**CHAPTER II**

**BASIC OF THEORY**

**II.2 Database : Briefly Description**

Database is an arrangement of complete operational data records of an organization or company which organized and stored in an integrated manner by using a particular method so as to meet the optimal information needed by the users. [1]

Database is important because it can organizing the data, avoiding duplication of data, deleting relationships between data that are not clear and also updating data. [2]

In this paper, we will describe about SQL Server as Database Application.

**II.2 Definition of SQL Server**

Microsoft SQL Server is a product of RDBMS (Relational Database Management System) created by Microsoft. People often call with SQL Server only. Microsoft SQL Server also supports SQL as a query language for processing into the database, and we know that SQL is already used in general to all database server products on the market today. Microsoft SQL Server is widely used in the world of business, education and government as well as a database or data storage solution. Various kinds of businesses start small scale to enterprise-scale can use Microsoft SQL Server as the database server. You probably know that there are a lot of similar products such as Microsoft SQL Server Database Oracle, Interbase, MySQL, Firebird, Sybase, IBM DB2 and others. [3]

**II.3 Function of SQL Server**

1. SQL allows you to access and manipulate databases.
2. SQL to execute queries against the database
3. SQL can retrieve data from the database
4. SQL can insert records in a database
5. SQL can update records in the database
6. SQL can delete records from database
7. SQL can create a new database
8. SQL can create new tables in the database
9. SQL can create stored procedures in the database
10. SQL can create views in the database
11. SQL can set permissions on tables, procedures, and views [4]

**II.4 History of SQL Server**

**1988**

Microsoft launching the first version of SQL Server only for OS/2 and developed together between Microsoft with Sybase.

**1990**

Microsoft start to make a new version of SQL Server for their NT Platform. During the development process, Microsoft decided that the Microsoft SQL Server must be integrated tightly with their NT operating system.

**1993**

Windows NT 3.1 and SQL Server 4.2 for NT released by Microsoft. Microsoft target to combine the high performance of the database server and easy of use also administration apparently achieved through this version of SQL Server.

**1994**

Microsoft and Sybase formally ended their cooperation

**1995**

Version 6.0 offers improvements in performance, built-in replication and centralized administration.

**1996**

Microsoft released SQL Server version 6.5 that contains a wide variety of additional capabilities and new features

**1997**

Microsoft released SQL Server 6.5 Enterprise Edition.

**1998**

Microsoft SQL Server 7.0 was released in 1998 and its database engine rewritten to be more optimal.

**2000**

Microsoft released SQL Server 2000 is the version that is widely used. Version of SQL Server 2000 is based on the existing framework in the previous version 7.0.

**2005**

Microsoft released SQL Server 2005 Express, Enterprise, Developer.

**2008**

Microsoft released SQL Server 2008 Express 32 and 64 bit.

**2012**

Microsoft released SQL Server 2012.

**2014**

Microsoft released SQL Server 2014. [3]

**II.5 Feature of SQL Server**

1. **Relational Database Engine**

SQL Server using Relational Database Engine types that makes Database more better than other types Database Engine.

1. **Notification Services**

Framework for a solution where the customer will be sent a notification when an event is appear.

1. **Reporting Services**

Service that will retrieve data from SQL Server, and generate reports.

1. **Service Broker**

Queuing mechanism that will handle the message based communication between the service.

1. **SQL server Agent**

Automate database maintenance and set tasks, events and alerts.

1. **Replication**

Set of technologies for making and distributing data and database objects from a database to another database, and synchronize to maintain consistency.

1. **Full Text Search**

Allows fast and flexible indexing for keyword-based queries (to the text data stored in the database).

1. **XML Support**

With this you can store XML documents in a table, query the data into XML format via the Transact-SQL and others.

1. **Multi-Instance Support**

This feature allows you to run multiple SQL Server database engine on the same machine.

1. **DTS Enhancement**

This facility is now able to pay attention to the primary key and foreign key constraints. This is useful when migrating tables from other RDBMS. [3]