International Journal of Integrated Science and Technology (IJIST)
Vol.2, No.11, 2024: 967-984

Introduction to Web Programming: Building Simple Web Applications with PHP and MYSQL

Chaerul Hidayat[1], Muhammad Wahyudi[2], Novi Miswanti[3], Ranggi Fatmawan[4], Emi Sita Eriana[5]

Universitas Pamulang

Corresponding Author: Chaerul Hidayat : chaerulhidayat12345@gmail.com

A R T I C L E I N F O

Keywords: Web Programming, PHP, Mysql, Web Application

Received : 6, Oktober
Revised : 10, September
Accepted: 15, November

A B S T R A C T

Web programming is a skill that is increasingly in demand. This article is an attemptto fill the gap in web programming learning literature, especially for beginners. By presenting comprehensive yet digestible material, this article contributes to the development of web programming learning curriculum. The methodology used is a step-by-step approach from basic concepts to practical application. The main contribution of this article is the provisionof an effective self-study guide, complete with exercises and small projects.

DOI: https://doi.org/10.59890/ijist.v2i9.2656

https://journal.multitechpublisher.com/index.php/ijist

INTRODUCTION

The development of information and communication technology in the era of globalization has had a significant impact on the development of the world. (Scientific 2024).Nowadays, websites are very useful as the main gateway to information and interaction. Almost all organizations and individuals have a website to display information, offer products,or build a community. Websites are constantly evolving, from static and passive to dynamic and interactive, following the increasingly complex needs of users. Web programming plays an important role in this evolution. By mastering programming languages and web technologies, we can build websites that are informative, functional and attractive. One popularcombination for building a dynamic website is PHP and MySQL.

One example is the use of a website-based information system in shopping data. This information system is a system specifically designed to facilitate the data collection process of delivering information related to the list of expenses.This system was developed using HyperText Markup Language, PHP: Hypertext Preprocessor, and MySQL.

HTML (Hyper Text Markup Language) is a language that uses certain signs (tags) to express codes that can be interpreted by the browser.(Samsudin and Hamdalah Islami 2023) sothat the page can be displayed correctly. Basically, HTML is not a programming language, but a markup language consisting of many sets of tags, usually only stating that certain parts of a web page are the content that must be displayed by the browser. Compilation of HTML, uses special codes or symbols written in files or documents to build the structure of web pages. Thisallows web pages to be displayed on a computer screen and also understood by users HTML isan open source script, meaning that everyone can use it freely and for free. Everyone who works as a web-based application developer is certainly familiar with HTML.

Cascading style sheet (CSS) is used to display a web with an attractive appearance, beautify the appearance of the web and easy to use. CSS is a technology used to beautify the appearance of web pages (sites). While cascading style sheet is a stylesheet that is used to set the style of a document. In general, CSS is used to format the appearance of web pages made with HTML and XHTML.CSS or cascading stylesheet is a programming language that functions to beautify the appearance of the web. (Rezagi Meilano, Heriyani, and Hari Zidan Rathomi 2023). Cascading Style Sheet (CSS) is a standard development

technology in managing the pages and appearance of a website Cascading Style Sheet (CSS) is not a programming language in itself, CSS is intended more for

configuring the appearance of a website. With CSS, developers can change text, colors, backgrounds and so on. (Febriyanti andHidayat 2024).

Bootstrap is a library that can be used in the development of a web-based application, with bootstrap we are also easier to build responsive websites quickly, easily and for free.(Febriyanti and Hidayat 2024)

Javascript is a language in the form of a collection of scripts that function in an HTML document, throughout the history of the internet this language was the first scripting languagefor the web. This language is a programming language to provide additional capabilities to the HTML language by allowing the execution of commands on the user side, which means on thebrowser side not on the web server side.(Samsudin and Hamdalah Islami 2023).

Structure Query Language (SQL) is a domain-specific language used to process data in a relational database management system. The most common RDBMS (Relational Database Management System) application used by web application programmers to process their databases is MySQL. Functions in the PHP programming language are commonly used to create, read, modify, or delete data in SQL, which can then be displayed on web pages. PHP, or Hypertext Preprocessor, is a server-side programming language that allows websites to interact with databases and generate dynamic content. PHP is a scripting language that integrates with HTML and runs on the server side. This means that all the syntax we provide will be fully executed on the server while only the results are sent to the browser. (Rina Noviana2022) For SQL, it is a relational database management system that stores structured website data.

By combining the PHP and MySQL programming languages, we can build a website that

stores and displays data in a structured manner, such as product lists, user profiles, or news articles, provides interaction with users, such as login forms, comments, or shopping carts customize website content based on user needs, such as product recommendations based on user preferences or different website views for *mobile* devices.

METHODS

In writing this journal, the author uses the SDLC *(System Life Development Cycle)* method. SDLC modeling helps researchers build information systems in stages according to their needs.(Alfonsius, Sukardi, and Astawa 2023).. Where at this stage planning is carried outregarding website development by studying HTML, CSS, and PHP programming languages, as well as others that support the needs of making this simple website. The next stage is the analysis stage, where at this stage the collection of components is carried out regarding what is needed in making this simple website.

RESULTS AND DISCUSSION

The steps for making this simple website are of course we already know the basic use of*syntax syntax* such as HTML, and CSS. Then proceed with a basic understanding of the PHP programming language. For the database this time using a MySql database.

SOFTWARE INSTALLATION

XAMPP/WAMP

Install XAMPP or WAMP to provide a local server, php, and MySql.

TEXT EDITOR

Use a text editor such as visual code studio, sublime text, or others

START SERVER

Run the server, APACHE and MySql controlled panel XAMPP or WAMPP

CREATE DATABASE AND TABLES IN MYSQL

Click admin on MySql, to go to the Mysql database as shown below

Figure 1: XAMPP control panel

Create a new database. Click new, then create database, for example: "crud_spending"

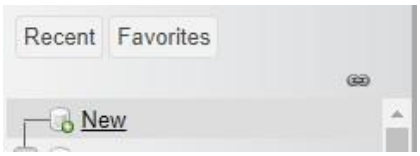

Figure 2: Create New Database

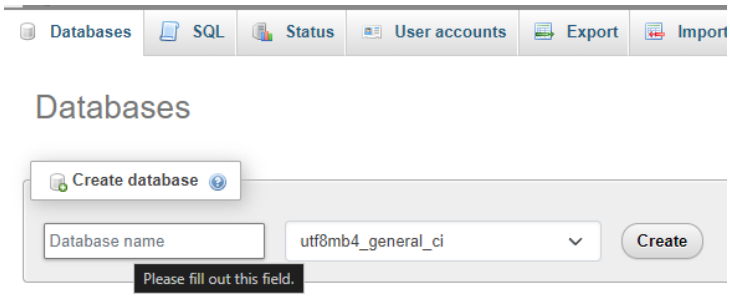

Figure 3: database name

If so, click create, then it will look like the picture below. In the table name, name the

table with "table_shopping", then create

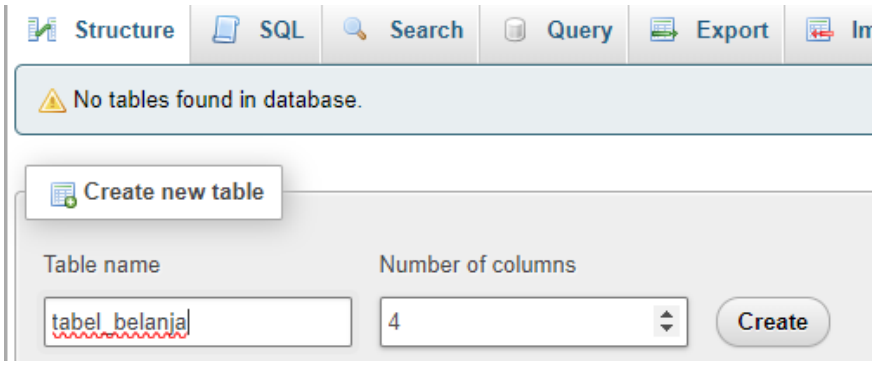

Figure 4: Create Table Name

If so, an image like this will appear:

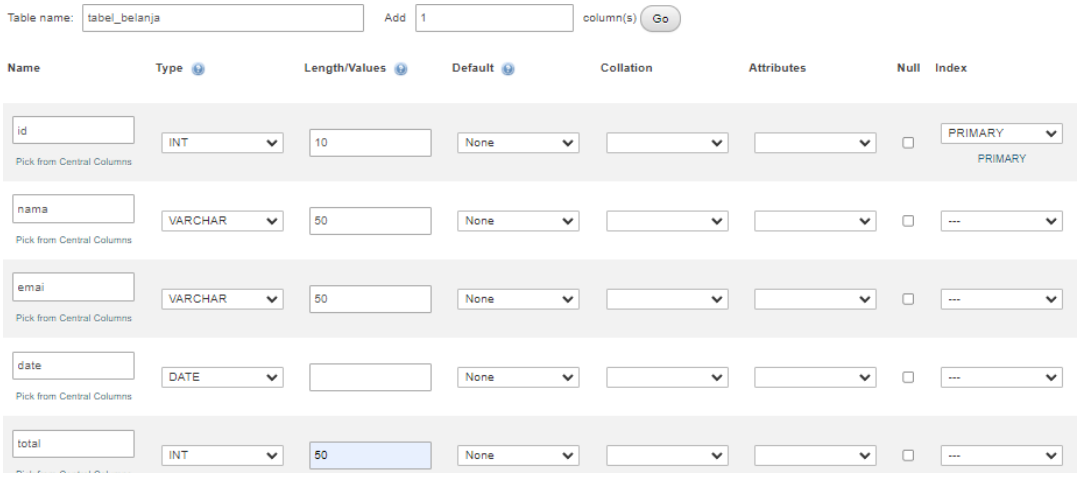

Figure 5: Database structure

After the creation of the database name, and tables in the database. It takes at least 5 PHPfiles to create a simple web application. Among them are index.php, connection.php, insert.php, edit.php, delete.php. make sure the 5 files, are in 1 folder stored in the htdocs file section. The steps are as follows:

Open the file manager, select the storage section, then go to windows:C

Search for xampp files,

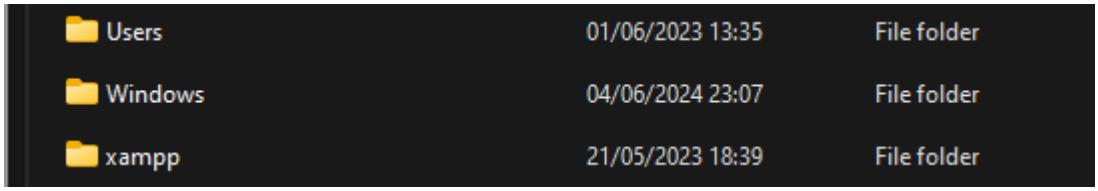

Figure 6: xampp folder

Search for htdocs files

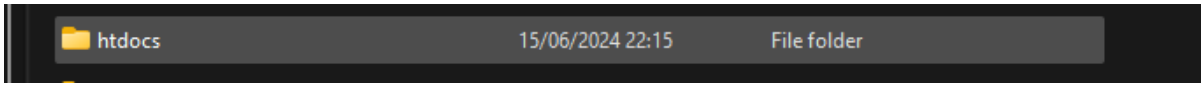

Figure 7: htdocs folder

Create 1 folder, which will consist of index.php, connection.php, insert.php, edit.php, delete.php. name as desired.

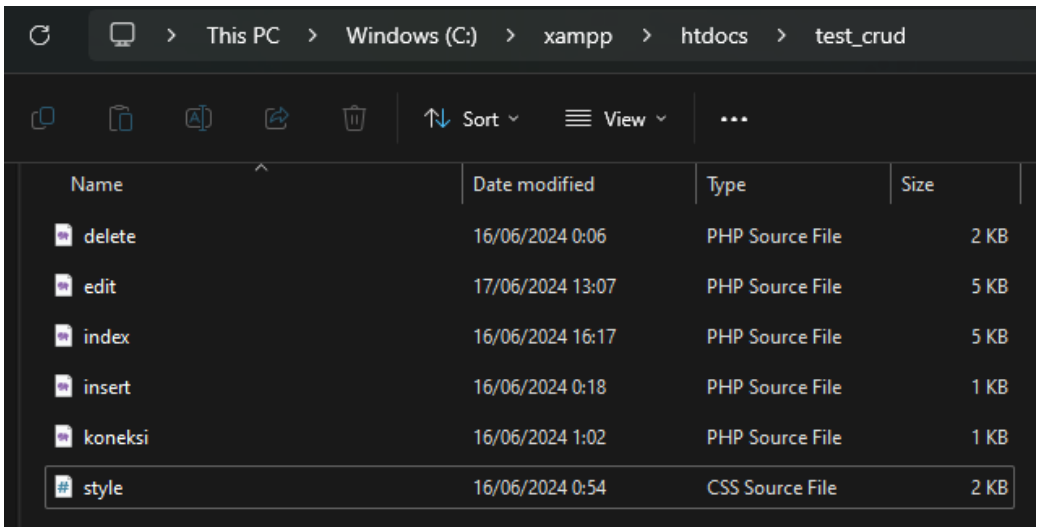

Figure 8: test_crud folder

The purpose of creating 1 folder in htdocs is to maintain ease of management, maintain order, and be easily accessible.

To access the web application that is being built, it can be seen by accessing it in a browseror chrome. If you name the folder test_crud. Then the application can be accessed via http://localhost/test_crud.

Next is before accessing, make sure in the xampp control panel, apache and mysql, already active.

After following the steps above, enter the script or code writing process. Open the text editor, here the author uses the text editor sublime text, create a new file or ctrl + n, then save,make sure it is saved in the storage as above, windows: c - xampp

- htdocs - name_folder - then name the file with connection.php for connection to the database.If so, start coding like the example script below:

```php
<?php
$servername = "localhost";   //server yang dijalankan
$username = "root";          // ini untuk settingan default
$password = "";              //ini adalah passwrod default
$database = "crudbelanja";  // ini adalah nama tujuan database

// Membuat koneksi
$conn = new mysqli($servername, $username, $password, $database);

// Memeriksa koneksi
if ($conn->connect_error) {
    die("Koneksi gagal: " . $conn->connect_error);
}
?>
```

Figure 9: connection.php

After finishing creating the connection.php file, then create a file with the name index.php. for the script, like the example script below.

```php
<?php
include "koneksi.php";
session_start(); // Menyertakan file koneksi.php

if (isset($_SESSION['pesan'])) {
    echo "<p style='color: green;'>" . $_SESSION['pesan'] . "</p>";
    unset($_SESSION['pesan']);
}


// Query untuk mengambil data dari tabel
$sql = "SELECT * FROM tabel_belanja";
$result = $conn->query($sql);
?>
```

Figure 10: index.php

```
47
48  th {
49      background-color: #4CAF50;
50      color: white;
51  }
52
53  form {
54      background-color: #fff;
55      padding: 20px;
56      border-radius: 5px;
57      box-shadow: 0 2px 5px rgba(0, 0, 0, 0.3);
58      margin-top: 20px;
59      width: 70%; /* Mengurangi lebar form menjadi 70% */
60      margin-left: auto; /* Agar form berada di tengah */
61      margin-right: auto; /* Agar form berada di tengah */
62  }
63
64  input[type=text], input[type=email], input[type=date], input[type=number] {
65      width: 100%;
66      padding: 12px 20px;
67      margin: 8px 0;
68      display: inline-block;
69      border: 1px solid #ccc;
70      border-radius: 4px;
71      box-sizing: border-box;
72  }
73
74  input[type=submit] {
75      width: 100%;
76      background-color: #4CAF50;
77      color: white;
78      padding: 14px 20px;
79      margin: 8px 0;
80      border: none;
81      border-radius: 4px;
82      cursor: pointer;
83  }
84
85
86  input[type=submit]:hover {
87      background-color: #45a049;
88  }
89
90  a {
91      text-decoration: none;
92      color: black;
93      font-family: arial;
```

Figure 11: index.php

```
93      font-family: arial;
94  }
95  a:hover {
96      color: darkblue;
97      font-size:17px;
98  }
99  h2 {
100     text-align: center;
101 }
102
103     </style>
104
105 </head>
106 <body>
107     <h1>Daftar Belanja</h1>
108     <table>
109         <div class="belanja">
110         <tr>
111             <th>ID</th>
112             <th>Nama</th>
113             <th>Email</th>
114             <th>Tanggal</th>
115             <th>Total Belanja</th>
116             <th>Aksi</th>
117         </div>
118         </tr>
```

Figure 12: index.php

Figure 13: index.php

```php
<?php
// Menampilkan data dalam bentuk tabel
if ($result->num_rows > 0) {
    while ($row = $result->fetch_assoc()) {
        $tanggal = $row['tanggal'] != '0000-00-00' ? date("d-m-Y", strtotime(
            $row['tanggal'])) : 'Tanggal tidak valid';
        echo "<tr>";
        echo "<td>" . $row['Id_member'] . "</td>";
        echo "<td>" . $row['nama'] . "</td>";
        echo "<td>" . $row['email'] . "</td>";
        echo "<td>" . $tanggal . "</td>";
        echo "<td>" . $row['Total'] . "</td>";
        echo "<td>
                <a href='edit.php?id=" . $row['Id_member'] . "'><b>
                    Edit</b></a>
                <a href='delete.php?Id=" . $row['Id_member'] . "'><b>
                    Delete</b></a>
            </td>";
        echo "</tr>";
    }
} else {
    echo "<tr><td colspan='6'>Tidak ada data</td></tr>";
}
?>

</table>
<form action="insert.php" method="post">
    <label>id:</label>
    <input type="text" name="id" required><br>
    <label>Nama:</label>
    <input type="text" name="nama" required><br>
    <label>Email:</label>
    <input type="email" name="email" required><br>
    <label>Tanggal:</label>
    <input type="date" name="tanggal" required><br>
    <label>Total Belanja:</label>
    <input type="number" name="Total" required><br>
    <input type="submit" name="submit" value="Submit">
</form>
```

Figure 14: index.php

```php


    <?php
    // Menampilkan data yang baru diinput
if (isset($_SESSION['data_baru'])) {
    $data_baru = $_SESSION['data_baru'];
    // Pastikan menggunakan kunci array yang benar
    $tanggal_baru = $data_baru['tanggal'] != '0000-00-00' ? date("d-m-Y", strtotime($
        data_baru['tanggal'])) : 'Tanggal tidak valid';
    echo "<h2>Data Baru</h2>";
    echo "<table>
            <tr>
                <th>ID</th>
                <th>Nama</th>
                <th>Email</th>
                <th>Tanggal</th>
                <th>Total</th>
            </tr>
            <tr>
                <td>" . $data_baru['Id_member'] . "</td>
                <td>" . $data_baru['nama'] . "</td>
                <td>" . $data_baru['email'] . "</td>
                <td>" . $tanggal_baru . "</td>
                <td>" . $data_baru['Total'] . "</td>
            </tr>
        </table>";
    unset($_SESSION['data_baru']);
}    ?>
</body>
</html>
```

Figure 15: index.php

In writing the code above, the author combines CSS styling in 1 index.php file as in thecode above.

If you want to see the results of the above script, go to the browser or chrome, access viahttp://localhost/test_crud. If there is no error, it will look like below:

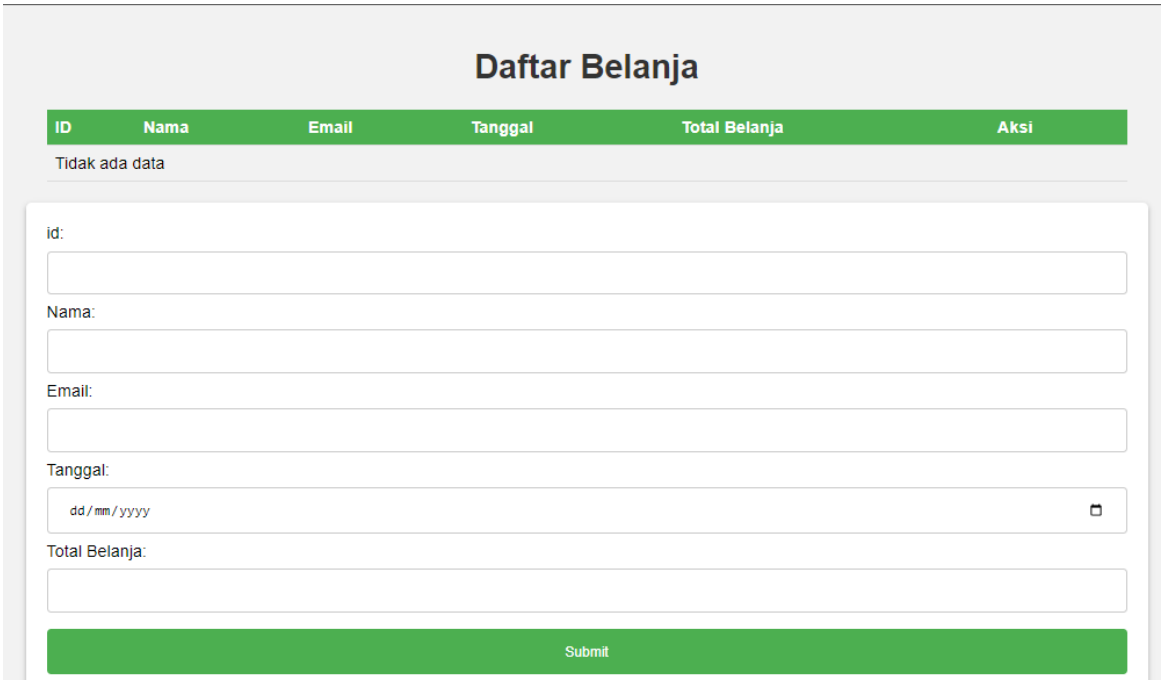

Figure 16: website view

If you have created an index.php file, then create an insert.php file to get the resultsof users who input data such as the provisions in the table. Here's the script for insert.php

```php
<?php
include "koneksi.php";
session_start();

// Memeriksa apakah ID telah dikirimkan
if (isset($_GET['id'])) {
    $id = $_GET['id'];

    // Query untuk mengambil data berdasarkan ID
    $sql = "SELECT * FROM tabel_belanja WHERE Id_member = '$id'";
    $result = $conn->query($sql);

    // Memeriksa apakah data ditemukan
    if ($result->num_rows > 0) {
        $row = $result->fetch_assoc();
    } else {
        echo "Data tidak ditemukan!";
        exit();
    }
}

// Memproses data yang telah di-submit untuk diperbarui
if (isset($_POST['submit'])) {
    $id = $_POST['id'];
    $nama = $_POST['nama'];
    $email = $_POST['email'];
    $tanggal = $_POST['tanggal'];
    $total = $_POST['Total'];

    // Query untuk mengupdate data
    $sql = "UPDATE tabel_belanja SET nama='$nama', email='$email', tanggal='$tanggal'
        , Total='$total' WHERE Id_member='$id'";

    if ($conn->query($sql) === TRUE) {
        $_SESSION['pesan'] = "Data berhasil diperbarui!";
        header("Location: edit.php?id=$id");
        exit();
    } else {
        echo "Error: " . $sql . "<br>" . $conn->error;
    }
}
?>
```

Figure 17: insert.php

```php
<?php
session_start();
include "koneksi.php"; // Menyertakan file koneksi.php

// Menangkap data dari form
$id = $_POST['Id_member'];
$nama = $_POST['nama'];
$email = $_POST['email'];
$tanggal = $_POST['tanggal'];
$Total = $_POST['Total'];

// Query untuk menambahkan data ke tabel
$sql = "INSERT INTO tabel_belanja (Id_member, nama, email, tanggal, Total) VALUES
    ('$Id_member', '$nama', '$email', '$tanggal', '$Total')";
if ($conn->query($sql) === TRUE) {
    $_SESSION['data_baru'] = array(
        'Id_member' => $Id_member,
        'nama' => $nama,
        'email' => $email,
        'tanggal' => $tanggal,
        'Total' => $Total,
    );
    header('Location: index.php');
} else {
    echo "Error: ". $sql. "<br>". $conn->error;
}

$conn->close();
?>
```

Same as the Previous step, then create an edit.php file. and the script is as below:

Figure 18: edit.php

```
<!DOCTYPE html>
<html>
<head>
    <title>Edit Data</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            background-color: #f8f9fa;
            margin: 0;
            padding: 20px;
        }

        h1 {
            text-align: center;
            color: #343a40;
        }

        form {
            background-color: #ffffff;
            padding: 20px;
            border-radius: 8px;
            box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);
            max-width: 600px;
            margin: 20px auto;
        }

        label {
            display: block;
            margin-bottom: 8px;
            color: #495057;
        }
```

Figure 19: edit.php

```
        input[type=text], input[type=email], input[type=date], input[type=number]
            {
            width: 100%;
            padding: 10px;
            margin: 8px 0 20px 0;
            display: inline-block;
            border: 1px solid #ced4da;
            border-radius: 4px;
            box-sizing: border-box;
            font-size: 16px;
            color: #495057;
        }
```

Figure 20: edit.php

```
        input[type=submit] {
            width: 100%;
            background-color: #007bff;
            color: white;
            padding: 12px 20px;
            margin: 8px 0;
            border: none;
            border-radius: 4px;
            cursor: pointer;
            font-size: 16px;
        }

        input[type=submit]:hover {
            background-color: #0056b3;
        }

        .message {
            text-align: center;
            color: green;
            margin-bottom: 20px;
        }

        .back-link {
            text-align: center;
            margin-top: 20px;
        }

        .back-link a {
            color: #007bff;
            text-decoration: none;
            font-size: 16px;
        }

        .back-link a:hover {
            text-decoration: underline;
        }
    </style>
</head>
```

Figure 21: edit.php

```
</head>
<body>
    <h1>Edit Data <style teks-align="center"></style></h1>
    <?php
    // Menampilkan pesan konfirmasi jika ada
    if (isset($_SESSION['pesan'])) {
        echo "<p class='message'>" . $_SESSION['pesan'] . "</p>";
        echo "<div class='back-link'><a href='index.php'>Kembali ke Halaman
            Utama</a></div>";
        unset($_SESSION['pesan']);
    }
    ?>
    <form action="edit.php?id=<?php echo $row['Id_member']; ?>" method="post">
        <input type="hidden" name="id" value="<?php echo $row['Id_member']; ?>">
        <label>Nama:</label>
        <input type="text" name="nama" value="<?php echo $row['nama']; ?>" required>
        <label>Email:</label>
        <input type="email" name="email" value="<?php echo $row['email']; ?>"
        required>
        <label>Tanggal:</label>
        <input type="date" name="tanggal" value="<?php echo $row['tanggal']; ?>"
        required>
        <label>Total Belanja:</label>
        <input type="number" name="Total" value="<?php echo $row['Total']; ?>"
        required>
        <input type="submit" name="submit" value="Update">
    </form>
</body>
</html>
```

Figure 22: edit.php

Finally, to delete the data, name it delete.php. for the script, as shown below

```php
<?php
include "koneksi.php";

// Check if ID is set in the URL
if (isset($_GET['Id'])) {
    $id = $_GET['Id'];

    // Validate that $id is a numeric value
    if (is_numeric($id)) {
        // Prepare the DELETE query
        $sql = "DELETE FROM tabel_belanja WHERE Id_member = ?";

        // Prepare statement
        if ($stmt = $conn->prepare($sql)) {
            // Bind parameters
            $stmt->bind_param("i", $id);

            // Execute the statement
            if ($stmt->execute()) {
                // Redirect to index.php after successful deletion
                header("Location: index.php");
                exit();
            } else {
                echo "Error: " . $stmt->error;
            }

            // Close statement
            $stmt->close();
        } else {
            echo "Error: " . $conn->error;
        }
    } else {
        echo "Error: Invalid Id_member parameter";
    }
} else {
    echo "Error: Id_member parameter not found";
}

// Close the database connection
$conn->close();
?>
```

Figure 23: delete.php

When the 5 files have been created, make sure there are no errors in connecting to the database, either in writing the code, or anything else. If everything goes well and there are no errors, it will look like this.

Figure 24: web view

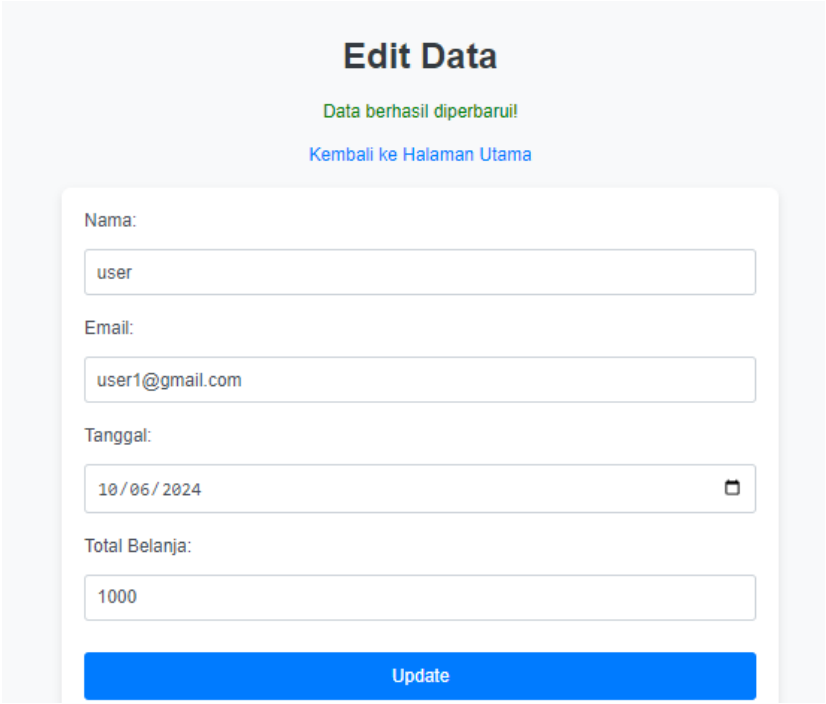

Figure 25: web view

CONCLUSIONS

Based on the discussion above, there is a conclusion that by using HTML, CSS, MySql and PHP programming language, can create a simple web application. Input, read, edit, and delete data, which is connected to a database accessed via localhost. The use of HTML to createthe framework of a website application display, CSS, to manage the appearance, layout, and style of the website application, PHP to run the process of inputting, editing, and deleting data, and Mysql, as the database. Data that is successfully inputted will be displayed on the website, in the form of a table. This program can be further developed to solve more complex problems,according to user needs. With the writing of this journal, it is hoped that it will help readers, tostart making simple web application programs, which can later be created or developed by readers, to make programs that suit their needs.

REFERENCES

Alfonsius, Eric, Sukardi, and I Made Nova Vendi Astawa. 2023. "Project Work Reporting Information SystemBased on SDLC Modeling (Case Study: PT Vertikal Tiara Manunggal)." *Journal of Artificial Intelligence And Technology Information (JAITI)* 1 (2): 50-58.

Febriyanti, Krismon Nuvi, and Wahyu Nur Hidayat. 2024. "Development of Android-Based Mobile Learning Media Assisted by Thunkable with Project Based Learning Model on CSS Material for Class X PPLG Expertise Program." *Journal of Innovation and Teacher Professionalism* 2 (2): 184–94. https://doi.org/10.17977/um084v2i22024p184-194.

Scientific, Journal. 2024. "Scientica," no. January. https://doi.org/10.572349/scientica.v2i1.828.

Zaharia, Matei, Reynold S. Xin, Patrick Wendell, Tathagata Das, Michael Armbrust, Ankur Dave, Xiangrui Meng, et al. 2016. "Apache Spark: A Unified Engine for Big Data Processing." *Communications of the ACM* 59 (11): 56–65. https://doi.org/10.1145/2934664.