    INTRODUCTION TO DATABASE MANAGEMENT : ARCHITECTURE

Syu Farizan

Nadia Zulaikha Binti Zainol

    A database management system is a computer software application that interact with end user and database itself to capture and analyse data.The general purpose of DBMS allows the definition,creation,querying,update and administration of database.Database are basically develop for large amount of data.Therefore,when dealing with huge amount of data there are two thing requires optimization which is storage of data and retrieval of data.DBMS is a collection of inter-related data and set of programs to store and access data in an easy and effective way.  Architecture in DBMS can be seen as single tier or multi-tier.The architecture separate  the whole system in a related but independent models that can be altered.It can be centralized,decentralized and hierarchical.

      The first tier architecture acknowledge  DBMS as the only entity.Therefore,user directly go through DBMS and uses it,and if there is any changes, it will be directly in DBMS.The downfall of using the single tier in DBMS is there is no handy tools for the end user.The database designers and programmers normally prefer the single tier architecture for quick respond from the end user.This is because it is far less complicated than multi tier as it connects directly to DBMS without having go through an application within the system

     DBMS architecture that are using 2-tier’s must have application which supported by the system.The programmers use 2-tier DBMS for intention of the application.It is a two way communication tool between the users and DBMS.The interface is known as open database connectivity.The advantages of 2-tier architecture,provides extra security as it does not exposed to user directly.The security can be improved by adding authentication chats in the layers of application too.

    3-tier DBMS architecture is the widely used application for web.It is a continuation from 2-tier architecture.3-tier architecture consist  of Graphic User Interface(GUI) or additional presentation for end user to interact with DBMS.The first layer  of 3-tier is where the database is written along with its query processing language relations which defines data and their constraints.The middle tier is the application level.The end user are unaware about the existence of the database outside the application.On the other hand,the database also does not aware of any user beyond the application.Therefore,the application layer sit in between and act as mediator for database and end user.The last layer in the 3-tier is the user tier.This tier is operated by end user,at this layer, the application provided multiple view of database . Multiple tiers databse architecture is highly modifiable. It is because most of its component are independent and can be changed easily.

    One of the benefits of architecture in DBMS are implementation of a vision by looking at the architecture is an effective way to view the overall state of database and develops vision for the user’s needs or wants. It is a potential cost savings because the security has been provided in the system. Moreover, it helps to maintain the data from corruption of virus. Thirdly, provides easy access to the end user. For instance, MYOB application has provided basic tools for the user to set up their business account. Last but not least, it is a long-lasting system. This is because the database in the system may be altered or modified from time to time according to user’s needs and wants.