SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE

A

MINI PROJECT REPORT

ON

EXPENSE MANAGEMENT SYSTEM

SUBMITTED TO THE SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE

IN THE FULFILLMENT OF THE REQUIREMENT

OF

Database Management System Lab

Third Year Computer Engineering

Academic Year 2023-24

BY

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CERTIFICATE

This is to certify that,

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studying in TE Computer Engineering Course SEM-V has successfully completed their DBMS Lab Mini-Project work titled **EXPENSE MANAGEMENT SYSTEM** at Sinhgad Institute of Technology and Science, Narhe in the fulfillment of the Bachelor's Degree in Engineering of Savitribai Phule Pune University, during the academic year 2023-2024.

Ms. S. S. Bhosale	Dr. G. S. Navale	Dr. S. D. Markande
Guide	**Head of Department**	**Principal**

SINHGAD INSTITUTE OF TECHNOLOGY AND SCIENCE, NARHE, PUNE– 411041

Place : Pune

Date :

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Name of students Signature

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Aditya Andhale

Kruttika Atre

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1. INTRODUCTION

Introduction:

Expense management is the systematic process of monitoring, controlling, and optimizing an organization's financial outflows. It involves tracking and categorizing expenditures, ensuring they align with budgets and financial goals, and identifying areas for cost reduction or efficiency improvement. Effective expense management not only helps maintain financial stability but also enhances profitability and cash flow. It encompasses various elements, including budgeting, expense tracking, approval workflows, and reporting, often facilitated through software solutions.

Problem Statement:

The current lack of a complete solution for tracking daily expenditures is causing a constant overload for users. This project aims to manage expenses more efficiently and manageable by freeing users from manual calculations and allowing them to plan ahead with past budgets in mind. The system allows users to add, delete and change for reminders. The graphical budget representation is appealing and easy to understand, making it suitable for future planning. The user interface is consistent, easy to read, and feedback-friendly. The application is useful for monthly report generation and expense tracking.

Scope:

Expense management systems are poised to undergo significant evolution with a broader scope and the integration of advanced features. Artificial Intelligence (AI) and automation will play a pivotal role, simplifying data entry and categorization through automated receipt scanning and intelligent expense recognition. Predictive analytics will enable users to forecast future expenses and make informed financial decisions. Mobile integration will continue to expand, with real-time expense tracking and approval workflows available on mobile apps. These systems will seamlessly integrate with the broader financial ecosystem, including accounting software and ERP systems, ensuring a comprehensive approach to financial management. They play a pivotal role in ensuring compliance with both company policies and regulatory standards. Additionally, expense management systems facilitate paperless operations and promote eco-friendly practices. The mobile accessibility of these systems empowers employees to submit expenses conveniently on the go. Integration with accounting software further simplifies financial processes

2. RELATIONAL DATABASE DESIGN

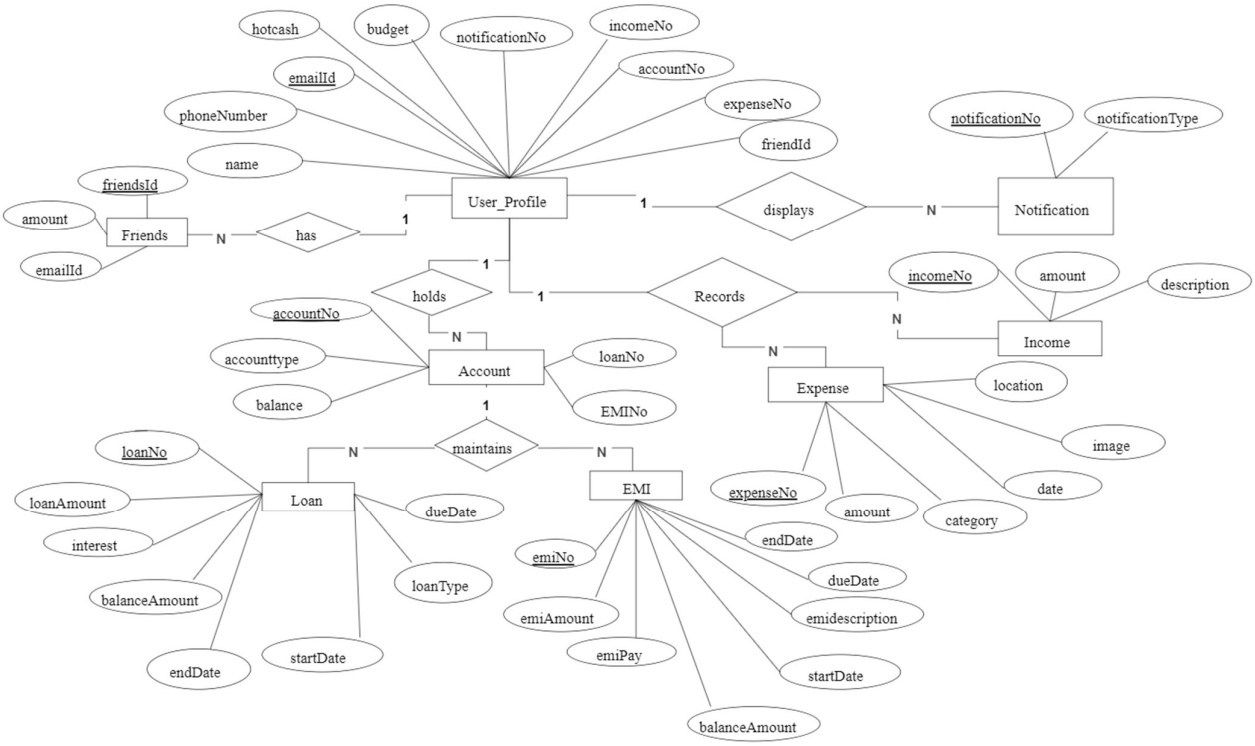

Fig 2.1: ER Diagram

3. IMPLEMENTATIONS

base.php

```
<?php
  class Base {
    protected $pdo;
    function __construct($pdo) {
      $this->pdo = $pdo;
    }
    public function create($table, $fields = array()) {
      $columns = implode(',', array_keys($fields));
      $values = ':' . implode(', :', array_keys($fields));
      $sql = "INSERT INTO {$table} ({$columns}) VALUES ({$values})";
      if ($stmt = $this->pdo->prepare($sql)) {
        foreach ($fields as $key => $data) {
          $stmt->bindValue(':'.$key, $data);
        }
        $stmt->execute();
        return $this->pdo->lastInsertId();
      }
    }
    public function update($table, $user_id, $fields = array()) {
      $columns = '';
      $i = 1;
      foreach ($fields as $name => $value) {
        $columns .= "{$name} = :{$name}";
        if ($i < count($fields)) {
          $columns .= ", ";
        }
        $i++;
      }
      $sql = "UPDATE {$table} SET {$columns} WHERE UserId = {$user_id}";
      if ($stmt = $this->pdo->prepare("$sql")) {
        foreach ($fields as $key => $value) {
          $stmt->bindValue(':' . $key, $value);
```

```
        }
        $stmt->execute();
      }
    }
    public function delete($table, $array) {
      $sql = "DELETE FROM {$table}";
      $where = " WHERE";

      foreach ($array as $name => $value) {
        $sql .= "{$where} {$name} = :{$name}";
        $where = " AND ";
      }
      if ($stmt = $this->pdo->prepare($sql)) {
        foreach ($array as $name => $value) {
          $stmt->bindValue(':'.$name, $value);
        }
      }
      $stmt->execute();
    }
  }
?>
```

connection.php

```
<?php
    $dsn = 'mysql:host=localhost; dbname=expenseman';
    $user = 'root';
    $pass = '';
    try {
        $pdo = new PDO($dsn, $user, $pass);
    }
    catch(PDOException $e){
        echo "Connection Error! ". $e->getMessage();
    }
?>
```

index.php

```
<?php
```

```
    include_once "init.php";

    // User login check
    if (isset($_SESSION['UserId'])) {
      header('Location: templates/3-Dashboard.php');
    }
    // Validate credentials and log the user in
    if (isset($_POST['login']) && !empty($_POST)) {
        $password = $_POST['password'];
        $username = $_POST['username'];

        if(!empty($username) || !empty($password)) {
            $username = $getFromU->checkInput($username);
            $password = $getFromU->checkInput($password);
            if($getFromU->login($username, $password) === false) {
            $error = "The username or password is incorrect";
            }
          }
    }
?>
```

index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="icon" href="static/images/wallet.png" sizes="16x16" type="image/png">
    <link rel="stylesheet" href="static/css/index.css">
   <linkhref="https://fonts.googleapis.com/css2?family=Source+Sans+Pro:wght@600&display=swap"
rel="stylesheet">
    <linkhref="https://fonts.googleapis.com/css2?family=Raleway:wght@300&display=swap"
rel="stylesheet">
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.9.0/css/all.css">
    <linkrel="stylesheet"href="https://stackpath.bootstrapcdn.com/font-awesome/4.7.0/css/font-
awesome.min.css"
```

```
    integrity="sha384-
wvfXpqpZZVQGK6TAh5PVlGOfQNHSoD2xbE+QkPxCAFlNEevoEH3Sl0sibVcOQVnN"
crossorigin="anonymous">
  <title>Expense Management</title>
</head>
<body>
  <div class="container">
    <div class="mob-hidden">
      <h1>EMS</h1>
    </div>
    <div class="top-heading">
      <h1>Expense Management System</h1>
    </div>
    <form action="index.php" method="post" onsubmit = "return validate()" id="form1">
      <div class="group">
        <div class="form-controller">
        <i class="fa fa-user-plus u3" aria-hidden="true"></i>
        <input type="text" name="username" placeholder="Username" id="user1" required>
        <br>
        <small></small>
        </div>
        <div class="form-controller">
        <i class="fa fa-key u4" aria-hidden="true"></i>
        <input type="password" name="password" placeholder="Password" id="pass1"
autocomplete="on" required>
        <br>
        <small></small>
        </div>
      </div>
      <button type="submit" class="sign-in" name="login">Log In</button>
      <br>
      <?php
        if (isset($error)) {
          $font = "Source Sans Pro";
          echo '<div style="color:  red;font-family:'.$font.';">'.$error.'</div>';
```

```
            }
        ?>
        <div class="new-account">
            <span style="color: rgba(0, 0, 0, 0.54); font-weight: bolder; font-family: 'Source Sans Pro';">Don't have an account?</span>
            <a href="templates/2-sign-up.php" style="text-decoration: none;"><span style="color: rgba(5, 0, 255, 0.81); font-weight: bolder; font-family: 'Source Sans Pro';">Sign Up Now</span></a>
        </div>
    </form>
    <div class="img-container">
        <img src="static/images/login.png" alt="Login-screen-picture">
    </div>
  </div>
<script src="static/js/index.js"></script>
</body>
</html>
```

4. GRAPHICAL USER INTERFACE

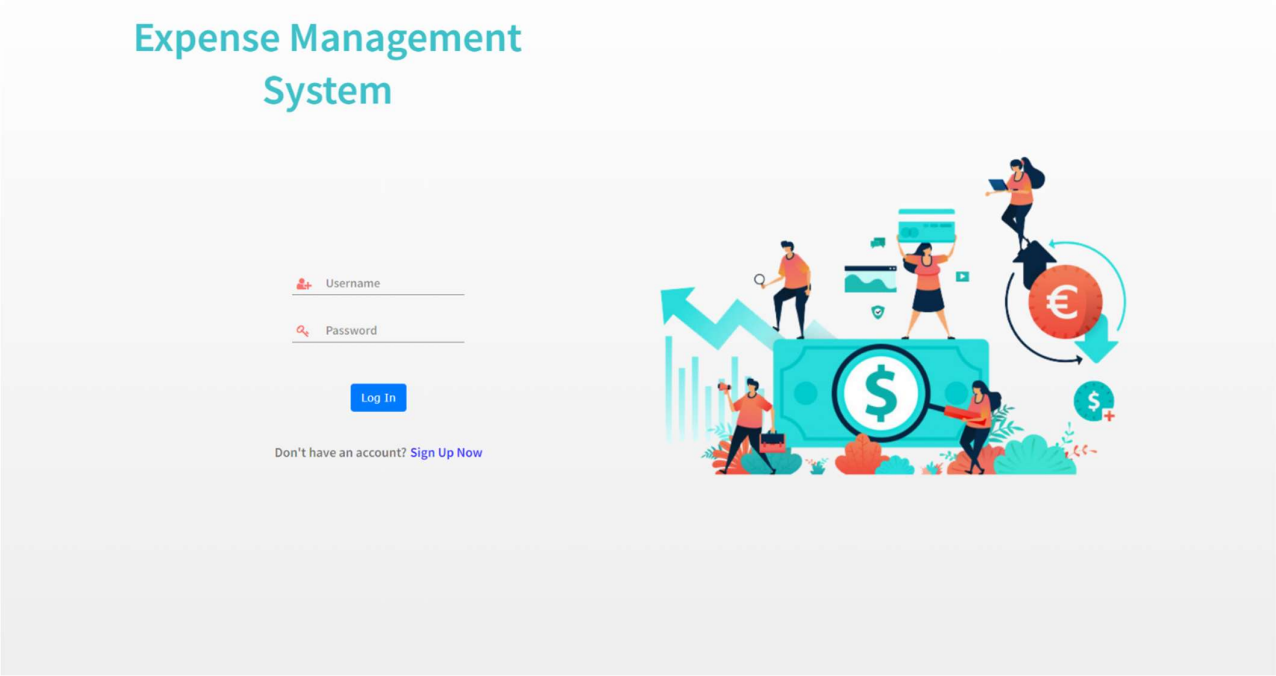

Fig 4.1: Login Page

Fig 4.2: Dashboard

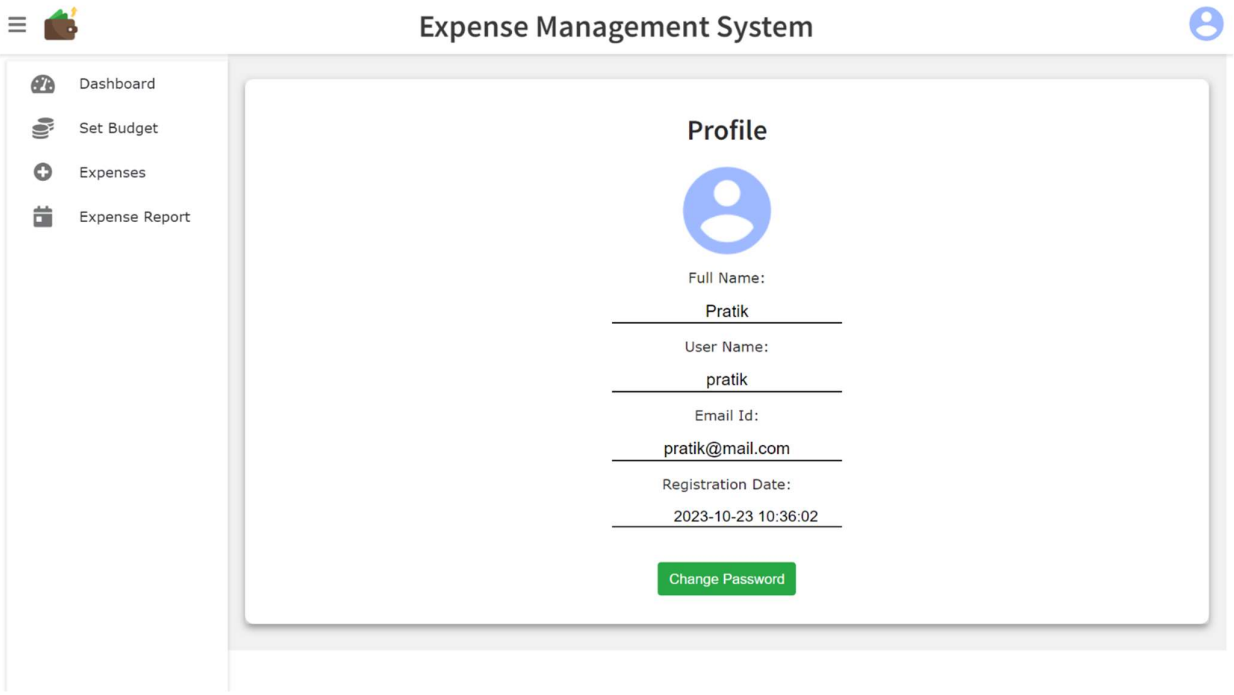

Fig 4.3 : Profile Page

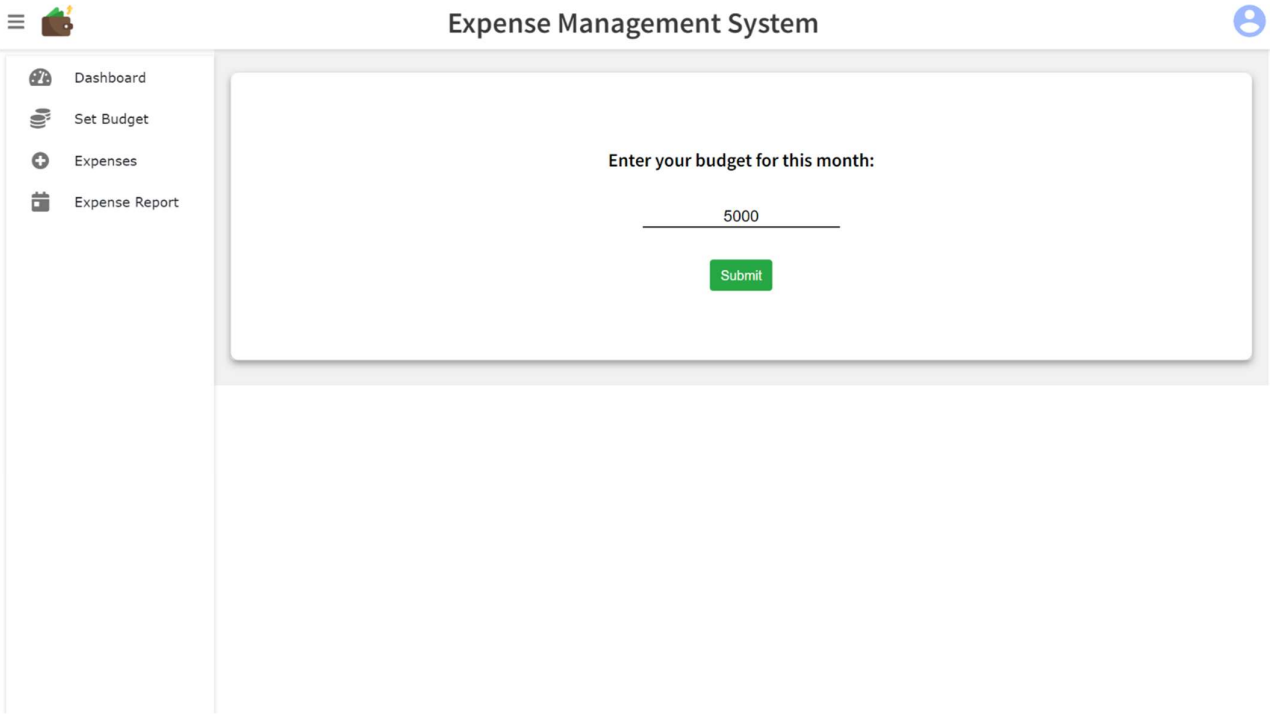

Fig 4.4: Set Budget

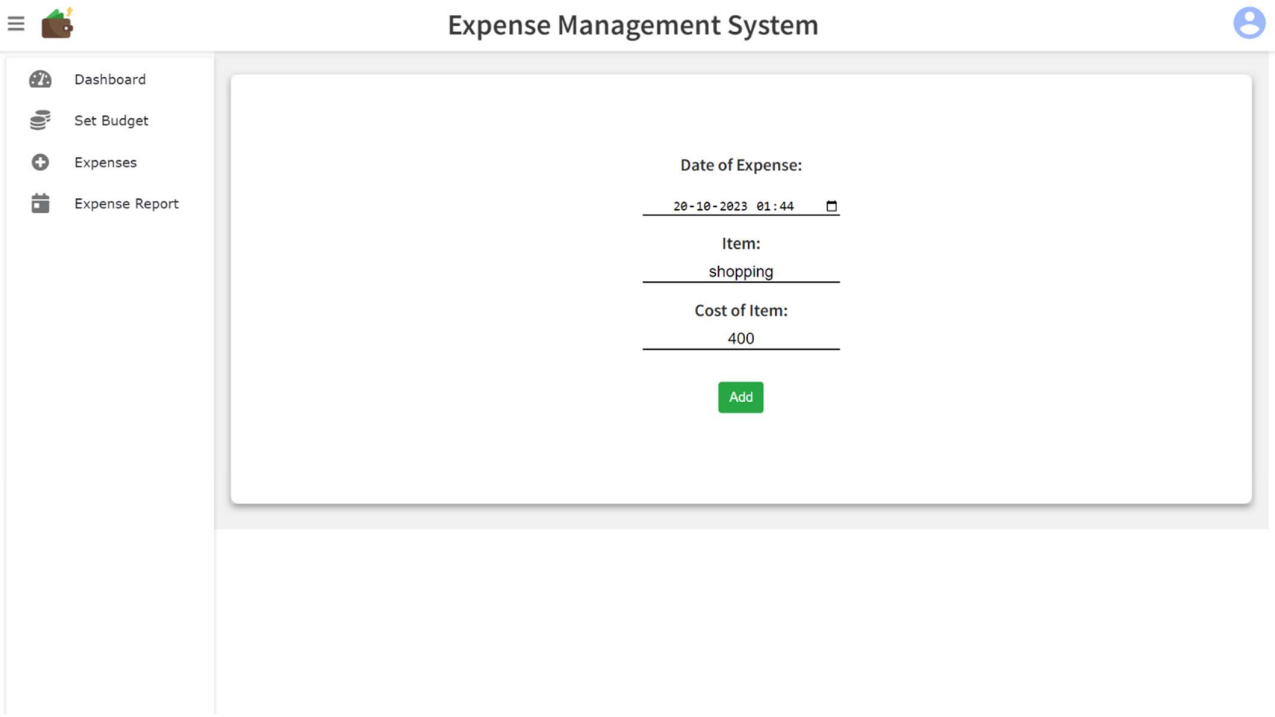

Fig 4.5: Add Expenses

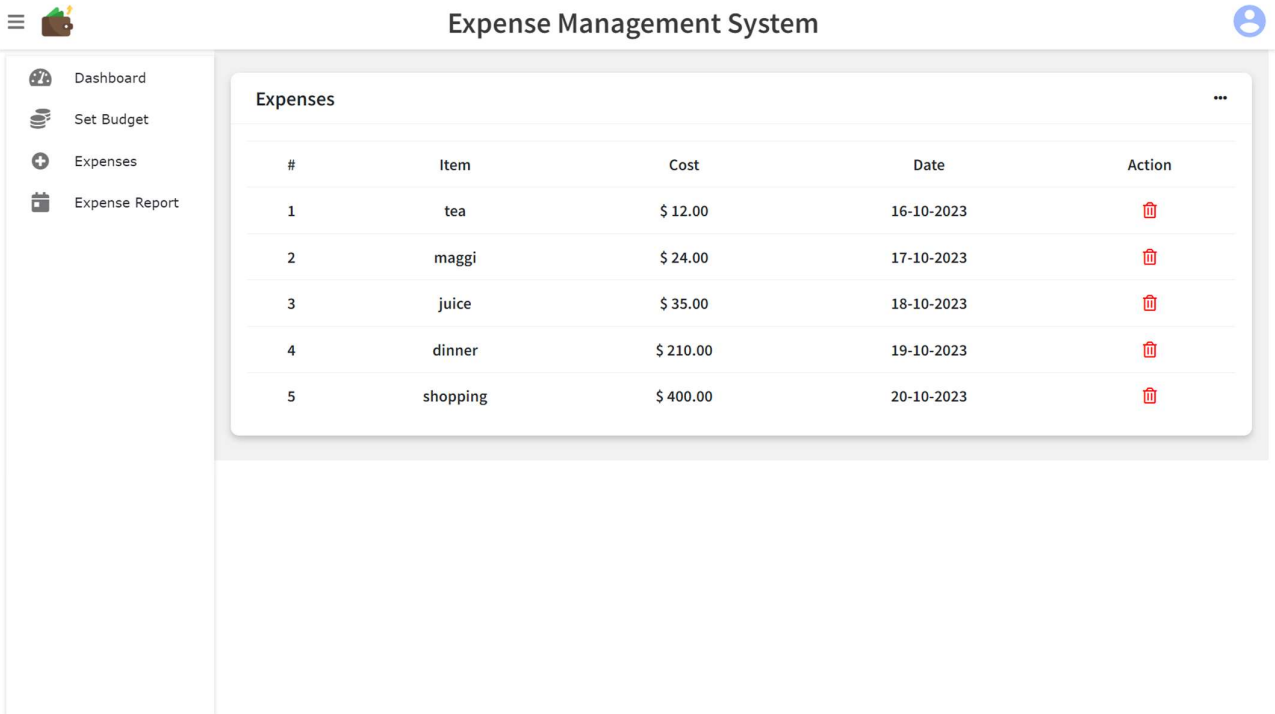

Fig 4.6: Manage Expenses

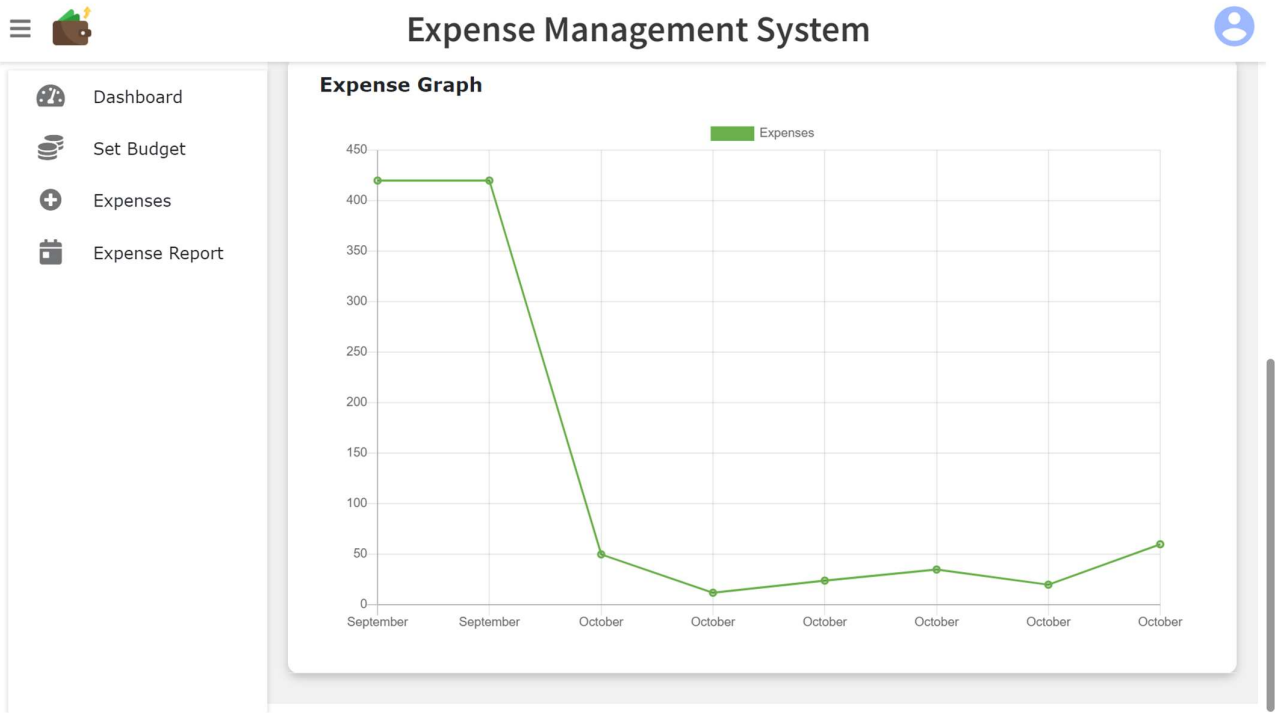

Fig 4.7: Graphical Diagram of Expenses

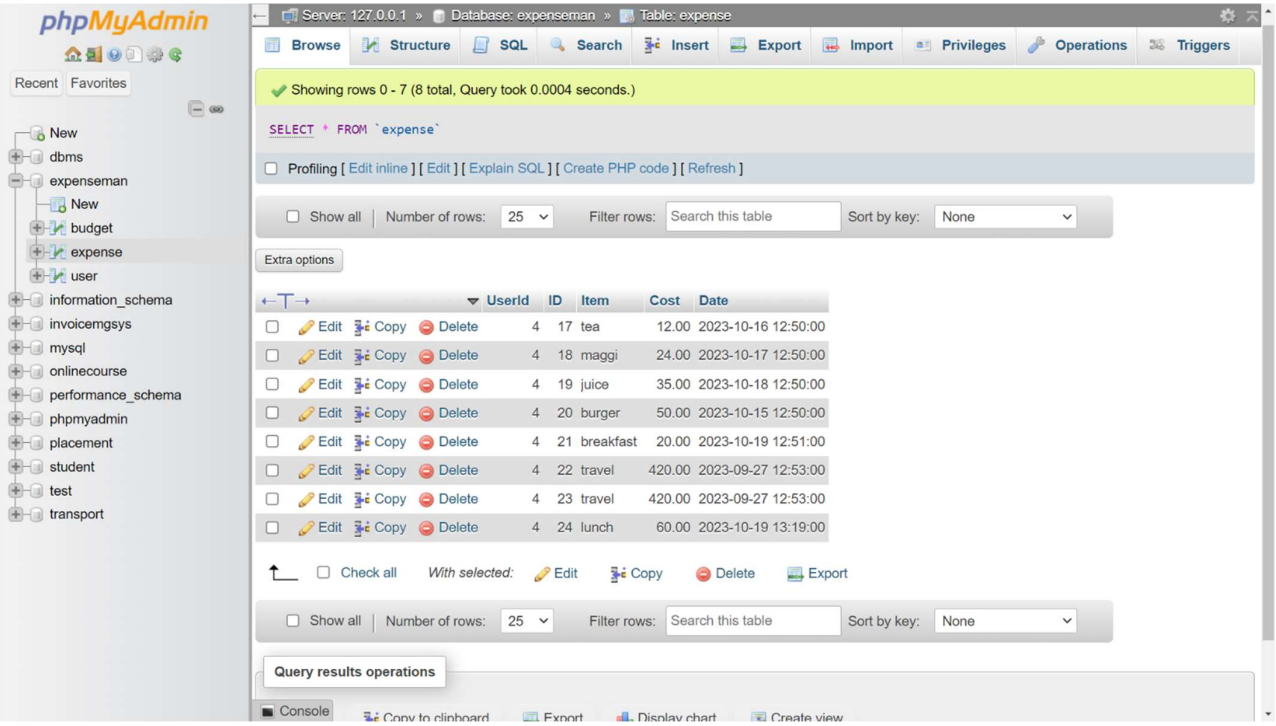

Fig 4.8: Database

5. TEST CASES

1. **Expense Creation:**

- Create a new expense entry and ensure it is saved correctly.
- Verify that all required fields are enforced during expense creation.
- Check if optional fields can be left empty or filled in as needed.
- Ensure proper validation for expense amount, date, and other related fields.

2. **Expense Approval Workflow:**

- Verify that an authorized user can approve or reject an expense.
- Ensure that expenses cannot be approved or rejected by unauthorized users.
- Check if notification emails are sent to users when their expenses are approved or rejected.

3. **Expense Categories and Tags:**

- Verify that expenses can be categorized correctly.
- Check if expenses can be tagged or labeled for easier tracking.
- Test that filtering and searching by category or tags work as expected.

4. **Expense Editing and Deletion:**

- Verify that users can edit existing expenses and save the changes.
- Ensure that users can delete expenses when necessary.
- Check that only the creator or authorized users can edit or delete expenses.

5. **Expense Reports:**

- Create an expense report with a range of expense entries.
- Verify that the report displays accurate expense data.
- Ensure the report total matches the sum of the included expenses.

6. CONCLUSION

The EMS addresses a pressing need for individuals and businesses alike, providing a user-friendly interface for tracking, analyzing, and managing expenses. With the features incorporated into the system, users can easily record, categorize, and organize their expenses, leading to better financial decision-making. Expense Management System is a valuable tool for businesses and individuals alike. It helps streamline financial processes, improve cost control, and enhance overall financial efficiency. By automating expense tracking, reducing errors, and providing valuable insights, it can contribute to better financial decision-making and ultimately lead to improved financial stability and success.

7. REFERENCES

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7) httpd.apache.org/docs/tutorials.html

8) http://localhost/expenseman/templates/

9) http://localhost/phpmyadmin/