO)
new   1: insert into Passenger values(1,1,'SACHIN',12,'m','sd1234')
1 row created.
SQL> /

Enter value for pnr_no: 2
Enter value for ticket_no: 2
Enter value for name: rahul
Enter value for age: 34
Enter value for sex: m
Enter value for ppno: sd3456
old   1: insert into Passenger (PNR_NO,TICKET_NO, Name, Age, Sex, PPNO)

new   1: insert into Passenger values(2,2,'rahul',34,'m','sd3456');

1 row created.

SQL> /

Enter value for pnr_no: 3
Enter value for ticket_no: 3
Enter value for name: swetha
Enter value for age: 24
Enter value for sex: f
Enter value for ppno: sdqw34
old   1: insert into Passenger (PNR_NO,TICKET_NO, Name, Age, Sex, PPNO)

new   1: values(3,3,'swetha',24,'f','sdqw34');

1 row created.

SQL> /

Enter value for pnr_no: 4
Enter value for ticket_no: 4
Enter value for name: ravi
Enter value for age: 56
Enter value for sex: m
Enter value for ppno: sdqazx
old   1: insert into Passenger (PNR_NO,TICKET_NO, Name, Age, Sex, PPNO)

new   1: values(4,4,'ravi',56,'m','sdqazx')

1 row created.

SQL> /
```

Enter value for pnr_no: 4
Enter value for ticket_no: 5
Enter value for name: asif
Enter value for age: 33
Enter value for sex: m
Enter value for ppno: iuyhjk
old 1: insert into Passenger (PNR_NO,TICKET_NO, Name, Age, Sex, PPNO)

new 1: insert into Passenger values(4,5,'asif',33,'m','iuyhjk')*

SQL> select * from Passenger;

PNR_NO	TICKET_NO	NAME	AGE	SEX	PPNO
1	1	SACHIN	12	m	sd1234
2	2	rahul	34	m	sd3456
3	3	swetha	24	f	sdqw34
4	4	ravi	56	m	sdqazx

SQL> insert into Bus (Bus_No,source,destination);

Enter value for bus_no: 1
Enter value for source: hyd
Enter value for destination: ban
old 1: insert into Bus (Bus_No,source,destination)

new 1: insert into Bus values('1','hyd','ban')

1 row created.

SQL> /

Enter value for bus_no: 2
Enter value for source: hyd
Enter value for destination: chn
old 1: insert into Bus values('&Bus_No','&source','&destination')

new 1: insert into Bus values('2','hyd','chn')

1 row created.

SQL> /

Enter value for bus_no: 4
Enter value for source: hyd
Enter value for destination: mum

old 1: insert into Bus (Bus_No,source,destination)

new 1: insert into Bus values('4','hyd','mum')

1 row created.

SQL> /

Enter value for bus_no: 5
Enter value for source: hyd
Enter value for destination: kol

old 1: insert into Bus (Bus_No,source,destination)

new 1: insert into Bus values('5','hyd','kol')

1 row created.

SQL> /

Enter value for bus_no: 5
Enter value for source: sec
Enter value for destination: ban

old 1: insert into Bus (Bus_No,source,destination)

new 1: insert into Bus values('5','sec','ban')

insert into Bus values('5','sec','ban')

SQL> insert into Reservation (PNR_NO, No_of_seats, Address, Contact_No , Status);

Enter value for pnr_no: 1
Enter value for no_of_seats: 2
Enter value for address: masabtank
Enter value for contact_no: 9009897812

Enter value for status: s

old 1: insert into Reservation (PNR_NO, No_of_seats, Address, Contact_No,Status)

new 1: insert into Reservation values(1,2,'masabtank',9009897812,'s')

1 row created.

SQL> insert into Reservation (PNR_NO,No_of_seats,Address,Contact_No,Status);

Enter value for pnr_no: 8
Enter value for no_of_seats: 3
Enter value for address: cbt
Enter value for contact_no: 9090887753
Enter value for status: s

old 1: insert into Reservation (PNR_NO, No_of_seats, Address, Contact_No, Status)

new 1: insert into Reservation values(8,3,'cbt',9090887753,'s')

insert into Reservation values(8,3,'cbt',9090887753,'s')

1.4 UPDATE Table

SQL> update Passenger set age='43' where PNR_NO='2';

1 row updated.

SQL> select * from Passenger;

PNR_NO	TICKET_NO	NAME	AGE	SEX	PPNO
1	1	SACHIN	12	m	sd1234
2	2	rahul	43	m	sd3456
3	3	swetha	24	f	sdqw34
4	4	ravi	56	m	sdqazx

2.5 DELETE

SQL> delete from Passenger where PNR_NO='4';

1 row deleted.

SQL> select * from Passenger;

PNR_NO	TICKET_NO	NAME	AGE	SEX	PPNO
1	1	SACHIN	12	m	sd1234
2	2	rahul	43	m	sd3456
3	3	swetha	24	f	sdqw34

1.5 DROP Table

SQL> drop table Cancellation;

Table dropped.