

SQL (select from and where clause)

- SQL also known as **Data Retrieval Language** (DRL)
- The clauses used for writing queries and retrieval of data are **select , from , join , where ,order by , group by , having.**
- Lets consider the below DataBase

Roll	name	City	Deptno
1	Ajay	Delhi	10
2	Vijay	Kolkata	10
3	Ajay	Mumbai	20
4	Ramesh	Delhi	30
5	Suneeta	Lucknow	40
6	Anita	Kolkata	30
7	Raj	Jaipur	30
8	Ali	Lucknow	40
9	Michael	Cochin	10
10	Pavan	Vijaywada	20
11	Suraj	Hyderabad	10
12	Altaf	Bangaluru	40
13	Ravi	Indore	20
14	Verma	Delhi	20
15	Sharma	Vizag	10

Deptno	Name
10	CSE
20	ECE
30	Civil
40	Mech

Select

- Select is used for **filtering Columns**
- Along with select we must use from also without from we cannot create a query
- It is used for **specifying the columns** of a relation that we want to retrieve

from

- It is used for **specifying a relation name**
- For instance, from the given data we want student Database then we use the following query

```
sqlite> .open univ
sqlite> select name from students;
Ajay
Vijay
Ajay
Ramesh
Suneeta
Anita
Raj
Ali
Michael
Pavan
Suraj
Altaf
Ravi
Verma
Sharma
```

- If we want to retrieve **all the columns** we write ***** in query

```
sqlite> select * from students;
1|Ajay|Delhi|10
2|Vijay|Kolkata|10
3|Ajay|Mumbai|20
4|Ramesh|Delhi|30
5|Suneeta|Lucknow|40
6|Anita|Kolkata|30
7|Raj|Jaipur|30
8|Ali|Lucknow|40
9|Michael|Cochin|10
10|Pavan|Vijaywada|20
11|Suraj|Hyderabad|10
12|Altaf|Bangaluru|40
13|Ravi|Indore|20
14|Verma|Delhi|20
15|Sharma|Vizag|10
sqlite> _
```

- From dept database we want every thing the following query is used

Select * from dept ;

- If you don't want repetition then we can use distinct in query as follows

Select distinct deptno from student ;

```
sqlite> select deptno from students;
10
10
20
30
40
30
30
40
10
20
10
40
20
20
10
sqlite> select distinct deptno from students;
10
20
30
40
sqlite>
```

- If you are using **multiple column** then distinct will treat 2 rows as duplicate only if all the values are same and not just one common value .

Where

- It is used for specifying conditions upon one or more fields / columns
- Basically it is used for **filtering rows**
- We can specify the condition in where clause using **<, <=, >, >=, =, <, >**

```
sqlite> select * from students where city='Delhi';  
1|Ajay|Delhi|10  
4|Ramesh|Delhi|30  
14|Verma|Delhi|20  
sqlite> select * from students where city<>'Delhi';  
2|Vijay|Kolkata|10
```

- If you have multiple conditions you can combine them with **AND , OR , NOT, LIKE , between__and__ , IN , NOT IN**

- AND

```
sqlite> select * from students where deptno>=30 and city='Lucknow';
5|Suneeta|Lucknow|40
8|Ali|Lucknow|40
sqlite> select * from students where deptno>=30 and not (city='Lucknow');
4|Ramesh|Delhi|30
6|Anita|Kolkata|30
7|Raj|Jaipur|30
12|Altaf|Bangaluru|40
```

- LIKE

```
sqlite> select * from students where name like 'A%';
1|Ajay|Delhi|10
3|Ajay|Mumbai|20
6|Anita|Kolkata|30
8|Ali|Lucknow|40
12|Altaf|Bangaluru|40
sqlite> select * from students where name like '%y';
1|Ajay|Delhi|10
2|Vijay|Kolkata|10
3|Ajay|Mumbai|20
sqlite> select * from students where name like '%m%';
4|Ramesh|Delhi|30
9|Michael|Cochin|10
14|Verma|Delhi|20
15|Sharma|Vizag|10
```

- between__and__

```
sqlite> select * from students where deptno between 20 and 40;
3|Ajay|Mumbai|20
4|Ramesh|Delhi|30
5|Suneeta|Lucknow|40
6|Anita|Kolkata|30
7|Raj|Jaipur|30
8|Ali|Lucknow|40
10|Pavan|Vijaywada|20
12|Altaf|Bangaluru|40
13|Ravi|Indore|20
14|Verma|Delhi|20
sqlite> select * from students where roll between 5 to 10;
Error: near "to": syntax error
sqlite> select * from students where roll between 5 and 10;
5|Suneeta|Lucknow|40
6|Anita|Kolkata|30
7|Raj|Jaipur|30
8|Ali|Lucknow|40
9|Michael|Cochin|10
10|Pavan|Vijaywada|20
sqlite>
```

- IN , NOT IN

```
sqlite> select * from students where city in ('Delhi','Jaipur');
1|Ajay|Delhi|10
4|Ramesh|Delhi|30
7|Raj|Jaipur|30
14|Verma|Delhi|20
sqlite> select * from students where city not in ('Delhi','Jaipur');
2|Vijay|Kolkata|10
3|Ajay|Mumbai|20
5|Suneeta|Lucknow|40
6|Anita|Kolkata|30
8|Ali|Lucknow|40
9|Michael|Cochin|10
```