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Lt. Shree Chimanbhai Shukla

BCA/ BSCIT SEM - 2
Web Programming

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Unit 3: Introduction of SQL

Working with MySQL using PhpMyAdmin

Features of MYSQL:-

❖ Free Ware:-
  - Like PHP the database MYSQL is also a free ware product, which means there is no requirement to purchase the software of MYSQL.
  - It can be downloaded without any cost.

❖ Easy to Use:-
  - There are many heavy database engines like oracle, Microsoft sql server, etc which use sql(Structure Query Language).
  - The person who knows the oracle or any other database server language can easily learn MYSQL, as the language it uses is SQL.

❖ Speed:-
  - The query execution in other heavy database server takes more timing than MYSQL database.

❖ CrossPlatform Interoperability:-
  - Crossplatform interoperability means operating system independent and machine in dependent.
  - PHP with database MYSQL can work on any OS stating from low level like UNIX to high level like vista.

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SQL DML Statement (Insert, Update, Select, Delete) Command

- ❖ DML STATEMENT
  - ❶ DML is short name of **Data Manipulation Language** which deals with data manipulation and includes most common SQL statements such SELECT, INSERT, UPDATE, DELETE, etc., and it is used to store, modify, retrieve, delete and update data in a database.
  - ❶ SELECT - retrieve data from a database
  - ❶ INSERT - insert data into a table
  - ❶ UPDATE - updates existing data within a table
  - ❶ DELETE - Delete all records from a database table

1. **Insert :**
   The insert statement is used to add new row to a table.

   INSERT INTO <table name> VALUES (<value 1>, ... <value n>);

   Example:

   INSERT INTO STUDENT VALUES (1001,'Ram');

   Note: The inserted values must match the table structure exactly in the number of attributes and the data type of each attribute. Character type values are always enclosed in single quotes; number values are never in quotes; date values are often (but not always) in the format 'yyyy-mm-dd' (for example, '2006-11- 30').

2. **UPDATE :**
   The update statement is used to change values that are already in a table.

   UPDATE <table name> SET <attribute> = <expression> WHERE <condition>;

   Example:

   UPDATE STUDENT SET Name = 'Amar' WHERE StudID=1001;

   The update expression can be a constant, any computed value, or even the result of a SELECT statement that returns a single row and a single column.

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DELETE :
The delete statement deletes row(s) from a table.

DELETE FROM <table name> WHERE <condition>;

Example:

DELETE FROM STUDENT WHERE StudID=1001;

If the WHERE clause is omitted, then every row of the table is deleted that matches with the specified condition.

3. **SELECT :**
The SELECT statement is used to form queries for extracting information out of the database.

SELECT <attribute>, ….., <attribute n> FROM <table name>;

Example:

SELECT StudID, Name FROM STUDENT;

Sr No.	Question	Answer
1.	DML is short name of ?	Data Manipulation Language
2.	The statement is used to add new row to a table.	Insert
3.	The_____statement is used to change values that are already in a table.	Update
4.	The_____ statement deletes row(s) from a table.	Delete
5.	The_____ statement is used to form queries for extracting information out of the database.	SELECT

PHP-MySQL Connectivity

❖ **PhpMyAdmin**

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- PhpMyAdmin is one of the most popular applications for MySQL databases management.
- It is a free tool written in PHP. Through this software you can create, alter, drop, delete, import and export MySQL database tables.
- You can run MySQL queries, optimize, repair and check tables, change collation and execute other database management commands.
- **The main PhpMyAdmin features are as follows:**
  - User-friendly web interface.
  - Support for most MySQL functions like browse, drop, create, copy and alter databases, tables, views, fields and indexes, execute MySQL queries, manage stored procedures and functions.
  - Import data from CSV and SQL files.
  - Export data to various formats: CSV, SQL, XML, PDF, ISO/IEC 26300 – OpenDocument Text and Spreadsheet, Word, Excel, LATEX and others.
  - Searching globally in a database.

PHP-MySQL Functions

- ❖ **Mysql_connect:** open a connection to a MYSQLi Server.
  - Syntax:- mysqli_connect(*host, username, password, dbname, port, socket*)
- ❖ **Parameter Values**

Parameter	Description
host	Optional. Specifies a host name or an IP address
username	Optional. Specifies the MySQL username
password	Optional. Specifies the MySQL password
dbname	Optional. Specifies the default database to be used
port	Optional. Specifies the port number to attempt to connect to the MySQL server

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socket	Optional. Specifies the socket or named pipe to be used

- Example:-
  ```php
  <?php
  $con                                                        =
  mysqli_connect("localhost","my_user","my_password","my_db");
  //                          Check                          connection
  if (mysqli_connect_errno())
  {
    echo "Failed to connect to MySQL: " . mysqli_connect_error();
    exit();
  }
  ?>
  ```

❖ **Mysqli_close:-** close MYSQLi connection.
  Syntax:- mysqli_close(*connection*)
❖ **Parameter Values**

Parameter	Description
connection	Required. Specifies the MySQL connection to close

- Example:-
  ```php
  <?php
  $con=mysqli_connect("localhost","my_user","my_password","my_db");
  if (mysqli_connect_errno())
  {
    echo "Failed to connect to MySQL: " . mysqli_connect_error();
    exit;
  }

  // ....some PHP code...
  ```

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```
mysqli_close($con);
?>
```

❖ **mysqli error()**

  • The error / mysqli_error() function returns the last error description for the most recent function call, if any.
  • Syntax:-mysqli_error(*connection*)

❖ **Parameter Values**

Parameter	Description
connection	Required. Specifies the MySQL connection to use

❖ **mysqli errno() :-** The errno / mysqli_errno() function returns the last error code for the most recent function call, if any.

Parameter Values

Parameter	Description
connection	Required. Specifies the MySQL connection to use

  • Example:-

```php
<?php
$con=mysqli_connect("localhost","my_user","my_password","my_db");

if (mysqli_connect_errno())                                         {
 echo "Failed to connect to MySQL: " . mysqli_connect_error();
 exit();
}

//       Perform      a      query,      check      for      error
if (!mysqli_query($con,"INSERT INTO Persons (FirstName) VALUES
('Glenn')"))                                                       {
```

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```
    echo("Errorcode:                    " .                mysqli_errno($con));
   }
  mysqli_close($con);
  ?>
```

❖ **Mysqli_select_db:-**The select_db() / mysqli_select_db() function is used to change the default database for the connection.
   • Syntax:- mysqli_select_db(*connection, name*)

   • **Parameter Values**

Parameter	Description
connection	Required. Specifies the MySQL connection to use
name	Required. Specifies the database name

❖ **Mysqli_query:-**The query() / mysqli_query() function performs a query against a database.
   • Syntax;-mysqli_query(*connection, query, resultmode*)
   • Parameters:

Parameter	Description
connection	Required. Specifies the MySQL connection to use
query	Required. Specifies the SQL query string
resultmode	Optional. A constant. Can be one of the following: • MYSQLI_USE_RESULT (Use this to retrieve large amount of data) • MYSQLI_STORE_RESULT (This is default)

❖ **mysqli_num_rows** -- returns the number of rows in a result set.
   • syntax:-mysqli_num_rows(*result*)*;*
   • **Parameter Values**

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Parameter	Description
result	Required. Specifies a result set identifier returned by mysqli_query(), mysqli_store_result() or mysqli_use_result()

- this command is only valid for SELECT statements. To retrieve the number of rows affected by a INSERT, UPDATE, or DELETE query, use mysql_affected_rows().
- Return values:- the number of rows in a result set on success, or FALSE on failure.

❖ **Mysqli_affected_rows:-**The affected_rows / mysqli_affected_rows() function returns the number of affected rows in the previous SELECT, INSERT, UPDATE, REPLACE, or DELETE query.
- Syntax:- int mysqli_affected_rows (resource link_identifier)
- Parameter:-
- Link_identifier:- the mysql connection. If the link identifier is not specified, the last link opened by mysql_connect() is assumed.
- Return values:- Returns the number of affected rows on success, and -1 if the last query failed.
- Example:-

```php
<?php
$con                                                        =
mysqli_connect("localhost","my_user","my_password","my_db");
if (mysqli_connect_errno())                                 {
 echo "Failed to connect to MySQL: " . mysqli_connect_error();
 exit();
}
// Perform queries        and       print     out        affected     rows
mysqli_query($con, "SELECT        *        FROM        Persons");
echo "Affected           rows:        " .        mysqli_affected_rows($con);
```

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```
mysqli_query($con, "DELETE FROM Persons WHERE Age>32");
echo "Affected        rows:       " .      mysqli_affected_rows($con);
mysqli_close($con);
?>
```

❖ **Mysqli_fetch_row:-** -- The fetch_row() / mysqli_fetch_row() function fetches one row from a result-set and returns it as an enumerated array.

- Syntax:- array mysqli_fetch_row (resource result)
- Returns an array that corresponds to the fetched row and moves the internal data pointer ahead.
- Result:- the result resource that is being evaluated. This result comes from a call to mysql_query().
- Return values:-Returns an array that corresponds to the fetched row, or FALSE if there are no more rows.
- mysqil_fetch_row () fetches one row of data from the result associated with the specified result identifier. The row is returned as an array. Each result column is stored in an array offset, starting at offset 0.
- Subsequent call to mysqli_fetch_row () would return the next row in the result set, or FALSE if there are no more rows.
- Example:-

```
<?php
$con =
mysqli_connect("localhost","my_user","my_password","my_db")
;

if (mysqli_connect_errno()) {
  echo "Failed to connect to MySQL: " . mysqli_connect_error();
  exit();
}

$sql = "SELECT Lastname, Age FROM Persons ORDER BY
Lastname";
```

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```
if ($result = mysqli_query($con, $sql)) {
  // Fetch one and one row
  while ($row = mysqli_fetch_row($result)) {
   printf ("%s (%s)\n", $row[0], $row[1]);
  }
  mysqli_free_result($result);
}

mysqli_close($con);
?>
```

- ❖ **mysqli_fetch_array** -- Fetch a result row as an associative array, a numeric array, or both.
  - Syntax:- array mysql_fetch_array (resource result [, int result_type])
  - Parameters:-
  - Result:- the result resource that is being evaluated. This result comes from a call to mysql_query().
  - Result_type:- the type of array that is to be fetched. It's a constant and can take the following values: MYSQL_NUM.
  - Return values:-
  - Returns an array that corresponds to the fetched row, or FALSE if there are no more rows.
  - MYSQL_NUM:-when this type is used in the function, then the columns are strictly referred using the index value.
  - MYSQL_ASSOC:-when this type is used in the function then the columns are strictly referred using the name of the column. This column names are case sensitive.
  - MYSQL_BOTH:-when this type is used in the function then the columns are referred using either the index value or the name of the column. Both can be used together.

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- Example:-

```php
<?php
$con=mysqli_connect("localhost","my_user","my_password","my_db");

if (mysqli_connect_errno()) {
  echo "Failed to connect to MySQL: " . mysqli_connect_error();
  exit();
}

$sql = "SELECT Lastname, Age FROM Persons ORDER BY Lastname";
$result = mysqli_query($con,$sql);

// Numeric array
$row = mysqli_fetch_array($result, MYSQLI_NUM);
printf ("%s (%s)\n", $row[0], $row[1]);

// Associative array
$row = mysqli_fetch_array($result, MYSQLI_ASSOC);
printf ("%s (%s)\n", $row["Lastname"], $row["Age"]);

// Free result set
mysqli_free_result($result);

mysqli_close($con);
?>
```

❖ **Mysqli_fetch_field():-** returns the next field (column) in the result-set, as an object.

- Syntax:- mysqli_fetch_field(*result*)
- parameters:-

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- Result:- the result resource that is being evaluated. This result comes from a call to mysql_query().
- return values:-

Return Value:	Returns an object containing field definition information. FALSE if no info is available. The object has the following properties: • name - name of the column • orgname - original column name (if an alias is specified) • table - name of table • orgtable - original table name (if an alias is specified) • def - reserved for default values, currently always "" • db - database (new in PHP 5.3.6) • catalog - catalog name, always "def" (since PHP 5.3.6) • max_length - maximum width of field • length - width of field as specified in table definition • charsetnr - character set number for the field • flags - bit-flags for the field • type - data type used for the field • decimals - for integer fields; the number of decimals used

- ❖ **Mysqli_fetch_assoc:-** function fetches a result row as an associative array.
  - Syntax:-mysqli_fetch_assoc(*result*)
  - parameters:
  - Result:- the result resource that is being evaluated.

- ❖ **mysqli_fetch_object-** Fetch a result row as an object
  - Description:-object mysqli_fetch_object(*result*, *classname*, *params*)
  - Returns an object with properties that correspond to the fetched row, or FALSE if there are no more rows.

  - Parameter Values

Parameter	Description

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result	Required. Specifies a result set identifier returned by mysqli_query(), mysqli_store_result() or mysqli_use_result()
classname	Optional. Specifies the name of the class to instantiate, set the properties of, and return
params	Optional. Specifies an array of parameters to pass to the constructor for *classname* objects

- mysql_fetch_object() is similar to mysql_fetch_array(), with one difference - an object is returned, instead of an array. Indirectly, that means that you can only access the data by the field names, and not by their offsets (numbers are illegal property names).
- ❖ **mysqli_insert_id()--** Get the ID generated from the previous INSERT operation
  - Description:-int mysqli_insert_id(*connection*)
  - mysql_insert_id() returns the ID generated for an AUTO_INCREMENT column by the previous INSERT query using the given link_identifier. If link_identifier isn't specified, the last opened link is assumed.
  - mysql_insert_id() returns 0 if the previous query does not generate an AUTO_INCREMENT value. If you need to save the value for later, be sure to call mysql_insert_id() immediately after the query that generates the value.
- ❖ **mysqli_data_seek** -- Move internal result pointer
  - Description:-bool mysqli_data_seek(*result,offset*)*;*
  - Returns TRUE on success or FALSE on failure.
  - mysql_data_seek() moves the internal row pointer of the MySQL result associated with the specified result identifier to point to the specified row number. The next call to mysql_fetch_row() would return that row.

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Sr No.	Question	Answer
1.	is used toopen a connection to a MYSQL Server.	**Mysqli_connect**
2.	_____ is used toclose MYSQL connection.	**Mysqli_close**
3.	_____ is used to Send a MySQL query.	**Mysqli_query**
4.	_____ is used to Get number of rows in result.	**mysqli_num_rows**
5.	is used to Get number of affected rows in previous MySQL operation.	**Mysqli_affected_rows**
6.	is used to Get a result row as an enumerated array.	**Mysqli_fetch_row**
7.	is used to Fetch a result row as an associative array, a numeric array, or both.	**mysqli_fetch_array**
8.	is used to returns the text of the error message from previous MYSQL operation.	**Mysqli_error**
9.	_____ is used to Fetch a result row as an object.	**mysqli_fetch_object**
10.	is used to Get the ID generated from the previous INSERT operation.	**mysqli_insert_id()**
11.	_____ is used to Move internal result pointer.	**mysqli_data_seek**