Software Requirements Specification

Simple Blog Web Application

Author : Mohammed Shoaib C

Version : 0.1

Date : 24/09/2024

Content Index

1 . Introduction

1.1 Purpose

The purpose of this document is to outline the requirements and specifications for the **Simple Blog Web Application**. This web-based application will allow users to create, read, update, and delete blog posts. The application will have a user-friendly interface designed using **Bootstrap** and will store all blog data in a **MySQL** database.

1.2 Scope

This system will enable users to register, log in, create blog posts, edit existing posts, and delete posts. The database will store all blog posts along with user credentials. It will include basic validation, user authentication, and simple CRUD operations.

1.3 Overview

The *Simple Blog Web Application* will allow registered users to:

- Create new blog posts.
- View a list of all posts.
- Read individual blog posts.
- Update and delete blog posts.

The system will be developed using **PHP** for the backend, **Bootstrap** for frontend design, and **MySQL** as the database management system.

1.4 Technology Stack

- **Frontend :** HTML, CSS, Bootstrap**.**
- **Backend** : PHP and **Database** : MySQL.

2. Overall Description

2.1 Product Perspective

The system is a standalone, web-based application designed to manage blog posts. It uses **PHP** for server-side logic, **Bootstrap** for responsive UI design, and **MySQL** to store blog post data. The application operates in a **CRUD** (Create, Read, Update, Delete) environment, providing users with full control over blog content.

2.2 Product Function

Create Posts: Users can add new blog posts with a title and content.

Read Posts : The application will list all blog posts and provide the ability to read the full post.

Update Posts : Users can update the content and title of their existing posts.

Delete Posts : Users can delete their posts from the system.

Authentication : Only authenticated users will be able to perform CRUD operations.

2.3 User Characteristics

- **Admin Users :** Full access to all CRUD operations.
- **Guest Users :** Can only view posts (if this feature is extended in the future).

2.4 Assumptions and Dependencies

- Users will access the application through a web browser.
- The system will be hosted on a PHP-compatible web server (Apache, Nginx, etc.).
- MySQL must be installed and properly configured on the server. Users are assumed to have basic knowledge of how to interact with web applications.

3. System Features

3.1 Create Blog Posts

Description : Authenticated users can create new blog posts by submitting a form with a title and content.

Functional Requirements :

- Users must be logged in to create a blog post.
- The form for creating posts should validate required fields.
- The new post should be stored in the **MySQL** database.

Inputs :

- None.

3.2 Read Blog Posts

Description : The homepage will list all the blog posts in descending order of creation date. Users can click on individual posts to view their full content.

Functional Requirements :

- Posts must be fetched from the database and displayed.
- Post content should be limited to a preview (e.g., first 100 characters) on the homepage.

Inputs :

- None.

3.3 Update Blog Posts

Description : Users can update the title and content of an existing post.

Functional Requirements :

- Only authenticated users can edit posts.
- The system should retrieve the current post data and pre-fill the form for editing.
- The updated post should be saved in the database.

Inputs :

- Post ID, Title, Content.

3.4 Delete Blog Posts

Description : Authenticated users can delete their blog posts.

Functional Requirements :

- Only the post's author can delete it.
- The system should confirm before deletion.
- The post should be removed from the database.

Inputs :

- Post ID.

3.5 User Authentication

Description : Users must log in to create, update, or delete posts.

Functional Requirements :

- The system must validate the username and password.
- Only authenticated users can access post management features.
- Passwords should be securely stored (e.g., hashed with bcrypt).

Inputs :

- Username, Password.

4. External Interface Requirements

4.1 User Interfaces

- **Homepage :** Displays all blog posts with titles and previews.
- **Post Creation Page :** Form to create a new post.
- **Post Editing Page :** Form to update an existing post.
- **Post View Page :** Displays the full content of a single post.
- **Login Page :** Allows users to authenticate.

4.2 Hardware Interfaces

- The application is designed to run on a server capable of hosting PHP and MySQL.

4.3 Software Interfaces

- The system interacts with a **MySQL** database to store blog post data.
- The front-end design is implemented using **Bootstrap** for responsive UI.

5. Non-Functional Requirements

5.1 Performance Requirements

- The system should load blog posts from the database within 2 seconds.
- The application should handle up to 1000 concurrent users.

5.2 Security Requirements

- Passwords should be hashed before storage.
- Users must authenticate before performing any write operations (create, update, delete).

5.3 Usability Requirements

- The application should have a clean and responsive UI, designed using **Bootstrap**.
- The system should be intuitive for non-technical users to manage blog content.

5.4 Scalability

- The system should be scalable to handle more blog posts and users in the future.

6. Source Code

6.1 login.php

```
<?php
if (isset($_POST['login'])){
   $username = $_POST['username'];
   $password = $_POST['password'];
   if ($username == "admin" && $password == "123"){
      session_start();
      $_SESSION["user"] = "admin";
      header("Location:index.php");

   }else{
      header("Location: index.php?error=1");
   }
}
?>
```

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Login</title>
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css" rel="stylesheet">
  <style>
    .error-message {
      color: red;
      background-color: #f8d7da;
      border-color: #f5c6cb;
      padding: 10px;
      border-radius: 5px;
      margin-bottom: 15px;
      display: none;
    }
    .login-form {
      background-color: #f7f7f7;
      padding: 30px;
      border-radius: 8px;
      box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
    }
  </style>
```

```
</head>
<body>
  <div class="container mt-5" style="max-width:600px">
    <div class="login-form">
      <!-- Error message placeholder -->
      <?php if (isset($_GET['error'])): ?>
        <div class="error-message" id="errorMessage">
          Invalid username or password. Please try again.
        </div>
      <?php endif; ?>

      <form action="login.php" method="post">
        <div class="form-field mb-4">
          <label for="username" class="form-label">Username</label>
          <input class="form-control" type="text" name="username" id="username" placeholder="Username" required>
        </div>
        <div class="form-field mb-4">
          <label for="password" class="form-label">Password</label>
          <input class="form-control" type="password" name="password" id="password" placeholder="Password" required>
        </div>
        <div class="form-field mb-4">
          <input class="btn btn-primary w-100" type="submit" value="Login" name="login">
        </div>
      </form>
```

```
    </div>
  </div>
</body>
</html>
```

6.2 index.php

```
<?php
include("templates/header.php");
?>
<div class="posts-list w-100 p-5">
  <!-- For Alert Messege -->
   <?php
   if (isset($_SESSION['create'])){
   ?>
   <div class="alert alert-success">
     <?php
     echo $_SESSION["create"];   // for create
     ?>
   </div>
   <?php
   unset($_SESSION["create"]);
   }
   ?>

  <?php
   if (isset($_SESSION['update'])){
```

```
?>
<div class="alert alert-success">
  <?php
  echo $_SESSION["update"];   // for update
  ?>
</div>
<?php
unset($_SESSION["update"]);
}
?>

<?php
if (isset($_SESSION['delete'])){
?>
<div class="alert alert-success">
  <?php
  echo $_SESSION["delete"];   // for delete
  ?>
</div>
<?php
unset($_SESSION["delete"]);
}
?>
<table class="table table-bordered">
  <thead>
    <tr>
```

```
        <th style="width:15%;">Publication Date</th>
        <th style="width:15%;">Title</th>
        <th style="width:45%;">Article</th>
        <th style="width:25%;">Action</th>
      </tr>
    </thead>
    <tbody>
        <?php
          include("../connect.php");
          $sqlSelect = "SELECT * FROM posts";
          $result = mysqli_query($conn, $sqlSelect);
          while($data = mysqli_fetch_array($result)){
          ?>
          <tr>
            <td><?php echo $data["date"]?></td>
            <td><?php echo $data["title"]?></td>
            <td><?php echo $data["summary"]?></td>
            <td>
              <a class="btn btn-info" href="view.php?id=<?php echo $data["id"]?>">View</a>
              <a class="btn btn-warning" href="edit.php?id=<?php echo $data["id"]?>">Edit</a>
              <a class="btn btn-danger" href="delete.php?id=<?php echo $data["id"]?>">Delete</a>
            </td>
          </tr>
        <?php
```

```
            }
          ?>
      </tbody>
    </table>
</div>

<?php
include("templates/footer.php");
?>
```

6.3 create.php

```
<?php
  include("templates/header.php");
?>
    <div class="create-form w-100 mx-auto p-4" style="max-width:700px;">
      <form action="process.php" method="post">
        <div class="form-field mb-3">
          <input type="text" class="form-control"name="title" id="" placeholder="Enter Title :">
        </div>
        <div class="form-field mb-3">
          <textarea name="summary" class="form-control" id="" cols="30" rows="10" placeholder="Enter Summary :"></textarea>
        </div>
        <div class="form-field mb-3">
          <textarea name="content" class="form-control" id="" cols="30" rows="10" placeholder="Enter Post :"></textarea>
        </div>
```

```
            <input type="hidden" name="date" value="<?php echo date("Y/m/d");?>">
            <div class="form-field">
              <input type="submit" class="btn btn-primary" value="submit" name="create">
            </div>
          </form>
        </div>
<?php
  include("templates/footer.php");
?>
```

6.4 view.php

```
<?php
include("templates/header.php");
?>
<div class="post w-100 bg-light p-5 ">
  <?php
      $id = $_GET["id"];
      if($id){
        include("../connect.php");
        $sqlSelectPosts = "SELECT * FROM posts WHERE id = $id";
        $result = mysqli_query($conn, $sqlSelectPosts);
        while($data = mysqli_fetch_array($result)){
        ?>
        <h1><?php echo $data['title'];?></h1>
        <p><?php echo $data['date'];?></p>
```

```
        <p><?php echo $data['content'];?></p>
        <?php
        }
      }else{
        echo "Post Not Found";
      }
  ?>
</div>
<?php
include("templates/footer.php");
?>
```

6.5 edit.php

```
<?php
  include("templates/header.php");
?>

<?php
$id = $_GET['id'];
if($id){
  include("../connect.php");
  $sqlEdit = "SELECT * FROM posts WHERE id= $id";
  $result = mysqli_query($conn, $sqlEdit);
}else{
  echo "No post found";
```

```
}
?>
    <div class="create-form w-100 mx-auto p-4" style="max-width:700px;">
      <form action="process.php" method="post">
        <?php
        while($data = mysqli_fetch_array($result)){
        ?>


        <div class="form-field mb-3">
          <input type="text" class="form-control"name="title" id="" placeholder="Enter Title :" value="<?php echo $data['title']; ?>">
        </div>
        <div class="form-field mb-3">
          <textarea name="summary" class="form-control" id="" cols="30" rows="10" placeholder="Enter Summary :"><?php echo $data['summary']; ?></textarea>
        </div>
        <div class="form-field mb-3">
          <textarea name="content" class="form-control" id="" cols="30" rows="10" placeholder="Enter Post :"><?php echo $data['content']; ?></textarea>
        </div>
        <input type="hidden" name="date" value="<?php echo date("Y/m/d");?>">
        <input type="hidden" name="id" value="<?php echo $id; ?>">
        <div class="form-field">
          <input type="submit" class="btn btn-primary" value="submit" name="update">
        </div>
```

```
            <?php
            }
            ?>
          </form>
      </div>
<?php
  include("templates/footer.php");
?>
```

6.6 delete.php

```
<?php
$id = $_GET["id"];
if($id){
  include("../connect.php");
  $sqlDelete = "DELETE FROM posts WHERE id = $id";
  if(mysqli_query($conn, $sqlDelete)){
    session_start();
    $_SESSION["delete"] = "Post deleted successfully";
    header("Location:index.php");
  }else{
    die("Something is not write. Data is not declared");
  }
}else{
  echo "Post not found";
}
?>
```

6.7 process.php

```
<?php
  if(isset($_POST["create"])){
    include("../connect.php");
    $title = mysqli_real_escape_string($conn,$_POST["title"]);
    $summary = mysqli_real_escape_string($conn,$_POST["summary"]);
    $content = mysqli_real_escape_string($conn,$_POST["content"]);
    $date = mysqli_real_escape_string($conn,$_POST["date"]);

    $sqlInsert = "INSERT INTO posts(date, title, summary, content) VALUES ('$date','$title','$summary','$content')";
    if(mysqli_query($conn, $sqlInsert)){
      session_start();
      $_SESSION["create"] = "Post added successfully";
      header("Location:index.php");
    }else{
      die("Data is not inserted!");
    }

  }
?>

<?php
  if(isset($_POST["update"])){
    include("../connect.php");
    $title = mysqli_real_escape_string($conn,$_POST["title"]);
```

```
    $summary = mysqli_real_escape_string($conn,$_POST["summary"]);
    $content = mysqli_real_escape_string($conn,$_POST["content"]);
    $date = mysqli_real_escape_string($conn,$_POST["date"]);
    $id = mysqli_real_escape_string($conn,$_POST["id"]);
    $sqlUpdate = "UPDATE posts SET title = '$title', summary = '$summary', content = '$content', date = '$date' WHERE id = $id";
    if(mysqli_query($conn, $sqlUpdate)){
      session_start();
      $_SESSION["update"] = "Post updated successfully";
      header("Location:index.php");
    }else{
      die("Data is not Updated!");
    }

  }
?>
```

6.8 header.php

```
<?php
session_start();
if (!isset($_SESSION["user"])){
  header("Location:login.php");
}
?>

<!DOCTYPE html>
```

```
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Dashboard</title>
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css" rel="stylesheet">
</head>
<body>
  <div class="dashboard d-flex justify-content-between ">
    <div class="sidebar bg-dark vh-100 ">
      <h1 class="bg-primary p-4"><a href="./index.php" class="text-light text-decoration-none">Dashboard</a></h1>
      <!-- For Menues after the Dashboard -->
      <div class="menues p-4 mt-5">
        <div class="menu">
          <a href="create.php" class="text-light text-decoration-none "><strong>Add New Post</strong></a>
        </div>
        <div class="menu mt-5">
          <a href="../index.php" class="text-light text-decoration-none "><strong>View website</strong></a>
        </div>
        <div class="menu mt-5">
          <a href="logout.php" class="btn btn-info">Logout</a>
        </div>
      </div>
```

```
</div>
```

6.9 footer.php

```
</div>
</body>
</html>
```

6.10 connect.php

```
<?php
$dbHost = "localhost:3307";
$dbUsername = "root";
$dbPassword = "";
$dbName = "cms";

$conn = mysqli_connect($dbHost, $dbUsername, $dbPassword, $dbName);
if(!$conn){
   die("Something went wrong. Database is not connected;");
}
?>
```

6.11 index.php (for Front End)

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Simple Blog</title>
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css" rel="stylesheet">
</head>
<body>
  <!-- Header session -->
  <header class="p-4 bg-dark text-center ">
    <h1><a href="index.php" class="text-light text-decoration-none">Simple Blog</a></h1>
  </header>
  <div class="post-list mt-5">
    <div class="container">
      <?php
        include("connect.php");
        $sqlSelect = "SELECT * FROM posts";
        $result = mysqli_query($conn, $sqlSelect);
        while($data = mysqli_fetch_array($result)){
        ?>
          <div class="row mb-4 p-5 bg-light">
            <div class="col-sm-2">
```

```
                <?php echo $data["date"];?>
              </div>
              <div class="col-sm-3">
                <h3><?php echo $data["title"];?></h3>
              </div>
              <div class="col-sm-5">
                <?php echo $data["content"];?>
              </div>
              <div class="col-sm-2">
                <a href="view.php?id=<?php echo $data['id'];?>" class="btn btn-primary">READ MORE</a>
              </div>
            </div>
          <?php
          }
        ?>
    </div>
  </div>

  <!-- Footer session-->
  <div class="footer bg-dark p-4 mt-4">
    <a href="admin/index.php" class="text-light">Admin Panel</a>
  </div>
</body>
</html>
```

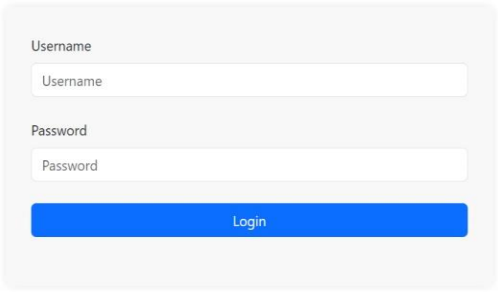
6.12 view.php (for Front End)

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Simple Blog</title>
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css" rel="stylesheet">
</head>
<body>
  <!-- Header session -->
  <header class="p-4 bg-dark text-center ">
    <h1><a href="index.php" class="text-light text-decoration-none">Simple Blog</a></h1>
  </header>
  <div class="post-list mt-5">
    <div class="container">
      <?php
        $id = $_GET['id']; // Here i am changing something
        if($id){
          include("connect.php");
          $sqlSelect = "SELECT * FROM posts WHERE id = $id";
          $result = mysqli_query($conn, $sqlSelect);
          while($data = mysqli_fetch_array($result)){
          ?>
```

```
                <div class="post bg-light p-4 mt-5">
                    <h1><?php echo $data['title'];?></h1>
                    <p><?php echo $data['date'];?></p>
                    <p><?php echo $data['content'];?></p>
                </div>
                <?php
                }
            }else{
                echo "No post found";
            }
        ?>
    </div>
  </div>
  <!-- Footer session -->
  <div class="footer bg-dark p-4 mt-4">
    <a href="admin/index.php" class="text-light">Admin Panel</a>
  </div>
</body>
</html>
```

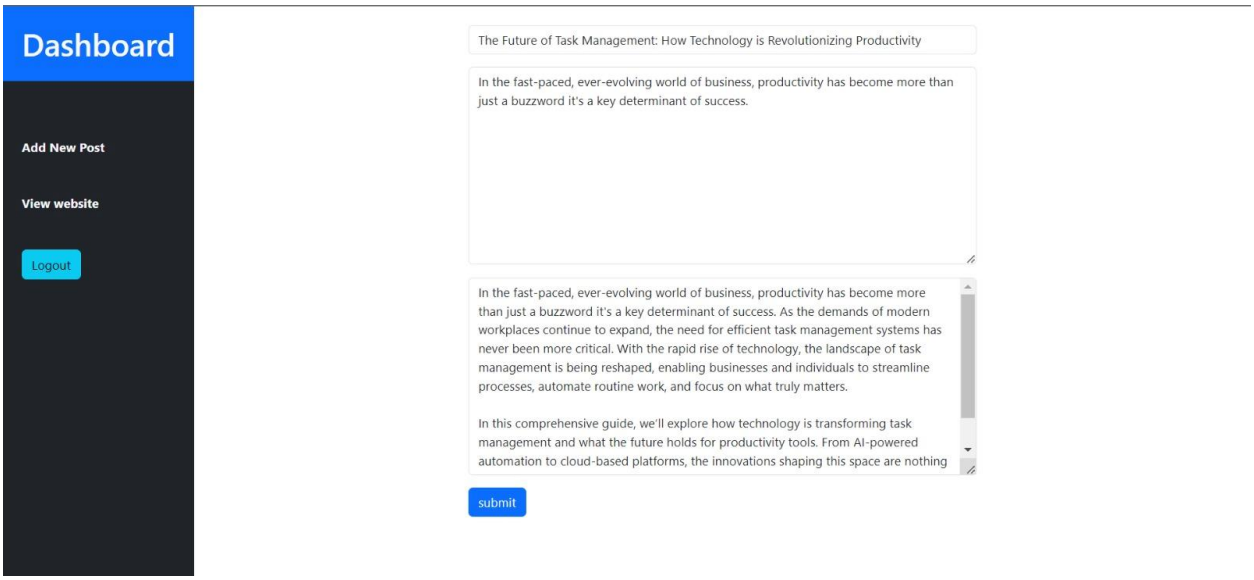
7 . Screenshots

7.1 Login Page Screenshot

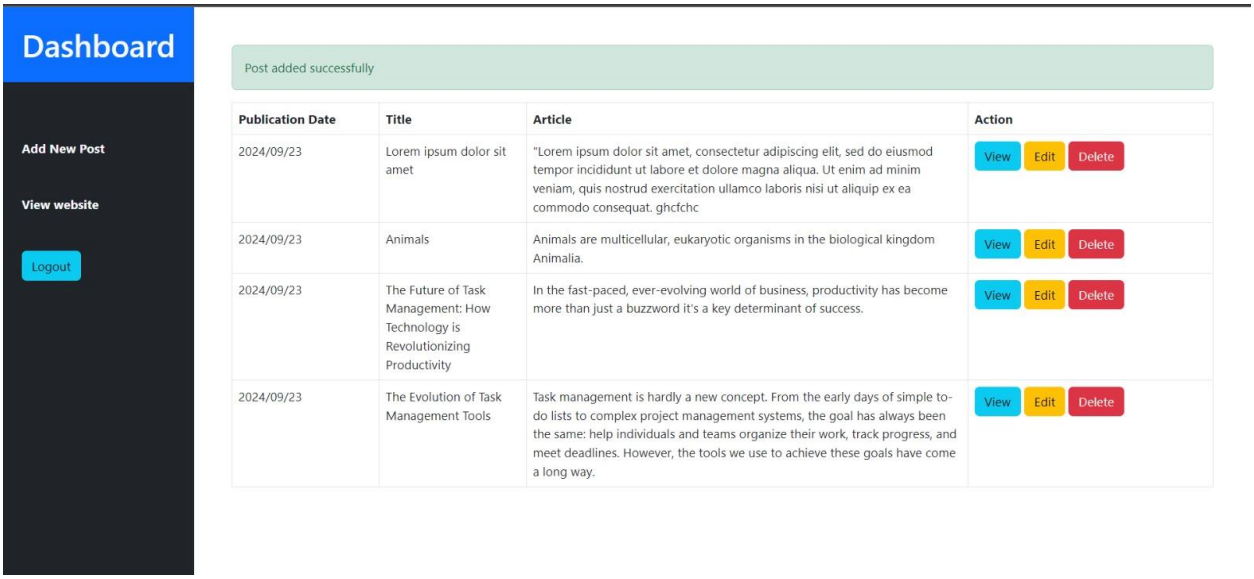


7.2 After Login Screenshot

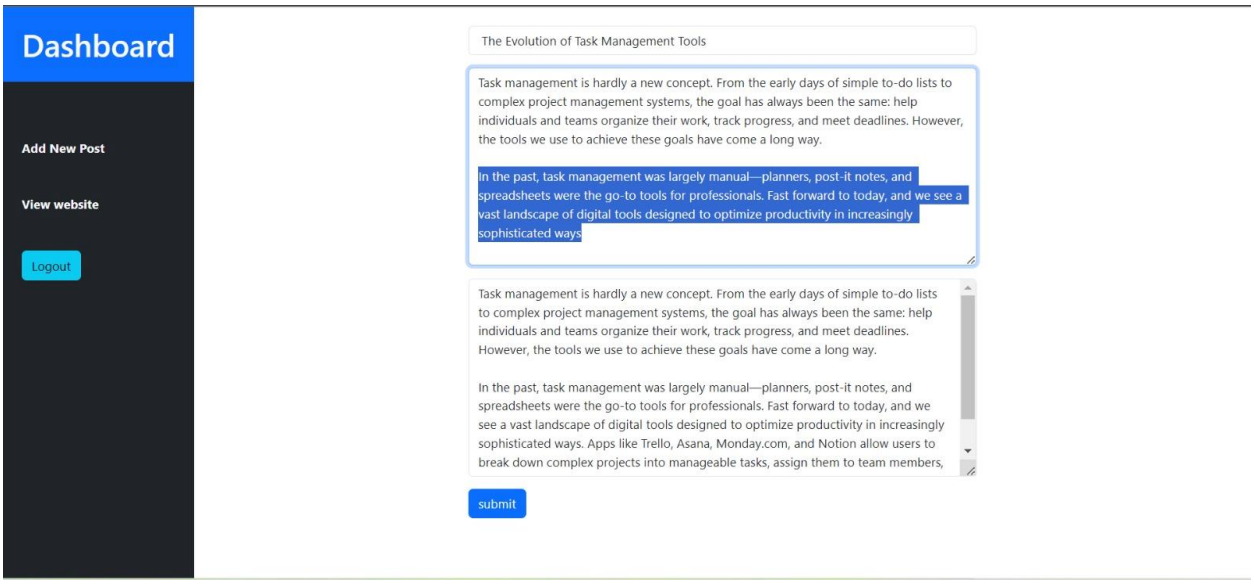
7.3 Create New Screenshot



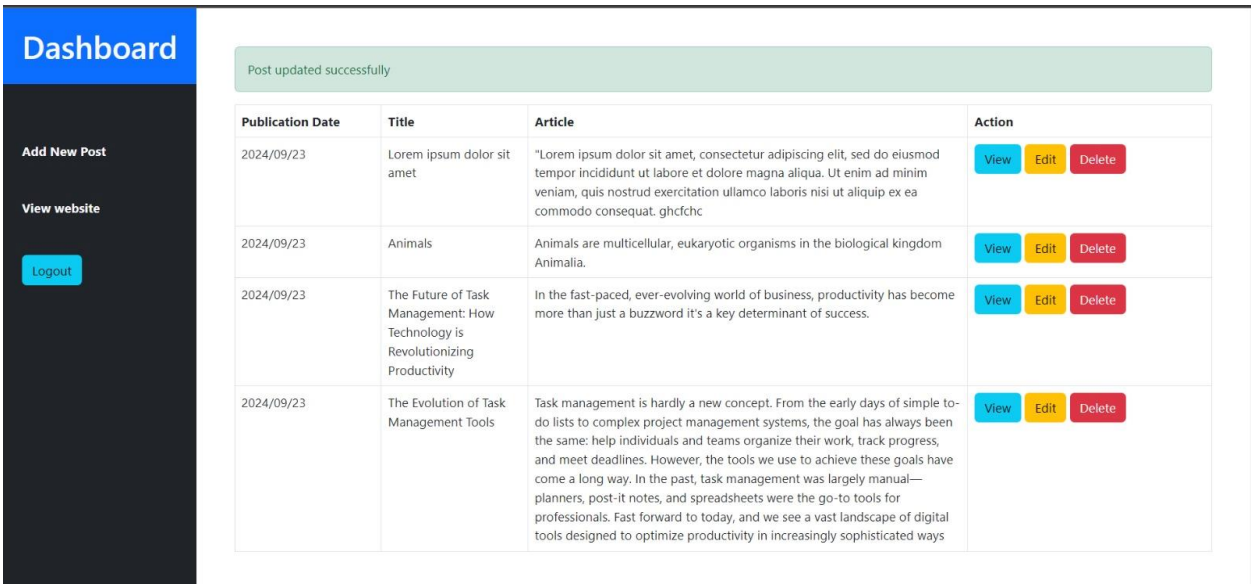
7.4 After creating post Screenshot



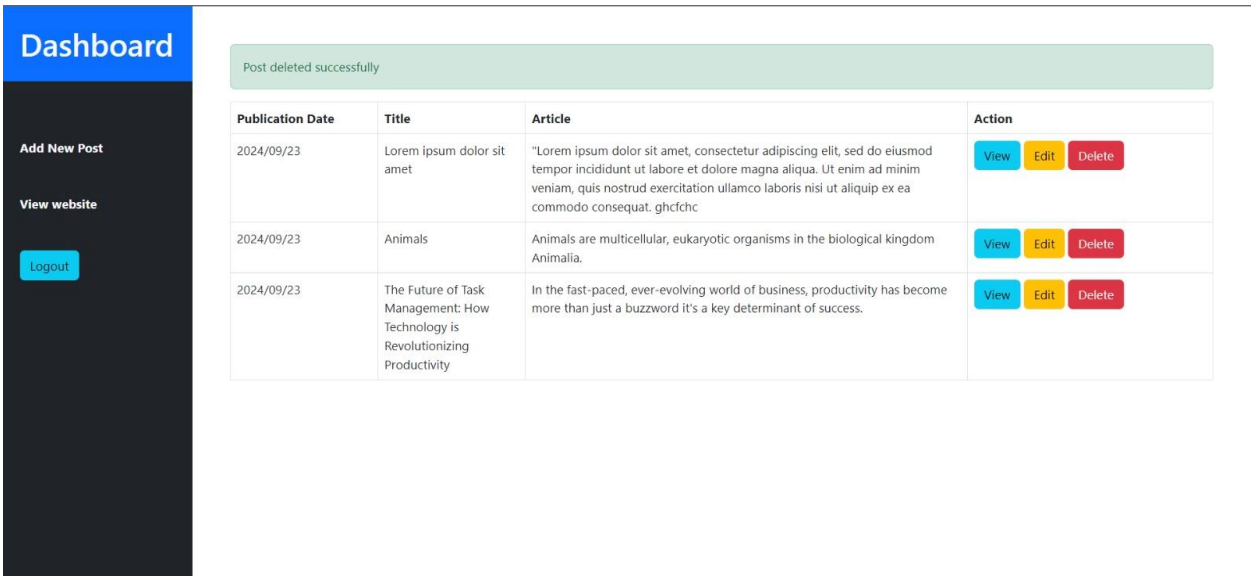
7.6 Edit Exixting Post Screenshot



7.7 After Editing Post Screenshot

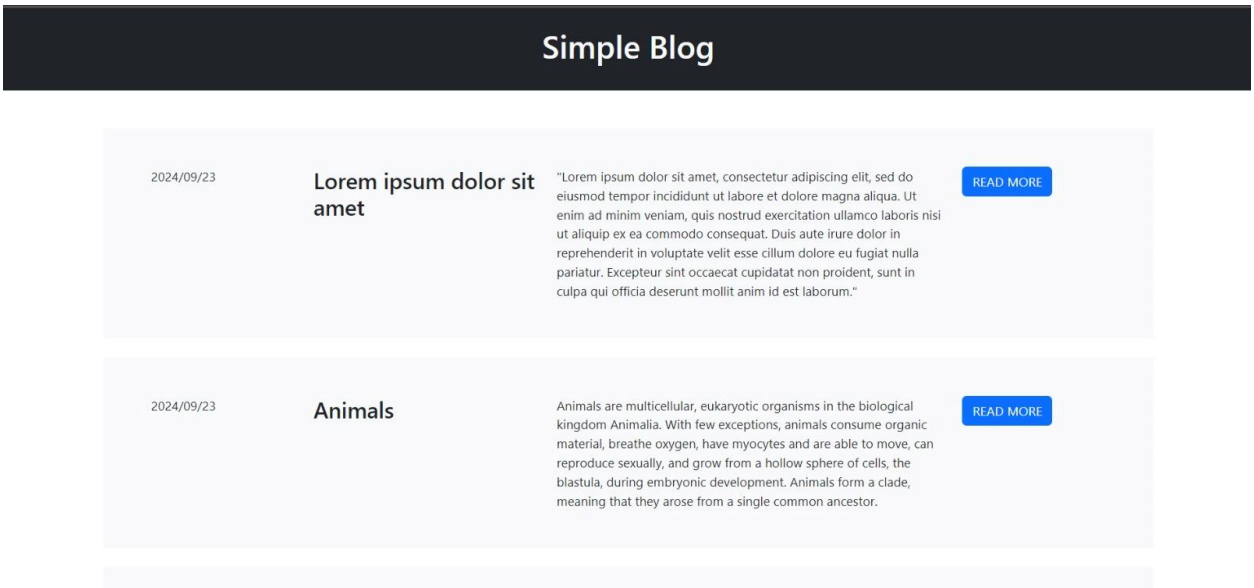


7.8 Delete Post Screenshot

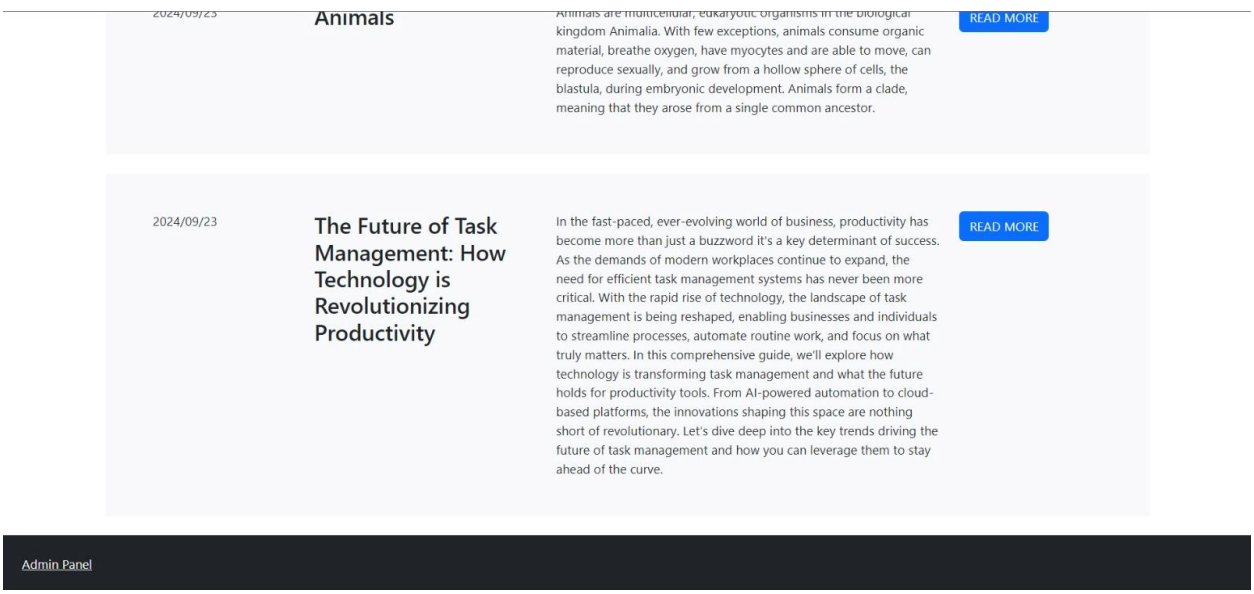


7.9 View Post Screenshot

7.10 View website and Header Screenshot



7.11 View website and Footer Screenshot



7.12 After press Read More button Screenshot

8. Conclusion

The Simple Blog with Bootstrap and MySQL project successfully demonstrates the core functionality of a blog management system using PHP for backend logic, Bootstrap for responsive and user-friendly design, and MySQL for data storage. The application allows users to perform essential CRUD operations — creating, reading, updating, and deleting blog posts — with a seamless interface.

This project showcases the practical implementation of key web development concepts, including user authentication, secure data management, and dynamic content rendering. It provides a foundation for further development, such as integrating more advanced features like user roles, comments, and media attachments.

The system achieved its primary goals of being simple, efficient, and easy to use. It is scalable and can be extended in the future to include additional functionalities like pagination, search filters, or rich media content. Overall, the project is a successful demonstration of building a full-stack web application with a focus on performance, usability, and scalability.