**DATABASE MANAGEMENT SYSTEMS**

1. **What is database?**

A database is a collection of [information](http://searchsqlserver.techtarget.com/definition/information) that is organized so that it can be easily accessed, managed and updated.

Data is organized into rows, columns and tables, and it is indexed to make it easier to find relevant information. Data gets updated, expanded and deleted as new information is added. Databases process workloads to create and update themselves, querying the data they contain and running applications against it.

1. **What is a table?**

A table is a named relational database data set that is organized by rows and columns. The relational table is a fundamental relational database concept because tables are the primary form of data storage.

1. **What is a column?**

In the context of relational databases, a column is a set of data values, all of a single type, in a table. Columns define the data in a table, while rows populate data into the table.

1. **What is a row?**

In a database, a row (sometimes called a [record](http://searchoracle.techtarget.com/definition/record)) is the set of [field](http://searchoracle.techtarget.com/definition/field)s within a [table](http://searchsoa.techtarget.com/definition/table) that are relevant to a specific [entity](http://whatis.techtarget.com/definition/entity). For example, in a table called *customer contact information*, a row would likely contain fields such as: *ID number*, *name*, *street address*, *city*, *telephone number* and so on.

Answering the questions from 11 using the below example.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Employee\_name** | **Emp\_id** | **Emp\_age** | **Emp\_dept** | **Emp\_sal** |
| **Alex** | **534** | **35** | **Finance** | **3,500** |
| **Brittany** | **555** | **27** | **Developing** | **5,000** |
| **Claire** | **548** | **33** | **Marketing** | **3,200** |
| **Donald** | **584** | **58** | **Developing** | **5,800** |
| **Elle** | **597** | **45** | **Testing** | **4,200** |

**11.1.2 Example of MAX ()**

**S**elect max(Emp\_sal) ---------------------------- output: 5,800

From Employee**;**

**11.2 Example of sum()**

Select sum(Emp\_sal) ---------------------------- output: 21,700

From employee;

11.3 Example of Avg()

Select avg(Emp\_sal)

From employee; -------------------------------- output: 4,340

12.Example of Group by

Select Emp\_name, Emp\_id, max( Emp\_sal)

From employee

Group by Emp\_name;

o/p

|  |  |  |
| --- | --- | --- |
| Emp\_name | Emp\_id | Emp\_sal |
| Alex | **534** | **3,500** |
| Brittany | **555** | **5,000** |
| Claire | **548** | **3,200** |
| Donald | **584** | **5,800** |
| Elle | **597** | **4,200** |

13. Example of Having

Select Emp-name, Emp\_id, avg(Emp\_sal)

From employee

Group by Emp\_sal

Having Emp\_age > 30;

14. Example of where

Select Emp\_name, Emp\_age

From employee

Where Emp\_sal >5000;

|  |  |
| --- | --- |
| Empl\_name | Emp\_age |
| Brittany | 5,000 |
| Donald | 5,800 |

15. Example of Primary key

The PRIMARY KEY constraint uniquely identifies each record in a database table.

Primary keys must contain UNIQUE values, and cannot contain NULL values.

A table can have only one primary key, which may consist of single or multiple fiel

CREATE TABLE Employee (  
    Emp\_ID int NOT NULL PRIMARY KEY,  
    Emp\_LastName varchar(255) NOT NULL,  
    Emp\_FirstName varchar(255),  
    Emp\_sal

Emp-Age int  
);

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Emp\_id | Emp\_LN | Emp\_FN | Emp\_Sal | Emp\_age |
| 124 | Karlapudi | Mounika | 8,000 | 24 |
| 127 | Mulagada | Mounik | 5,000 | 26 |
| 158 | Gadde | Bindhu | 9,000 | 24 |

Here Emp-id acts as a primary key with unique values (no repetitions)