SQL : it stands for structured Query language and standard language for manipulating & retrieving data in database it comes from “SEQUEL” structure English query language “

SQL is powerful language that use simple English sentences and the reason is “it uses very simple English sentence such as **SELECT**”

**DECLARATIVE LANGUAGE :**  when you write a query you just need to describe what you need to be done i.e. you don’t need to be worry about the flow of query

**FEATURES OF SQL**

**SQL HAS WELL DEFINED STANDARD: -**  developer of SQL has clearly mention that how query is to be written

**SQL IS EASY TO LEARN :**  slq is a language that is used to work with data base as the sql has large data base & well defined standard for beginner& each to learn

SQL is used to create multiple view : with the help of sql multiple views can be created

It is the unique feature of sql : it means by sql we can create a virtual table

Virtual table :’ it just a temp table for sudden use by wich we can protect the integradity of data that’s why sql has ability to create no only single view but multiple views

Sql query are portable in nature: it means we can excute the same data from any computer may be other one computer without changing the formate

Condition : the environment setuo of these two system has to be same otherwise sql query wouldnot be execute

Feature of sql diagram

**DATA & DATABASE**

What Is data: value from different source which has been translated for some purpose & purpose can be anything

Data type are :

* transport data
* scientific data
* statistical data etc…..

data sould be ghave meaning full sence after that contenet is considered as data

i.e. data I scollertion of facts ,figure ,& values from different source.

**DATABASE**

“database is an organised collection of data ”

i.e. “database is an location where the data is stored in certain format“ and can be access electronically from the computer system

example : library ”A libraray has collection of books of different agenda”

“here libraray is the database and the collection of al books are stored data in it ”

Database diagram

In above diagram you can see how a user can proceed for dta and after that how it converted into machine language understood by the system . after that system store user data & proceed for for for giving result to the user.

The entire process is bi-directional i.e. control flow on both the side

Type of database

“there are different type of database used in today”

The database are classified on the basis of capabilities ,features ,functionality ,size & performance

Structure diagram

In this type of database two are poplar database tahts are :

1. rational database : - used SQL language
2. No SQl database

---------------------------------few popular database are -------------------------------

* Mongo DB
* Postge SQL
* Microsoft access
* MIcrosft SQL server
* MY SQL
* ORACLE DB

These are the few popular database that are used now a day each one has its own pro’s and on’s

MONGODB: Afreee database that has commercial version it is designed for application that use both structured and unstructured data

“the database engine is very versatile & it works by connecting database to application via ‘mongo db’ database drivers it is easy tofind a driver that will works with programming language being used

Magodb 3.2 version is latest & it’s feature is new pluggable storage engine

* Pro’s

1. It is fast and easy to uyse
2. The engine support TSON and other no SQL document
3. Data of any structured can be stored and accessed quickly & easily
4. Scema can be written without downtime

* Con’s

1. SQL is not used as Query language
2. Tools to ranslate sql to mongo DB Query are available but they add an extra step to using engine
3. Setup can be a lengthy process
4. Default setting are not secure

Psotgre sql : postgre sql is one of several freepopular database and it is frequently usedfor web database one of the first database management system to be developed. it allows useers to manage both structure and unstructured data it can also be used on most major platform ,including linix-based one it fairly simple to import information from other atabase type using the tool

The database management engine can be hosted in a number of environment “ including virtual, physical & cloud based environment. The latest version postgre sql 9.5 offer larger data volume and an increase in the number of concurrent user’s

* Pro’s :

1. The data base mamangement engine I sscalable & can be handle terabyte of data
2. It support JSON
3. There ar e a veriety of pre-defined function
4. A no of interface are available

* Con’s

1. Documentation can be spotty so you may find yourself searching online in an effort to figure out how ot do something
2. Configuration can be configuring
3. Speed may be suffer during large bulk operation or read query

Microsoft SQL serve : this database managemenet engine works on cloud -based server as well as local server and it can be setup to work on both at the same time. Not after long the realease at microsft sql server 2016 .microsoft made it available on lnux as well as window based plateform.

Some of standout feature for 2013 edition include emporal data support which makes it possible to track changes made to data over time

The latest of Microsoft sql server also allow’s for dynamics data making, which that only authorised indivisual will see sensitive data .

* Pro’s :

1. It is very fast & stable
2. The engine offers the ability to adjust & track performance level which can reduce resource use
3. You are able to access visualization on mobile s devices
4. It works very well with other Microsoft product

* Con’s :

1. Enterprises pricing may be beyond what many organization can effort
2. Even with performance tuning Microsoft sql srver can be gabble resource
3. Many indivisual have issue usinggg the sql server integration service to import files

MYSQL: my sql is one of the most poplar database ofr web based application it is freeware but It is frequently updated with feature&security improvement there aere also veriety of paid edition designed for commercial use with freeware version

The database engine allows you to select from a veriety of storage that enables you to change the functionality at tools and handle data from diff table it also has been easy to use interface and batch command let you process enormous amount of data

* Pro’s:

1. it available for free
2. Its offersa lot of functionality even for a free database engine
3. There are a veriety of user interface that can be implemented
4. It can be made to work with other database include DB2 and ORACLE

* CON’S

1. Yo umay spend a lot of time and effort to get my sql to do things that other system to get my sql to do things that other system do automatically like create increment breakup’s
2. There is no built-in support for XML or OLAP
3. Supportis available for free version but you will need to play for it

Oracle db : oracle is consistently at the top of list popular database the first version of the database management tool’s was created in the late 70’s and there are no of edition of this tool available to meet you rorganization needs.

The newest version of oracle 12c designed for the cloud and can be hosted on single server multiple server it enable the management of database holding billion of record’s

Some of latest version of oracle is grid framework and the use of both physical & logical structure

* Pro’s:

1. You will find he latest innovation and feature coming from their product since oracle tendsto set the bar for other database management tool’s
2. Oracle database management tools are also incredibly rebust and you can find one that can do just about anything you can possibly think of

* Con’s :

1. the cost of oracle can be prohibitive especially for small organization
2. the system can require significant resource installed, so hardware upgrade may be required to even implement Oracle.

My SQL work bench

As we know SQL is the language tha use to communicate with database

MY SQL is management database system

Step.1 how to create a data base

-type---------Create database students ; -then click on light bolt icon

Step.2 data base created on left side database list

{student}

Step.3 how to delete database

-type ---------drop database students

Database has been deleted from left side table o database