Republic of Rwanda
Ministry of Education

RTB | RWANDA TVET BOARD

TVET LEVEL IV

SOFTWARE DEVELOPMENT

WEBSITE AND DATABASE INTEGRATION

TRAINEE MANUAL

RTB | RWANDA TVET BOARD

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

MODULE

WEBSITE AND DATABASE INTEGRATION

UNIT 1: Connect to the Database

UNIT 2: Implement Crud Operations

UNIT 3: Create Reports to Present Summary Information

UNIT 1: CONNECT TO THE DATABASE

Self-Assessment: Unit 1

1. Look at the illustration. What is happening? What do you think this unit will be about? What topics might be covered?

2. Fill in the self assessment below.

There are no rights or wrong ways to answer this survey. It is for your own use during this course. Think about yourself: do you think you can do this? How well? Read the statements across the top. Put a check in column that best represents your situation. At the end of this unit, we'll take this survey again.

My experience Knowledge, skills and attitudes	I don't have any experience doing this.	I know a little about this.	I have some experience doing this.	I have a lot of experience with this.	I am confident in my ability to do this.
Identify the importance to integrate website with database					
Identify strategies to integrate website with database					
Compare web application architecture					
Identify Software specifications					
Identify connection tools and platforms.					
select the best DBMS editions middleware, script language					
Make a database structure					

My experience Knowledge, skills and attitudes	I don't have any experience doing this.	I know a little about this.	I have some experience doing this.	I have a lot of experience with this.	I am confident in my ability to do this.
Set up Environment					
Connect a database to web					

Topic 1.1: Reviewing of importance and strategies of database and website integration

Points to Remember

- Always be updated on web server version
- Always remember web server that works on Cross Platform

Formative Assessment

1. Match the followings:

a) Presentation Layer	1.Importance to integrate website with database
b) Protocols	
c) Browser requests	
d) Browser requests	
e) Logic layer	2.Strategies to integrate website with database
f) Data access layer	
g) Web server processes	
h) Web server responses	

2. Fill the blank space of the following questions:

a. **.....**It is used to present data to the application layer (layer 7) in an accurate, well-defined and standardized format.

b. ……The business logic provides data required by the presentation layer.

c. **……**A data access layer (DAL) in computer software, is a layer of a computer program which provides simplified access to data stored in persistent storage of some kind, such as an entity-relational database.

d. **……**Defines rules and conventions for communication between network devices. Network protocols include mechanisms for devices to identify and make connections with each other, as well as formatting rules that specify how data is packaged into sent and received messages.

e. **……**sends the Web address to a DNS server that translates it to the respective IP address. This is sent back to the browser (client).

f. **……**The primary function of a web server is to store, process and deliver web pages to clients.

g. **……**response status codes indicate whether a specific HTTP request has been successfully completed.

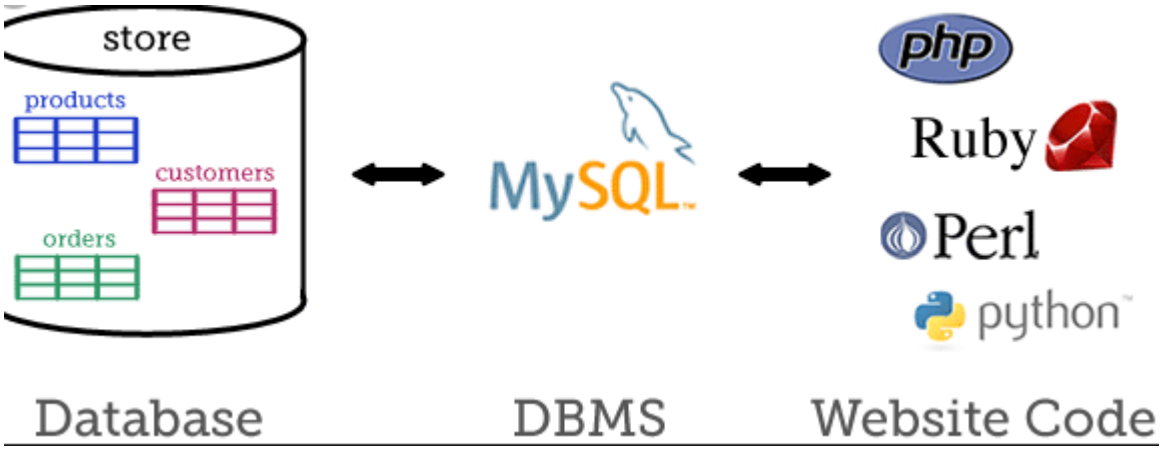
TOPIC 1.2: SELECTION OF CONNECTION TOOLS AND PLATFORMS TO APPLICATION SPECIFICATIONS.

Key Competencies:

Knowledge	Skills	Attitudes
1. list out software Specifications	**1**. Describe Software specifications	1. Be Critical thinker
2.List connection tools and Platforms	**2.** Identify connection tools and platforms	2.Be Detail-oriented
3. Explain DBMS editions, Middleware and Scripting Language	**3.** select DBMS editions middleware and script language	3. Self-motivated

Getting Started: What do we know and where are we going?

Task: Form small groups and observe the picture below and answer the following questions



1. What does the picture represents to you?
2. What is the relationship between the picture and the topic?

Activity 1: Problem Solving

Ishema ltd is a Company that provides electronic services. Ishema is facing a problem of invoice track. The company wants to digitalize their invoicing system in other to get rid of the current problem.

In group of four trainees, you are asked to do the following tasks:

Task:

1. Describe the software specifications which will be needed to digitalize their invoice
2. List at list two DBMS which can be used to resolve this problem.

Key Facts 1.2

Software specifications

- ✓ **DBMSs (Database Management Systems) to be used**: A database management system (**DBMS**) is a collection of programs that enables you to store, modify, and extract information from a database. There are many different types of database management systems, ranging from small systems that run on personal computers to huge systems that run on mainframes

Examples of DBMS: include MySQL, PostgreSQL, Microsoft Access, SQL Server, FileMaker, Oracle, RDBMS, dBASE, Clipper, and FoxPro.

Mysql Specifications as DBMS to be used:

- ❖ Relational Database System: Like almost all other database systems on the market, MySQL is a relational database system.
- ❖ Client/Server Architecture: MySQL is a client/server system.
- ❖ SQL compatibility: MySQL supports as its database language -- as its name suggests – SQL (Structured Query Language).

- ✓ **Editors:** refers to any program capable of editing files. ... The term editor is commonly used to refer to a text editor, which is a software program that allows users to create or manipulate plain text computer files. They are often used in the field of computer programming

  Some editors:

  - **Windows Operating editors(** Notepad,Wordpad,Edit Plus, Sublime etc**)**
  - **Linux Operating System(**vi, emacs, Jed and pico etc …**)**
  - **Mac Os(**Brackets,BBEdit 12,UltraEdit,Coda 2,Visual Studio Code,Textastic,TextMate**)**

- ✓ **Browsers:** is a software application that lets you visit web pages on the Internet.

  Examples of Browsers

  - Google Chrome,
  - Firefox,
  - Safari,
  - Internet Explorer
  - Opera mini

of connection tools and platforms

- ✓ **Server-side script language:** is a technique used in web development which involves employing scripts on a web server which produce a response customized for each user's (client's) request to the website. Server-side scripting is often used to provide a customized interface for the user

  Popular Server-side scripting language

  - ❖ PHP (Hypertext Preprocessor): is a server side scripting language. That is used to develop Static websites or Dynamic websites or Web applications. PHP is by far the most used *server-side scripting language*
  - ❖ ASP.NET(Active Server Page): is an open source web framework, created by Microsoft, for building modern web apps and services that run on Mac OS, Linux, Windows, and Docker
  - ❖ Node.js: is a platform built on Chrome's JavaScript runtime for easily building fast and scalable network applications
  - ❖ Java: is a widely used programming language expressly designed for use in the distributed environment of the internet. Java can be used to create complete applications that may run on a single computer or be distributed among servers and clients in a network
  - ❖ Ruby: It is used in a wide range of fields, but is best known as a language for Web Applications, because of the Ruby on Rails framework
  - ❖ Perl: is a general-purpose programming language originally developed for text manipulation and now used for a wide range of tasks including system administration, web development, network programming, GUI development, and more.
  - ❖ Python: is a general purpose and high level programming language. You can use Python for developing desktop GUI applications, websites and web applications

- ✓ **Middleware:** is software which is in the middle of an operating system and the applications working on it. ... The term is considered vague since it is used to link two separate applications together. "Middleware is sometimes called plumbing because it connects two sides of an application and passes data between them"

  Some middleware

  - ❖ database middleware: allows data contained in one **database** to be accessed through another. Like ODBC,JDBC etc…
  - ❖ application server middleware: Web server(Apache, Microsoft's Internet Information Server (IIS))
  - ❖ message-oriented middleware
  - ❖ web middleware
  - ❖ transaction-processing monitors

Activity 2 : Guided Practice

A TVET school wants to digitalize their school, but first of all, they want to use some tools which will be needed in this process.

In group of four trainees, guided by the trainer, ask trainees to do the following tasks:

1. Identify software specification s which will be needed?

2. Identify necessary connections tools to be used

Activity 3: Application

A company xyz which sales cars wants to digitalize its activities, and they don't know anything about technology. You are asked to do the following tasks:

Task:

1. Download Apache ,browsers and editors
2. Describe Software specifications which will be used by XYZ Company.
3. Identify connection tools according to platform specifications

Points to Remember

- Better use Xampp server as Cross Platforms according to Operating System.

- Better use Xampp server as Cross Platforms according to Operating System.

Formative Assessment

A. Fills the blank space of the following questions

1. ……..is a server side scripting language. That is used to develop Static websites or Dynamic websites or Web applications.

   2. ……..is an open source web framework, created by Microsoft, for building modern web apps and services that run on Mac OS, Linux, Windows, and Docker

   4. ……..is a platform built on Chrome's JavaScript runtime for easily building fast and scalable network applications

5. ……is a widely used programming language expressly designed for use in the distributed environment of the internet. Java can be used to create complete applications that may run on a single computer or be distributed among servers and clients in a network
6. ……It is used in a wide range of fields, but is best known as a language for Web Applications.

7. ……. is a general-purpose programming language originally developed for text manipulation and now used for a wide range of tasks including system administration, web development, network programming, GUI development, and more.

8. ……..is a general purpose and high level programming language. You can use Python for developing desktop GUI applications, websites and web applications.

B. what is browser, and give at least four browsers which are being used by users?

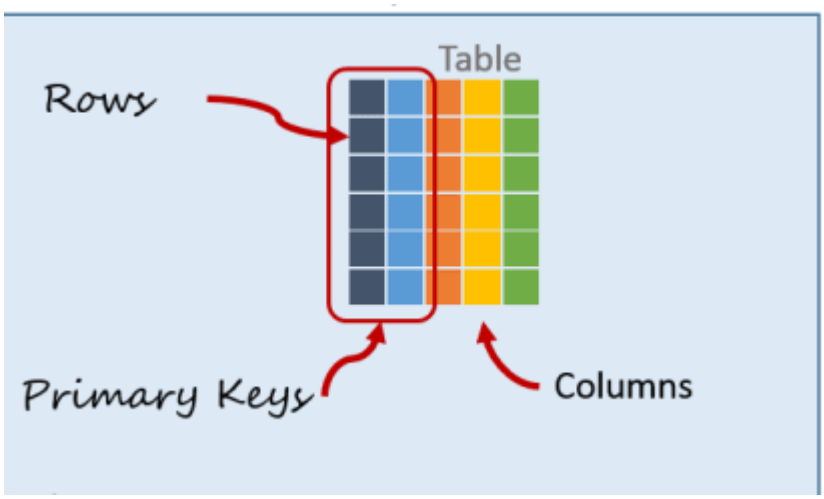
Topic 1.3: Connection of database to a web application using server-side script languages

Key Competencies:

Knowledge	Skills	Attitudes
1. Define database structure	1. Make a database structure	1. Critical thinking
2. Describe Environment structure	2.Set up Environment	2. Attentive
3.Describe Database Connection Parameters	3.Connect a database	3.Commitment

Getting Started: What do we know and where are we going?

Task:



1. Looking to the picture above, what does it represent to you?

2. What is the relationship between the picture and the topic?

Activity 1: Problem Solving

WASAC has a problem of not having the database of their clients, that's why they have approached us to help them resolve this problem.

In group of four people, you are asked to respond to the question asked below.

Task:

1. Make database structure of managing WASAC's clients?

2. Set up environment structure for managing WASAC's clients?

3. Connect the database of WASAC with the Web application?

Key Facts 1.3

Database structure

The *database structure* is the collection of record type and field type definitions that comprise. Changing *database* definitions does not invalidate existing data.

- ✓ Tables: in relational databases, and flat file databases, a table is a set of data elements (values) using a model of vertical columns (identifiable by name) and horizontal rows, the cell being the unit where a row and column intersect.
  A table has a specified number of columns, but can have any number of rows
- ✓ Attributes and their data types: an attribute is a characteristic. In a database management system (DBMS), an attribute refers to a database component, such as a table. It also may refer to a database field. Attributes describe the instances in the row of a database

  Main data types

  - **String:** Data that contains a combination of letters, numbers, and special characters. String data types are listed below:
    - CHARACTER: Fixed-length character strings. The common short name for this data type is CHAR
    - VARCHAR: Varying-length character strings
    - BINARY: A sequence of bytes that is not associated with a code page
  - **Numeric:** Data that contains digits. Numeric data types are listed below:
    - SMALLINT: for small integers.
    - INTEGER: for large integers
    - BIGINT: for bigger values.
    - DECIMAL(*p,s*) or NUMERIC(*p,s*), where *p* is precision and *s* is scale: for packed decimal numbers with precision *p* and scale *s*. *Precision* is the total number of digits, and *scale* is the number of digits to the right of the decimal point.
    - DECFLOAT: for decimal floating-point numbers.

- REAL: for single-precision floating-point numbers.
- DOUBLE: for double-precision floating-point numbers.

- **Date time:** Data values that represent dates, times, or timestamps. Date time data types are listed below:
  - DATE: Dates with a three-part value that represents a year, month, and day.
  - TIME: Times with a three-part value that represents a time of day in hours, minutes, and seconds.
  - TIMESTAMP: Timestamps with a seven-part value that represents a date and time by year, month, day, hour, minute, second, and microsecond.

✓ Attributes' constraints: constraints are used to specify rules for data in a table. Constraints are used to limit the type of data that can go into a table. This ensures the accuracy and reliability of the data in the table. If there is any violation between the constraint and the data action, the action is aborted.

The following constraints are commonly used in SQL:

- **NOT NULL** - Ensures that a column cannot have a NULL value
- **UNIQUE** - Ensures that all values in a column are different
- **PRIMARY KEY** - A combination of a NOT NULL and UNIQUE. Uniquely identifies each row in a table
- **FOREIGN KEY** - Uniquely identifies a row/record in another table
- **CHECK** - Ensures that all values in a column satisfies a specific condition
- **DEFAULT** - Sets a default value for a column when no value is specified
- **INDEX** - Used to create and retrieve data from the database very quickly

✓ Tables' relationships

- **One-to-one:** Both tables can have only one record on either side of the relationship. Each primary key value relates to only one (or no) record in the related table
- **One-to-many:** The primary key table contains only one record that relates to none, one, or many records in the related table.
- **Many-to-many:** Each record in both tables can relate to any number of records (or no records) in the other table

1. **Environment setup**

- install a web server(wamp,or Xampp)
- install PHP
- install a database, such as MySQL

Steps to Install Xampp for windows

1. Open the **Apache Friends** website.
2. Click the **XAMPP for Windows** button to save the file on your desktop
3. Double-click the downloaded file to launch the installer.
4. Click the **OK** button.
5. Click the **Next** button.
6. XAMPP offers a variety of components that you can install, such as MySQL, phpMyAdmin, PHP, Apache, and more. For the most part, you will be using most of these components, as such it's recommended to leave the default options.
7. Click the **Next** button.
8. Use the default install location, or choose another folder to install the software in the "Select a folder" field.
9. Click the **Next** button.
10. Clear the **Learn more about Bitnami for XAMPP** option.
11. Click the **Next** button.
12. Click the **Allow access** button to allow the app through the firewall (if applicable).
13. Click the **Finish** button.

2. **Description of connection string with authentication parameters**

Before you can access data in a database, you must create a connection to the database.

In PHP, this is done with the mysqli_connect () function.

Syntax

```
mysqli_connect(servername,username,password);
```

Parameter	**Description**
Servername	Optional. Specifies the server to connect to. Default value is "localhost:3306"
Username	Optional. Specifies the username to log in with. Default value is the name of the user that owns the server process

Password	Optional. Specifies the password to log in with. Default is ""

Note: There are more available parameters, but the ones listed above are the most important.

Code to create a connection

```
<?php
$servername = "localhost";
$username = "root";
$password = "";

// Create connection
$conn = mysqli_connect($servername, $username, $password);

// Check connection
if (!$conn) {
   die("Connection failed: " . mysqli_connect_error());
}
echo "Connected successfully";
?>
```

Note on the object-oriented example above:

$connect_error was broken until PHP 5.2.9 and 5.3.0. If you need to ensure compatibility with PHP versions prior to 5.2.9 and 5.3.0, use the following code instead:

```
// Check connection
if (mysqli_connect_error()) {
   die("Database connection failed: " . mysqli_connect_error());
}
```

Selecting database name

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

// ...some PHP code for database "my_db"...

// Change database to "test"
mysqli_select_db($con,"test");
```

```
// ...some PHP code for database "test"...

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

Close the Connection

The connection will be closed automatically when the script ends. To close the connection before, use the following:

```
mysqli_close($conn);
```

7. Closing Database Connection

Its simplest function **mysql_close** PHP provides to close a database connection. This function takes connection resource returned by mysql_connect function. It returns TRUE on success or FALSE on failure

Activity 2: Guided Practice

WASAC is in process of connecting their database with a web application, looking to the picture below, in group of four trainees, guided by trainer, you are asked to do following tasks:

Task:

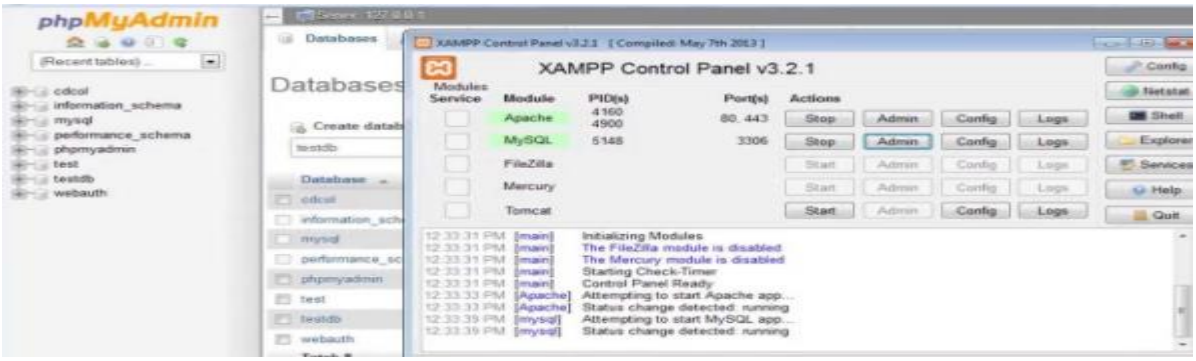
1. Make a database structure WASAC's clients?

2. List the steps to install xamp server environment which will be used in this process

2. Install database server (xampp) and browser to be used in this process.

Activity 3: Application

WASAC is in process of connecting their database with a web application, looking to the picture below, everyone is asked to do the following tasks:



Task:

1. Make a database structure for this scenario

2. Describe the steps to install Xampp environment in this process

2. Write the codes to create a connection to the server and select the database.

Points to Remember :

- Always start Apache for MySQL to work correctly.

Formative Assessment

1. What is relationship table in database?
2. List the steps to install Xampp for windows
3. Match the following:

A. Primary Key	1. Ensures that a column cannot have a NULL value
B. Not Null	2. A combination of a NOT NULL and UNIQUE. Uniquely identifies each row in a table.
C. Foreign Key	3. Both tables can have only one record on either side of the relationship
D. Varchar	4. Uniquely identifies a row/record in another table
E. One-to-one	5. Varying-length character strings

F. String	6. Data that contains a combination of letters, numbers, and special characters
G. Server name	7. Specifies the username to log in with
H. Username	8. Specifies the server to connect to. Default value is "localhost:3306"
I. REAL	9. Each record in both tables can relate to any number of records (or no records) in the other table
J. Many-to-many	10. for single-precision floating-point numbers

Self Reflection

Areas of strength	Areas for improvement	Actions to be taken to improve
1. **2.**	**1.** **2.**	**1.** **2.**

UNIT 2: IMPLEMENT CRUD OPERATIONS

Illustration of Learning Unit

Description: Draw the figure that indicate someone using Computer browser a web for creating Database, Reading the data from database, update data and Delete the data from Database table based on the figure indicated.

Picture Brief

From left to the right, the first figure describes the web browser, and the middle commands (Create, Read, Update and Delete) describe the commands which can be done on data into our database, and the last one is the database.

Topics

2.1 Insertion of data into database structured query language (SQL)
2.2 display of data from database in the most appropriate
2.3 Updating of data input
2.4 Deletion data from database.

Unit Summary: This unit describes skills, knowledge and attitudes required to implement CRUD (Create, retrieve, update and delete) in Database using Structured Query Language.

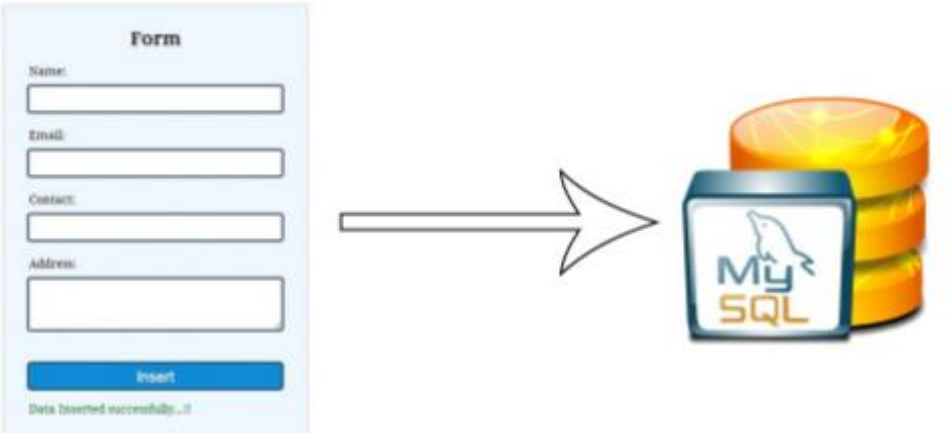
My experience Knowledge, skills and attitudes	I don't have any experience doing this.	I know a little about this.	I have some experience doing this.	I have a lot of experience with this.	I am confident in my ability to do this.
Create Database table					
Add data into Database table					
Differentiate SQL clause					
Use functions and Operators					
Retrieve data from database					
Identify process update					
Update data from database table					
Apply data updates to database					
Identify process delete					
Delete data from database table					

Topic 2.1: Insertion of data into database structured query language (SQL)

Key Competencies:

Knowledge	Skills	Attitudes
1. Describe Database table	1.Create database table	**3.** Be Critical thinker
4. Describe SQL queries	2.Use SQL queries	**5.** Be Detail-oriented
3. Describe insertion queries	3.Insert data into Database table	3. Self-motivated

Getting Started: What do we know and where are we going?



Task:

1. What does the picture above represents to you?
2. What is the relationship between the picture and the Topic?

Activity 1: Problem Solving

Cedine works as Librarian in TVET School, but she has a problem of using Manual system for recording the books in Library. Because of how it is hard to use that System, She wants to record the book using a database for recording the name of the book, Author of Book and The ISBN (International Standard Book Number**)**

In group of four trainees, you are asked to do the following tasks:

Task:

1. **According to the problem above, what do you know about Structured Query Language, which will be used when recording data?**
2. **Looking to the problem we have, what database table will be created?**

Key Facts 2.1

DATABASE

A database (DB), in the most general sense, is an organized collection of data. More specifically, a database is an electronic system that allows data to be easily accessed, manipulated and updated. In other words, a database is used by an organization as a method of storing, managing and retrieving information.

TABLE

A table is a collection of related data held in a table format within a database. In relational databases, and flat file databases, a table is a set of data elements (values) using a model of vertical columns (identifiable by name) and horizontal rows, the cell being the unit where a row and column intersect.

PHP MySQL Create Database and Tables

A database holds one or multiple tables.

Create a Database

The CREATE DATABASE statement is used to create a database in MySQL.

Syntax
CREATE DATABASE database_name

To get PHP to execute the statement above we must use the mysql_query() function. This function is used to send a query or command to a MySQL connection.

Database Creation

```
<?php
$con = mysql_connect("localhost","root","");
if (!$con)
  {
  die('Could not connect: ' . mysql_error());
  }
if (mysql_query("CREATE DATABASE my_db",$con))
  {
  echo "Database created";
  }
else
  {
```

```
  echo "Error creating database: " . mysql_error();
  }
mysql_close($con);

?>
```

Create a Table

The CREATE TABLE statement is used to create a table in MySQL.

Syntax

```
CREATE TABLE table_name
(
column_name1 data_type,
column_name2 data_type,
column_name3 data_type,
....
)
```

We must add the CREATE TABLE statement to the mysql_query() function to execute the command.

Creation of Table

The following codes creates a table named "Persons", with three columns. The column names will be "FirstName", "LastName" and "Age":

```
<?php
// Create database
if (mysql_query("CREATE DATABASE my_db",$con))
  {
  echo "Database created";
  }
else
  {
  echo "Error creating database: " . mysql_error();
  }
// Create table
mysql_select_db("my_db", $con);
```

```
$sql = "CREATE TABLE Persons
(
FirstName varchar(15),
LastName varchar(15),
Age int
)";
// Execute query
mysql_query($sql,$con);

?>The data type specifies what type of data the column can hold
```

Primary Keys and Auto Increment Fields

Each table should have a primary key field.

A primary key is used to uniquely identify the rows in a table. Each primary key value must be unique within the table. Furthermore, the primary key field cannot be null because the database engine requires a value to locate the record.

The following example sets the personID field as the primary key field. The primary key field is often an ID number, and is often used with the AUTO_INCREMENT setting. AUTO_INCREMENT automatically increases the value of the field by 1 each time a new record is added. To ensure that the primary key field cannot be null, we must add the NOT NULL setting to the field.

Table Creation

```
$sql = "CREATE TABLE Persons
(
personID int NOT NULL AUTO_INCREMENT,
PRIMARY KEY(personID),
FirstName varchar(15),
LastName varchar(15),
Age int
```

)";

mysql_query($sql,$con);

PHP MySQL Insert Into

The INSERT INTO statement is used to insert new records in a table.

Insert Data Into a Database Table

The INSERT INTO statement is used to add new records to a database table.

Syntax

It is possible to write the INSERT INTO statement in two forms.

The first form doesn't specify the column names where the data will be inserted, only their values:

INSERT INTO table_name

VALUES (value1, value2, value3,...)

The second form specifies both the column names and the values to be inserted:

INSERT INTO table_name (column1, column2, column3,...)

VALUES (value1, value2, value3,...)

To get PHP to execute the statements above we must use the mysql_query() function. This function is used to send a query or command to a MySQL connection.

PHP MYSQL Insertion

In the previous chapter we created a table named "Persons", with three columns; "Firstname", "Lastname" and "Age". We will use the same table in this example. The following codes adds two new records to the "Persons" table:

mysql_select_db("my_db", $con);

mysql_query("INSERT INTO Persons (FirstName, LastName, Age)

VALUES ('Peter', 'Griffin', '35')");

mysql_query("INSERT INTO Persons (FirstName, LastName, Age)

VALUES ('Glenn', 'Quagmire', '33')");

?>

Insert Data From a Form Into a Database

Now we will create an HTML form that can be used to add new records to the "Persons" table.

Here is the HTML form:

```
<html>
<body>

<form action="insert.php" method="post">

Firstname: <input type="text" name="firstname" />

Lastname: <input type="text" name="lastname" />

Age: <input type="text" name="age" />

<input type="submit" />

</form>

</body>

</html>
```

When a user clicks the submit button in the HTML form in the example above, the form data is sent to "insert.php".

The "insert.php" file connects to a database, and retrieves the values from the form with the PHP $_POST variables.

Then, the MySQL query () function executes the INSERT INTO statement, and a new record will be added to the "Persons" table.

Here is the "insert.php" page:

```
<?php
$con = mysql_connect("localhost","peter","abc123");
if (!$con)
```

```
 {
 die('Could not connect: ' . mysql_error());
 }
mysql_select_db("my_db", $con);
$sql="INSERT INTO Persons (FirstName, LastName, Age)
VALUES
('$_POST[firstname]','$_POST[lastname]','$_POST[age]')";
if (!mysql_query($sql,$con))
 {
 die('Error: ' . mysql_error());
 }
echo "1 record added";
mysql_close($con)
?>
```

Activity 2: Guided Practice

Ikirezi Ltd is a public bounded warehouse located at Kimihurura, they want to create a database called"Ikirezi" that contain tables below:

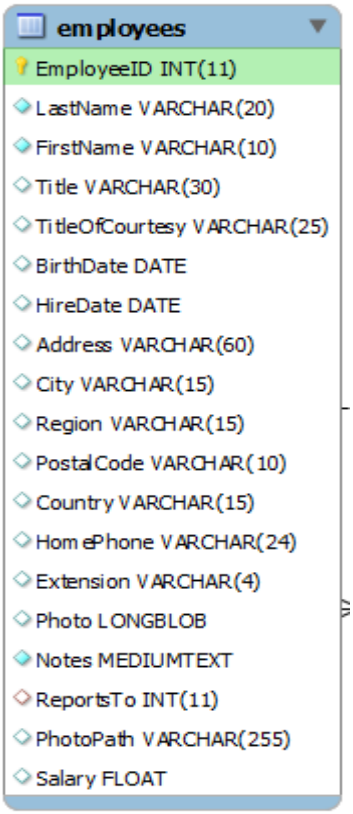
Manager (Manager_id(Primary key),Username,Password)

Furniture (furniture_id (Primary Key), Furniture_name, Furniture_owner_name)

In pair guided by trainer, you are asked to do the following tasks:

a. Create Database and table indicated above
b. Insert records into databases tables

Activity 3: Application



Task: observe the following database and every trainee is asked to perform the following tasks.

1. create a database “ihaha” and employees table bases on the figure

2. Insert data records into database table “Employees” using HTML Form

Points to Remember

- Always be updated on PHP Versions
- When you create a database field of data type, you must specify the maximum length of the field, A database must be selected before creating a table

Formative Assessment

1. Write the syntax to create a table?

2. Write the codes for creating the table persons, with three columns(FirstName. LastName and Age)

3. Write the syntax of inserting values into created columns

Refer to the figure below you are requested to do the following

ⓘ Further Information for the Trainer

ⓘ https://en.wikipedia.org/wiki/Database
ⓘ https://w3schools.sinsixx.com/php/php_mysql_insert.asp.htm

Topic 2.2 displaying of data from database in the most appropriate

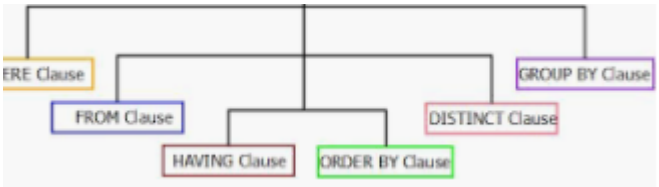
Key Competencies:

Knowledge	Skills	Attitudes
3. Describe SQL Clause	1.Differentiate SQL clause	**6.** Be Critical thinker
4. Explain functions and operators	2.Use functions and Operators	**7.** Be Detail-oriented
5. List SQL Statements	3.Retrieve data from database	3. Self-motivated

Getting Started: What do we know and where are we going?

Task:

.



1. What do you think about the figure?

2. What is the relationship between the picture and the topic?

Activity 1: Problem Solving

Karangwa is a Secretary in TVET school ,and he has a problem of recording the list of trainees of Level IV software Development in school database.

In group of four trainees, you are asked to do the following tasks:

a. What do you understand by retrieving data from the database?
b. List at least two SQL Clause you know?

Key Facts 2.2

SQL CLAUSE

1. The SQL WHERE Clause

The WHERE clause is used to filter records.
The WHERE clause is used to extract only those records that fulfill a specified condition.

WHERE Syntax
SELECT *column1*, *column2, ...*
FROM *table_name*
WHERE *condition*;

Text Fields vs. Numeric Fields
SQL requires single quotes around text values (most database systems will also allow double quotes).
However, numeric fields should not be enclosed in quotes

2. SQL ORDER BY Keyword

The ORDER BY keyword is used to sort the result-set in ascending or descending order.
The ORDER BY keyword sorts the records in ascending order by default. To sort the records in descending order, use the DESC keyword.
ORDER BY Syntax
SELECT *column1*, *column2, ...*
FROM *table_name*
ORDER BY *column1, column2, ...* ASC|DESC;

3. The SQL GROUP BY Statement

The GROUP BY statement groups rows that have the same values into summary rows, like "find the number of customers in each country".

The GROUP BY statement is often used with aggregate functions (COUNT, MAX, MIN, SUM, AVG) to group the result-set by one or more columns.

GROUP BY Syntax
SELECT *column_name(s)*
FROM *table_name*
WHERE *condition*
GROUP BY *column_name(s)*
ORDER BY *column_name(s);*

4. The SQL HAVING Clause

The HAVING clause was added to SQL because the WHERE keyword could not be used with aggregate functions.

HAVING Syntax

```
SELECT column_name(s)
FROM table_name
WHERE condition
GROUP BY column_name(s)
HAVING condition
ORDER BY column_name(s);
```

5. The SQL SELECT DISTINCT Statement

The SELECT DISTINCT statement is used to return only distinct (different) values.
Inside a table, a column often contains many duplicate values; and sometimes you only want to list the different (distinct) values.

SELECT DISTINCT Syntax

```
SELECT DISTINCT column1, column2, ...
FROM table_name;
```

6. The SQL SELECT Statement

The SELECT statement is used to select data from a database.
The data returned is stored in a result table, called the result-set.

SELECT Syntax

```
SELECT column1, column2, ...
FROM table_name;
```

Here, column1, column2, ... are the field names of the table you want to select data from.
If you want to select all the fields available in the table, use the following syntax:

```
SELECT * FROM table_name;
```

7. SQL JOIN

A JOIN clause is used to combine rows from two or more tables, based on a related column between them.

Let's look at a selection from the "Orders" table:

OrderID	CustomerID	OrderDate
10308	2	1996-09-18
10309	37	1996-09-19
10310	77	1996-09-20

Then, look at a selection from the "Customers" table:

CustomerID	CustomerName	ContactName	Country

1	Alfreds Futterkiste	Maria Anders	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mexico

The "CustomerID" column in the "Orders" table refers to the "CustomerID" in the "Customers" table. The relationship between the two tables above is the "CustomerID" column.

Then, we can create the following SQL statement (that contains an INNER JOIN), that selects records that have matching values in both tables:

Join Creation

```
SELECT Orders.OrderID, Customers.CustomerName, Orders.OrderDate
FROM Orders
INNER JOIN Customers ON Orders.CustomerID=Customers.CustomerID;
```

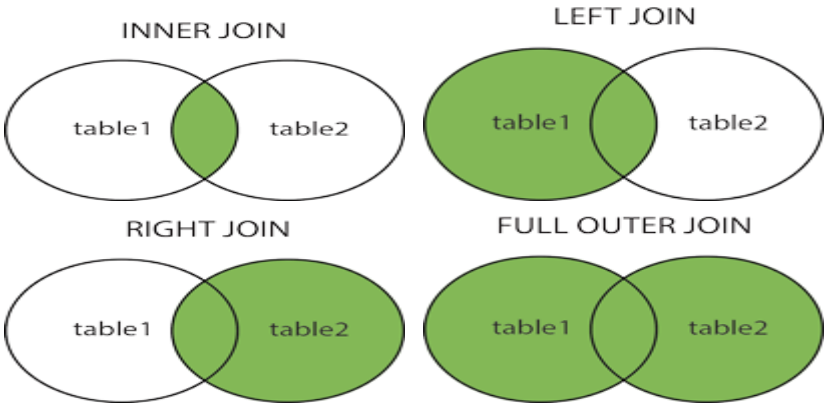
and it will produce something like this:

OrderID	CustomerName	OrderDate
10308	Ana Trujillo Emparedados y helados	9/18/1996
10365	Antonio Moreno Taquería	11/27/1996
10383	Around the Horn	12/16/1996
10355	Around the Horn	11/15/1996
10278	Berglunds snabbköp	8/12/1996

Different Types of SQL JOINs

Here are the different types of the JOINs in SQL:

- **(INNER) JOIN**: Returns records that have matching values in both tables
- **LEFT (OUTER) JOIN**: Returns all records from the left table, and the matched records from the right table
- **RIGHT (OUTER) JOIN**: Returns all records from the right table, and the matched records from the left table
- **FULL (OUTER) JOIN**: Returns all records when there is a match in either left or right table



SQL OPERATORS AND FUNCTIONS

SQL Function: Have many built-in functions for performing calculations on data.

A function is a database object in SQL Server. Basically, it is a set of SQL statements that accept only input parameters, perform actions and return the result. A function can return an only a single value or a table

TYPES OF SQL OPERATORS

- ✓ SQL Arithmetic Operators
- ✓ SQL Bitwise Operators
- ✓ SQL Comparison Operators
- ✓ SQL Logical Operators
- ✓ Assignment Operators

PHP MySQL Select

The SELECT statement is used to retrieve data from a database.

Syntax

SELECT column_name(s)
FROM table_name

To get PHP to execute the statement above we must use the mysql_query() function. This function is used to send a query or command to a MySQL connection.

Retrieve Data from Database

selects all the data stored in the "Persons" table (The * character selects all the data in the table):

```
$result = mysql_query("SELECT * FROM Persons");
while($row = mysql_fetch_array($result))
  {
  echo $row['FirstName'] . " " . $row['LastName'];
  echo "<br />";
  }
```

```
?>
```

The code above stores the data returned by the mysql_query() function in the $result variable.

Next, we use the mysql_fetch_array() function to return the first row from the recordset as an array. Each call to mysql_fetch_array() returns the next row in the recordset. The while loop loops through all the records in the recordset. To print the value of each row, we use the PHP $row variable ($row['FirstName'] and $row['LastName']).

The output of the code above will be:

Peter Griffin

Glenn Quagmire

PHP - Loop Types

Loops in PHP are used to execute the same block of code a specified number of times. PHP supports following four loop types.

- **for** − loops through a block of code a specified number of times.
- **while** − loops through a block of code if and as long as a specified condition is true.
- **foreach** − loops through a block of code for each element in an array.

The for loop statement

The for statement is used when you know how many times you want to execute a statement or a block of statements.

Syntax

for (*initialization*; *condition*; *increment*){
  code to be executed;
}

The initializer is used to set the start value for the counter of the number of loop iterations. A variable may be declared here for this purpose and it is traditional to name it $i.

The following makes five iterations and changes the assigned value of two variables on each pass of the loop −

```
<?php
  $a = 0;
  $b = 0;
  for( $i = 0; $i<5; $i++ ) {
    $a += 10;
    $b += 5;
  }
```

```
    echo ("At the end of the loop a = $a and b = $b" );
  ?>
```

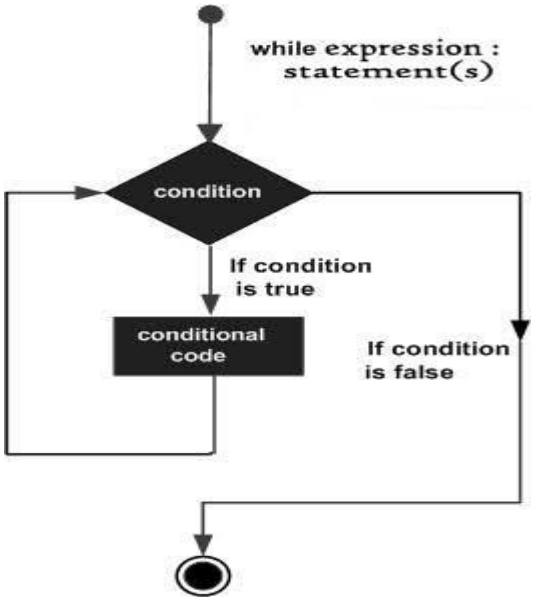
This will produce the following result −

At the end of the loop a = 50 and b = 25

The while loop statement

The while statement will execute a block of code if and as long as a test expression is true.

If the test expression is true then the code block will be executed. After the code has executed the test expression will again be evaluated and the loop will continue until the test expression is found to be false.



Syntax

while (*condition*) {
  code to be executed;
}

The following code decrements a variable value on each iteration of the loop and the counter increments until it reaches 10 when the evaluation is false and the loop ends.

```
<?php
    $i = 0;
    $num = 50;
    while( $i < 10) {
      $num--;
      $i++;
    }
     echo ("Loop stopped at i = $i and num = $num" );
  ?>
```

This will produce the following result −

```
Loop stopped at i = 10 and num = 40
```

The foreach loop statement

The foreach statement is used to loop through arrays. For each pass the value of the current array element is assigned to $value and the array pointer is moved by one and in the next pass next element will be processed.

Syntax

```
foreach (array as value) {
  code to be executed;
}
```

```
<?php
    $array = array( 1, 2, 3, 4, 5);

    foreach( $array as $value ) {
      echo "Value is $value <br />";
    }
  ?>
```

This will produce the following result −

```
Value is 1
Value is 2
Value is 3
Value is 4
Value is 5
```

Display the Result in an HTML Table

The following code selects the same data as above, but will display the data in an HTML table:

```
$result = mysql_query("SELECT * FROM Persons");

echo "<table border='1'>
<tr>
<th>Firstname</th>
<th>Lastname</th>
</tr>";
while($row = mysql_fetch_array($result))
  {
  echo "<tr>";
  echo "<td>" . $row['FirstName'] . "</td>";
  echo "<td>" . $row['LastName'] . "</td>";
  echo "</tr>";
  }
echo "</table>";
```

The output of the code above will be:

Firstname	Lastname
Glenn	Quagmire
Peter	Griffin

Using Paging through PHP

It's always possible that your SQL SELECT statement query may result into thousand of records. But it is not good idea to display all the results on one page. So we can divide this result into many pages as per requirement.

Paging means showing your query result in multiple pages instead of just put them all in one long page.

MySQL helps to generate paging by using **LIMIT** clause which will take two arguments. First argument as OFFSET and second argument how many records should be returned from the database.

Creation of Pagination

```
<html>

   <head>
      <title>Paging Using PHP</title>
   </head>

   <body>
      <?php
         $dbhost = 'localhost:3036';
         $dbuser = 'root';
         $dbpass = 'rootpassword';

         $rec_limit = 10;
         $conn = mysql_connect($dbhost, $dbuser, $dbpass);

         if(! $conn ) {
            die('Could not connect: ' . mysql_error());
         }
         mysql_select_db('test_db');

         /* Get total number of records */
         $sql = "SELECT count(emp_id) FROM employee ";
         $retval = mysql_query( $sql, $conn );

         if(! $retval ) {
            die('Could not get data: ' . mysql_error());
         }
         $row = mysql_fetch_array($retval, MYSQL_NUM );
         $rec_count = $row[0];
```

```
         if( isset($_GET{'page'} ) ) {
            $page = $_GET{'page'} + 1;
            $offset = $rec_limit * $page ;
         }else {
            $page = 0;
            $offset = 0;
         }

         $left_rec = $rec_count - ($page * $rec_limit);
         $sql = "SELECT emp_id, emp_name, emp_salary ".
            "FROM employee ".
            "LIMIT $offset, $rec_limit";

         $retval = mysql_query( $sql, $conn );

         if(! $retval ) {
            die('Could not get data: ' . mysql_error());
         }

         while($row = mysql_fetch_array($retval, MYSQL_ASSOC))
{
            echo "EMP ID :{$row['emp_id']}  <br> ".
               "EMP NAME : {$row['emp_name']} <br> ".
               EMP SALARY : {$row['emp_salary']} <br> ".
               "--------------------------------<br>";
         }

         if( $page > 0 ) {
            $last = $page - 2;
            echo "<a href = \"$_PHP_SELF?page = $last\">Last 10
Records</a> |";
            echo "<a href = \"$_PHP_SELF?page = $page\">Next 10
Records</a>";
         }else if( $page == 0 ) {
            echo "<a href = \"$_PHP_SELF?page = $page\">Next 10
Records</a>";
         }else if( $left_rec < $rec_limit ) {
            $last = $page - 2;
            echo "<a href = \"$_PHP_SELF?page = $last\">Last 10
Records</a>";
         }

         mysql_close($conn);
      ?>
      </body></html>
```

Activity 2: Guided Practice

Kaliza has graduated in Software Development. He has applied for Assistant Web Master at RRA(Rwanda Revenue Authority).he want to retrieve data from database table"bandgroup".

Band Group ID	Band Group Name
1	grp1
2	grp2
3	grp3
4	grp4
5	grp5
6	grp6
7	grp7
8	grp8
9	grp9
10	grp10

In group of four trainees, you are asked to do the following tasks:

1. Show the SQL Clause that will be used to select the record of **bandgroup**
2. Use functions and operators that will be used to select the record from **bandgroup**
3. **Select the record located into database table bandgroup.**

Activity 3: Application

Below is the table which shows the informations of employees for XYZ company:

BACK Search

Staff ID	Staff first Name	Staff last Name	Highest degree	Degree name	Date joined	Nationality	Phone	Email	Date left	Active	Comment
1	Francois Regis	DUKUZUMUREMYI	Bcs	Bachelor	29/01/2012	rwandan	0788780666	rexe@yahoo.com	4	1	no comment
2	Billy	GATETE	A0	A0	09/01/2010	rwandan	0788549930	gatete@yahoo.com	4	1	no comment
3	pascal	Ndayizigiye	A1	A1	29/01/2012	rwandan	0788600011	pazzo@yahoo.com	4	2	pursuing his PhD
4	Emmy	Bahati	Bsc	bachelor	10/01/2011	Rwandan	0788279690	bahati@yahoo.com	6	2	no comment
5	Eric	Twahirwa	A0	A0	10/03/2012	rwandan	0722529999	eric@yahoo.com	4	3	no comment
6	Jacque	Ndagijimana	A1	A1	10/05/2012	rwandan	0788437932	jacque@yahoo.com	3	2	no comment

Everyone is asked to do the following tasks:

Task:

1. Select the information of staff who has Id 1?
2. Select the information of staff Gatete and Ndayizigiye ?
3. Display the information of all staff?

Points to Remember

- **The WHERE clause is not only used in SELECT statement, but also used in UPDATE, DELETE statement**

Formative Assessment

1. Write the syntax of SQL Where Clause?
2. What are different types of SQL Joins?
3. Write the syntax of SQL Group By Statement?

Topic 2.3: Updating of data with user-supplied input according to the information changes

Key Competencies:

Knowledge	Skills	Attitudes
1. Describe process update	1.Identify process update	**8.** Be Critical thinker
9. List SQL update queries	2.Update data from database table	2.Be Detail-oriented
3. Describe data update	3. Apply data updates to database	3. Self-motivated

Getting Started: What do we know and where are we going?

Task:

This version of whatsApp has expired

1. What the figure above represents?
2. What is the relationship between the figure and the topic?

Activity 1: Problem Solving

Semugeshi is a Secretary in TVET school ,when he was recording the list of trainees of Level IV software Development in school database.he has found that a trainee ISHIMWE Christian has not well recorded his entire names.he want to change the name ISHIMWE Christian to ISHIMWE Rangira Christian.the secretary request you to do the following

a. Describe the process of update the trainee name into database table
b. What is the SQL query to update the trainee's names

Key Facts 2.3

PHP script "update process" management

1. A process to check the current version of the script available from our home website.
2. File update process: download and update the required files from my server on the client server.
3. Make required database changes: Download the upgrade sql file from my home server and run it against the database.

I know that all major open source scripts like Wordpress, Joomla, osCommerce, Magento have this facility. So there must be resources available for this on the internet.

PHP MySQL Update

The UPDATE statement is used to modify data in a table.

Update Data in a Database

The UPDATE statement is used to update existing records in a table.

SQL update query Syntax

```
UPDATE table_name
SET column1=value, column2=value2,...
WHERE some_column=some_value
```

To get PHP to execute the statement above we must use the mysql_query() function. This function is used to send a query or command to a MySQL connection.

Update Creation

Earlier in the tutorial we created a table named "Persons". Here is how it looks:

FirstName	LastName	Age
Peter	Griffin	35
Glenn	Quagmire	33

The following updates some data in the "Persons" table:

```
mysql_select_db("my_db", $con);

mysql_query("UPDATE Persons SET Age = '36'
WHERE FirstName = 'Peter' AND LastName = 'Griffin'");
mysql_close($con);
```

After the update, the "Persons" table will look like this:

FirstName	LastName	Age
Peter	Griffin	36
Glenn	Quagmire	33

Activity 2: Guided Practice

Munyemana has graduated in Software Development. He has applied for Assistant Web Master at Mifotra. They need to edit the name of the city of Cenation to Kigali City

First Name	Last Name	City	Edit
john	cena	cenation	
dwayne	johnson	new york	
brock	lesnar	chicago	

In group of four trainees, guided by trainer you are asked to do the following tasks:

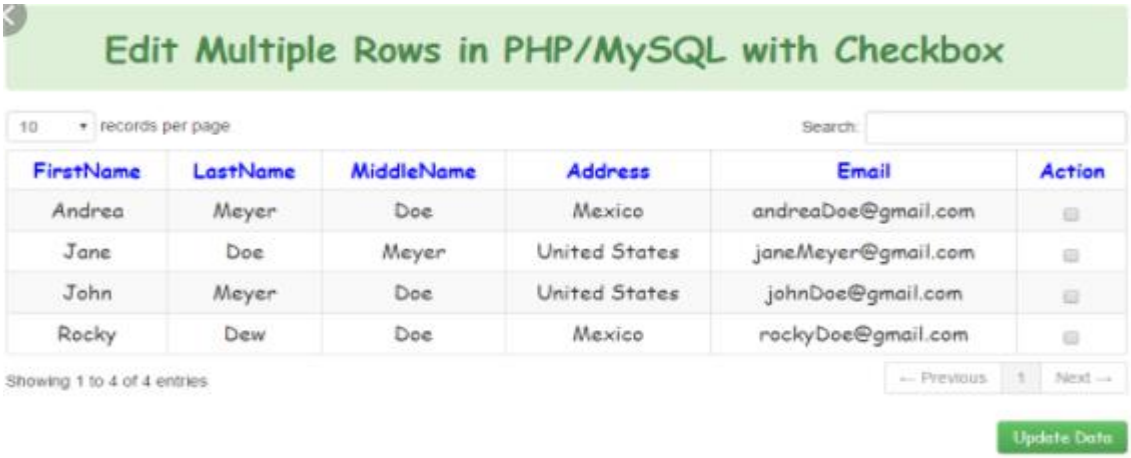
1. Show the process of update the name mentioned in the scenario

2. Identify the SQL Update Syntax Query that will be used for solving the problem mentioned in the scenario.

3. Apply data update to database table using PHP MySQL of trainee and the data updated will be show on the form as the figure indicated.

Activity 3: Application

Task:



Ask trainees to form small groups

Based on figure above ask them to edit and **display the list of taxpayers by doing the following:**

1. rite Mysql code to update Mr. Andrea into alexandre
2. Write MySql code to update Last Name for Meyer into Mayor and Dew into Dway
3. Ask trainees to form small groups
4. Based on figure above ask them to edit and **display the list of taxpayers by doing the following:**

Points to Remember

The WHERE clause in the UPDATE syntax. The WHERE clause specifies which record or records that should be updated. If you omit the WHERE clause, all records will be updated!

Formative Assessment

1. Where do we use PHP MySQL Update?

2. Show the SQL syntax of Update

3. using the table called persons bellow, update the age of Peter to 36

FirstName	LastName	Age

Peter	Griffin	35
Glenn	Quagmire	33

Topic 2.4: Deletion data from database

Key Competencies:

Knowledge	Skills	Attitudes
1. Describe process delete	1.identify process of delete	1.Be Critical thinker
2.List SQL delete queries	2.Delete data from database table	2.Be Detail-oriented

Getting Started: What do we know and where are we going?

Karigura Ltd is a company that sells the cars. They put the different car model on their website for marketing. One of the cars has been sold. many customers find the car sold on the website.

task:

1. What do you think Karigura Company must do?

2. What is the relationship between the scenario and the topic?

Activity 1: Problem Solving

Kaneza Louis is a Secretary in TVET school ,when he was recording the list of trainees of Level IV software Development in school database.he has found that a trainee ISHIMWE Christian has recorded on Class list of Level IV Software Development.After that Ishimwe Christian has shifted from Software Development to Electronic Service and Kaneza Louis want to delete Ishimwe Christian from the Software Development list.

In group of four trainees, you are asked to do the following tasks:

Tasks:

1. What do you think Ishimwe must do according to the scenario?

2. What is deleting data from the database?

Key Facts 2.4

PHP script “deleteprocess” management

1. Connect to the MySQL database by creating MYQSL Procedural.
2. Construct a DELETE statement to delete a row, multiple rows, or all rows in a table. If you want to delete all rows in a big table quickly and more efficiently, you use the TRUNCATE TABLE statement.
3. Execute the DELETE statement.

PHP MySQL Delete

The DELETE statement is used to delete records in a table.

Delete Data In a Database

Just as you insert records into tables, you can delete records from a table using the SQL DELETEstatement. It is typically used in conjugation with the WHERE clause to delete only those records that matches specific criteria or condition.

The basic syntax of the DELETE statement can be given with:

```
DELETE FROM table_name WHERE column_name=some_value
```

Let's make a SQL query using the DELETE statement and WHERE clause, after that we will execute this query through passing it to the PHP mysql_query() function to delete the tables records.

Look at the following "Persons" table:

FirstName	LastName	Age
Peter	Griffin	35
Glenn	Quagmire	33

The following codes deletes all the records in the "Persons" table where LastName='Griffin':

```
<?php

mysql_query("DELETE FROM Persons WHERE LastName='Griffin'");
mysql_close($con);

?>
```

After the deletion, the table will look like this:

FirstName	LastName	Age
Glenn	Quagmire	33

CRUD On Same Page PHP MySQL

We basically want crud operation(create,read,update,delete) on the same page .ieto create a table we use create query , as we enter the data in the table, that data will be displayed in tabular form on the same page Showing the available options such as edit ,delete in front of them.If we click on the delete button, the entries can be deleted To change any field we click on the edit button

Create database, select database, Create Table

```
<?php

//connectivity code
$con=mysql_connect("localhost","root","") or die(mysql_error());

//create database
mysql_query("create database test");
//select database
mysql_select_db("test");
//create table stuinfo
$que="CREATE TABLE stuinfo
(
stu_id INT AUTO_INCREMENT PRIMARY KEY ,

email VARCHAR( 50 ) NOT NULL ,

password VARCHAR( 50 ) NOT NULL ,

mobile BIGINT NOT NULL ,

address TEXT NOT NULL ,

gender ENUM( 'm', 'f' ) NOT NULL ,

hobbies VARCHAR( 100 ) NOT NULL ,

image VARCHAR( 200 ) NOT NULL ,

dob DATE NOT NULL ,

INDEX ( `gender` , `dob` ) ,
```

```
UNIQUE (`email` ,`mobile`)

);

//Execute query using query analyzer function
mysql_query($que);

?>
```

PHP Script Retrieve values From HTML Form

```
<?php
// error_reporting(1) function hides all errors Mostly Notice Error

error_reporting(1);

//retrieve email id entered by user and store in $eid. and so on for other values

$eid=$_POST['eid'];
$p=$_POST['pass'];
$m=$_POST['mob'];
$add=$_POST['add'];
$gen=$_POST['g'];
$hobb=$_POST['chlist'];
$h=implode(",",$hobb);
$img=$_FILES["file"]["name"];
$yy=$_POST['yy'];
$mm=$_POST['mm'];
$dd=$_POST['dd'];
$dob=$yy."-".$mm."-".$dd;

//checked whether user clicked on INSERT button

if(isset($_POST['ins']))
{
$sql="INSERT INTO stuinfo values('','$eid','$p','$m','$add','$gen','$h','$img','$dob')";

mysql_query($sql);
move_uploaded_file($_FILES["file"]["tmp_name"], "userDetails/" .
$_FILES["file"]["name"]);
echo "data saved";
}

//checked whether user clicked on display button

if(isset($_POST['disp']))
```

```
{
$res=mysql_query("SELECT * FROM stuinfo");
echo "<table border='1'>";
echo
"<tr><th>SutId</th><th>Email</th><th>Password</th><th>Mobile</th><th>Address</th
><th>Gender</th>  </tr>";

while(list($a,$b,$c,$d,$e,$f)=mysql_fetch_array($res))
{

echo "<tr>";  echo "<td>".$a."</td>";

echo "<td>".$b."</td>";

echo "<td>".$c."</td>";

echo "<td>".$d."</td>";

echo "<td>".$e."</td>";

echo "<td>".$f."</td>";

echo "<td><a href='db.php?chk=$b'>Edit</a>  <a
href='db.php?chkid=$a'>Delete</a></td>";

echo "</tr>";

}

echo "</table>";
}

// receive  value(value sent  using query string )

@$v=$_GET['chkid'];
@$email=$_GET['chk'];
if(isset($v))
{
mysql_query("delete from stuinfo where stu_id='$v'");
echo "records deleted";
}

if(isset($_POST['upd']))
{
$p=$_POST['p'];
$m=$_POST['mob'];
$add=$_POST['add'];
```

```
echo $email;

$upd="update stuinfo set pass='$p',mobile='$m',address='$add' where email='$email'";

mysql_query($upd);

echo "updated";

}

if(isset($_GET['chk']))
{
$sql="SELECT * FROM stuinfo where email='$email'";

$res=mysql_query($sql);

list($a,$b,$c,$d,$e,$f)=mysql_fetch_array($res);

echo "<table border='1'>";

echo "<form method='post'>";

echo "<tr>";

echo "<td>Password</td>";

echo "<td><input type='password' name='p' value='$c' /></td></tr>";

echo "<tr>";

echo "<td>Mobile</td>";

echo "<td><input type='text' name='mob' value='$d' /></td></tr>";

echo "<tr>";

echo "<td>Address</td>";

echo "<td><textarea name='add'>$e</textarea></td></tr>";

echo "<tr>";

echo "<td colspan='2' align='center'><input type='submit' value='Update infor'
name='upd' /></td></tr>";

echo "</form>";
```

```
echo "</table>";
}

?>
```

HTML Form

```
<body>

<form  method="post" enctype="multipart/form-data">

<table width="419" border="1">
 <tr>
<td width="173">Enter your email </td>
  <td width="230"><input type="email"  name="eid"/>

</td>  </tr>  <tr>

   <td>Password</td>

<td><input type="password"  name="pass"/></td>

</tr>  <tr>    <td>Mobile</td>

   <td><input type="text"  name="mob"/></td>

  </tr>

 <tr>
 <td>Address</td>

 <td><textarea name="add"></textarea></td>

 </tr>
 <tr>
  <td>Gender</td>
   <td>

Male<input type="radio" value="m" name="g"/>
Female<input type="radio" value="f" name="g"/>

</td>

 </tr>

 <tr>
```

```
  <td>Hobbies</td>
   <td>    cricket<input type="checkbox" name="chlist[]" value="cricket"/>
singing<input type="checkbox" name="chlist[]" value="singing"/>

reading<input type="checkbox" name="chlist[]" value="reading"/>

</td>

 </tr>

 <tr>

  <td>Image</td>

  <td><input type="file" name="file" id="file" />

 </td>
 </tr>

 <tr>

  <td>DOB</td>

  <td>
            <select name="yy">
            <option value="" disabled="disabled" selected="selected">          Year</option>
            <?php
            for($i=1900;$i<=2013;$i++)
            {
            echo "<option value='$i'>$i</option>";
            }
            ?>

</select><select name="mm">

<option value="" disabled="disabled" selected="selected">          Month    </option>

            <?php
            for($i=1;$i<=12;$i++)
                        {
                        echo "<option value='$i'>$i</option>";
                        }
                        ?>

            </select>
```

```
            <select name="dd">

<option value="" disabled="disabled" selected="selected">          Date</option>

                        <?php
                        for($i=1;$i<=31;$i++)
                        {
                        echo "<option value='$i'>$i</option>";
                        }
                        ?>

</select></td>

  </tr>

            <tr>
                        <td colspan="2" align="center">        <input type="submit" name="ins"
value="Insert"/>

<input type="submit" name="disp" value="show"/>

</tr>

</table>

</form>

</body>
</html>
```

User enters the value inside the field, and click on Insert button.data is stored inside the database table.Second button is to display the value when user click on show button all information will display and with all rows a delete and edit link also displayed. whenever user want to update he has to click on edit link or can click on delete link to delete the information.

Activity 2: Guided Practice

Name	Salary	Age	Action
Tiger Nixon	320800	61	Edit Delete View
Garrett Winters	434343	63	Edit Delete View
Ashton Cox	86000	66	Edit Delete View
Cedric Kelly	433060	22	Edit Delete View
Airi Satou	162700	33	Edit Delete View
Brielle Williamson	372000	61	Edit Delete View
Herrod Chandler	137500	59	Edit Delete View

Using the table above, in pair guided by the trainer, you are asked to do the following tasks:

Tasks:

1. Write SQL code to delete the column Age.
2. Write the SQL code to delete Mr. Cedric

Activity 3: Application

List of PHP students

ID	Name	Age	Skills	Address	Designation		
12	Ray	30	PHP	Delhi, India	Web Developer	Update	Delete
11	Rajiv	38	PHP	Delhi	Web Developer	Update	Delete
10	Nathan	28	PHP	London	Web Developer	Update	Delete
9	Stokes	23	jQuery	Sydney	Web Developer	Update	Delete
8	Root	28	HTML	Paris	Web Developer	Update	Delete
7	Cook	26	MySQL	Paris	Web Developer	Update	Delete
6	Steve	28	Angular	London	Web Developer	Update	Delete
5	Andrew	35	NodeJS	Tokiyo	Programmer	Update	Delete
4	William	25	JavaScript	Delhi	Web Developer	Update	Delete
3	Adam	30	jQuery	New Jersy	Web Developer	Update	Delete

Showing 1 to 10 of 10 entries

Previous 1 Next

Refering to the table above, each trainee, is asked to do the following tasks:

Task:

1. write the code to delete the student who has the Id 11

2. write the code to delete the column designation

3. write the code to delete the student whose designation is programmer

Points to Remember

Before delete, always think big, as information will be deleted permanently.

Formative Assessment

1. Describe the process of SQL delete using HTML form?

2. Write SQL Syntax of delete

3. Write the codes to delete the person “Griffin” using the table below called Persons

FirstName	LastName	Age
Peter	Griffin	35
Glenn	Quagmire	33

Self Reflection

Areas of strength	Areas for improvement	Actions to be taken to improve
1. **2.**	**1.** **2.**	**1.** **2.**