

## Kun Shan

The screenshot displays the SQL Developer interface with two queries and their results. The top query is 'select A+B from R;' and the bottom query is 'select B,A from R order by B,A;'. Both queries are executed, and the results are shown in the 'Query Result' tab. The SQL History tab shows the execution details for both queries.

**Query 1: select A+B from R;**

A+B
1
2
3
4
5

**Query 2: select B,A from R order by B,A;**

B	A
1	0
2	0
3	2
4	2
5	3

**SQL History**

SQL	Connect...	TimeSt...	Type	Executed	Duratio...
select A+B from R;	CSC453	10-JAN-...	SQL	2	0.014
insert into R values (0,1); insert into R values (2,3);...	CSC453	10-JAN-...	Script	1	0.215
file:/Users/shankun/Desktop/Untitled.sql	CSC453	05-JAN-...	Script	1	0.0
CREATE TABLE Models ( model_id number(5) pri...	CSC453	05-JAN-...	Script	1	0.218

**Query 1: select B,A from R order by B,A;**

B	A
1	0
2	0
3	2
4	2
5	3

**SQL History**

SQL	Connect...	TimeSt...	Type	Executed	Duratio...
select B,A from R order by B,A;	CSC453	10-JAN-...	SQL	1	0.015
select A+B from R;	CSC453	10-JAN-...	SQL	2	0.014
insert into R values (0,1); insert into R values (2,3);...	CSC453	10-JAN-...	Script	1	0.215
file:/Users/shankun/Desktop/Untitled.sql	CSC453	05-JAN-...	Script	1	0.0

CSC453

Worksheet

Query Builder

```

-- iii
select distinct A,B from R;

-- iv
select A,sum(B) from R group by A;

-- v
select A,max(C) from R inner join S on R.B=S.B group by A;

-- vi
-- match
select distinct R.* from R left outer join S on R.B=S.B where S.B is not null;

```

Script Output x

Query Result x

SQL
All Rows Fetched: 4 in 0.022 seconds

	A	B
1	0	1
2	2	3
3	2	4
4	3	4

SQL History

Filter

SQL	Connect...	TimeSt...	Type	Executed	Duration...
select distinct A,B from R;	CSC453	10-JAN-...	SQL	1	0.022
select B,A from R order by B,A;	CSC453	10-JAN-...	SQL	1	0.015
select A+B from R;	CSC453	10-JAN-...	SQL	2	0.014
insert into R values (0,1); insert into R values (2,3);...	CSC453	10-JAN-...	Script	1	0.215

CSC453

Worksheet

Query Builder

```

-- iv
select A,sum(B) from R group by A;

-- v
select A,max(C) from R inner join S on R.B=S.B group by A;

-- vi
-- match
select distinct R.* from R left outer join S on R.B=S.B where S.B is not null;
-- unmatched
select R.* from R left outer join S on R.B=S.B where S.B is null;

```

Script Output x

Query Result x

SQL
All Rows Fetched: 3 in 0.388 seconds

	A	SUM(B)
1	2	7
2	3	4
3	0	2

SQL History

Filter

SQL	Connect...	TimeSt...	Type	Executed	Duration...
select A,sum(B) from R group by A;	CSC453	10-JAN-...	SQL	1	0.388
select distinct A,B from R;	CSC453	10-JAN-...	SQL	1	0.022
select B,A from R order by B,A;	CSC453	10-JAN-...	SQL	1	0.015
select A+B from R;	CSC453	10-JAN-...	SQL	2	0.014

**CSC453**

Worksheet | Query Builder

```
-- v
select A,max(C) from R inner join S on R.B=S.B group by A;
-- vi
-- match
select distinct R.* from R left outer join S on R.B=S.B where S.B is not null;
-- unmatched
select R.* from R left outer join S on R.B=S.B where S.B is null;
-- vii
-- match
select distinct S.* from S left outer join R on S.B=R.B where R.B is not null;
```

Script Output | Query Result | All Rows Fetched: 1 in 0.02 seconds

A	MAX(C)
1	4

SQL History

SQL	Connect...	TimeSt...	Type	Executed	Duratio...
select A,max(C) from R inner join S on R.B=S.B gro...	CSC453	10-JAN-...	SQL	1	0.02
select A,sum(B) from R group by A;	CSC453	10-JAN-...	SQL	1	0.388
select distinct A,B from R;	CSC453	10-JAN-...	SQL	1	0.022
select B,A from R order by B,A;	CSC453	10-JAN-...	SQL	1	0.015

**CSC453**

Worksheet | Query Builder

```
-- vi
-- match
select distinct R.* from R left outer join S on R.B=S.B where S.B is not null;
-- unmatched
select R.* from R left outer join S on R.B=S.B where S.B is null;
-- vii
-- match
select distinct S.* from S left outer join R on S.B=R.B where R.B is not null;
-- unmatched
select S.* from S left outer join R on S.B=R.B where R.B is null;
```

Script Output | Query Result | All Rows Fetched: 1 in 0.02 seconds

A	B
1	3

SQL History

SQL	Connect...	TimeSt...	Type	Executed	Duratio...
select distinct R.* from R left outer join S on R.B=S...	CSC453	10-JAN-...	SQL	1	0.02
select A,max(C) from R inner join S on R.B=S.B gro...	CSC453	10-JAN-...	SQL	1	0.02
select A,sum(B) from R group by A;	CSC453	10-JAN-...	SQL	1	0.388
select distinct A,B from R;	CSC453	10-JAN-...	SQL	1	0.022

Worksheet Query Builder

```
-- vii
-- match
select distinct S.* from S left outer join R on S.B=R.B where R.B is not null;
-- unmatched
select S.* from S left outer join R on S.B=R.B where R.B is null;

-- viii
-- match
select distinct R.* from R left outer join S on R.B<S.B where S.B is not null;
-- unmatched
select R.* from R left outer join S on R.B<S.B where S.B is null;
```

Script Output x Query Result x

SQL | All Rows Fetched: 1 in 0.022 seconds

	B	C
1	3	4

SQL History

SQL	Connect...	TimeSt...	Type	Executed	Duratio...
select distinct S.* from S left outer join R on S.B=R....	CSC453	10-JAN-...	SQL	2	0.022
select R.* from R left outer join S on R.B=S.B wher...	CSC453	10-JAN-...	SQL	1	0.013
select distinct R.* from R left outer join S on R.B=S...	CSC453	10-JAN-...	SQL	1	0.02
select A,max(C) from R inner join S on R.B=S.B gro...	CSC453	10-JAN-...	SQL	1	0.02

Worksheet Query Builder

```
-- vii
-- match
select distinct S.* from S left outer join R on S.B=R.B where R.B is not null;
-- unmatched
select S.* from S left outer join R on S.B=R.B where R.B is null;

-- viii
-- match
select distinct R.* from R left outer join S on R.B<S.B where S.B is not null;
-- unmatched
select R.* from R left outer join S on R.B<S.B where S.B is null;
```

Script Output x Query Result x

SQL | All Rows Fetched: 4 in 0.022 seconds

	B	C
1	2	4
2	2	5
3	0	1
4	0	2

SQL History

SQL	Connect...	TimeSt...	Type	Executed	Duratio...
select S.* from S left outer join R on S.B=R.B where...	CSC453	10-JAN-...	SQL	1	0.022
select distinct S.* from S left outer join R on S.B=R....	CSC453	10-JAN-...	SQL	2	0.022
select R.* from R left outer join S on R.B=S.B wher...	CSC453	10-JAN-...	SQL	1	0.013
select distinct R.* from R left outer join S on R.B=S...	CSC453	10-JAN-...	SQL	1	0.02

Worksheet Query Builder

```

-- viii
-- match
select distinct R.* from R left outer join S on R.B<S.B where S.B is not null;
-- unmatched
select R.* from R left outer join S on R.B<S.B where S.B is null;

-- Create Dataset
create table R(
  A integer,
  B integer
);

```

Script Output x Query Result x

SQL | All Rows Fetched: 1 in 0.022 seconds

A	B
1	0

SQL History

SQL	Connect...	TimeSt...	Type	Executed	Duratio...
select distinct R.* from R left outer join S on R.B<S...	CSC453	10-JAN-...	SQL	1	0.022
select S.* from S left outer join R on S.B=R.B where...	CSC453	10-JAN-...	SQL	1	0.022
select distinct S.* from S left outer join R on S.B=R....	CSC453	10-JAN-...	SQL	2	0.022
select R.* from R left outer join S on R.B=S.B wher...	CSC453	10-JAN-...	SQL	1	0.013

Worksheet Query Builder

```

-- viii
-- match
select distinct R.* from R left outer join S on R.B<S.B where S.B is not null;
-- unmatched
select R.* from R left outer join S on R.B<S.B where S.B is null;

-- Create Dataset
create table R(
  A integer,
  B integer
);

```

Script Output x Query Result x

SQL | All Rows Fetched: 3 in 0.017 seconds

A	B
1	2
2	3
3	2

SQL History

SQL	Connect...	TimeSt...	Type	Executed	Duratio...
select R.* from R left outer join S on R.B<S.B wher...	CSC453	10-JAN-...	SQL	1	0.017
select distinct R.* from R left outer join S on R.B<S...	CSC453	10-JAN-...	SQL	1	0.022
select S.* from S left outer join R on S.B=R.B where...	CSC453	10-JAN-...	SQL	1	0.022
select distinct S.* from S left outer join R on S.B=R....	CSC453	10-JAN-...	SQL	2	0.022

Worksheet Query Builder

```
-- vi
-- match
select distinct R.* from R left outer join S on R.B=S.B where S.B is not null;
-- unmatched
select R.* from R left outer join S on R.B=S.B where S.B is null;

-- vii
-- match
select distinct S.* from S left outer join R on S.B=R.B where R.B is not null;
-- unmatched
select S.* from S left outer join R on S.B=R.B where R.B is null;
```

Script Output x Query Result x

SQL All Rows Fetched: 4 in 0.013 seconds

	A	B
1	0	1
2	0	1
3	2	4
4	3	4

SQL History

SQL	Connect...	TimeSt...	Type	Executed	Duratio...
select R.* from R left outer join S on R.B=S.B wher...	CSC453	10-JAN-...	SQL	1	0.013
select distinct R.* from R left outer join S on R.B=S...	CSC453	10-JAN-...	SQL	1	0.02
select A,max(C) from R inner join S on R.B=S.B gro...	CSC453	10-JAN-...	SQL	1	0.02
select A,sum(B) from R group by A;	CSC453	10-JAN-...	SQL	1	0.388