Create a Connection
Name: HR
Username : hr
Password : hr
Click save password checkbox

ASC/DESC

ASC A-Z 0-9 (low to high)
DESC Z-A 9-0 (high to low)

GROUP BY
The group by clause divides the rows retrieved from the select statement into group based on the row we provide

```
--get me average salary for each different job_id
select job_id,avg(salary)
from employees
group by job_id;
```

This query group all the records based on their job_id so that we can implement aggregate functions to each group.

If we want to filter the result AFTER we got the group by query result, we have to use **HAVING** statement

```
--get me job_ids where their avg salary is more than 5k
select job_id,avg(salary),count(*)
from employees
group by job_id
having avg(salary)>5000;
```

The **having** statement sets the condition for group rows created by the GROUP BY clause **after the GROUP BY applies.** WHERE clause sets the condition for individual rows **before GROUP BY cause applies**.

SUBQUERY

Using one query inside the another query. We can use nested queries in sql.

For example: if we want to get all info who is earning highest salary in the company,

First we need to learn what is the highest salary with max function

```
select max(salary) from employees;
```

Which is 24000

Then we can use this result in another query to get all information

```
select *
from employees
where salary = 24000;
```

But instead of 2 separate queries we can use first query result as an input of second query result.

```
--one shot with subquery combining two queires
select *
from employees
where salary = (select max(salary) from employees);
```

So we use first quart as an inner query and it will be executed first, then the result will be used in outer query.

ROWNUM
Limits the number of result displayed in the query result.

```
select *
from employees
where rownum <10;
```

If we want to use order by first then row number, we need to order table first based on our needs(salary high to low for example) then use that query result as a table to get number of rows.

```
--order all employees based on salary high to low then display only first 10 result
select *
from (select * from employees order by salary desc)
where rownum <11;
```

For other databases like postgresql, mysql the keyword is LIMIT and it comes after all clauses.

VIEWS
Virtual tables. Views does not contain data but it contains the query that retrieve the data from tables.

STRING MANIPULATION

```sql
select email||'@gmail.com' as "full_email"
from employees;
--lower(value)
select lower(email||'@gmail.com') as "full_email"
from employees;
--upper(value)
select upper(email||'@gmail.com') as "full_email"
from employees;

--length(value)
select first_name||' '||last_name as "full_name",length(first_name||' '||last_name) as "length"
from employees
order by "length" desc;

--substr(colName,begIndex,NumberOfChar)
select substr(first_name,0,1)||'.'||substr(last_name,0,1) as "initials"
from employees;

create view email_list as
select substr(first_name,0,1)||'.'||substr(last_name,0,1) as "initials",
first_name||' '||last_name as "full_name", lower(email||'@gmail.com') as "full_email"
from employees;
```