SURVEY OF VARIOUS DATABASES AND ITS APPLICATIONS IN THE REAL WORLD

Gutti Vishnu Vardhan
MCA VIth semester student, Department of MCA,
SreeVidyanikethan Institute of Management, Sri
VenkateswareUniversity,A.Rangampeta, Tirupati,
Andhra Pradesh, India

V Rahamathulla
Assistant Professor, Department of MCA,
SreeVidyanikethan Institute of Management,
A.Rangampeta, Tirupati,
Andhra Pradesh, India

Abstract: Now a day's data has become enormous in everybody's life that can be right or wrong which leads to the confusion. If data sources are increased in our lives, we are not able to get certainty in the information, and then what is the correct information. We can say that the databases are most important not only has a government agency, for everywhere, any work must be maintained the data.

Last few years ago everyone is maintaining the data in manually, now a day's data maintaining through online it is totally different. As per required it can start with a basic concepts of databases, in early years the updating of technology the data bases versions are also totally changed. There are some databases versions are in the market (i.e., COBOL, SQL,MYSQL, and MONGODB). The goal of this paper is to define the various types of databases and their working mechanism.

Keywords: Msaccess, oracle, NoSQL, MongoDB.

1. INTRODUCTION:

Data is not a simple thing it is necessary in every body. A data can store as per they required time. Most of the organizations and institutions look back for previous data what they did in past. Now a day as per changing the technology the stories and maintaining of the data also changes to be advanced [1]. Whenever we are gathering the real time data, it must be overcome some problems. There

1. MS ACCESS

MS Access stands by Microsoft access. It is a DBMS that contains the relational Microsoft jet Database Engine with a GUI and software developed tools by a Microsoft organization. The ms access isinitiallydeveloped and maintained by Microsoft it is released in November 1992(i.e., 25 years ago). It supports the windows operating system.

Up to now the ms access changes so many versions with updates present version is Microsoft office access 2016 interface running on windows operating system.Before you jump in the access important to know the access interface you know everything else. The ms access 2016 interface is the collection of ribbon related tools. The ms access also supports for visual basic for applications (VBA), object based programming language and including DAO (Data Access Objects).

Microsoft access is most important because of immediately decline the amount of time appropriate to interchange and activity information between msoffice applications [2]. MS access provides database management something is designed for in experienced end users and is highly extensible architecture with enterprise systems by appropriate professional developers.

are so many databases software's are available in the real world.

In olden days the data can be stored as manually, later on developing the technology it can be changed as electronic databases using electronic devices. It made to easy of retrieving and accesses the required data. The data can be store in a electronic devices or any other secondary devices are in the form of files or group of files. The database files are mandatory to allow the accessing to data.

→MS access working mechanism is in the same form of any other databases accomplish, by string related data well-adjusted, and grant you to compose the association between different things. The relationship between things in msaccess can be very simple or difficult. Data can be stored in ms access tables as mini spread sheets that may take to store the data one type of thing only. A table can have many columns in the spread sheets. Each column in a table, that can be set up giving permission to the users from entering in to the exact information [3].

If you can give(someone) knowledge yourself with the access environment including the (Ribbon, Backstage view, Navigation pane, Document Tabs bar,) and more.

Fig: To know Ms access 2016 sample database.

2. ORACLE:

Oracle commonly known as oracle database and referred oracle RDBMS. It is a multi-model database management system managed by Oracle Corporation. Oracle was developed by Larry Ellison and his friends Bob Miner and Edoates at software development Laboratories (SDL) in 1977.

Oracle has releases the many versions like Oracle 10g, oracle 11g, oracle 11i , where g stands for 'grid' and I stands for internet. The latest version of oracle is 12c, the c stands for 'cloud'. Oracle 12c comes in 3 editions for on-premises deployment like

→ Oracle Database Enterprise edition 2(EE): The Oracle is action industry outstanding scalability and honestly in both clustered and single system composition and no constraint on server resources.

→Oracle DB standard edition2 (SE2) intended for small to medium sized implementations it also includes real application clusters [4].

→Oracle DB personal edition (PE) it is upward compatible to SE2 and EE

2.1 The advantages of oracle 12c and supports OS like

- Linux on x86-84
- Microsoft windows
- Oracle Solaris on SPARC
- IBM AIX on power system
- IBM Linux
- HP-UP on itanium

Oracle Corporation provides critical patch updates or security patch updates that prevents data theft. Oracle is the world's popular database for running online transaction processing and data warehousing. Oracle next version may be Oracle autonomous database. Oracle is used by almost all large applications and majorly in Banking. Oracle offers a powerful combination of technology and comprehensive, pre integrated business applications including key functionalities. Oracle has no loops, conditions, arrays, cursors and temp tables which are very slow and resource consuming operations [5].

The main advantage of oracle is it follows the ACID properties like are Atomicity, Consistency, Isolation, Durability. Oracle 12c has flashback technology for careful maintenance of data i.e. sometimes application outage can occur and human errors like deletion of data or deleting wrong data or table.

The technologies are provided to efficient of recovery from human errors.

The database can berecovered within a short time. It helps to simplify the management and administration. The oracle is majorly implements in the real world environment is Financial system in a business class purpose [6], Airlines the store the enormous data while plane running status and etc. The future oracle database is oracle 18c.
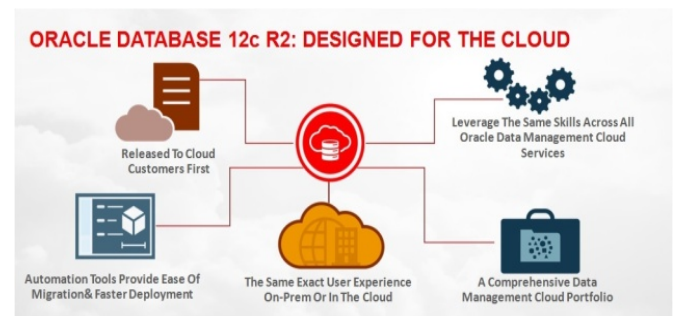

Fig.2 : The oracle database 12c is designed for the cloud.

3. MongoDB

MongoDB is commonly Mongo Database which is developed by MongoDB Inc and it is initial release on 11 February 2009. The MongoDB can support the windows Vista and later, Linux, OS X 10.7 and later, Solaris, FreeBSD operating systems.

The MongoDB was written in the C, C++, JavaScript programming languages. The MongoDB is a free and open source, document-oriented database programme. In the year of 2017 MongoDB became a publicity traded company, listed on NASDAQ as MDB with an IPO price of $24 per share.

3.1 The architecture of MongoDB is:

3.1.1 Programming language Accessibility: MongoDB has approved drivers for better programming languages and development background. The large number of unauthorized drivers are available for other programming languages, and frame works.

3.1.2 Management and graphical Front ends: The central interface to the database has been the mongo frame. The MongoDB circle is introduced as the native graphical user interface.

3.1.3 Licensing: MongoDB is accessible at no cost Unser the GNU Affero General Public License.

The MongoDB is the database that can exists in the real world applications are:

- Authority of data and automation to maximize combative advantages.
- To break the contingency for mission-analytical classification.
- Hasten time-to-value
- Dangerously decreased total cost of ownership.

There are several versions of MongoDB

In the version MongoDB 3.6 has too run the speed of data.

The version MongoDB 4.0 supports the ACID transactions to multi-document level.

3.2 The MongoDB features are:

3.2.1 Ad hoc queries: MongoDB accepts circle or bounds, range queries, regular argument searches. The queries can return definite fields of document and allow user-defined JavaScript functions.

3.2.2 Indexing: Circles or fields in a MongoDB document can be alphabetize with earliest and secondary basis or formula.

3.2.3 Replication: MongoDB arrange high availability with carbon copy set contains two or more copies of data [7].

3.2.4 Load balancing: MongoDB computation angular using sharding.

3.2.5 File storage: MongoDB can be used to contents of system with load correspond and data impression or carbon copy attribute.

3.2.6 Aggregation: The aggregation frame of reference enables users to obtain the kind of results of which the SQL Group By Clause is used.

3.2.7 Server Side JavaScript Execution: The JavaScript can be used in queries map Reduce and sent thoroughly to the database to be accomplished [8].

3.2.8 Capped Collections: MongoDB accepts locked-sized collection called Capped Collections.

3.2.9 Transactions: The present stable doesn't accept transactions but transactions are anticipated to be applicable in a new major release [9].

3.3 Disadvantages of MongoDB:
- ➔ MongoDB is a NoSQL DB; you need to DB admin only to maintain it.
- ➔ MongoDB is not a RDBMS; it is so difficult to get the required data set from different tables.
- ➔ Sometimes you may have locked and attack the problems of your entire database.

4. NoSQL:

NoSQL stands for "not only SQL". The NoSQL basically referring as " non-sql" or else "non relational database. It provides components for storage and betterment of data that is modeled except the tabular relations are involved in relational databases.

NoSQL is an approach to database architect that can contain a extensive change of data models, including key-value, document, columnar and graph representation.

The NoSQL caption can be applied to some databases that anticipate the RDBMS. There are many ways to access the classification NoSQL databases, there are differential group and sub groups, some of which lap over. It can followsome basic arrangement by data model. There all are classification based on from Stephen Yen.

The column can be arrangement by Accumilo, Cassandra, Druid, HiBase, Vertica

The document type may have classified by data model is Apache CouchDB,IBM Domino, MongoDB.

Graph type is AllegroGraph,ArangoDB

Multi model can be as Apache Ignite, Arango DB.

4.1 Architecture with NoSQL:

The architecture of NoSQL how to properly designer operations with NoSQL databases you want accept the differentiation of burden between data management and data storage [10]. Fig 3

4.2 Disadvantages of NoSQL:
- ➢ Less mature: RDBMS has a lot of longer than SQL databases. The initial RDBMS releases in the market approximation 25years ago. In the NoSQL database is having a much important features are implemented.
- ➢ Less support: Every company needs to have the recollection that should a key function with their DMS fails.

- ➢ Business intelligence and analytics: Most of the easy queries want to a minimum of programming knowledge then the maximum business intelligence tools that means companies to be connected with NoSQL databases [11].
- ➢ Administration: The main scope of NoSQL databases architect was designed to offer and solution that would be required no administration [12].
- ➢ No advanced expertise: Till now every NoSQL developer is releasing the roper everyday this is unlike RDBMS systems.
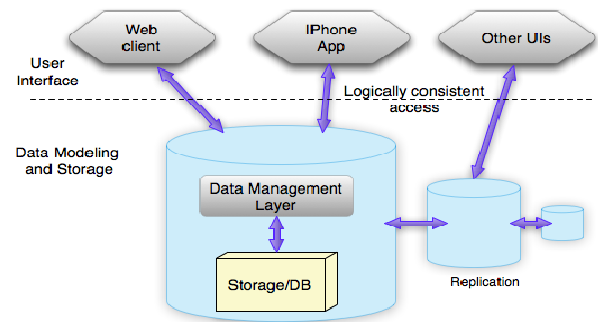

Fig.2: The architecture of NoSQL database [10].

CONCLUSION:

The database plays a major role in the field of information technology. Every real world application contains 2 parts. 1) Front End (User Interaction Interface). 2) Back End (Data Storage). Early days the program and data is going to club into a single program where we cannot expect the security. The 3 tier architecture of oracle, My Sql, Nosql provides maximum security for the user. The data used as a reference for every transaction. The database management system software's allows managing the data.

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