Working with Database :-

A Database is an organized collection of information that can be easily accessed, managed and updated. Database consisting of logically related data/records.

Database Applications :- Banking, Airlines, telecommunications, auctions, sales, Universities, credit card transactions, finance etc...

→ Data base relies on software, Data Base Management Systems (DBMS). DBMS having many advantages over file system.

- ⊙ Reducing data redundancy and inconsitency.
- ⊙ Easy to access.
- ⊙ supports ACID (Automicity, Consistency, Isolation & Durability) Transaction management Propertrg.
- ⊙ providing enhanced security features.
- ⊙ solving the data integrity problems by providing constraints.
- ⊙ Provides Back-up, by storing data on disk.

→ Storing & retrieving data to and from database/tables can perform with the help of "queries", an English statements to access table data.

→ **working with SQL Statements :-** SQL is the most widely used query language to manipulate data in a database. SQL queries can be categorized as follows:

① **Data Definition Language (DDL) :-** Defines the structure of a database and its tables. ➡ create, droop, truncate, alter.

② **Data Manipulation Language (DML) :-** Allows you to alter and extract data from data from database tables ➡ add, delete, modify (update), retrieve.

③ **Data Control Languages (DCL) :-** Grant & Revoke i.e. priviliges.

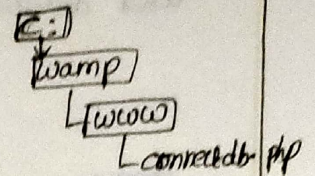④ **Transaction Control Languages (TCL) :-** Rollback and save point.

SQL command / statement :-

SQL statement	Action
Create Database database-name .	Database creation
Create table table-name (field₁, fieldtype (length), field₂, -----) .	table creation .
Insert into table (field₁, field₂ ---) values (value₁, value₂ ---)	Insert a new tuple.
Update table set field₁ = value, field₂ = value [where condition]	updates the values
Select field₁, field₂ from table-name [condition] Select * from table-name;	To retrieve .
Rename tablename to new_table name	To Rename .
Drop table table-name Drop database database-name	To Drop the table & database.
Alter table table-name drop colum colum-name Alter table table-Name add column colum-name datatype Alter table tN change oldcolum newcolum datatype; Alter table tablename modify column-name newDatatype; Alter table tablename drop colum-name;	To Alter table structure .

→ List of Datatypes in MYSQL are :

char()	float.
varchar()	Double (,)
Text.	Decimal (,)
Int	Date
BigInt	time
	Datetime . . .

Connecting a database :-

In PHP, you can connect with database by establishing connection to the mysql database server. PHP requires the following information :-
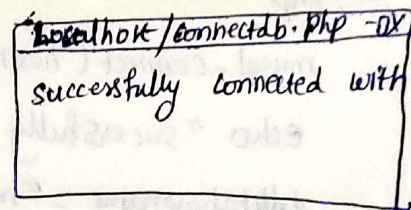- hostname
- user name of database
- password.

```
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         [connectdb. php]
```

connectdb · php

```php
<? php
    mysql - connect ("hostname", "username", "password") or die(mysql_error());
    echo  " successfully connected with database server";
?>
```

```
localhost / connectdb. Php -OX
successfully connected with
```

→ Mysql functions :-

* mysql_connect ("hostname", "username", "password"); — to connect with mysql server.

*. mysql_select_db ("databasename"); — to select a particular database from the mysql server databases.

*. mysql_query ("query"); — to process mysql comments.. we have to pass our query as a parameter. That query can be any. query/command like : creating a database/table.
                          : Any DDL command.
                          : DML, DCL, TCL command.

*. mysql_close(); — to close or disconnect the server (database) connection.

* mysql_fetch_array(); — The retrieved data of select command can read with this function.

* die(mysql_error()); — Displays/returns the corresponding error message. If any error/syntax mistake in the mysql queries.

(iii). **Selecting a database :-** Its a selection of working environment the corresponding database to which we will work from the user databases.

> mysql - select_db ("database name");

Steps :-

1. connect with database server
2. select the database.
3. close the connection

dbselect.php

```php
<?php
    mysql-connect ("hostname", "username", "password") or die(mysql-error
    echo "sucessfully, connected to the db server";
    $databasename = "mydb";
    mysql-select_db (" $databasename);
    echo "<br> database $databasename is selected";
    mysql - close();
?>
```

(ii) **Creating a database :-** we can create the database with the commar
" create database databasename";

dbcreate.php

```php
<?php
    mysql-connect (" hostname", "username", "password") or die(mysql-er
    echo " connected with db server<br>";
    $query = "create database mydb";
    mysql-query ($query) or die (mysql-error());
    echo "database created";
    mysql - error();
?>
```