Data Access Patterns

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Module Overview

Query-specific index usage

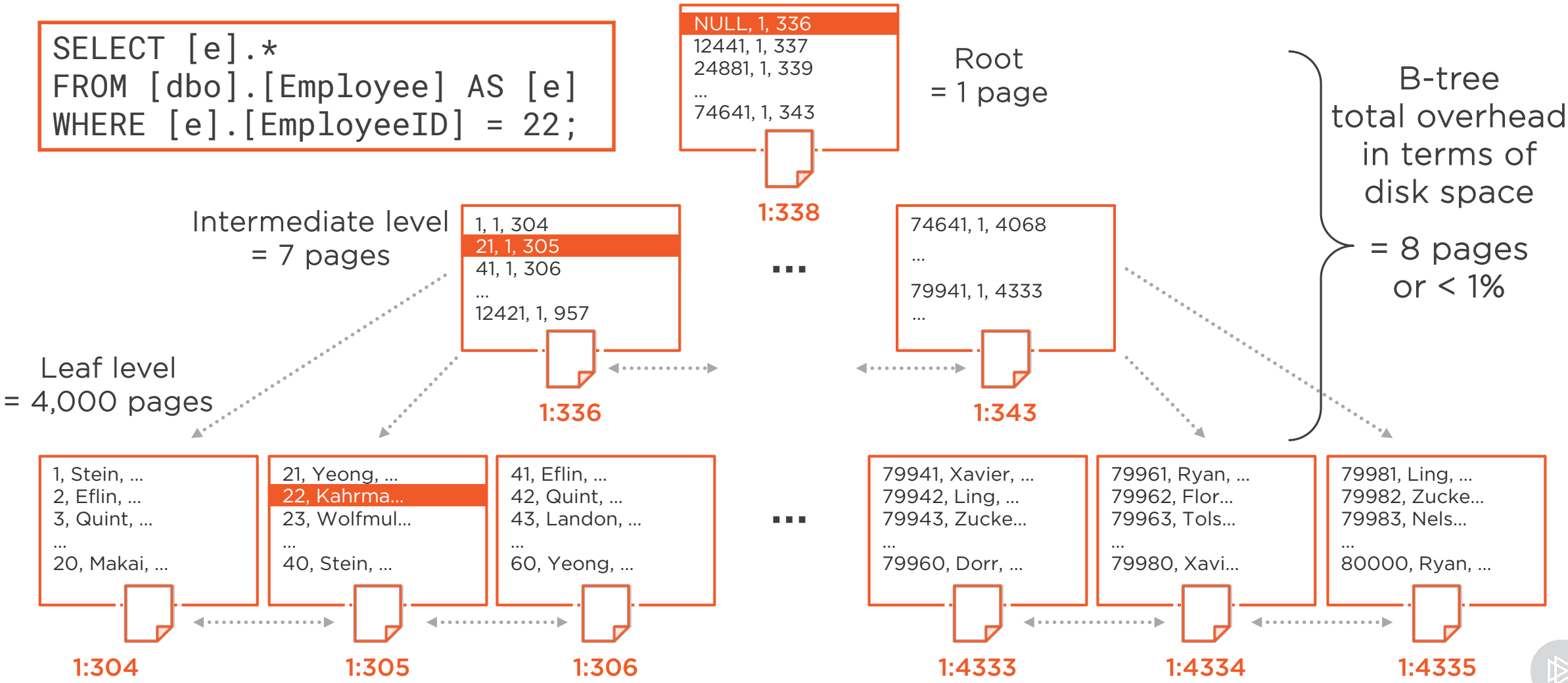
Clustered index seek

Bookmark lookup: nonclustered seek and seek in clustered for data

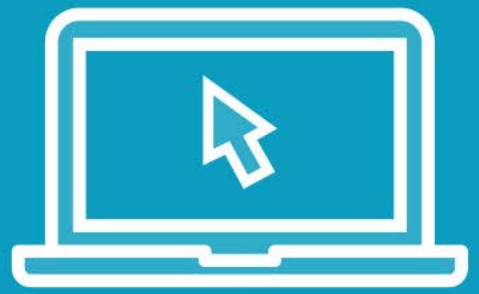
Multiple bookmark lookups

Clustered Index Seek

```
SELECT [e].*
FROM [dbo].[Employee] AS [e]
WHERE [e].[EmployeeID] = 22;
```



Demo



Clustered index seek

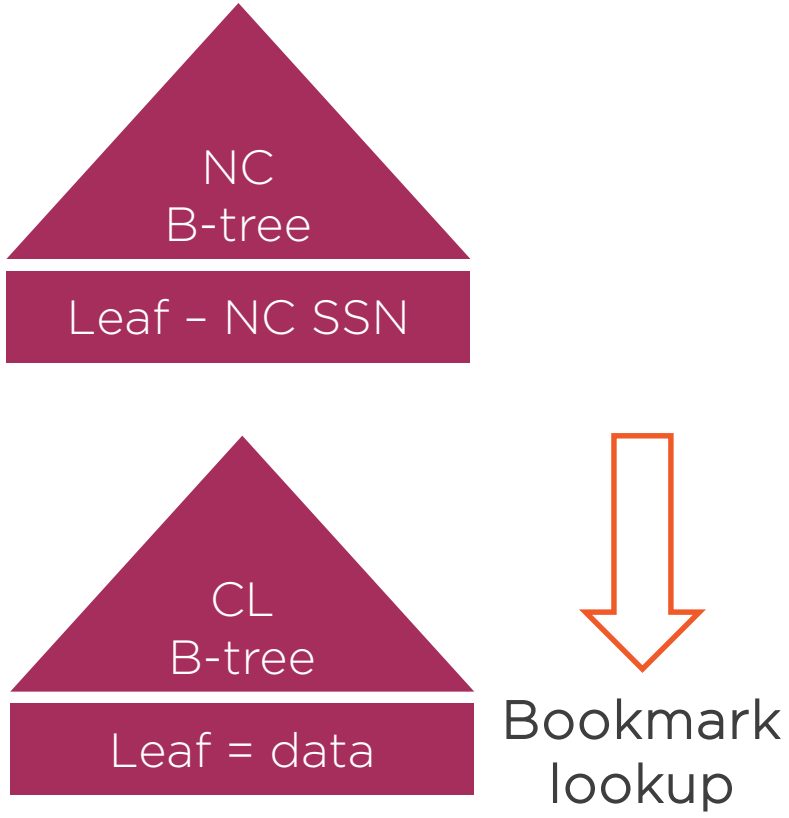
Bookmark Lookup

```
SELECT [e].*
FROM [dbo].[Employee] AS [e]
WHERE [e].[SSN] = '749-21-9445';
```

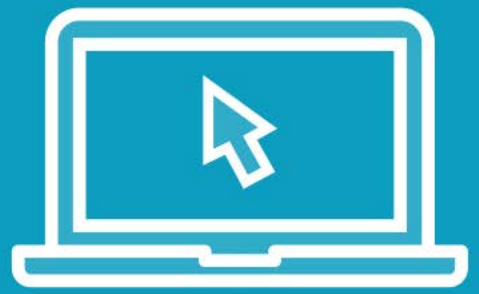
Root, then leaf in NC index on SSN to yield EmployeeID = 2 logical reads

Root, intermediate, leaf in CL index to yield * (all columns) = 3 logical reads

Total of 5 logical reads



Demo



Nonclustered index seek with a bookmark lookup

Multiple Bookmark Lookups

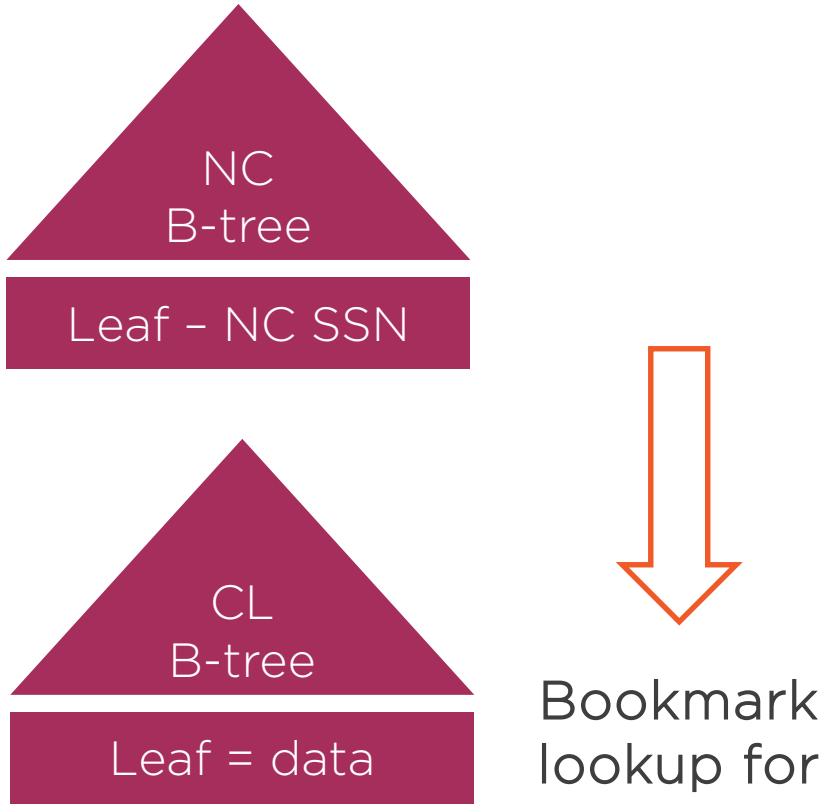
```
SELECT [e].*
FROM [dbo].[Employee] AS [e]
WHERE [e].[SSN] BETWEEN '123-45-6789'
    AND '123-45-6800';
```

Assumption: 12 Rows

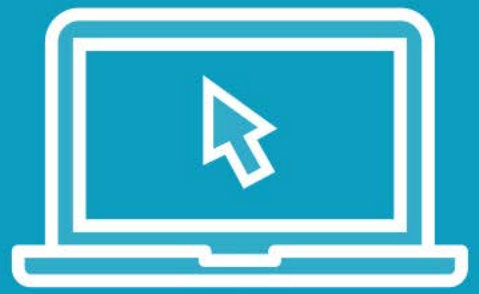
Root, then leaf in NC index on SSN to yield 12 EmployeeIDs = 2 to 3 logical reads

Root, intermediate, leaf for each row to access * in CL index to yield = 3 x 12 logical reads

Total of 38/39 logical reads



Demo



Nonclustered index seek with multiple bookmark lookups

What We Covered

- Query-specific index usage
- Clustered index seek
- Bookmark lookup: nonclustered seek and seek in clustered for data
- Multiple bookmark lookups