INDEXES IN SQL:

Why We Need Indexes:

1. Generally a library has a huge collection of books, files, etc... A student

requests the librarian for a book of Microsoft SQL Server 2008, if we think

without an index the librarian had to find this without any help she/he has to

search one by one! This must be time consuming; so with a proper

arrangement, that is with the help of an index, it very much easier and faster

to find out the desired one.

2. One of the most important routes to high performance in a SQL Server

database is the index. Indexes speed up the querying process by providing

quickly access to rows in the data tables, similarly to the way a book’s index

helps you find information quickly within that book.

What is INDEX:

 Index is a database object which is used for the quick retrieving of the data

from the table.

 An index contains keys built from one or more columns in the table and map

to the storage location of the specified data.

 By using indexes we can save time and can improve the performance of

database queries and applications.

 When we create an indexes on any column, SQL server internally maintain a

separate table called index table. So that when ever user trying to retrieve the

data from existing table depends on index table SQL server directly go to the

table and retrieve required data very quickly.

 In a table we can use max 250 indexes. The index type refers to the way the

index is stored internally by SQL Server. So a table can contain the two

types of indexes.

1. Clustered

2. Non-Clustered

Clustered Index:

 The only time the data rows in a table are stored in sorted (ascending order

only) order structure is when the table contains a clustered index. When a

table has a clustered index then is called a clustered table. If a table has no

clustered index, its data rows are stored in an unordered structure.

 A table can have only 1 clustered index on it, which will be created when

primary key constraint is used in a table.

Non-Clustered Indexes:

 Non-clustered indexes will not have any arrangement order (Unordered

structure) of the data in the table. In a table we can create 249 non-clustered

indexes.

 If we don’t mention clustered indexes in a table then default is stored as nonclustered indexes.

Syntax: Create Index <Index Name> on <Table Name> (Column Name);

EX: Create index demo index on EMP (Eid)