```sql
-- working
select source_of_joining
from students
order by years_of_exp
desc limit 5;

-- not working
select DISTINCT source_of_joining
from students
order by years_of_exp
desc limit 5;

SELECT source_of_joining
FROM students
WHERE location in ('BANGALORE','HYDERABAD','PUNE')
ORDER BY years_of_exp desc
LIMIT 5;
```

FROM - LOAD THE TABLE (*)   10000 rows / 20 columns
WHERE - FILTER THE DATA   2000rows/ 20 columns
SELECT- PROJECT THE COLUMNS   2000rows / 4 columns
DISTINCT- REMOVE THE DUPLICATE RECORDS
ORDER BY – SORTING BASED ON ASC OR DESC ORDER
LIMIT - restrict the number of records

```sql
-- IF SELECT IS HAPPENING BEFORE WHERE THEN THIS SHOULD NOT HAVE WORKED
SELECT student_fname
FROM students
WHERE years_of_exp > 15;

-- IF SELECT IS HAPPENING BEFORE WHERE THEN THIS SHOULD HAVE WORKED
SELECT first_name, salary * 1.1 as revised_salary
FROM employees
WHERE revised_salary > 60000;
```

-- UNKNOWN COLUMN REVISED SALARY IN WHERE CLAUSE
FROM   ->   WHERE   -> SELECT

```sql
-- we are able to use derived column in order by
SELECT first_name, salary * 1.1 as revised_salary
FROM employees
WHERE job_title != 'Manager'
ORDER BY revised_salary desc
LIMIT 5;
```

FROM -> WHERE -> SELECT -> ORDER BY -> LIMIT

we cannot use the derived column in where clause
but we can use the derived column in order by

```
SELECT first_name
FROM employees
WHERE job_title != 'Manager'
ORDER By salary desc
LIMIT 5;
```

FROM (32 ROWS / 10 COLUMNS) -> WHERE (31 ROWS / 10 COLUMNS) -> SELECT (31 ROWS / 1 COLUMN first_name, salary) -> ORDER BY SALARY -> DISCARD THE SALARY COLUMN -> LIMIT

```
SELECT DISTINCT source_of_joining
FROM students
WHERE location in ('BANGALORE','HYDERABAD','PUNE')
ORDER BY years_of_exp desc
LIMIT 5;
```

```
SELECT source_of_joining
FROM students
WHERE location in ('BANGALORE','HYDERABAD','PUNE')
ORDER BY years_of_exp desc
LIMIT 5;
```

FROM -> FILTER ->   SELECT source_of_joining, years_of_exp -> ORDER BY -> LIMIT

```
SELECT DISTINCT source_of_joining
FROM students
WHERE location in ('BANGALORE','HYDERABAD','PUNE')
ORDER BY years_of_exp desc
LIMIT 5;
```

FROM -> FILTER -> SELECT source_of_joining, years_of_exp -> DISTINCT ORDER BY -> LIMIT

we wanted - DISTINCT source_of_joining
but what is happening is DISTINCT (source_of_joining,years_of_exp)