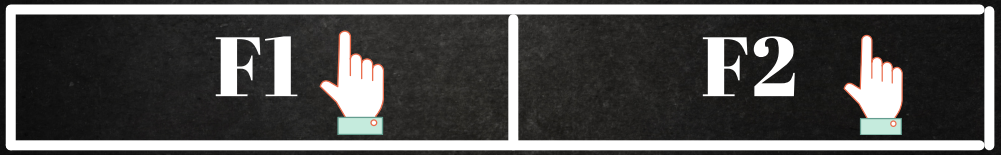
SELECT * FROM T

WHERE F1 = 1 AND F2 = 4



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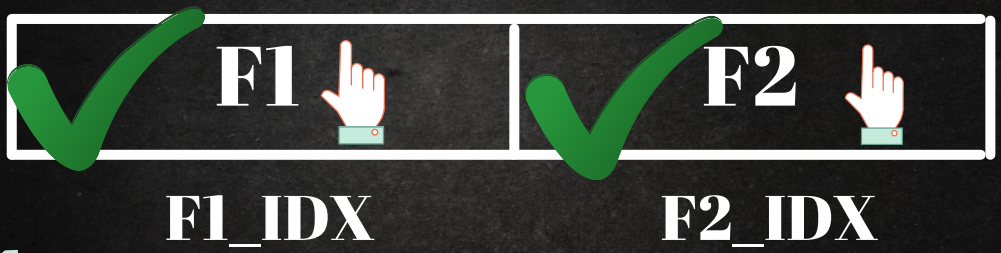
SELECT * FROM T
WHERE F1 = 1 AND F2 = 4



Case 1

- Both indexes are used to query
- e.g. F1_IDX is used to search 1 and F2_IDX used to search 4

rowids are merged

- e.g. resultset not too small or too large

F1_IDX

1 - row7

1 - row8

1 - row9

F2_IDX

4 - row7

4 - row22

4 - row12

AND

F1_IDX	F2_IDX
1 - row7	4 - row7
~~1 - row8~~	~~4 - row22~~
~~1 - row9~~	~~4 - row12~~
1 - row10	4 - row10

resultset is row 7 and row 10

SELECT * FROM T
WHERE F1 = 1 AND F2 = 4

Case 2

- Only one index is used
- e.g. F1_IDX to search 1, rowIds are collected and the table is accessed and then filtered for F2 = 4 is filtered
- e.g. F1 is a primary key or stats has low (the condition must be AND)

F1_IDX

1 - row7

1 - row8

1 - row9

1 - row10

Table

f1-f2-rowid

3 - 9 - row01

5 - 5 - row02

1 - 3 - row03

1 - 4 - row07

1 - 8 - row08

1 - 9 - row09

1 - 4 - row10

3 - 4 - row12

4 - 4 - row22

F1_IDX

1 - row7

1 - row8

1 - row9

1 - row10

Table

f1-f2-rowid

3 - 9 - row01

5 - 5 - row02

1 - 3 - row03

1 - 4 - row07

~~1 - 8 - row08~~

~~1 - 9 - row09~~

1 - 4 - row10

3 - 4 - row12

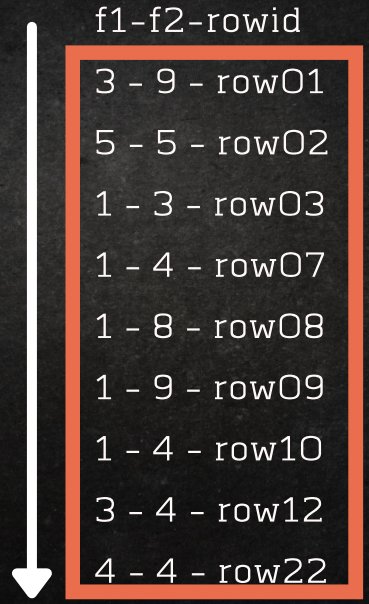
4 - 4 - row22

SELECT * FROM T
WHERE F1 = 1 AND F2 = 4

Case 3

- No indexes are used (full table scan)
- e.g. Database decides the search will yield so many rows that its going to be faster to do a full table scan.
- table statistics are critical here!!

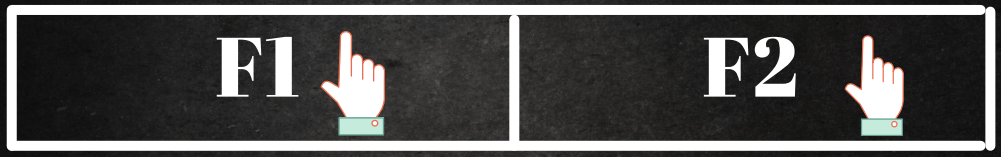
Table


f1-f2-rowid
3 - 9 - row01
5 - 5 - row02
1 - 3 - row03
1 - 4 - row07
1 - 8 - row08
1 - 9 - row09
1 - 4 - row10
3 - 4 - row12
4 - 4 - row22

Table


f1-f2-rowid
3 - 9 - row01
5 - 5 - row02
1 - 3 - row03
1 - 4 - row07
1 - 8 - row08
1 - 9 - row09
1 - 4 - row10
3 - 4 - row12
4 - 4 - row22

```
SELECT * FROM T
WHERE F1 = 1 AND F2 = 4
/*+ INDEX(F1 F1_IDX) */
```



Hints!

- Hints can be useful if the application has more knowledge about the query than the optimizer, it can force the optimizer to use a specific plan to pick an index over another especially if the stats are not up to date. Use with caution though!