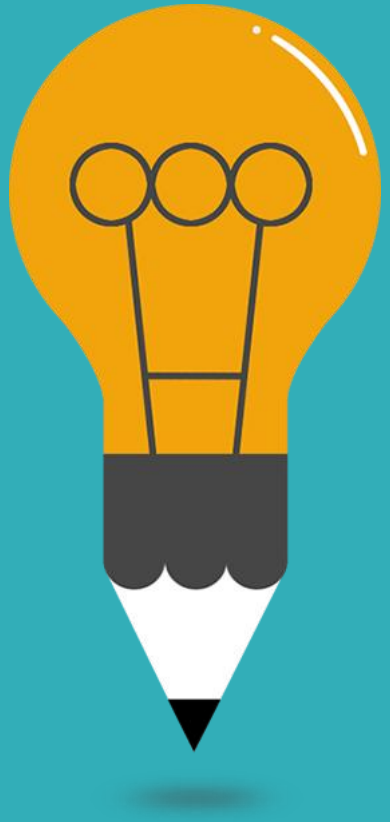
UNIVERSITAS AMIKOM
YOGYAKARTA



INDEX

MATA KULIAH PEMROGRAMAN BASISDATA
SEMESTER GENAP 2023/2024

Dosen Pengampu:
Novi Prisma Yunita, M.Kom

Introduction

Think about a regular book: at the end of the book there is an index which helps to quickly locate information within the book. The index is a sorted list of keywords and next to each keyword is a set of page numbers pointing to the pages where each keyword can be found. A SQL Server index is no different: it is an ordered list of values and for each value there are pointers to the data pages where these values are located. The index itself is stored on pages, making up the Index Pages in SQL Server. In a regular book, if the index spans multiple pages and you have to find pointers to all the pages that contain the word "SQL“ for example, you would have to leaf through until you locate the index page that contains the keyword "SQL". From there you follow the pointers to all the book pages

Source : https://docs.microsoft.com/en-us/sql/relational-databases/sql-server-index-design-guide?view=sql-server-ver15

Index

Index

- An index is a structure that provides accelerated access to the rows of a table based on the values of one or more columns
- An index speeds retrieval of rows from table, index can significantly improve the performance of a query
- Index contain keys built from one or more columns in the table
- Indexes usually created to satisfy particular search criteria after the table has been in use for some time and has grown in size

Index Benefit and Loss

- When index created, the performance of accessing data in database increased. An index allow SQL to find data without scanning the entire table
- The memory needed also increased **2-3 time bigger**

Maximizing Index : create index only for data that’s needed to be accesses frequently

Index Basic Syntax

```
CREATE [UNIQUE] INDEX IndexName
ON TableName (columnName [ASC|DESC][,…])
```

- The specified columns constitute the index key and should be listed in major to minor order
- Indexes can be created only on base table not on views
- If the UNIQUE clause is used, uniqueness of the indexed column or combination of columns will be enforced by the DBMS

```
CREATE UNIQUE INDEX IdxCustomerId ON customers (customer_id);

CREATE UNIQUE INDEX IdxItemId ON items (item_id DESC);
```

Rebuild Index

Rebuilding **SINGLE INDEX**

```
ALTER INDEX IndexName
ON table_name
REBUILD
```

Example :

```
ALTER INDEX IdxCustomerId
ON customers
REBUILD
```

Rebuilding **ALL INDEXES**

```
ALTER INDEX ALL ON table_name
REBUILD
```

Example:

```
ALTER INDEX ALL ON customers
REBUILD
```

Disable Index

Disabling **SINGLE**

```
ALTER INDEX IndexName
ON table_name
DISABLE
```

Example :

```
ALTER INDEX IdxItemId
ON items
DISABLE
```

Disabling **ALL INDEX**

```
ALTER INDEX ALL ON table_name
DISABLE
```

Example:

```
ALTER INDEX ALL ON items
DISABLE
```

Drop Index

```
DROP INDEX IndexName;

Example:

DROP INDEX IdxItemId;
```

Question ?