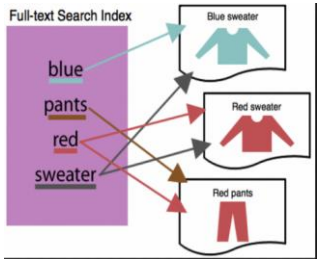
TABLE INDEXES

Instructor:

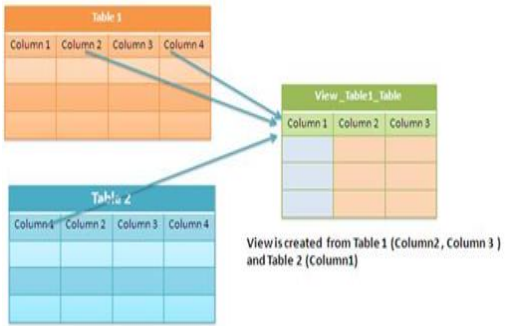
Learning Goals

By the end of this lecture students should be able to:

- ✓ Create Indexes to improve query retrieval speed
- ✓ Automatically generate sequence numbers by using a sequence generator
- ✓ Create, maintain, and use View



	EmployeeID	PersonID	FirstName	LastName
1	1	1	Eralper	YILMAZ
2	2	3	Robert	Vieira
3	3	607	Guy	Gilbert
4	4	608	Kevin	Brown
5	5	609	Roberto	Tamburello
6	6	610	Rob	Walters
7	7	611	Thierry	D'Hers
8	8	612	David	Bradley
9	9	613	JoLynn	Dobney
10	10	614	Ruth	Ellerbrock
11	11	615	Gail	Erickson
12	12	616	Barry	Johnson
13	13	617	Jossef	Goldberg
14	14	618	Terri	Duffy
15	15	619	Sidney	Higa



Why use indexes?

- An index in database is similar to an index in a book
- Indexes in database help speed up search queries. Allow find data in a table without scanning the entire table.

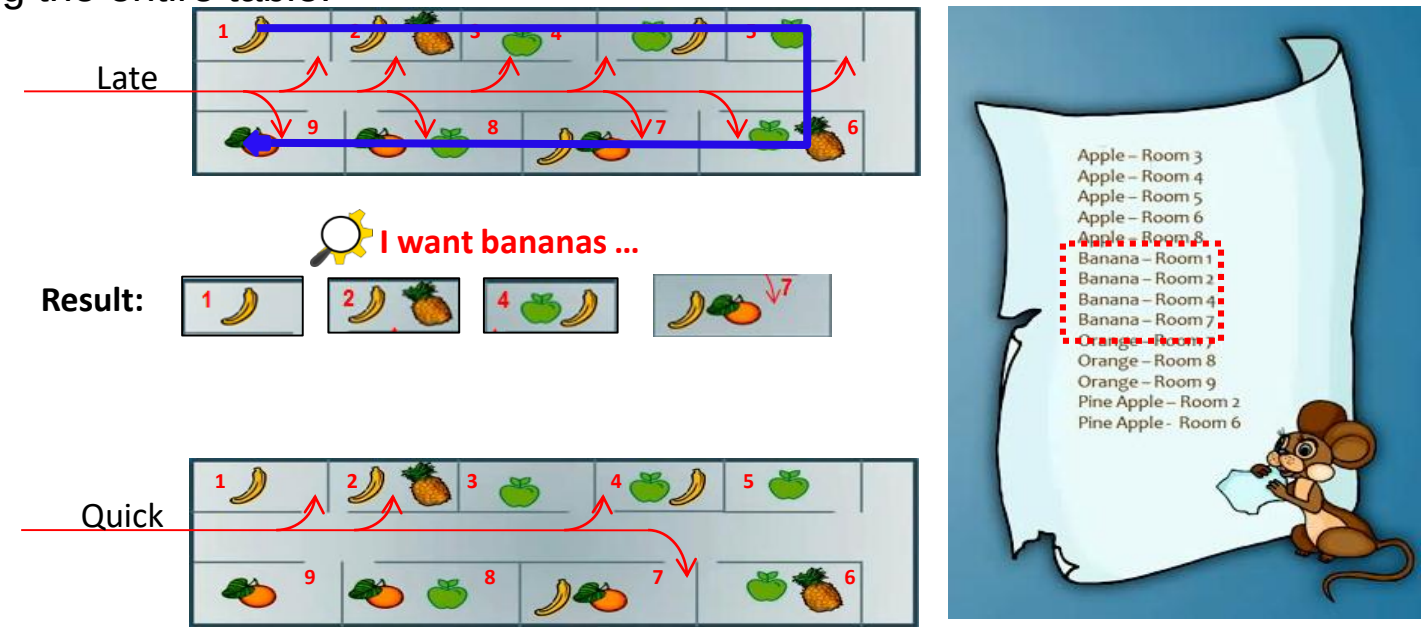


Table Indexes (1/3)

```
CREATE TABLE dbo.PhoneBook (
        LastName        varchar(50) NOT NULL,
        FirsName        varchar(50) NOT NULL,
        PhoneNumber varchar(50) NOT NULL
);
```

Table Indexes (2/3)

```
CREATE TABLE dbo.PhoneBook (
        LastName        varchar(50) NOT NULL,
        FirsName        varchar(50) NOT NULL,
        PhoneNumber varchar(50) NOT NULL
);
```

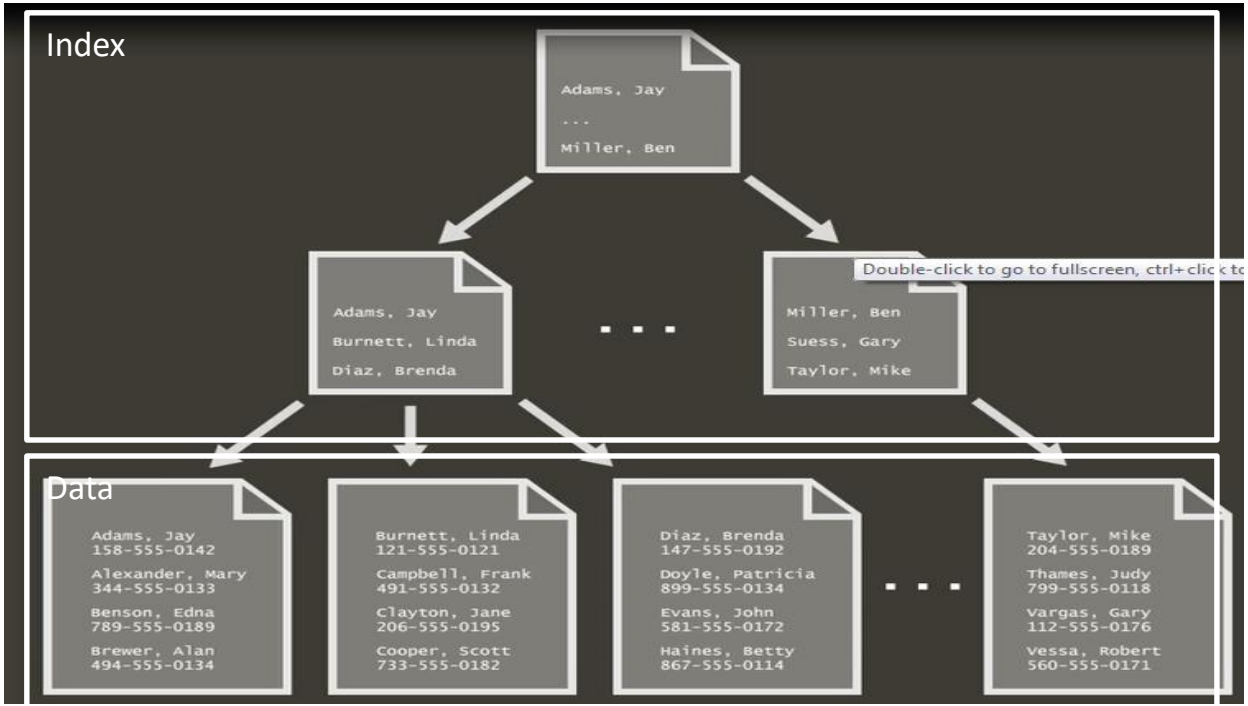
Result:
783-555-0110

Table Indexes (1/3)

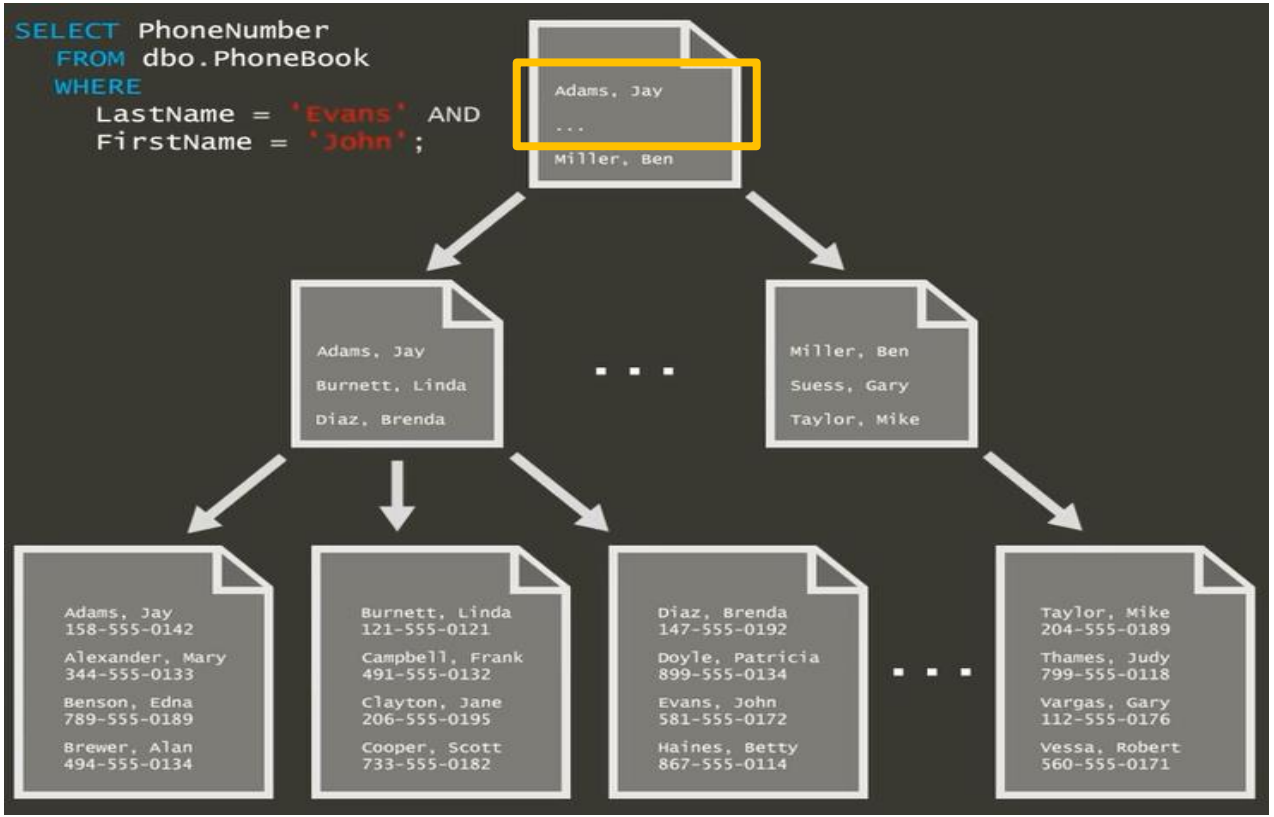
- **There are 2 types of major Indexes:**
  - ✓ ***Clustered***
    - Data is stored in the order on the clustered index
    - Only 1 clustered index per table
    - Usually the Primary Key
    - Sort and store the data rows in the table based on their key value.
  - ✓ ***Non-clustered***
    - Data is not stored in the order on the non clustered index
    - Have a structure completely separate from the data rows.

Clustered Index

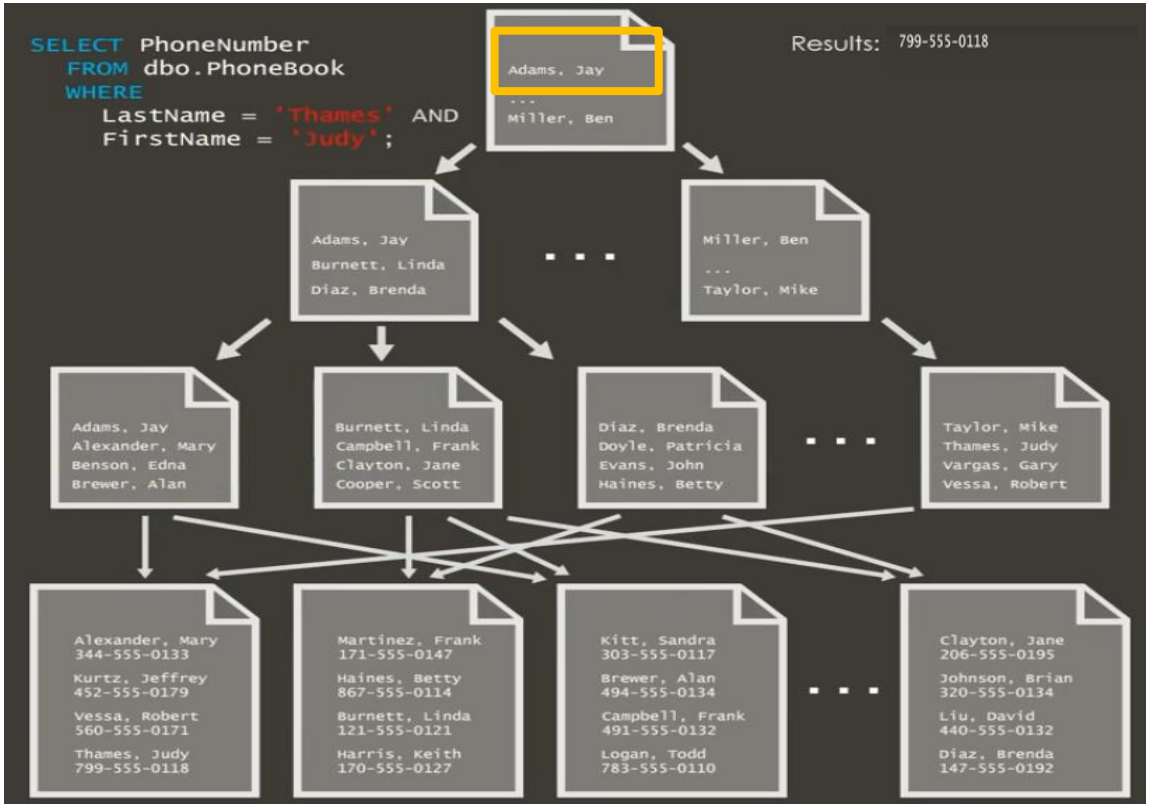
```
CREATE CLUSTERED INDEX IX_PhoneBook_CI
ON dbo.PhoneBook (LastName, FirstName)
```



Clustered Index



Non - Clustered Index



Creating an Index

- Create a new index:

```
CREATE INDEX index_name
ON  table_name (column1_name, column2_name, …)
```

- Deleting an Index

```
DROP INDEX table_name.index_name
```

Summary

- ✓ Table Indexes
  - ✓ Why use indexes?
  - ✓ Create, maintain and use index

Thank you