

25 – Indexing

An index organizes the data in a way that makes finding information fast and efficient. A simple illustration will prove why indexes are effective

- An index is used to seek data sets more quickly; SQL Server manages the structure and organization of the index
- A scan will traverse all rows within the data set

No index will scan the data set

- Finding the value of 225 requires a comparison to each item to find a match

id	Match?
1	≠ 225
2	≠ 225
3	≠ 225
4	≠ 225
5	≠ 225
...	...
223	≠ 225
224	≠ 225
225	= 225
...	[done searching]

225 comparisons to find match

An index will seek the data set and typically find the match faster than a scan

- Finding the value of 225 requires fewer comparisons

Page	1	2	3	4	5	...
From	1	51	101	150	201	...
To	50	100	150	200	250	...
	1	51	101	151	201	...
	2	52	102	152	202	...

	24	74	124	174	224	...
	25	75	125	175	225	...

5 comparisons to know 225 is on page 5

25 comparisons within page 5 to find 225

30 is much faster than 225

30 comparisons to find match