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AUTOMATIC DATABASE SCHEMA GENERATION TOOL FOR EXECUTING SQL QUERIES

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ABSTRACT

The Automatic Database Schema Generation is a framework, which permits the engineers to concentrate on making the database utilizing the GUI interface .The client needs to satisfy the necessities in the interface and he can play out the database tasks which he needs and can make the database. This task focuses on making of a programmed database outline age. This task will be available to all designers and its office permits engineers to concentrate on making the database pattern based on JSP while letting the application worker characterize table dependent on the fields in JSP and connections between them. This framework gives the accompanying offices. This encourages the client to concentrate much on application viewpoints deserting the database aspects. This venture permits clients to create database composition age without having a lot of information on database aspects.

Keywords: Automatic, Database, Schema, Generation

I. INTRODUCTION

A database is an organized collection of data. It is the collection of schemas, tables, queries, reports, views, and other objects. The data are typically organized to model aspects of reality in a way that supports processes requiring information, such as modelling the availability of rooms in hotels in a way that supports finding a hotel with vacancies.

A database management system (DBMS) is a computer software application that interacts with the user, other applications, and the database itself to capture and analyze data. A general-purpose DBMS is designed to allow the definition, creation, querying, update, and administration of databases. Well-known DBMSs include

MySQL,

PostgreSQL,

MongoDB,

MariaDB,

Microsoft SQL Server,

Oracle,

MS-Access

Sybase,

SAP HANA,

MemSQL

and IBM DB2.

A database is not generally portable across different DBMSs, but different DBMS can interoperate by using standards such as SQL and ODBC or JDBC to allow a single application to work with more than one DBMS. Database management systems are often classified according to the database model that they support; the most popular database systems since the 1980s have all supported the relational model as represented by the SQL language. Sometimes a DBMS is loosely referred to as a 'database'[1],[2].

1.1 APPLICATIONS OF DATABASE

Databases are used to support internal operations of organizations and to underpin online interactions with customers and suppliers (see Enterprise software).Databases are used to hold administrative information and more specialized data, such as engineering data or economic models. Examples of database applications include computerized library systems, flight reservation systems, computerized parts inventory systems, and many content management systems that store websites as collections of webpage's in a database.

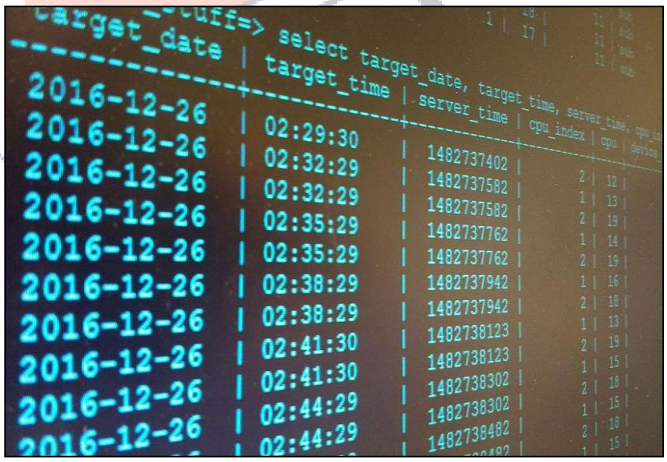


FIGURE. 1 REPRESENTS AN EXAMPLE OF DATA BEING RETURNED AFTER A SUCCESSFUL QUERY IN POSTGRES SQL.

From the above figure 1, we can clearly get an idea that SQL query is written on a Command Prompt for getting the Target_Date, Target_Time, Sever _Time and a lot more fields from a user

created table. This query is written on a SQL command prompt by suing PostGres SQL.Once if the query was correctly executed then we can able to find out the resultant data as a result.

Both a database and its DBMS conform to the principles of a particular database model [6]. "Database system" refers collectively to the database model, database management system, and database [7].

Physically, database servers are dedicated computers that hold the actual databases and run only the DBMS and related software. Database servers are usually multiprocessor computers, with generous memory and RAID disk arrays used for stable storage. RAID is used for recovery of data if any of the disks fail. Hardware database accelerators, connected to one or more servers via a high-speed channel, are also used in large volume transaction processing environments. DBMSs are found at the heart of most database applications. DBMSs may be built around a custom multitasking kernel with built-in networking support, but modern DBMSs typically rely on a standard operating system to provide these functions. Since DBMSs comprise a significant market, computer and storage vendors often take into account DBMS requirements in their own development plans [8]. Databases and DBMSs can be categorized according to the database model(s) that they support (such as relational or XML), the type(s) of computer they run on (from a server cluster to a mobile phone), the query language(s) used to access the database (such as SQL or XQuery), and their internal engineering, which affects performance, scalability, resilience, and security.

2. LITERATURE SURVEY

Writing study is the most significant advance in programming improvement process. Prior to building up the apparatus, it is important to decide the time factor, economy and friends quality. When these things are fulfilled, ten following stages are to figure out which working framework and language utilized for building up the device. When the software engineers begin assembling the instrument, the developers need part of outside help. This help got from senior software engineers, from book or from sites. Before building the framework the above thought r taken into for building up the proposed framework.

Following the innovation progress in the territories of processors, PC memory, PC stockpiling, and PC organizes, the sizes, capacities, and execution of databases and their individual DBMSs have developed in significant degrees. The advancement of database innovation can be partitioned into three times dependent on information model or structure: navigational,[9] SQL/social, and post-relational.The two primary early navigational information models were the progressive model, exemplified by IBM's IMS framework, and the CODASYL model (arrange model), executed in various items, for example, IDMS.

The social model, first proposed in 1970 by Edgar F. Codd, left from this custom by demanding that applications should look for information by content, as opposed to by following connections. The social model utilizes sets of record style tables, each utilized for an alternate sort of substance. Just in the mid-1980s did processing equipment become ground-breaking enough to permit the wide organization of social frameworks (DBMSs in addition to applications). By the mid 1990s, notwithstanding, social frameworks overwhelmed in all enormous scope information handling applications, and starting at 2015 they stay prevailing: IBM DB2, Oracle, MySQL, and Microsoft SQL Server are the top DBMS [10]. The predominant database language, normalized SQL for the social model, has affected database dialects for other information models. Item databases were created during the 1980s to beat the burden of article social impedance befuddle, which prompted the instituting of the expression "post-social" and furthermore the advancement of crossover object-social databases.

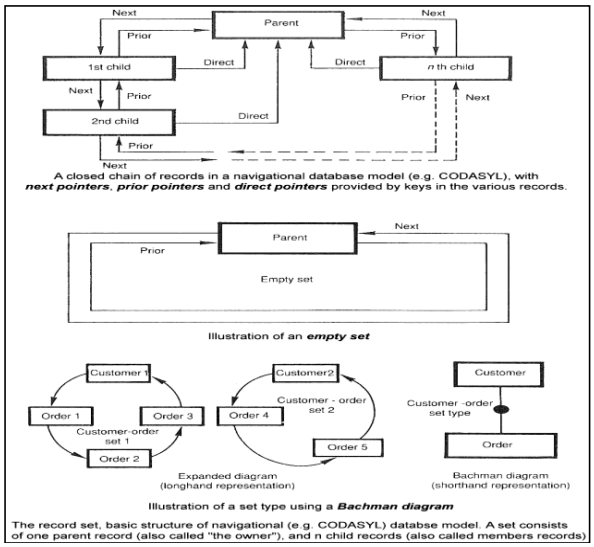


FIGURE. 2 REPRESENT THE ILLUSTRATION OF A SET TYPE USING A BACHMAN DIAGRAM

The introduction of the term *database* coincided with the availability of direct-access storage (disks and drums) from the mid-1960s onwards. The term represented a contrast with the tape-based systems of the past, allowing shared interactive use rather than daily batch processing. The Oxford English Dictionary cites [11] a 1962 report by the System Development Corporation of California as the first to use the term "data-base" in a specific technical sense.

As computers grew in speed and capability, a number of general-purpose database systems emerged; by the mid-1960s a number of such systems had come into commercial use. Interest in a standard began to grow, and Charles Bachman, author of one such product, the Integrated Data Store (IDS), founded the "Database Task Group" within CODASYL, the group responsible for the creation and standardization of COBOL. In 1971, the Database Task Group delivered their standard, which generally became known as the "CODASYL

approach", and soon a number of commercial products based on this approach entered the market.

The CODASYL approach relied on the "manual" navigation of a linked data set which was formed into a large network. Applications could find records by one of three methods:

1. Use of a primary key (known as a CALC key, typically implemented by hashing)
2. Navigating relationships (called sets) from one record to another
3. Scanning all the records in a sequential order

Later systems added B-trees to provide alternate access paths. Many CODASYL databases also added a very straightforward query language. However, in the final tally, CODASYL was very complex and required significant training and effort to produce useful applications.IBM also had their own DBMS in 1966, known as Information Management System (IMS). IMS was a development of software written for the Apollo program on the System/360. IMS was generally similar in concept to CODASYL, but used a strict hierarchy for its model of data navigation instead of CODASYL's network model. Both concepts later became known as navigational databases due to the way data was accessed, and Bachman's 1973 Award presentation was *The Programmer as Navigator*. IMS is classified as a hierarchical database. IDMS and Cincom Systems' TOTAL database are classified as network databases. IMS remains in use as of 2014 [12].

3. EXISTING SYSTEM

There are many Database Management systems available today. The Database designer is familiar with any one of the database Management Systems. Let us consider a condition when a database designer required to design the schema for an application on different DBMS. He required to learn all the DBMS User Interfaces. Where some of them are GUI (Graphic User Interface) based and others are CUI(Character User Interface). So this leads a main problem for the users to study every database separately to work on that sql queries.

LIMITATION OF EXISTING SYSTEM

The following are the limitation of existing system. They is as follows:

1) In the existing system, if the user wants to alter or update or edit a large database schema, it consumes a lot of time by the database designer to update that queries. Hence the operations like altering the table structure, Editing the table, Dropping columns, searching for a column name, searching for a data in the table is quite time taken by the end users.

2) Also in the existing systems to design a new database with set of tables ,the database user need to have knowledge on all the sql query syntax ,if he don’t have enough knowledge the database user cannot able to operate the database queries properly.

4. PROPOSED SYSTEM

In the proposed system we try to use the Automatic Database Schema Generation System, in which the queries can be generated automatically without the knowledge of writing sql queries separately for each and every individual sql queries. The proposed system has the following features.

ADVANTAGES OF THE PROPOSED SYSTEM

The following are the advantages of the proposed system. They are as follows:

1. The Automatic Database Schema Generation System provides a Common User Interface to interact with all the databases.
2. Here the user interface is Graphical User Interface.
3. This application is a Web based Application.
4. Being a web based application it doesn't require any client side installation.
5. Any number of users can interact with the system simultaneously.
6. Centralized database connectivity.
7. Using Session management the interaction more flexible and secure

5. MODULES

Implementation is the stage where the theoretical design is converted into programmatically manner. In this stage we will divide the application into a number of modules and then coded for deployment. We have implemented the proposed concept on Java programming language with JSE as the chosen language in order to show the performance this proposed Mixed Stegnography. The front end of the application takes JSP,HTML and CSS and as a Back-End Data base we took MY-SQL to show the performance of our proposed project. The application is divided mainly into following 5modules. They are as follows:

1. SQL Query Panel Module
2. Import Option Module
3. Export Option Module
4. Operation Module
5. Search Database Module

Now let us discuss about each and every module in detail as follows:

SQL Query Panel Module

Here we can type SQL queries and get the data from Database and we can write any SQL queries and directly connect this panel with the database which is already installed on the PC.

Import Option Module

We can import .sql files only into the Database.Here if we want to collect any pre-defined database tables and store immediately in

this current PC.We can able to import by using this import option.

Export Option Module

We can export sql Structure, sql Data or both based on some conditions into 3 types of files

a. .sql files
b. .html files
c. .cavy files(Excel Files) only

Operation Module

Here we can create table with constraints of alter the existing table like

A. Alter column
B. Rename column
C. Drop column
D. Empty column

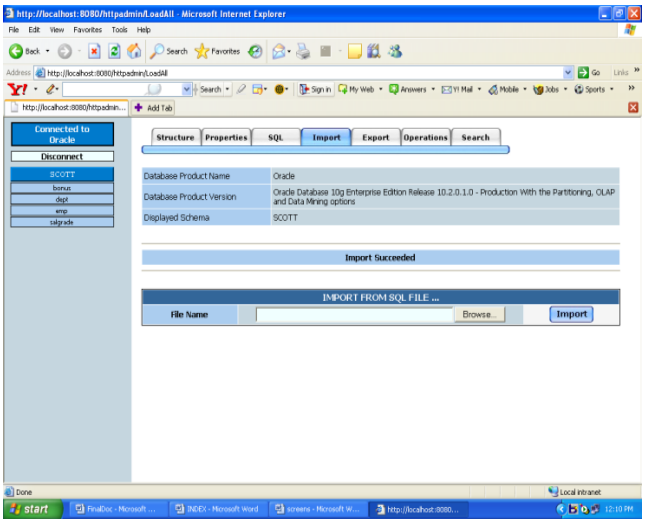
Search Database Module

Search based on keywords

1. Search looks for column names only
2. Search looks for data

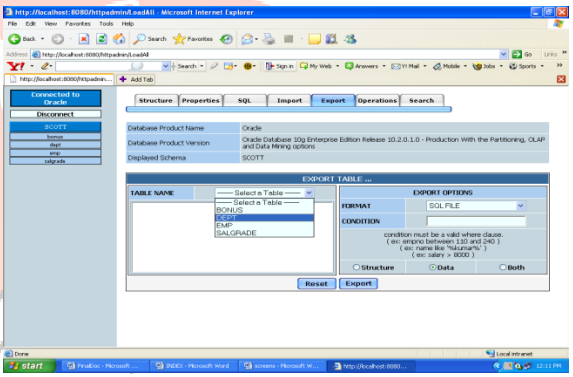
6. RESULTS

File is Imported Successfully



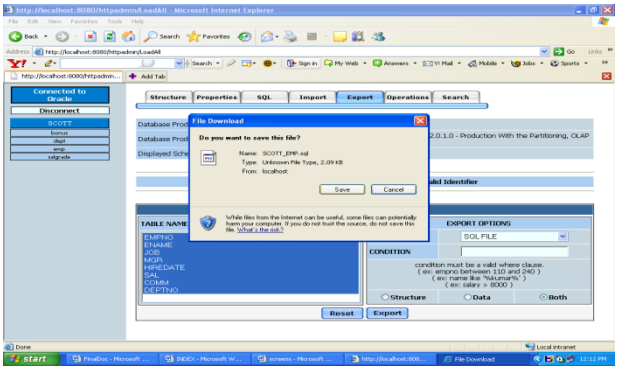
Represents the File is Imported

EXPORT A TABLE



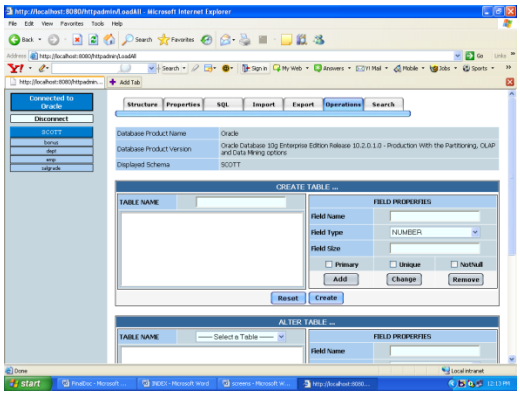
Represents the Export a Table

EXPORT IS SUCCESSFUL



Represents the User is Exported the Database

USER TRY TO CREATE TABLE USING GUI



Represents the Table Creation in GUI manner

7.CONCLUSION

The whole task has been created and conveyed according to the prerequisites expressed by the client, it is seen as bug free according to the testing principles that are executed. Any detail untraced mistakes will be amassed in the coming forms, which are intended to be created in not so distant future.

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