

Intersect, Union, Union All, Minus & Joins in Oracle

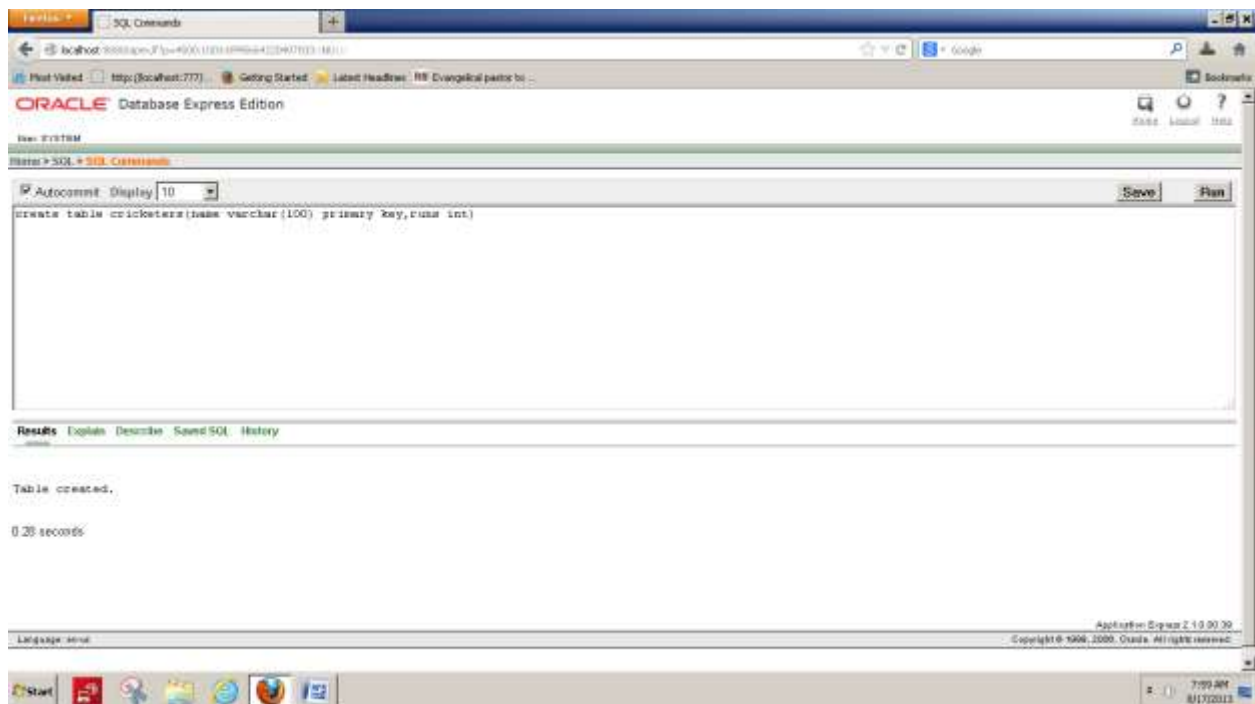
To understand these concepts we define the following tables:-

Cricketers

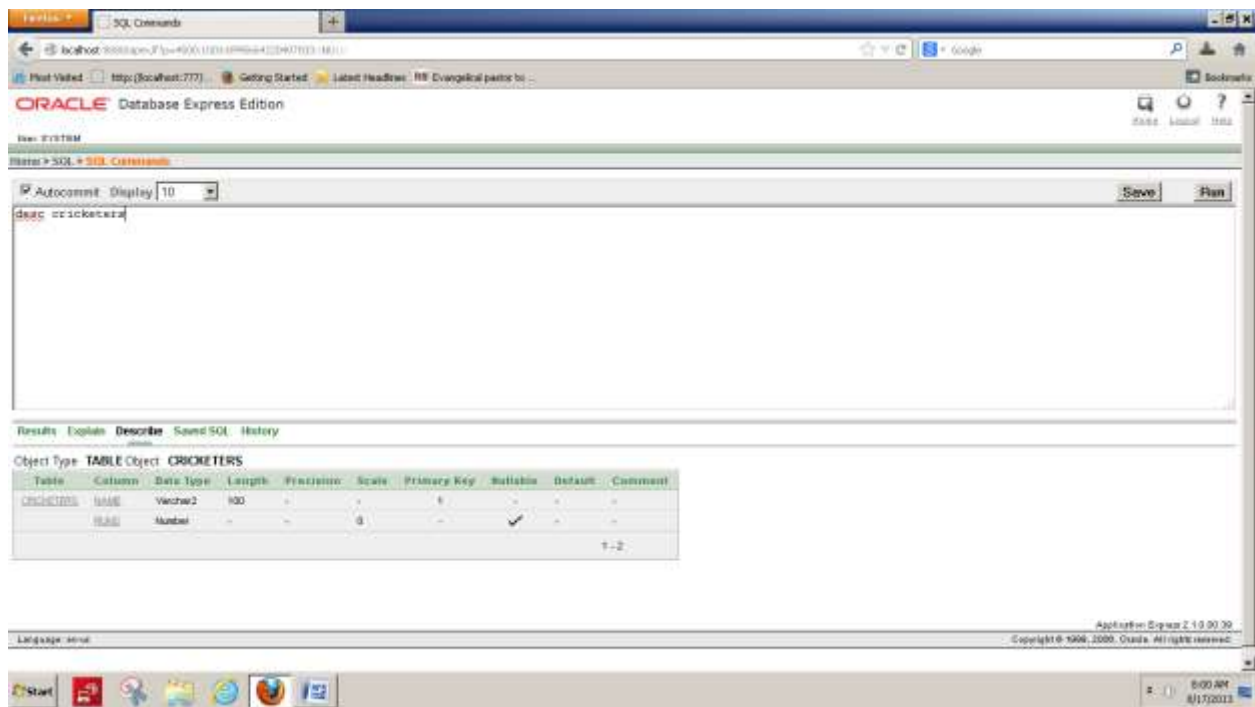
& Footballers.

Cricketers:-

create table cricketers(name varchar(100) primary key,runs int)

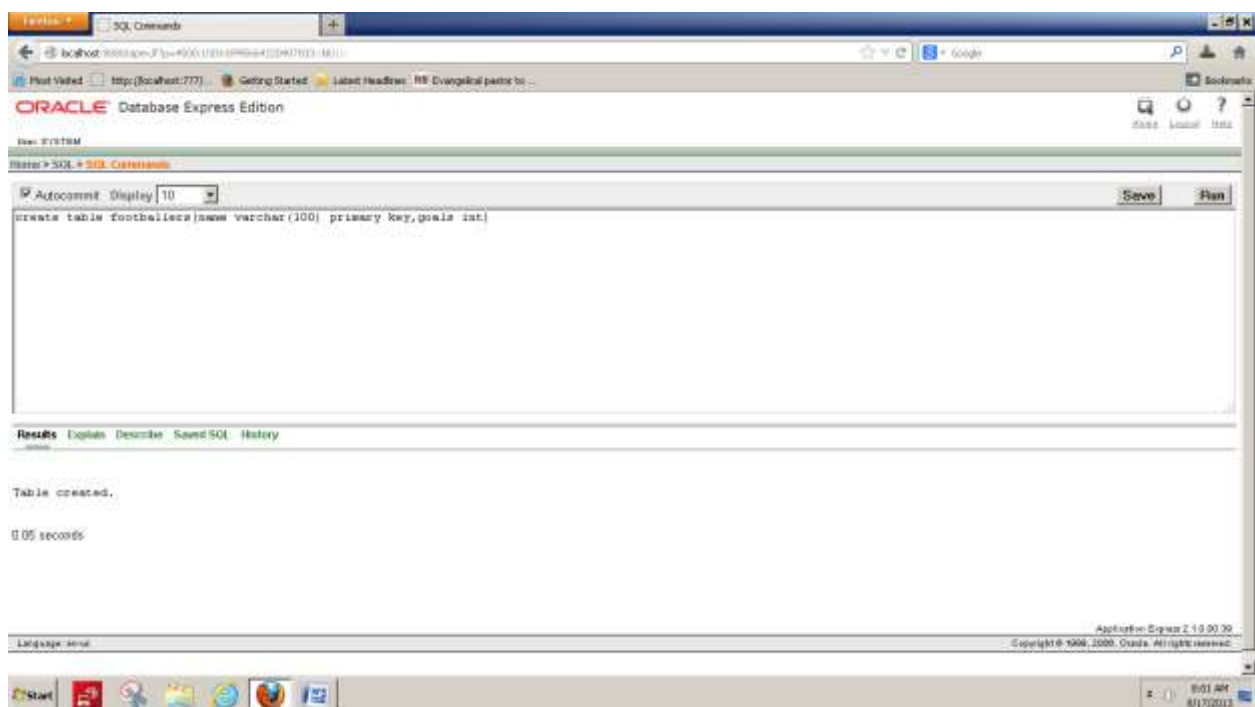


desc cricketers

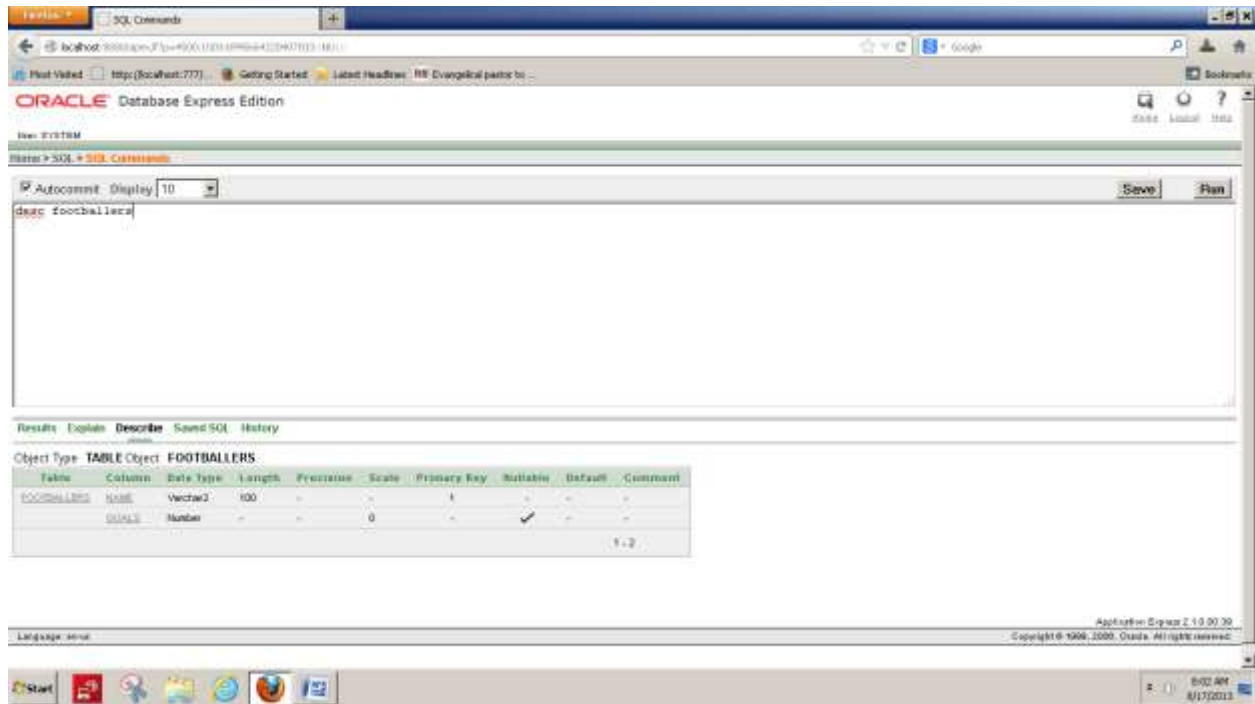


Footballers:-

create table footballers(name varchar(100) primary key,goals int)



desc footballers

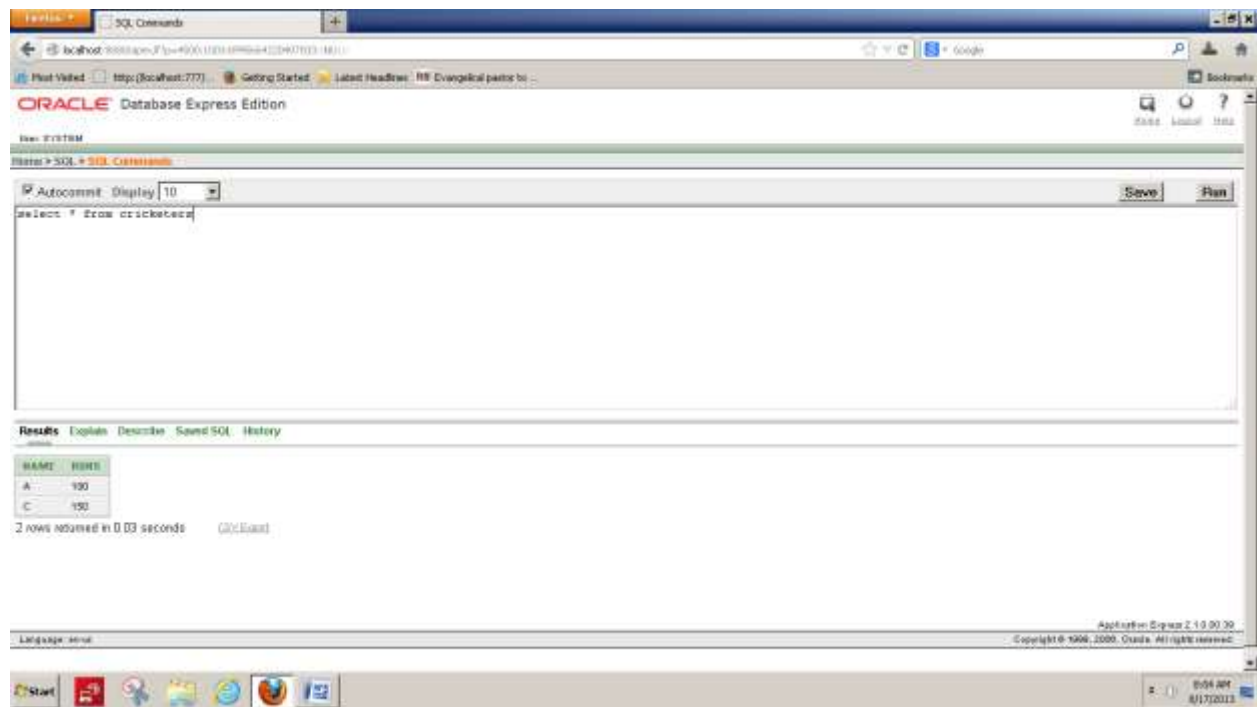


Now we will insert some data:-

insert into cricketers values('A','100')

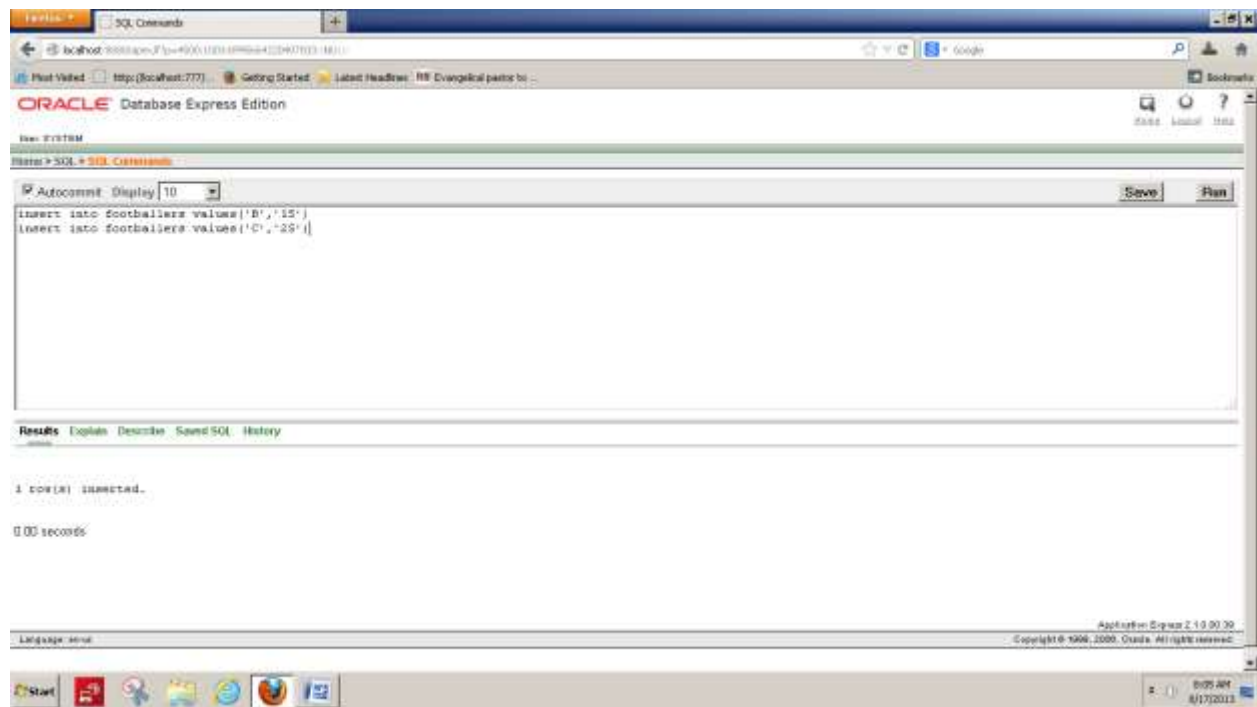
insert into cricketers values('C','150')

select * from cricketers



insert into footballers values('B','15')

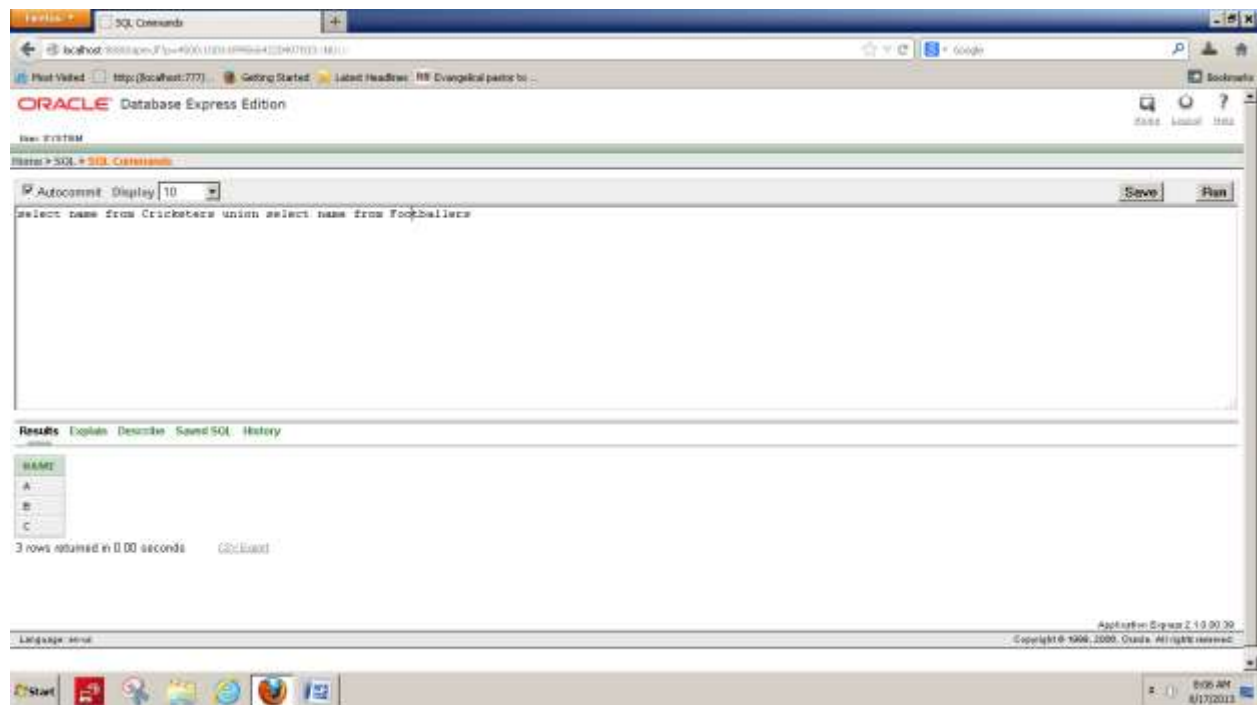
insert into footballers values('C','25')



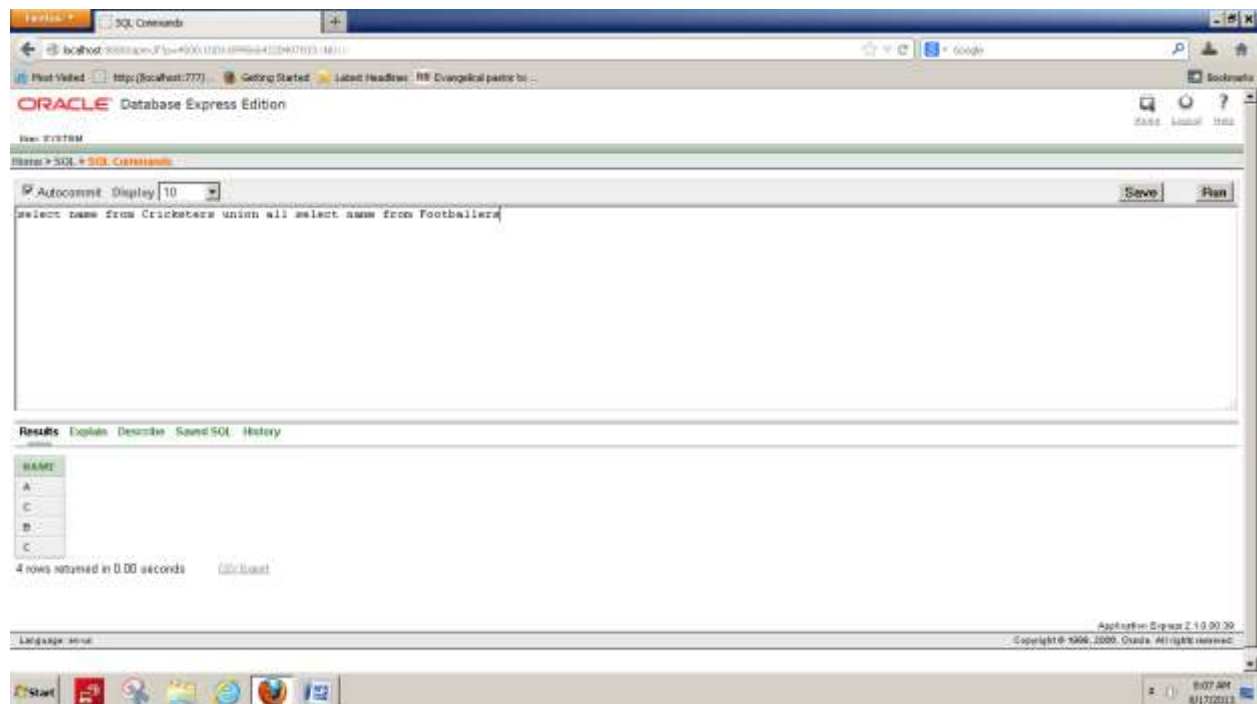
A plays only cricket, B plays football only while C plays both.

Now let us try some queries:-

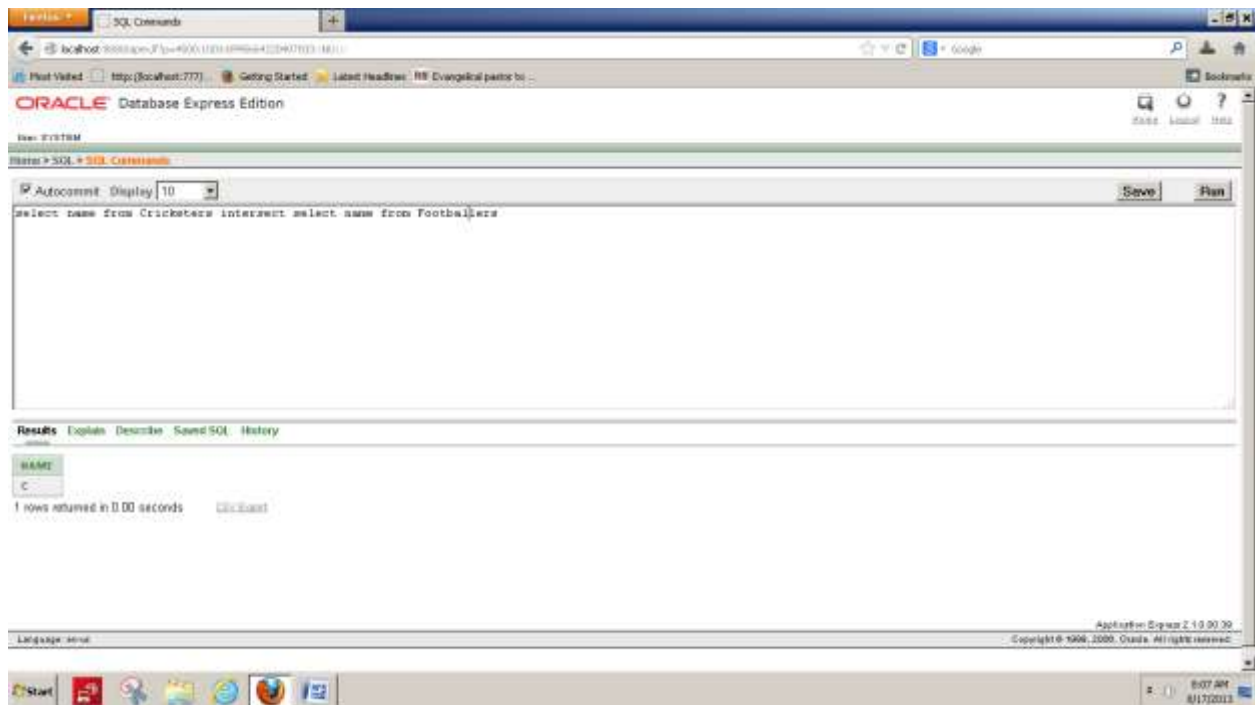
select name from Cricketers union select name from Footballers



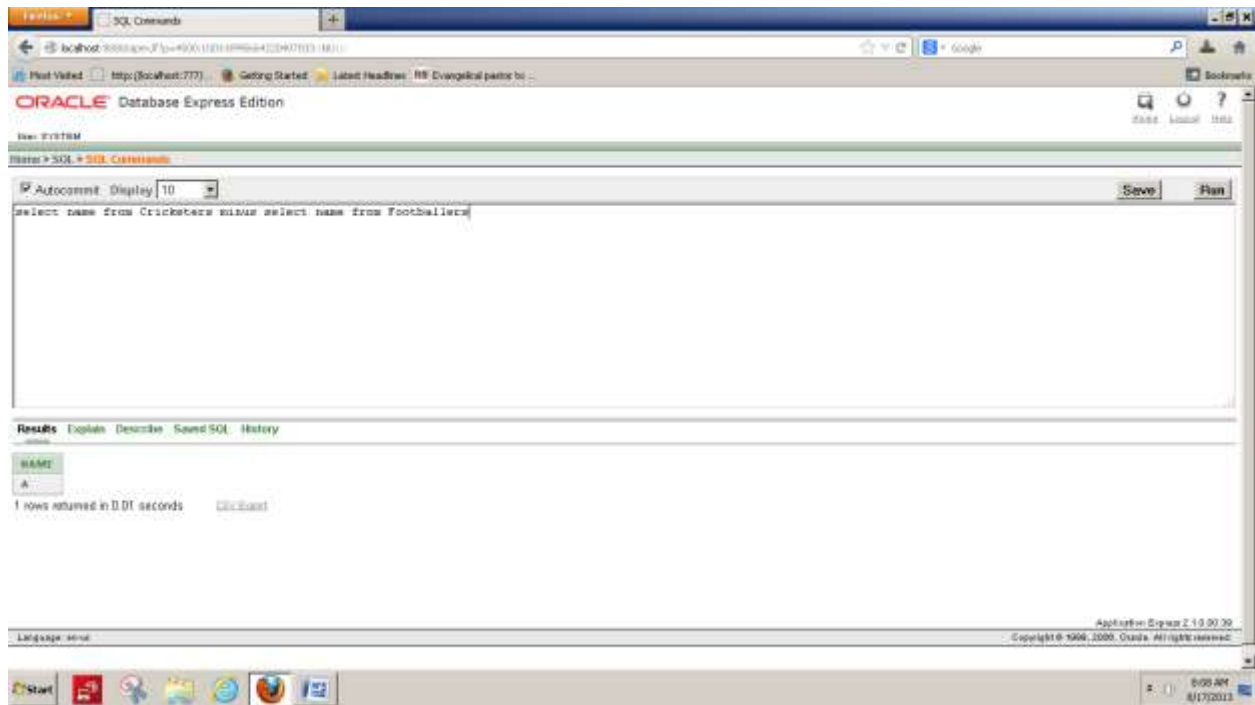
select name from Cricketers union all select name from Footballers



select name from Cricketers intersect select name from Footballers

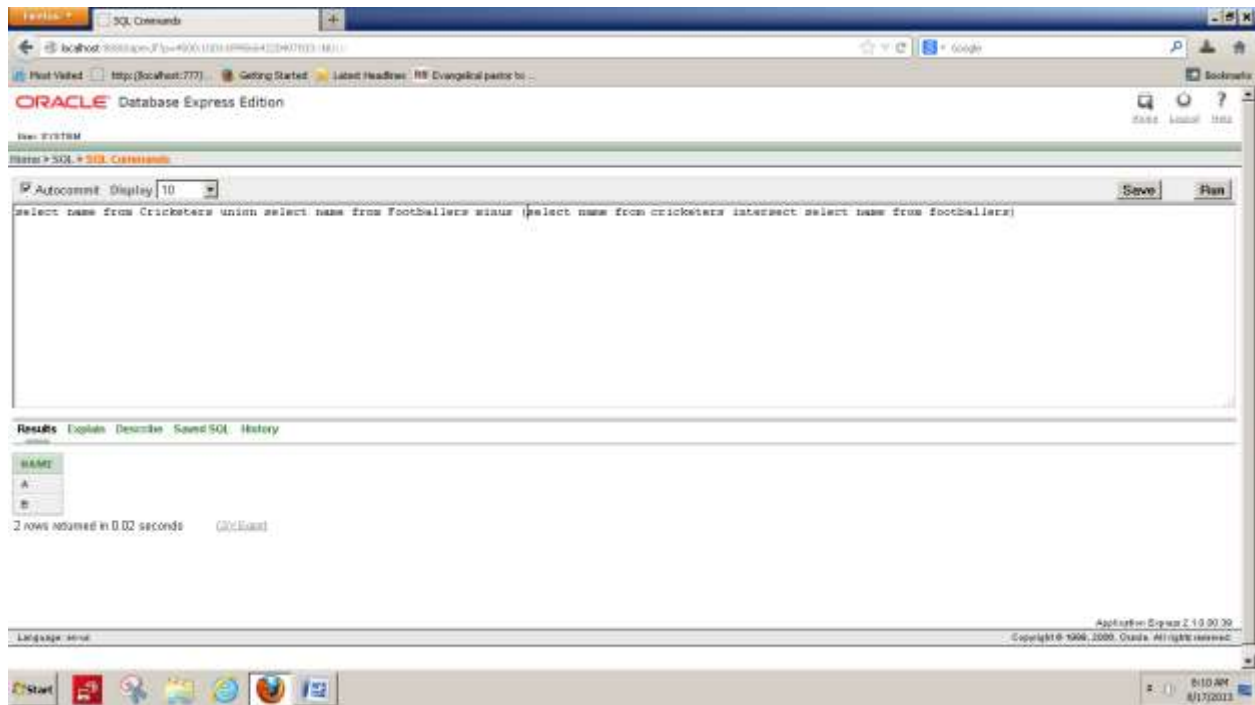


select name from Cricketers minus select name from Footballers



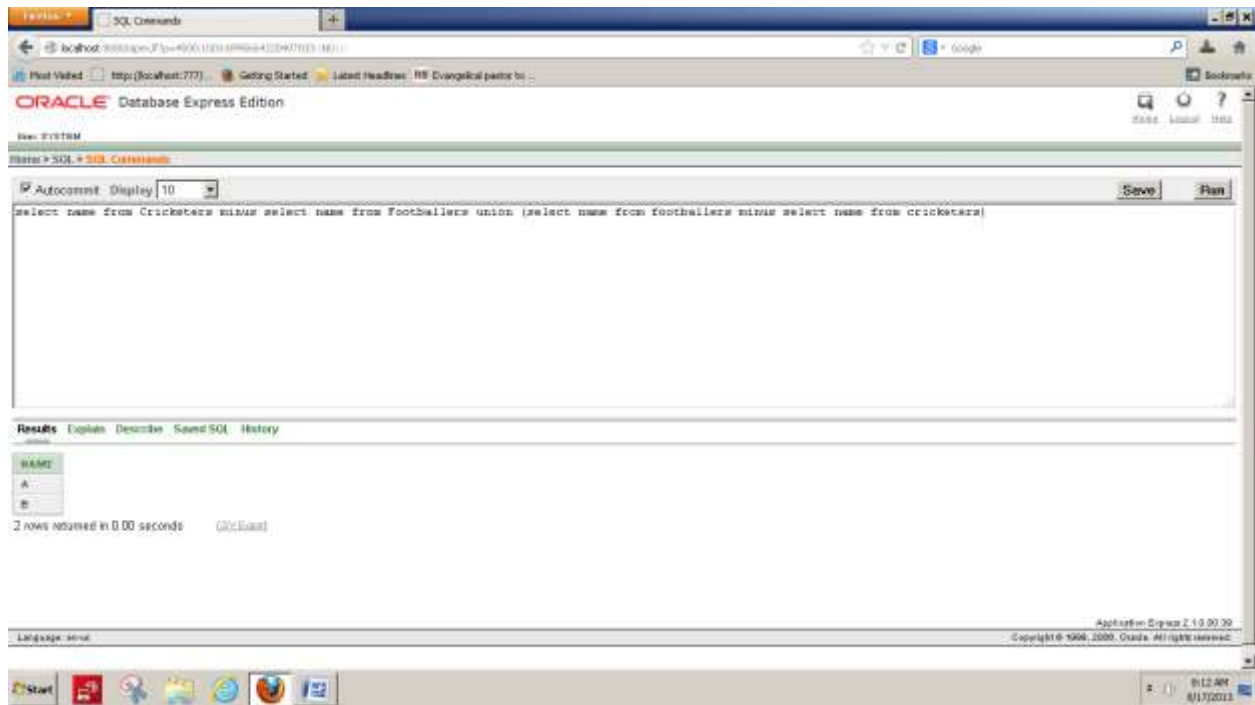
The result of every select query is also a table and can be considered as a set. Thus to find all the players who play only one game, we can use the following query:-

select name from Cricketers union select name from Footballers minus (select name from cricketers intersect select name from footballers)



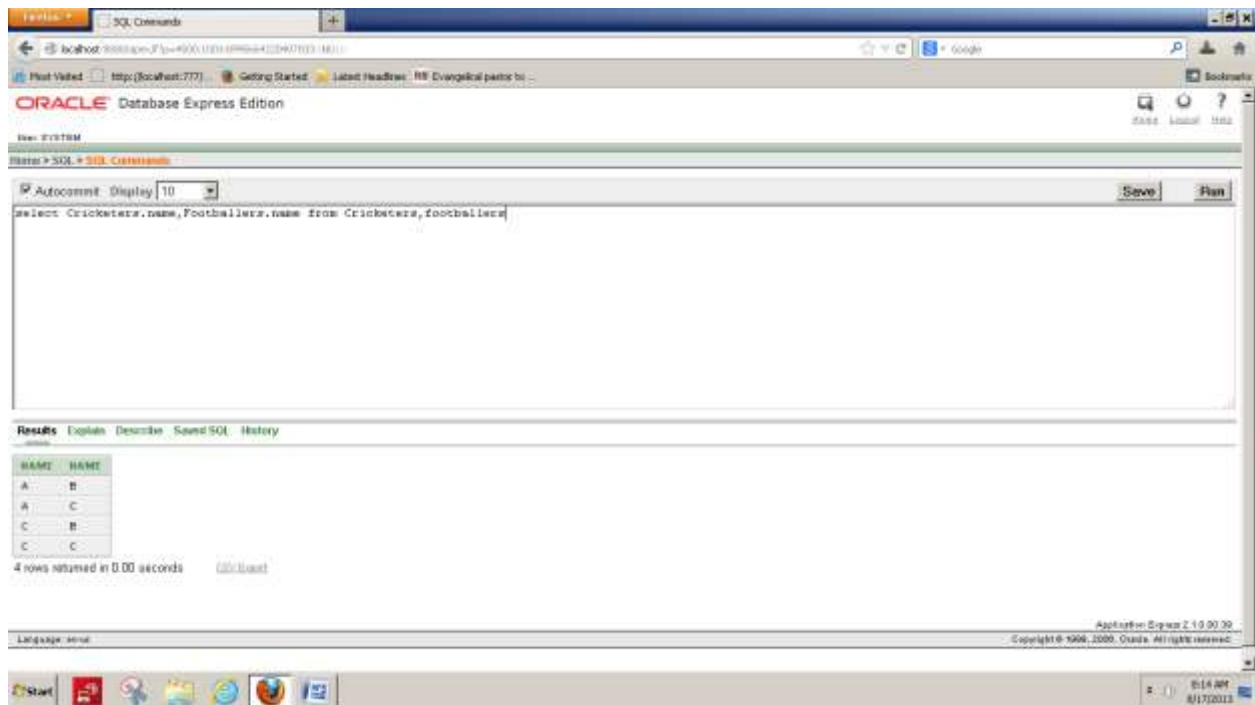
This query can also be written as :-

select name from Cricketers minus select name from Footballers union (select name from footballers minus select name from cricketers)



Now to try the cartesian product:-

select Cricketers.name, Footballers.name from Cricketers, footballers



Since there were 2 records per table, we finally get 4 records.

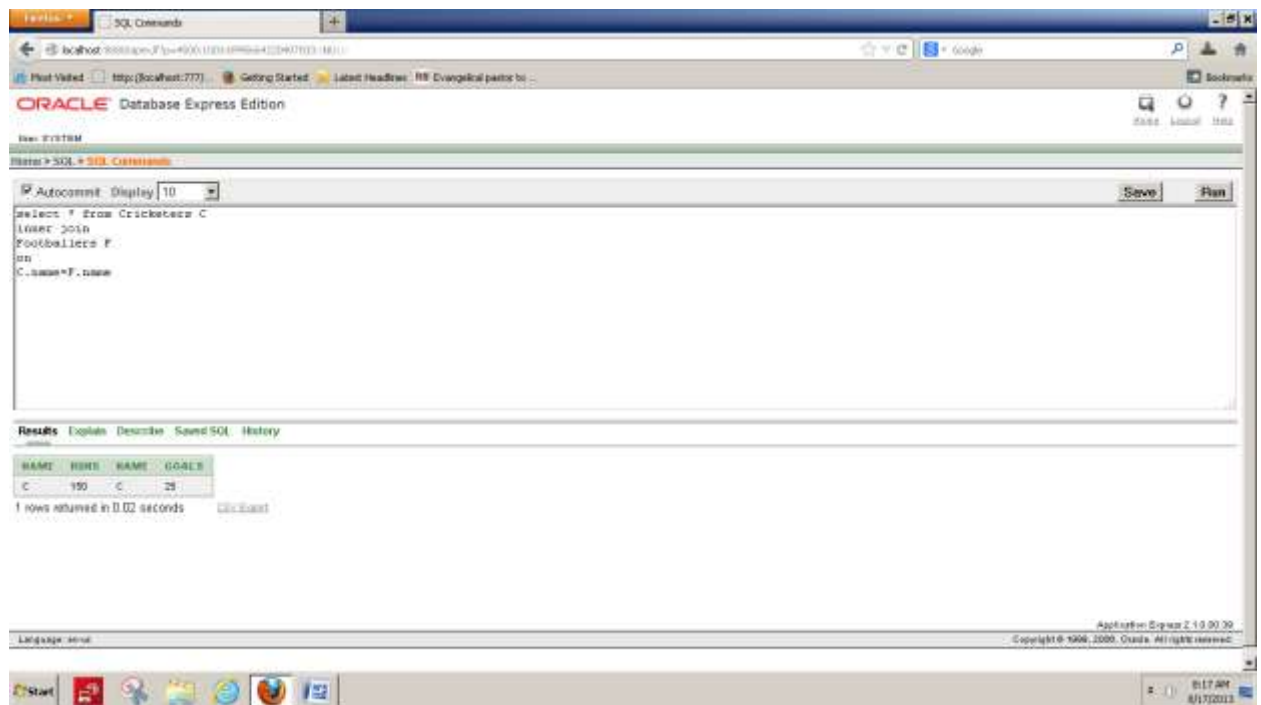
Joins

There are four joins:-

- 1) Inner join
- 2) Outer join
- 3) Left join
- &
- 4) Right join

Inner Join

```
select * from Cricketers C
inner join
Footballers F
on
C.name=F.name
```



```
select * from Cricketers C
left join
Footballers F
on
C.name=F.name
```

The screenshot shows the Oracle Database Express Edition SQL*Plus interface. The command window contains the following SQL query:

```

select * from Cricketers C
left join
Footballers F
on
C.name=F.name
  
```

The results pane displays the following data:

NAME	RIGHT	NAME	GOALS
C	150	C	25
A	100	-	-

2 rows returned in 0.00 seconds

select * from Cricketers C
 right join
 Footballers F
 on
 C.name=F.name

The screenshot shows the Oracle Database Express Edition SQL*Plus interface. The command window contains the following SQL query:

```

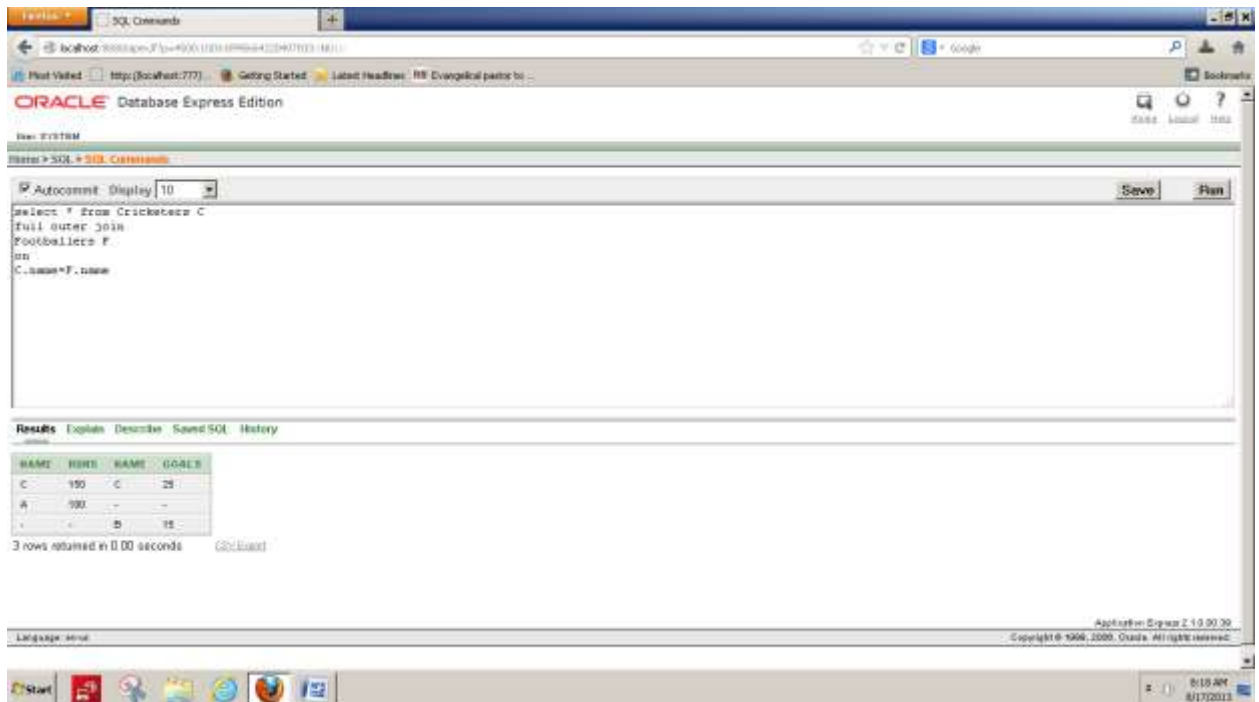
select * from Cricketers C
right join
Footballers F
on
C.name=F.name
  
```

The results pane displays the following data:

NAME	RIGHT	NAME	GOALS
C	150	C	25
-	-	B	15

2 rows returned in 0.00 seconds

```
select * from Cricketers C
full outer join
Footballers F
on
C.name=F.name
```

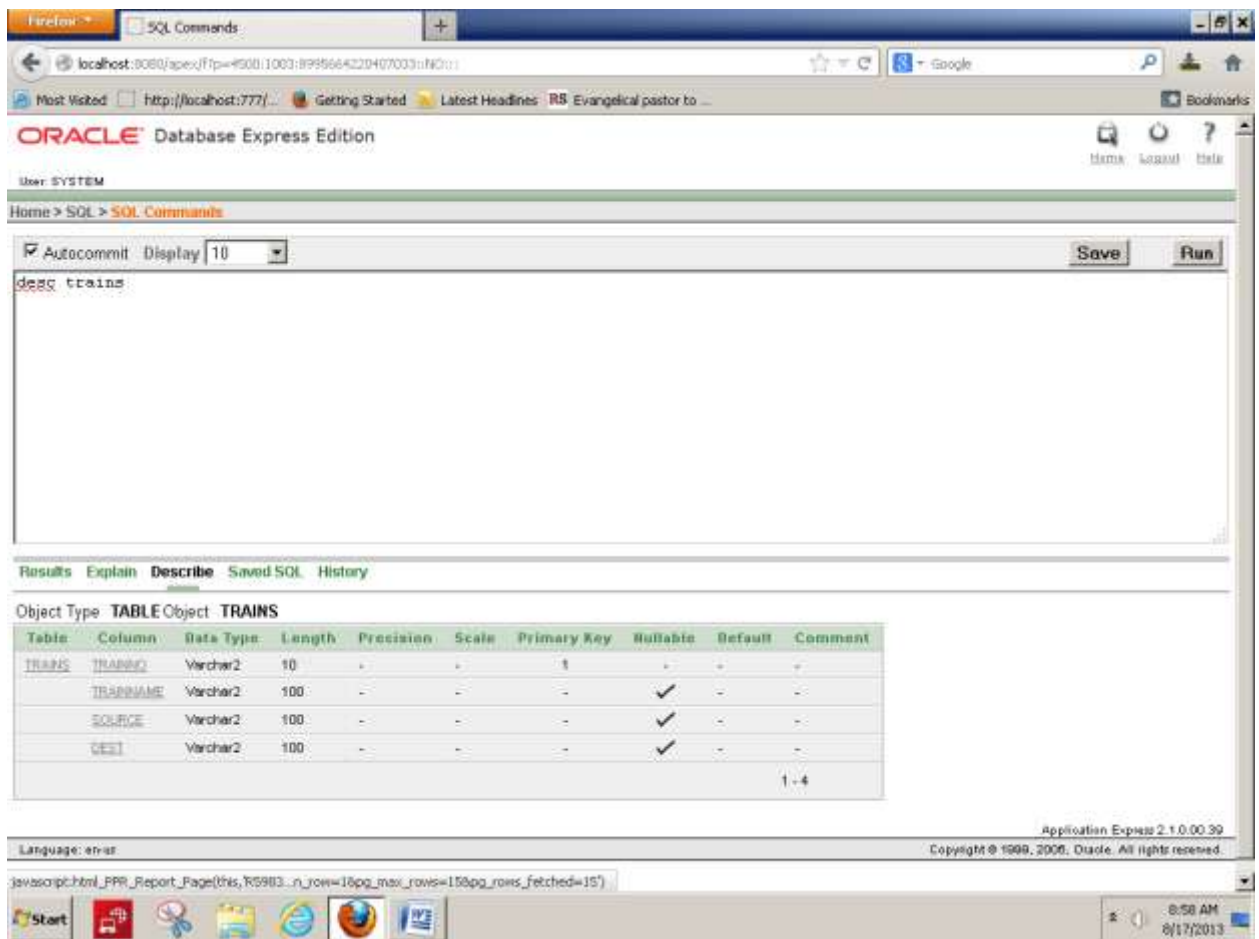


Joins can be implemented on the same table as well.

Here we solve an example where we wish to find out the trains between any two given stations.

Here are the tables:-

```
create table trains(TrainNo varchar(10) primary key,TrainName varchar(100), Source
varchar(100),Dest varchar(100))
```



create table stops(stopno int ,trainno varchar(10) references trains(trainno), station
varchar(100),primary key(stopno,trainno))

Firefox - SQL Commands

localhost:8080/apex/f?p=4008:1003:8995664220407003::NO::

Most Visited http://localhost:777/... Getting Started Latest Headlines RS Evangelical pastor to ...

ORACLE Database Express Edition

User: SYSTEM

Home > SQL > SQL Commands

☒ Autocommit Display 10 Save Run

desc stops

Results Explain Describe Saved SQL History

Object Type TABLE Object STOPS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
STOPS	STOPNO	Number	-	-	0	1	-	-	-
	TRAINNO	Varchar2	10	-	-	2	-	-	-
	STATION	Varchar2	100	-	-	-	✓	-	-

1 - 3

Application Express 2.1.0.0.39
Copyright © 1998, 2006, Oracle. All rights reserved.

Language: en-us

javascript:html_PPR_Report_Page(this,15983...n_row=18pg_max_rows=158pg_rows_fetched=15)

Start 8:59 AM 8/17/2013

insert into trains values(1,'Mahanagari','Varanasi','Mumbai')

insert into trains values(2,'Mahanagari','Mumbai','Varanasi')

insert into trains values(3,'Ratnagiri','Varanasi','Mumbai')

The screenshot shows the Oracle Database Express Edition interface in a Firefox browser. The SQL Commands window is active, displaying the query `select * from Trains`. The results are shown in a table with 4 columns: TRAINID, TRAINNAME, SOURCE, and DEST. There are 3 rows of data. The status bar indicates '3 rows returned in 0.00 seconds'.

TRAINID	TRAINNAME	SOURCE	DEST
1	Mahanagari	Varanasi	Mumbai
2	Mahanagari	Mumbai	Varanasi
3	Rathnagiri	Varanasi	Mumbai

Now , we insert into stops:-

insert into stops values(1,1,'Varanasi')

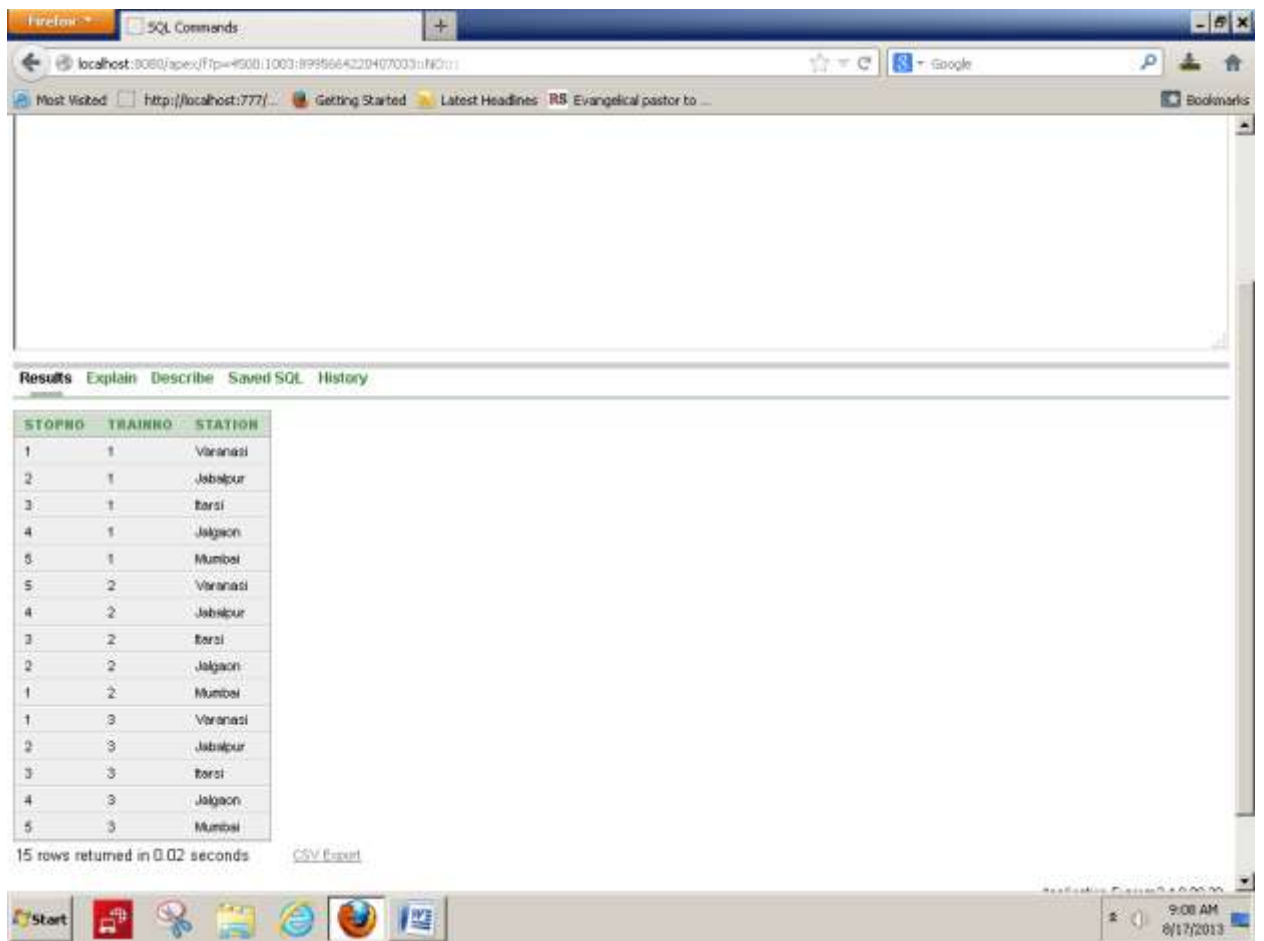
insert into stops values(2,1,'Jabalpur')

insert into stops values(3,1,'Itarsi')

insert into stops values(4,1,'Jalgaon')

insert into stops values(5,1,'Mumbai')

The complete table:-



Firefox - SQL Commands

localhost:8080/apex/f?p=4500:1003:8995664220407003::NO::

Most Visited http://localhost:777/... Getting Started Latest Headlines RS Evangelical pastor to ...

ORACLE Database Express Edition

User: SYSTEM

Home > SQL > SQL Commands

☒ Autocommit Display 30 Save Run

```
select * from stops where trainno=1 order by stopno
```

Results Explain Describe Saved SQL History

STOPNO	TRAINNO	STATION
1	1	Varanasi
2	1	Jabalpur
3	1	Karsi
4	1	Jalgaon
5	1	Mumbai

5 rows returned in 0.00 seconds [CSV Export](#)

Application Express 2.1.0.0.30
Copyright © 1996, 2006, Oracle. All rights reserved.

Language: en-us

Start

9:09 AM
8/17/2013

Firefox - SQL Commands

localhost:8080/apex/f?p=4001:1003:8995664220407003::NO::

Most Visited http://localhost:777/... Getting Started Latest Headlines RS Evangelical pastor to ...

ORACLE Database Express Edition

User: SYSTEM

Home > SQL > SQL Commands

☒ Autocommit Display 30 Save Run

```
select * from stops where trainno=2 order by stopno
```

Results Explain Describe Saved SQL History

STOPNO	TRAINNO	STATION
1	2	Mumbai
2	2	Jalgaon
3	2	Karsi
4	2	Jabalpur
5	2	Vinasi

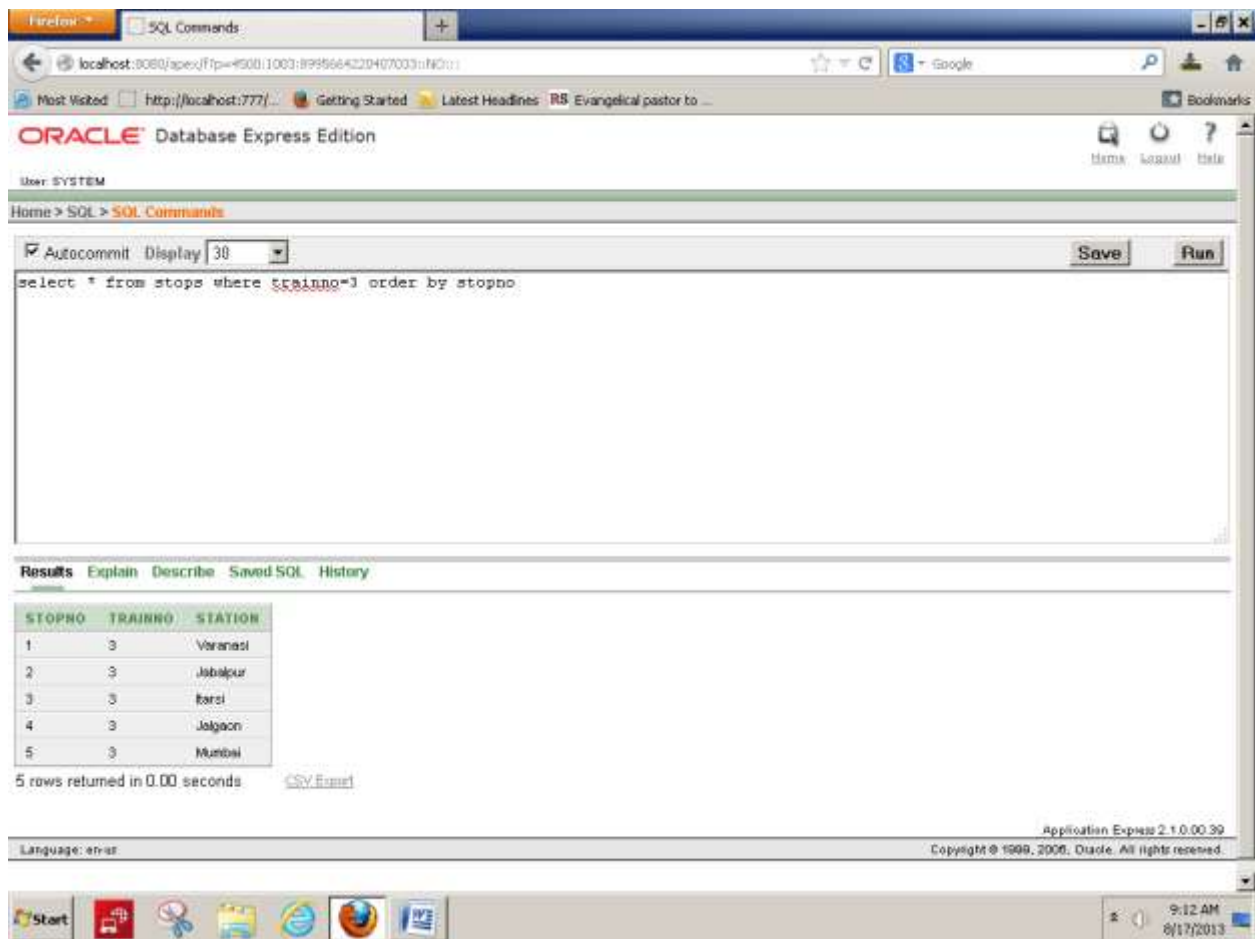
5 rows returned in 0.00 seconds [CSV Export](#)

Application Express 2.1.0.00.30
Copyright © 1996, 2006, Oracle. All rights reserved.

Language: en-us

Start

9:11 AM
8/17/2013



select * from stops Source

inner join

Stops dest

on source.trainno=dest.trainno

inner join

trains Train

on source.trainno=Train.Trainno

where source.station='Itarsi' and dest.station='Jalgaon' and
source.stopno<dest.stopno

The screenshot shows the Oracle Database Express Edition interface in a Firefox browser. The user is 'SYSTEM'. The SQL command window contains the following query:

```
select * from stops Source
inner join
Stops dest
on source.trainno=dest.trainno
inner join
trains Train
on source.trainno=Train.Trainno
where source.station='Itarsi' and dest.station='Jalgaon' and source.stopno<dest.stopno
```

The query results are displayed in a table with 10 columns: STOPNO, TRAINNO, STATION, STOPNO, TRAINNO, STATION, TRAINNO, TRAINNAME, SOURCE, and DEST. There are 2 rows returned.

STOPNO	TRAINNO	STATION	STOPNO	TRAINNO	STATION	TRAINNO	TRAINNAME	SOURCE	DEST
3	1	Itarsi	4	1	Jalgaon	1	Mahanagari	Varanasi	Mumbai
3	3	Itarsi	4	3	Jalgaon	3	Ratnagiri	Varanasi	Mumbai

2 rows returned in 0.00 seconds

Application Express 2.1.0.00.39
Copyright © 1998, 2006, Oracle. All rights reserved.

For Classes, Training & Software development

C, C++, Java, C#, VB.NET, PHP

Contact: **Champak Roy**

+91-9335874326

Sa-18/132, Nai Basti, Pandepur, Varanasi

champak5501@yahoo.com