# INDEXES

## What are indexes?

* Indexes are used to find data from tables quickly
* Indexes in sql are very much similar to the index we find in a book.
* As the index of a book helps us to locate a particular page quickly, indexes in sql helps us to locate data present in a table quickly.

## Syntax for creating an index

Create INDEX index\_name ON table\_name;

## Types of indexes:

1. Simple column indexes
2. Unique indexes
3. Composite indexes
4. Implicit indexes

## Single column indexes

A single column index is created based only on one table column.

CREATE INDEX idx\_lastname ON Persons (LastName);

## Composite column indexes

A composite index contains a common index for one or more columns.

CREATE INDEX idx\_lastname ON Persons (FirstName,LastName);

## Unique column indexes

Unique indexes are used not only for performance, but also for data integrity. A unique index does not allow any duplicate values to be inserted into the table.

CREATE UNIQUE INDEX idx\_lastname ON Persons (FirstName,LastName);

## Column store indexes

* Columnstore index is a new type of index introduced in SQL Server 2012. It is a column-based non-clustered index geared toward increasing query performance for workloads that involve large amounts of data, typically found in data warehouse fact tables. This new type of index stores data column-wise instead of row-wise, as indexes currently do. Columnstore indexes are **the standard for storing and querying large data warehousing fact tables**. This index uses column-based data storage and query processing to achieve gains up to 10 times the query performance in your data warehouse over traditional row-oriented storage.

CREATE NONCLUSTERED COLUMNSTORE INDEX idx\_lastname ON Persons (FirstName,LastName);