A

PROJECT REPORT

ON

BANK MANAGEMENT SYSTEM

Submitted towards partial fulfilment of the requirement

For the awards of the degree of

"BACHELOR OF COMPUTER APPLICATION"

Guided by

Dr. Nishant Kumar Rathi

Submitted by

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Roll no – 237422010011

Department Of Computer Application

SHRI RAM COLLEGE MUZAFFARNAGAR

(Affiliated to MS University Saharanpur)

DECLARATION

I / We Abbu Raja hereby declare that the project report title "Bank Management System" is the work carried out by me under the supervision of Mr. Dr. Nishant Kumar Rathi. I / We further declare that this work has not been submitted to any other Institute/University for the requirement of third semester of Bachelor of Computer Application.

Student Name
Abbu Raja
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ACKNOWLEDGEMENT

This project report on" BANK MANAGEMENT SYSTEM" is the result of idea and suggestions to me by. Dr. Nishant Kumar Rathi.

We have received unfailing encouragement and inspiration of Dr. Nishant Kumar Rathi whose exceptional knowledge and unparalleled behaviour is full of ardent inspiration in it. However, we can never adequate thank all those who have their assistance, guidance, cooperation criticism contributed to the improvement of this report. We are ebullient in expressing my intense in debtless heartiest gratitude to all of them.

Since performance feedback is essential for effective communication, mistakes and creative feedback of the report may be unhesitatingly communicated to me, who will be as far as possible duly acknowledged and most welcome.

In this report, whatever is beneficial comes from almighty, and whatever is faulty is mine.

NAME : Abbu Raja

ROLL NO : 237422010011

Date-21/12/2025

To Dr. Nishant Kumar Rathi

This certify that student ***Mr. Abbu Raja (237422010011)*** *of* ***BCA V th Semester , Shri Ram College , Muzaffarnagar*** *, have collected information regarding their project entitled* ***"Bank Management System"*** *during period 15/10/2025 to 15/11/2025 under my guidance.*

During this period his conduct was good . We wish him all the best for future endeavours .

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1. Introduction

A Bank Management System is a software application designed to handle and manage the day-to-day operations of a bank efficiently. The main goal of this system is to automate traditional banking processes, reduce manual work, and provide fast, secure, and accurate banking services to customers. It allows both bank employees and customers to perform various banking activities like account creation, transactions, balance inquiry, and record management in a smooth and structured manner.

This Bank Management System provides a solid foundation for digital banking operations, combining security, efficiency, and user-friendly interfaces to meet modern banking needs.

OBJECTIVE

1. ***Digital Transformation.***
2. ***Security & Compliance.***
3. ***Customer Management.***
4. ***Account Management.***
5. ***Transaction Processing.***
6. ***User Experience.***
7. ***Customer Service Improvement***

LIMITATION OF EXITING SYSTEM

***Technical Limitations**: Existing systems use outdated technology that lacks mobile compatibility, has poor security with weak authentication and no data encryption, and suffers from slow performance during peak hours due to inefficient database design.*

***Security Limitations**: Weak password policies, lack of role-based access controls, incomplete audit trails, and vulnerability to cyber attacks create significant risks for sensitive financial data protection*

***Modern Feature Gaps:** Absence of mobile banking, digital payments, AI-based fraud detection, and cloud deployment capabilities prevents banks from offering contemporary services and leveraging technological advancements.*

Advantages of proposed system

- *Modern Technology: Uses latest PHP/MySQL with mobile-friendly design, secure data handling, and easy future upgrades.*
- *Cost Effective: Saves money through automation, reduces errors, and uses free open-source technology.*
- *Better Security: Features strong login protection, user role controls, and complete activity tracking.*
- *Efficiency Boost: Automates manual work, provides instant transaction processing, and quick customer service.*
- *Powerful Reports: Real-time dashboard with customizable reports and visual charts for smart decisions.*
- *Easy Access: Works on all devices, enables remote work, and has simple staff-friendly interface.*
- *Growth Ready: Handles increasing customers easily and allows new feature additions.*

HARDWARE REQUIREMENTS

In order to implement a new system the choice of processor with maximum possible speed is made. There should be sufficient memory to store data and software tools for efficient processing.

Processor	*: Intel i3 or higher*
RAM	*: 4 GB or more*
Hard Disk Drive	*: 250 GB or more*

SOFTWARE REQUIREMENTS

Operating System	*: Window/Linux*
IDE	*: Visual Studio Code*
Database	*: phpMyAdmin (MySQL)*

FRONT END USED

HTML, CSS, JS

BACKEND USED

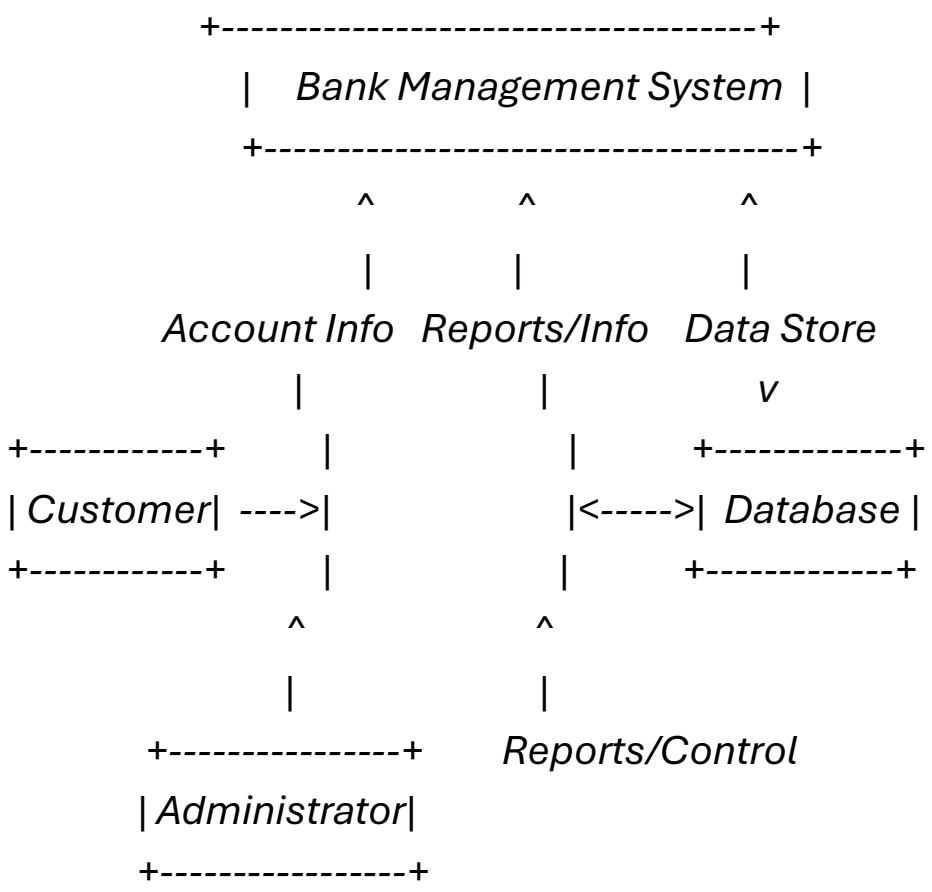
PHP, MySQL

Modules

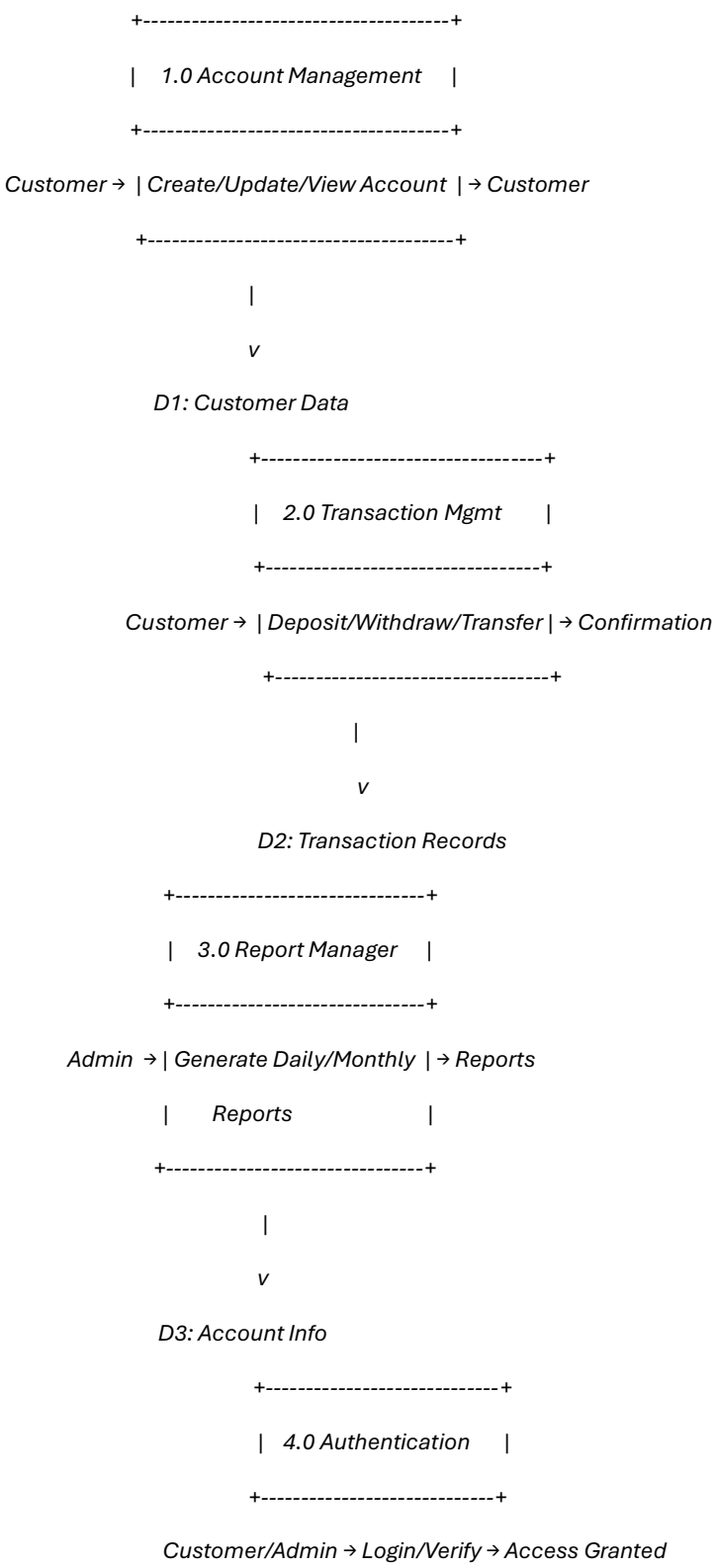
- ***Login Module*** *– Secure employee authentication and role-based access.*
- ***Dashboard Module*** *– Real-time statistics and performance overview.*
- ***Customer Module*** *– Complete customer profile management and registration.*
- ***Transactions Module -*** *Deposit, withdrawal processing and transaction history.*
- ***Admin Module*** *- System configuration and user management.*
- ***Search Module*** *- Quick customer and account search capabilities.*

Data Flow Diagram (DFD)

Level 0



Level 1


1.0 Account Management
Customer → | Create/Update/View Account | → Customer
D1: Customer Data
2.0 Transaction Mgmt
Customer → | Deposit/Withdraw/Transfer | → Confirmation
D2: Transaction Records
3.0 Report Manager
Admin → | Generate Daily/Monthly | → Reports
Reports
D3: Account Info
4.0 Authentication
Customer/Admin → Login/Verify → Access Granted

E-R DIAGRAM

EMPLOYEE
employee_id
username
password
full_name
role
created_at
CUSTOMER
customer_id
account_no
first_name
last_name
email
phone
address
date_of_birth
id_proof
created_at
ACCOUNT
account_id
customer_id
account_type
balance
status
created_at
MANAGES
OWNS
PROCESSES
HAS
TRANSACTION
transaction_id
account_id
transaction_type
amount
description
transaction_date
reference_number

DATABASE TABLE

CUSTOMER TABLE

	id	account_number	first_name	last_name	email	phone	address	date_of_birth	id_proof	created_at
Edit Copy Delete	1	BNK202511155459	abbu	raja	abburajabth4890@gmail.com	7091843253	Bihar(Bettiah)	2005-01-01	Adhar card	2025-11-15 22:00:37
Edit Copy Delete	2	BNK202511163864	niraj	kumar	lkhg@gmail.com	7894561585	bihar motihari	2006-01-01	a	2025-11-16 14:02:52
Edit Copy Delete	4	BNK202511187615	bikesh	kumar	dhfgfj@gmail.com	85412394225	bihar bettiah	2004-01-01	Adhar card	2025-11-18 10:27:41
Edit Copy Delete	5	BNK202511187479	rahul	kumar	rahul125@gmail.com	4567891231	bihar	2005-01-01	Adhar card	2025-11-18 10:30:37
Edit Copy Delete	6	BNK202511182487	ravi kishan	kumar	ravi456@gmail.com	2485963478	bihar	2004-01-01	Adhar card	2025-11-18 10:31:31

ACCOUNTS

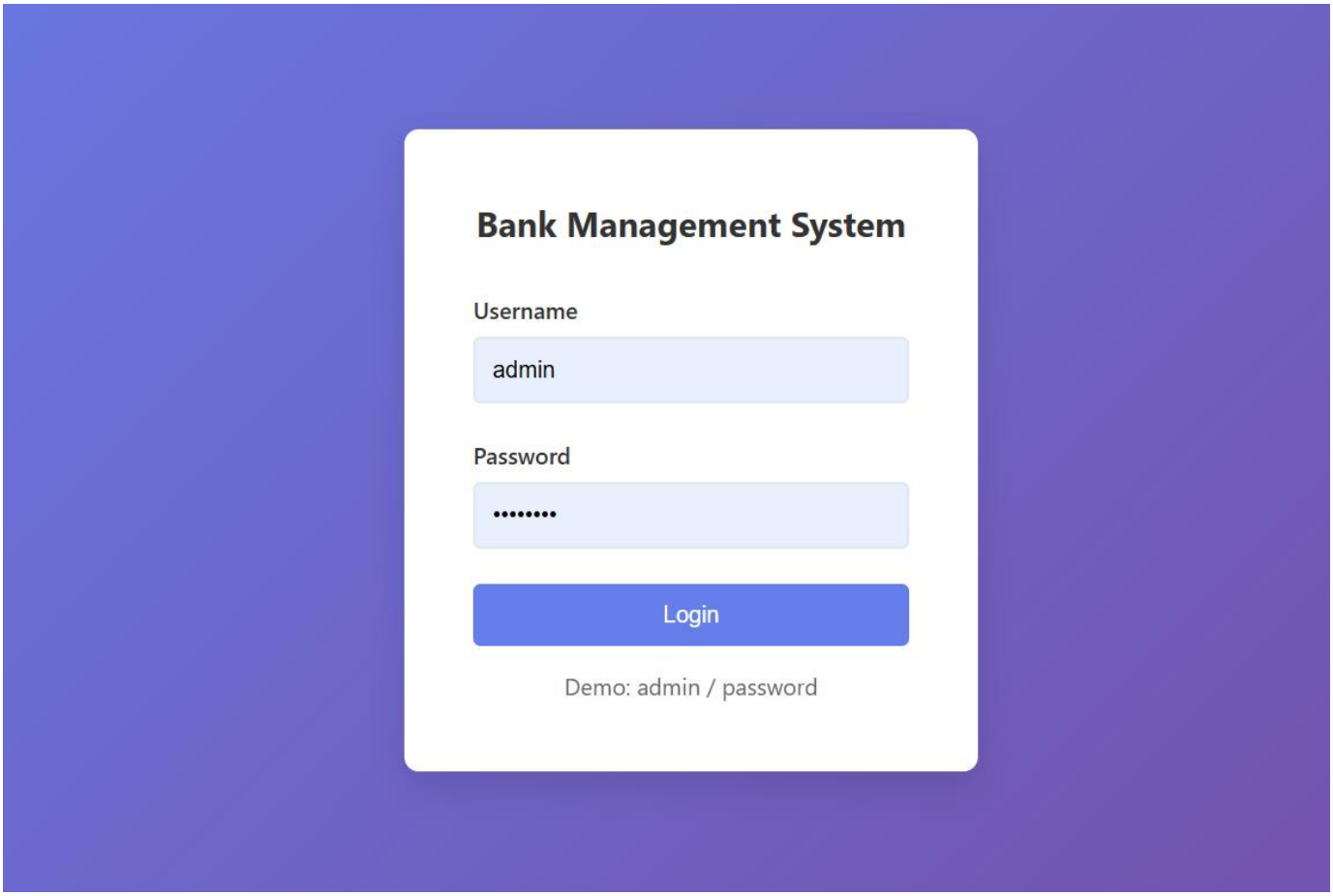
	id	customer_id	account_type	balance	status	created_at
Edit Copy Delete	1	1	savings	8000.00	active	2025-11-15 22:00:37
Edit Copy Delete	2	2	savings	500.00	active	2025-11-16 14:02:52
Edit Copy Delete	3	4	savings	10000.00	active	2025-11-18 10:27:41
Edit Copy Delete	4	5	savings	5000.00	active	2025-11-18 10:30:37
Edit Copy Delete	5	6	savings	20000.00	active	2025-11-18 10:31:31

TRANSACTIONS

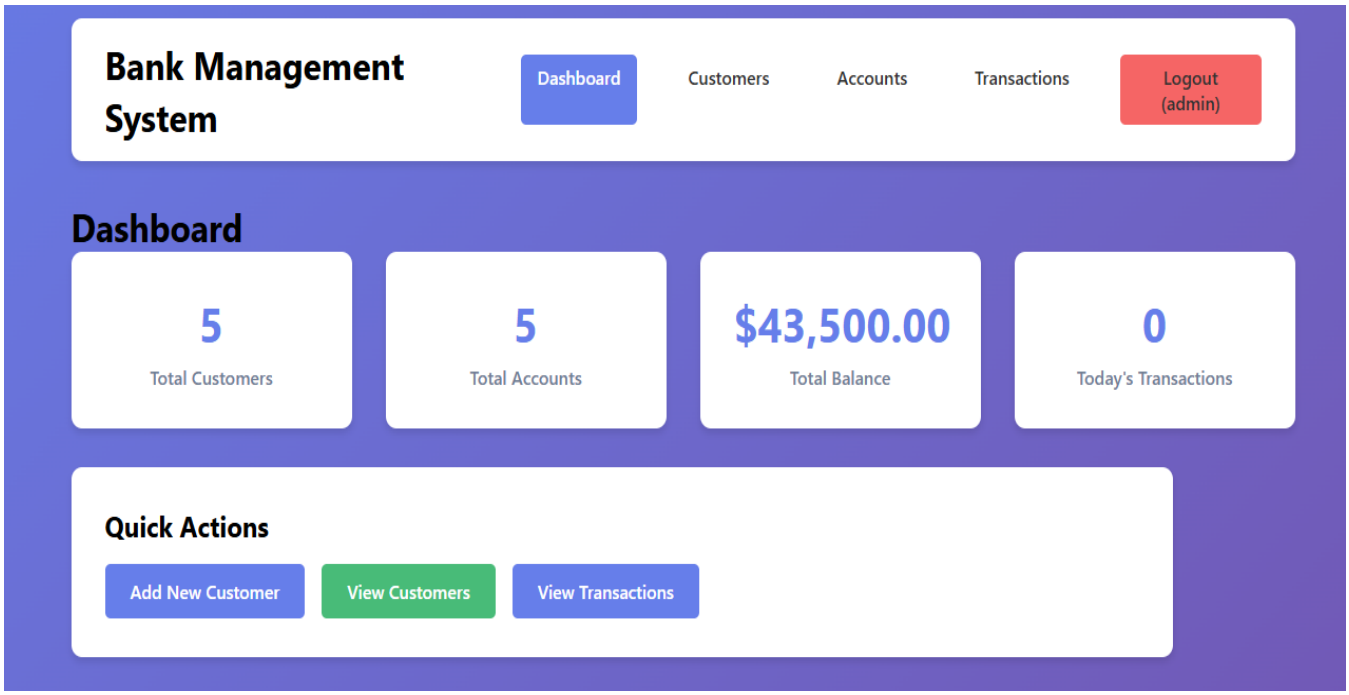
	id	account_id	transaction_type	amount	description	transaction_date
Edit Copy Delete	1	1	deposit	10000.00	with bank	2025-11-15 22:05:52
Edit Copy Delete	2	1	withdrawal	2000.00	withdrawal	2025-11-15 22:16:50
Edit Copy Delete	3	2	deposit	500.00	with bank	2025-11-16 14:03:40
Edit Copy Delete	4	3	deposit	10000.00	with bank	2025-11-18 10:28:17
Edit Copy Delete	5	4	deposit	5000.00	with bank	2025-11-18 10:32:07
Edit Copy Delete	6	5	deposit	20000.00	with bank	2025-11-18 10:32:21

OUTPUT SCREENS

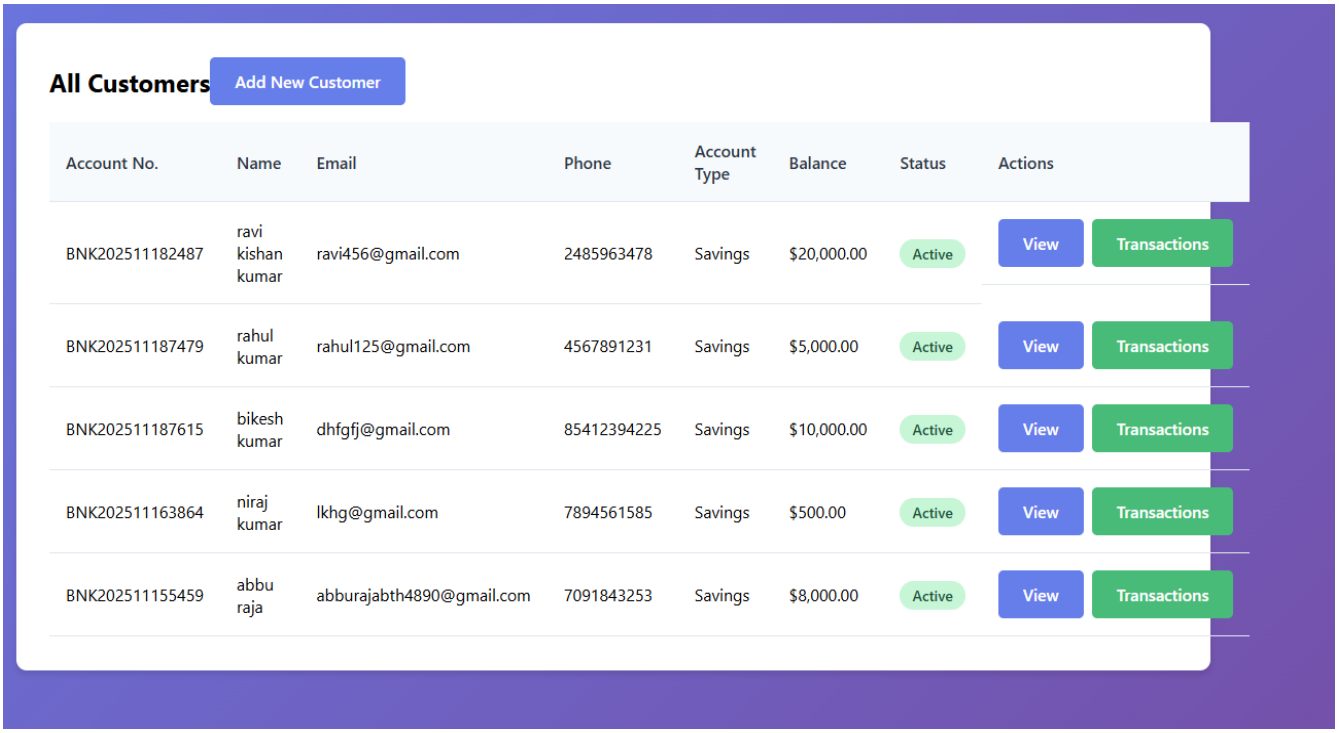
LOGINPAGE



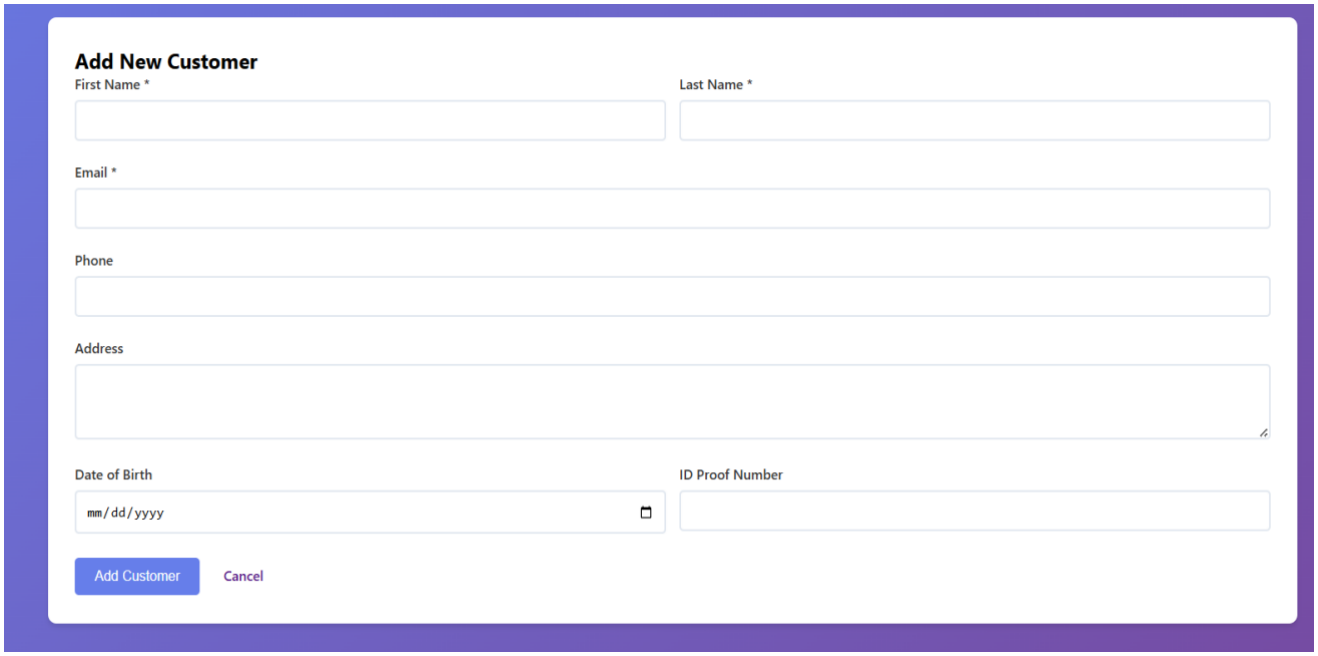
HOME PAGE


Bank Management System
Dashboard
Customers
Accounts
Transactions
Logout (admin)
Dashboard
5
Total Customers
5
Total Accounts
$43,500.00
Total Balance
0
Today's Transactions
Quick Actions
Add New Customer
View Customers
View Transactions

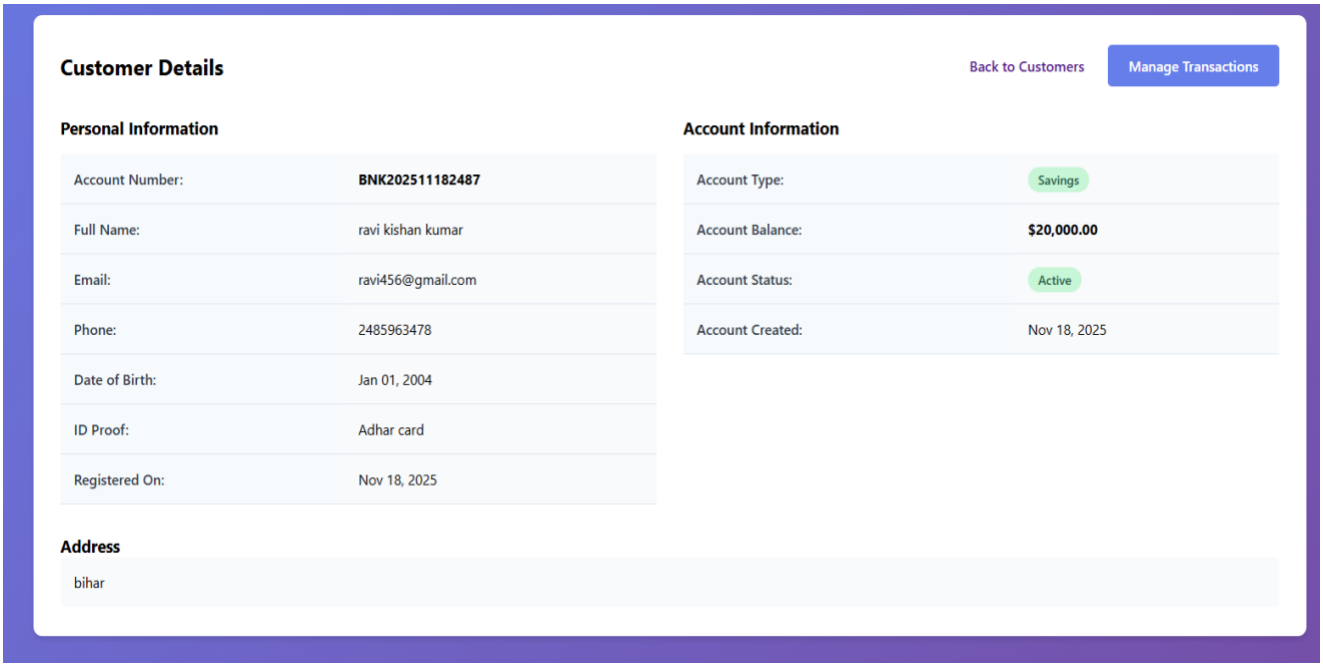
CUSTOMER


All Customers
Add New Customer
Account No.
Name
Email
Phone
Account Type
Balance
Status
Actions
BNK202511182487
ravi kishan kumar
ravi456@gmail.com
2485963478
Savings
$20,000.00
Active
View
Transactions
BNK202511187479
rahul kumar
rahul125@gmail.com
4567891231
Savings
$5,000.00
Active
View
Transactions
BNK202511187615
bikesh kumar
dhfgfj@gmail.com
85412394225
Savings
$10,000.00
Active
View
Transactions
BNK202511163864
niraj kumar
lkhg@gmail.com
7894561585
Savings
$500.00
Active
View
Transactions
BNK202511155459
abbu raja
abburajabth4890@gmail.com
7091843253
Savings
$8,000.00
Active
View
Transactions

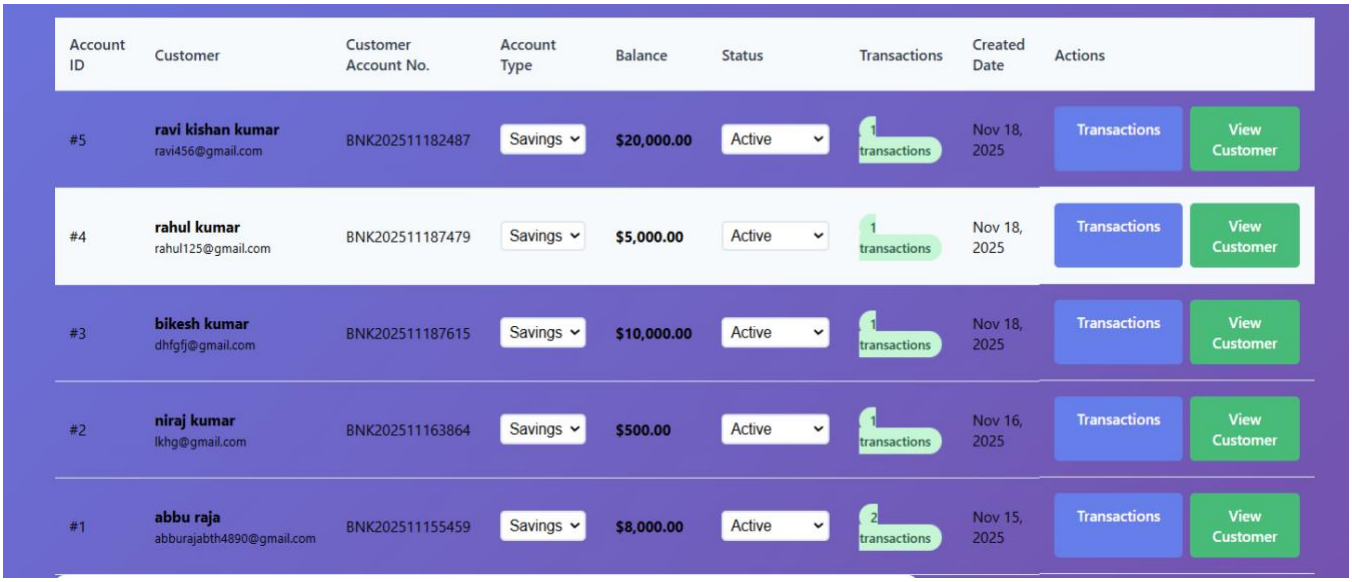
ADD NEW CUSTOMER



VIEW CUSTOMER DETAILS



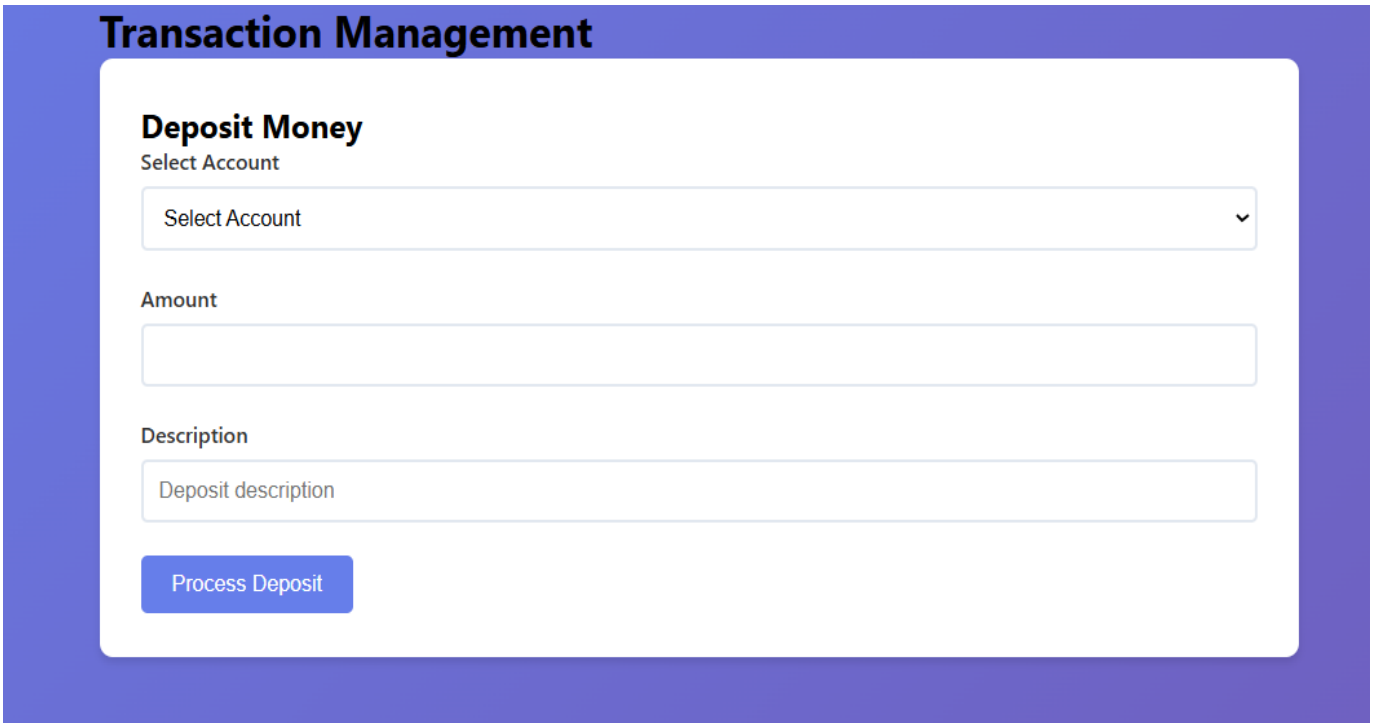
ALL ACCOUNTS



Account ID	Customer	Customer Account No.	Account Type	Balance	Status	Transactions	Created Date	Actions
#5	**ravi kishan kumar** ravi456@gmail.com	BNK202511182487	Savings	**$20,000.00**	Active	1 transactions	Nov 18, 2025	Transactions / View Customer
#4	**rahul kumar** rahul125@gmail.com	BNK202511187479	Savings	**$5,000.00**	Active	1 transactions	Nov 18, 2025	Transactions / View Customer
#3	**bikesh kumar** dhfgfj@gmail.com	BNK202511187615	Savings	**$10,000.00**	Active	1 transactions	Nov 18, 2025	Transactions / View Customer
#2	**niraj kumar** lkhg@gmail.com	BNK202511163864	Savings	**$500.00**	Active	1 transactions	Nov 16, 2025	Transactions / View Customer
#1	**abbu raja** abburajabth4890@gmail.com	BNK202511155459	Savings	**$8,000.00**	Active	2 transactions	Nov 15, 2025	Transactions / View Customer

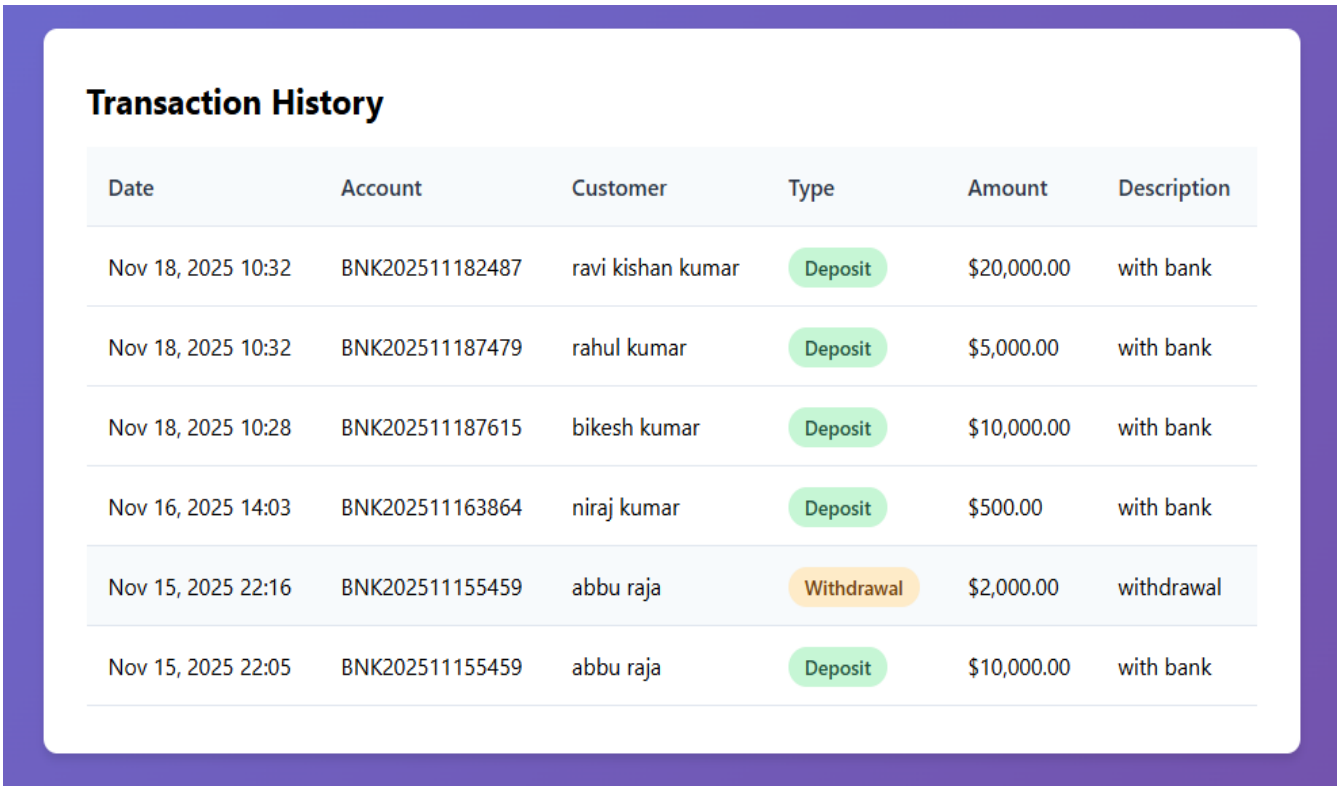
TRANSACTION MANAGEMENT

PROCESS DEPOSITE



PROCESS OF WITHDRAW

TRANSACTION HISTORY



Transaction History

Date	Account	Customer	Type	Amount	Description
Nov 18, 2025 10:32	BNK202511182487	ravi kishan kumar	Deposit	$20,000.00	with bank
Nov 18, 2025 10:32	BNK202511187479	rahul kumar	Deposit	$5,000.00	with bank
Nov 18, 2025 10:28	BNK202511187615	bikesh kumar	Deposit	$10,000.00	with bank
Nov 16, 2025 14:03	BNK202511163864	niraj kumar	Deposit	$500.00	with bank
Nov 15, 2025 22:16	BNK202511155459	abbu raja	Withdrawal	$2,000.00	withdrawal
Nov 15, 2025 22:05	BNK202511155459	abbu raja	Deposit	$10,000.00	with bank

CODING

DATABASE CONNECTION

```
<?php
session_start();

// Database configuration
define('DB_HOST', 'localhost');
define('DB_USER', 'root');
define('DB_PASS', '');
define('DB_NAME', 'bank_system');

// Create database connection
try {
    $pdo = new PDO("mysql:host=" . DB_HOST . ";dbname=" . DB_NAME, DB_USER, DB_PASS);
    $pdo->setAttribute(PDO::ATTR_ERRMODE, PDO::ERRMODE_EXCEPTION);
} catch(PDOException $e) {
    die("Connection failed: " . $e->getMessage());
}

// Generate unique account number
function generateAccountNumber() {
    return 'BNK' . date('Ymd') . rand(1000, 9999);
}
```

```
// Check if user is logged in
function isLoggedIn() {
    return isset($_SESSION['employee_id']);
}

// Redirect if not logged in
function requireLogin() {
    if (!isLoggedIn()) {
        header("Location: login.php");
        exit();
    }
}
?>
```

LOGINPAGE

```
<?php
include 'config.php';

if ($_SERVER['REQUEST_METHOD'] == 'POST') {
    $username = $_POST['username'];
    $password = $_POST['password'];

    $stmt = $pdo->prepare("SELECT * FROM employees WHERE username = ?");
    $stmt->execute([$username]);
    $employee = $stmt->fetch();

    if ($employee && password_verify($password, $employee['password'])) {
        $_SESSION['employee_id'] = $employee['id'];
        $_SESSION['username'] = $employee['username'];
        $_SESSION['role'] = $employee['role'];
        header("Location: dashboard.php");
        exit();
    } else {
        $error = "Invalid username or password!";
    }
}
?>
```

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Bank System - Login</title>
  <link rel="stylesheet" href="style.css">
</head>
<body>
  <div class="login-container">
    <form class="login-form" method="POST">
      <h2>Bank Management System</h2>
      <?php if (isset($error)): ?>
        <div class="alert alert-error"><?php echo $error; ?></div>
      <?php endif; ?>

      <div class="form-group">
        <label>Username</label>
        <input type="text" name="username" class="form-control" required>
      </div>

      <div class="form-group">
        <label>Password</label>
        <input type="password" name="password" class="form-control" required>
       </div>
```

```
        <button type="submit" class="btn btn-primary" style="width: 100%;">Login</button>

        <div style="text-align: center; margin-top: 1rem; color: #666;">
          Demo: admin / password
        </div>
      </form>
    </div>
</body>
</html>
```

HOMEPAGE

```
<?php
include 'config.php';
requireLogin();

// Get statistics
$customers_count = $pdo->query("SELECT COUNT(*) FROM customers")->fetchColumn();
$accounts_count = $pdo->query("SELECT COUNT(*) FROM accounts")->fetchColumn();
$total_balance = $pdo->query("SELECT SUM(balance) FROM accounts WHERE status = 'active'")->fetchColumn();
$transactions_today = $pdo->query("SELECT COUNT(*) FROM transactions WHERE DATE(transaction_date) = CURDATE()")->fetchColumn();
?>

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Dashboard - Bank System</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>
    <div class="container">
        <?php include 'header.php'; ?>
```

```
 <h1>Dashboard</h1>

<div class="dashboard-stats">
  <div class="stat-card">
    <h3><?php echo $customers_count; ?></h3>
    <p>Total Customers</p>
  </div>
  <div class="stat-card">
    <h3><?php echo $accounts_count; ?></h3>
    <p>Total Accounts</p>
  </div>
  <div class="stat-card">
    <h3>$<?php echo number_format($total_balance, 2); ?></h3>
    <p>Total Balance</p>
  </div>
  <div class="stat-card">
    <h3><?php echo $transactions_today; ?></h3>
    <p>Today's Transactions</p>
  </div>
</div>

<div class="card" style="width: 90%">
  <h2>Quick Actions</h2>
  <div style="display: flex; gap: 1rem; margin-top: 1rem;">
    <a href="add_customer.php" class="btn btn-primary">Add New Customer</a>
```

```
        <a href="view_customers.php" class="btn btn-success">View Customers</a>
        <a href="transactions.php" class="btn btn-primary">View Transactions</a>
    </div>
</div>

<!-- Recent Transactions -->
<div class="card" style="width: 90%">
    <h2>Recent Transactions</h2>
    <?php
    // CORRECTED QUERY - using c.account_number instead of a.account_number
    $stmt = $pdo->query("
        SELECT t.*, c.account_number, c.first_name, c.last_name
        FROM transactions t
        JOIN accounts a ON t.account_id = a.id
        JOIN customers c ON a.customer_id = c.id
        ORDER BY t.transaction_date DESC
        LIMIT 10
    ");
    $recent_transactions = $stmt->fetchAll();
    ?>

    <table class="table">
        <thead>
            <tr>
                <th>Date</th>
                    <th>Account</th>
```

```
                <th>Customer</th>
                <th>Type</th>
                <th>Amount</th>
              </tr>
            </thead>
            <tbody>
              <?php foreach ($recent_transactions as $transaction): ?>
              <tr>
                <td><?php echo date('M d, Y H:i', strtotime($transaction['transaction_date'])); ?></td>
                <td><?php echo $transaction['account_number']; ?></td>
                <td><?php echo $transaction['first_name'] . ' ' . $transaction['last_name']; ?></td>
                <td>
                  <span class="badge <?php echo $transaction['transaction_type'] == 'deposit' ?
'badge-success' : 'badge-warning'; ?>">
                    <?php echo ucfirst($transaction['transaction_type']); ?>
                  </span>
                </td>
                <td>$<?php echo number_format($transaction['amount'], 2); ?></td>
              </tr>
              <?php endforeach; ?>
            </tbody>
          </table>
        </div>
      </div>
    </body>
    </html>
```

VIEW CUSTOMER

```
        <?php
include 'config.php';
requireLogin();

// Fetch all customers with their account information
$stmt = $pdo->query("
   SELECT c.*, a.id as account_id, a.account_type, a.balance, a.status
   FROM customers c
   LEFT JOIN accounts a ON c.id = a.customer_id
   ORDER BY c.created_at DESC
");
$customers = $stmt->fetchAll();
?>

<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>View Customers - Bank System</title>
   <link rel="stylesheet" href="style.css">
</head>
<body>
   <div class="container">
      <?php include 'header.php'; ?>
```

```
    <div class="card" style="width: 100%">
        <div style="display: flex; justify-content: between; align-items: center; margin-bottom: 1rem;">
            <h2>All Customers</h2>
            <a href="add_customer.php" class="btn btn-primary">Add New Customer</a>
        </div>

        <table class="table">
            <thead>
                <tr>
                    <th>Account No.</th>
                    <th>Name</th>
                    <th>Email</th>
                    <th>Phone</th>
                    <th>Account Type</th>
                    <th>Balance</th>
                    <th>Status</th>
                    <th>Actions</th>
                </tr>
            </thead>
            <tbody>
                <?php foreach ($customers as $customer): ?>
                <tr>
                    <td><?php echo $customer['account_number']; ?></td>
                    <td><?php echo $customer['first_name'] . ' ' . $customer['last_name']; ?></td>
```

```
                <td><?php echo $customer['email']; ?></td>
                <td><?php echo $customer['phone']; ?></td>
                <td><?php echo ucfirst($customer['account_type']); ?></td>
                <td>$<?php echo number_format($customer['balance'], 2); ?></td>
                <td>
                  <span class="badge <?php echo $customer['status'] == 'active' ? 'badge-success' : 'badge-warning'; ?>">
                    <?php echo ucfirst($customer['status']); ?>
                  </span>
                </td>
                <td class="action-buttons">
                  <a href="customer_details.php?id=<?php echo $customer['id']; ?>" class="btn btn-primary">View</a>
                  <a href="transactions.php?account_id=<?php echo $customer['account_id']; ?>" class="btn btn-success">Transactions</a>
                </td>
              </tr>
              <?php endforeach; ?>
            </tbody>
          </table>
        </div>
      </div>
    </body>
    </html>
```

ADD NEW CUSTOMER

```
<?php
include 'config.php';
requireLogin();

if ($_SERVER['REQUEST_METHOD'] == 'POST') {
    $account_number = generateAccountNumber();
    $first_name = $_POST['first_name'];
    $last_name = $_POST['last_name'];
    $email = $_POST['email'];
    $phone = $_POST['phone'];
    $address = $_POST['address'];
    $date_of_birth = $_POST['date_of_birth'];
    $id_proof = $_POST['id_proof'];

    try {
        $stmt = $pdo->prepare("INSERT INTO customers (account_number, first_name,
last_name, email, phone, address, date_of_birth, id_proof) VALUES (?, ?, ?, ?, ?, ?, ?, ?)");
        $stmt->execute([$account_number, $first_name, $last_name, $email, $phone,
$address, $date_of_birth, $id_proof]);

        $customer_id = $pdo->lastInsertId();

        // Create default savings account
        $stmt = $pdo->prepare("INSERT INTO accounts (customer_id, account_type, balance)
VALUES (?, 'savings', 0.00)");
        $stmt->execute([$customer_id]);
```

```
        $success = "Customer added successfully! Account Number: " . $account_number;
    } catch (PDOException $e) {
        $error = "Error adding customer: " . $e->getMessage();
    }
}
?>

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Add Customer - Bank System</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>
    <div class="container">
        <?php include 'header.php'; ?>

        <div class="card">
            <h2>Add New Customer</h2>

            <?php if (isset($success)): ?>
                <div class="alert alert-success"><?php echo $success; ?></div>
            <?php endif; ?>
```

```
<?php if (isset($error)): ?>
  <div class="alert alert-error"><?php echo $error; ?></div>
<?php endif; ?>

<form method="POST">
  <div style="display: grid; grid-template-columns: 1fr 1fr; gap: 1rem;">
    <div class="form-group">
      <label>First Name *</label>
      <input type="text" name="first_name" class="form-control" required>
    </div>

    <div class="form-group">
      <label>Last Name *</label>
      <input type="text" name="last_name" class="form-control" required>
    </div>
  </div>

  <div class="form-group">
    <label>Email *</label>
    <input type="email" name="email" class="form-control" required>
  </div>

  <div class="form-group">
    <label>Phone</label>
    <input type="tel" name="phone" class="form-control">
```

```
        </div>

        <div class="form-group">
          <label>Address</label>
          <textarea name="address" class="form-control" rows="3"></textarea>
        </div>

        <div style="display: grid; grid-template-columns: 1fr 1fr; gap: 1rem;">
          <div class="form-group">
            <label>Date of Birth</label>
            <input type="date" name="date_of_birth" class="form-control">
          </div>

          <div class="form-group">
            <label>ID Proof Number</label>
            <input type="text" name="id_proof" class="form-control">
          </div>
        </div>

        <button type="submit" class="btn btn-primary">Add Customer</button>
        <a href="dashboard.php" class="btn">Cancel</a>
      </form>
    </div>
  </div>
</body>
</html>
```

VIEW CUSTOMER DETAILS

```
        <?php
include 'config.php';
requireLogin();

// Fetch all customers with their account information
$stmt = $pdo->query("
   SELECT c.*, a.id as account_id, a.account_type, a.balance, a.status
   FROM customers c
   LEFT JOIN accounts a ON c.id = a.customer_id
   ORDER BY c.created_at DESC
");
$customers = $stmt->fetchAll();
?>

<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>View Customers - Bank System</title>
   <link rel="stylesheet" href="style.css">
</head>
<body>
   <div class="container">
      <?php include 'header.php'; ?>
```

```
<div class="card" style="width: 100%">
    <div style="display: flex; justify-content: between; align-items: center; margin-bottom: 1rem;">
        <h2>All Customers</h2>
        <a href="add_customer.php" class="btn btn-primary">Add New Customer</a>
    </div>

    <table class="table">
        <thead>
            <tr>
                <th>Account No.</th>
                <th>Name</th>
                <th>Email</th>
                <th>Phone</th>
                <th>Account Type</th>
                <th>Balance</th>
                <th>Status</th>
                <th>Actions</th>
            </tr>
        </thead>
        <tbody>
            <?php foreach ($customers as $customer): ?>
            <tr>
                <td><?php echo $customer['account_number']; ?></td>
                <td><?php echo $customer['first_name'] . ' ' . $customer['last_name']; ?></td>
```

```
                <td><?php echo $customer['email']; ?></td>
                <td><?php echo $customer['phone']; ?></td>
                <td><?php echo ucfirst($customer['account_type']); ?></td>
                <td>$<?php echo number_format($customer['balance'], 2); ?></td>
                <td>
                  <span class="badge <?php echo $customer['status'] == 'active' ? 'badge-success' : 'badge-warning'; ?>">
                    <?php echo ucfirst($customer['status']); ?>
                  </span>
                </td>
                <td class="action-buttons">
                  <a href="customer_details.php?id=<?php echo $customer['id']; ?>" class="btn btn-primary">View</a>
                  <a href="transactions.php?account_id=<?php echo $customer['account_id']; ?>" class="btn btn-success">Transactions</a>
                </td>
              </tr>
              <?php endforeach; ?>
            </tbody>
          </table>
        </div>
      </div>
    </body>
    </html>
```

ALL ACCOUNTS

```
<?php
include 'config.php';
requireLogin();

// Handle account status update
if (isset($_POST['update_status'])) {
    $account_id = $_POST['account_id'];
    $new_status = $_POST['status'];

    try {
        $stmt = $pdo->prepare("UPDATE accounts SET status = ? WHERE id = ?");
        $stmt->execute([$new_status, $account_id]);
        $success = "Account status updated successfully!";
    } catch (PDOException $e) {
        $error = "Error updating account status: " . $e->getMessage();
    }
}

// Handle account type update
if (isset($_POST['update_type'])) {
    $account_id = $_POST['account_id'];
    $account_type = $_POST['account_type'];

    try {
        $stmt = $pdo->prepare("UPDATE accounts SET account_type = ? WHERE id = ?");
```

```
        $stmt->execute([$account_type, $account_id]);
        $success = "Account type updated successfully!";
    } catch (PDOException $e) {
        $error = "Error updating account type: " . $e->getMessage();
    }
}

// Fetch all accounts with customer information
$stmt = $pdo->query("
    SELECT
        a.id,
        a.customer_id,
        a.account_type,
        a.balance,
        a.status,
        a.created_at,

        c.account_number AS customer_account_no,
        c.first_name,
        c.last_name,
        c.email,
        c.phone,

        (SELECT COUNT(*) FROM transactions t WHERE t.account_id = a.id) AS
transaction_count
    FROM accounts a
```

```
JOIN customers c ON a.customer_id = c.id
ORDER BY a.created_at DESC
");
$accounts = $stmt->fetchAll();

// Get account statistics
$savings_count = $pdo->query("SELECT COUNT(*) FROM accounts WHERE account_type = 'savings'")->fetchColumn();
$current_count = $pdo->query("SELECT COUNT(*) FROM accounts WHERE account_type = 'current'")->fetchColumn();
$fixed_count = $pdo->query("SELECT COUNT(*) FROM accounts WHERE account_type = 'fixed'")->fetchColumn();
$active_count = $pdo->query("SELECT COUNT(*) FROM accounts WHERE status = 'active'")->fetchColumn();
?>

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>View Accounts - Bank System</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>
    <div class="container">
        <?php include 'header.php'; ?>
```

```
<h1>Account Management</h1>

<?php if (isset($success)): ?>
  <div class="alert alert-success"><?php echo $success; ?></div>
<?php endif; ?>

<?php if (isset($error)): ?>
  <div class="alert alert-error"><?php echo $error; ?></div>
<?php endif; ?>

<!-- Account Statistics -->
<div class="dashboard-stats">
  <div class="stat-card">
    <h3><?php echo count($accounts); ?></h3>
    <p>Total Accounts</p>
  </div>
  <div class="stat-card">
    <h3><?php echo $savings_count; ?></h3>
    <p>Savings Accounts</p>
  </div>
  <div class="stat-card">
    <h3><?php echo $current_count; ?></h3>
    <p>Current Accounts</p>
  </div>
  <div class="stat-card">
```

```
        <h3><?php echo $active_count; ?></h3>
        <p>Active Accounts</p>
      </div>
    </div>

    <!-- Accounts Table -->
    <div class="card1">
      <div style="display: flex; justify-content: space-between; align-items: center; margin-bottom: 1rem;">
        <h2>All Accounts</h2>
        <div>
          <a href="view_customers.php" class="btn btn-primary">View Customers</a>
          <a href="transactions.php" class="btn btn-success">Manage Transactions</a>
        </div>
      </div>

      <table class="table">
        <thead>
          <tr>
            <th>Account ID</th>
            <th>Customer</th>
            <th>Customer Account No.</th>
            <th>Account Type</th>
            <th>Balance</th>
            <th>Status</th>
            <th>Transactions</th>
```

```
                <th>Created Date</th>
                <th>Actions</th>
            </tr>
        </thead>
        <tbody>
            <?php foreach ($accounts as $accou
```**nt): ?>**
```
            <tr>
                <td>#<?php echo $account['id']; ?></td>
                <td>
                    <strong><?php echo $account['first_name'] . ' ' . $account['last_name'];
?></strong>
                    <br><small><?php echo $account['email']; ?></small>
                </td>
                <td><?php echo $account['customer_account_no']; ?></td>
                <td>
                    <form method="POST" style="display: inline;">
                        <input type="hidden" name="account_id" value="<?php echo
$account['id']; ?>">
                        <select name="account_type" onchange="this.form.submit()" class="form-
control" style="width: auto; display: inline-block; padding: 0.25rem;">
                            <option value="savings" <?php echo $account['account_type'] == 'savings'
? 'selected' : ''; ?>>Savings</option>
                            <option value="current" <?php echo $account['account_type'] == 'current'
? 'selected' : ''; ?>>Current</option
```**>**
```
                            <option value="fixed" <?php echo $account['account_type'] == 'fixed' ?
'selected' : ''; ?>>Fixed</option>
                        </select>
```

```
                    <button type="submit" name="update_type" style="display:
none;"></button>
                </form>
            </td>
            <td><strong>$<?php echo number_format($account['balance'], 2);
?></strong></td>
            <td>
                <form method="POST" style="display: inline;">
                    <input type="hidden" name="account_id" value="<?php echo
$account['id']; ?>">
                    <select name="status" onchange="this.form.submit()" class="form-control"
style="width: auto; display: inline-block; padding: 0.25rem;">
                        <option value="active" <?php echo $account['status'] == 'active' ?
'selected' : ''; ?>>Active</option>
                        <option value="inactive" <?php echo $account['status'] == 'inactive' ?
'selected' : ''; ?>>Inactive</option>
                        <option value="suspended" <?php echo $account['status'] == 'suspended'
? 'selected' : ''; ?>>Suspended</option>
                    </select>
                    <button type="submit" name="update_status" style="display:
none;"></button>
                </form>
            </td>
            <td>
                <span class="badge <?php echo $account['transaction_count'] > 0 ? 'badge-
success' : 'badge-warning'; ?>">
                    <?php echo $account['transaction_count']; ?> transactions
                </span>
            </td>
```

```
                <td><?php echo date('M d, Y', strtotime($account['created_at'])); ?></td>
                <td class="action-buttons">
                    <a href="transactions.php?account_id=<?php echo $account['id']; ?>"
class="btn btn-primary">Transactions</a>
                    <a href="customer_details.php?customer_id=<?php echo
$account['customer_id']; ?>" class="btn btn-success">View Customer</a>
                </td>
            </tr>
            <?php endforeach; ?>
        </tbody>
    </table>

    <?php if (empty($accounts)): ?>
        <div style="text-align: center; padding: 2rem; color: #666;">
            <h3>No accounts found</h3>
            <p>No accounts have been created yet.</p>
            <a href="add_customer.php" class="btn btn-primary">Add First Customer</a>
        </div>
    <?php endif; ?>
</div>

<!-- Account Type Information -->
<div class="card"  style="width: 80%">
    <h2>Account Types Information</h2>
    <div style="display: grid; grid-template-columns: repeat(auto-fit, minmax(300px, 1fr));
gap: 1rem; margin-top: 1rem;">
```

```
            <div style="padding: 1rem; background: #f0f9ff; border-radius: 5px; border-left: 4px solid #667eea;">
                <h3>Savings Account</h3>
                <p>Ideal for personal savings with interest earnings. Minimum balance requirements may apply.</p>
            </div>
            <div style="padding: 1rem; background: #f0fff4; border-radius: 5px; border-left: 4px solid #48bb78;">
                <h3>Current Account</h3>
                <p>For business transactions with no interest. Unlimited transactions allowed.</p>
            </div>
            <div style="padding: 1rem; background: #fffaf0; border-radius: 5px; border-left: 4px solid #ed8936;">
                <h3>Fixed Deposit</h3>
                <p>Higher interest rates for fixed periods. Premature withdrawal penalties may apply.</p>
            </div>
        </div>
    </div>
</div>

<script>
// Confirm before changing account status to suspended
document.addEventListener('DOMContentLoaded', function() {
    const statusSelects = document.querySelectorAll('select[name="status"]');
    statusSelects.forEach(select => {
        select.addEventListener('change', function() {
```

```
        if (this.value === 'suspended') {
            if (!confirm('Are you sure you want to suspend this account? The customer will not be able to perform transactions.')) {
                this.form.reset();
            }
        }
    });
});
</script>
</body>
</html>
```

TRANSACTION MANAGEMENT

```
<?php
include 'config.php';
requireLogin();

// Handle deposit
if (isset($_POST['deposit'])) {
    $account_id = $_POST['account_id'];
    $amount = $_POST['amount'];
    $description = $_POST['description'];

    try {
        $pdo->beginTransaction();

        // Update account balance
        $stmt = $pdo->prepare("UPDATE accounts SET balance = balance + ? WHERE id = ?");
        $stmt->execute([$amount, $account_id]);

        // Record transaction
        $stmt = $pdo->prepare("INSERT INTO transactions (account_id, transaction_type,
amount, description) VALUES (?, 'deposit', ?, ?)");
        $stmt->execute([$account_id, $amount, $description]);

        $pdo->commit();
        $success = "Deposit successful!";
    } catch (PDOException $e) {
```

```
        $pdo->rollBack();
        $error = "Error processing deposit: " . $e->getMessage();
    }
}

// Handle withdrawal
if (isset($_POST['withdraw'])) {
    $account_id = $_POST['account_id'];
    $amount = $_POST['amount'];
    $description = $_POST['description'];

    try {
        $pdo->beginTransaction();

        // Check sufficient balance
        $stmt = $pdo->prepare("SELECT balance FROM accounts WHERE id = ?");
        $stmt->execute([$account_id]);
        $balance = $stmt->fetchColumn();

        if ($balance >= $amount) {
            // Update account balance
            $stmt = $pdo->prepare("UPDATE accounts SET balance = balance - ? WHERE id = ?");
            $stmt->execute([$amount, $account_id]);

            // Record transaction
```

```
        $stmt = $pdo->prepare("INSERT INTO transactions (account_id, transaction_type, amount, description) VALUES (?, 'withdrawal', ?, ?)");
        $stmt->execute([$account_id, $amount, $description]);

        $pdo->commit();
        $success = "Withdrawal successful!";
      } else {
        $error = "Insufficient balance!";
      }
    } catch (PDOException $e) {
      $pdo->rollBack();
      $error = "Error processing withdrawal: " . $e->getMessage();
    }
}

// Fetch accounts for dropdown
$accounts = $pdo->query("SELECT a.id, a.account_type, a.balance, c.first_name, c.last_name, c.account_number FROM accounts a JOIN customers c ON a.customer_id = c.id WHERE a.status = 'active'")->fetchAll();

// Fetch transactions - CORRECTED QUERY
$stmt = $pdo->query("
    SELECT t.*, c.account_number, c.first_name, c.last_name
    FROM transactions t
    JOIN accounts a ON t.account_id = a.id
    JOIN customers c ON a.customer_id = c.id
    ORDER BY t.transaction_date DESC
```

```
");
$transactions = $stmt->fetchAll();
?>

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Transactions - Bank System</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>
    <div class="container">
        <?php include 'header.php'; ?>

        <h1>Transaction Management</h1>

        <?php if (isset($success)): ?>
            <div class="alert alert-success"><?php echo $success; ?></div>
        <?php endif; ?>

        <?php if (isset($error)): ?>
            <div class="alert alert-error"><?php echo $error; ?></div>
        <?php endif; ?>
```

```
<div style="display: grid; grid-template-columns:; gap: 2rem;">
  <!-- Deposit Form -->
  <div class="card" style="width: 80%">
    <h2>Deposit Money</h2>
    <form method="POST">
      <div class="form-group">
        <label>Select Account</label>
        <select name="account_id" class="form-control" required>
          <option value="">Select Account</option>
          <?php foreach ($accounts as $account): ?>
          <option value="<?php echo $account['id']; ?>">
            <?php echo $account['account_number'] . ' - ' . $account['first_name'] . ' ' .
$account['last_name'] . ' ($' . number_format($account['balance'], 2) . ')'; ?>
          </option>
          <?php endforeach; ?>
        </select>
      </div>

      <div class="form-group">
        <label>Amount</label>
        <input type="number" name="amount" step="0.01" min="0.01" class="form-
control" required>
      </div>

      <div class="form-group">
        <label>Description</label>
```

```
            <input type="text" name="description" class="form-control"
placeholder="Deposit description">
        </div>

        <button type="submit" name="deposit" class="btn btn-primary">Process
Deposit</button>
    </form>
</div>

<!-- Withdrawal Form -->
<div class="card" style="width: 80%">
    <h2>Withdraw Money</h2>
    <form method="POST">
        <div class="form-group">
            <label>Select Account</label>
            <select name="account_id" class="form-control" required>
                <option value="">Select Account</option>
                <?php foreach ($accounts as $account): ?>
                <option value="<?php echo $account['id']; ?>">
                    <?php echo $account['account_number'] . ' - ' . $account['first_name'] . ' ' .
$account['last_name'] . ' ($' . number_format($account['balance'], 2) . ')'; ?>
                </option>
                <?php endforeach; ?>
            </select>
        </div>

        <div class="form-group">
```

```
            <label>Amount</label>
            <input type="number" name="amount" step="0.01" min="0.01" class="form-control" required>
        </div>

        <div class="form-group">
            <label>Description</label>
            <input type="text" name="description" class="form-control" placeholder="Withdrawal description">
        </div>

        <button type="submit" name="withdraw" class="btn btn-primary">Process Withdrawal</button>
    </form>
  </div>
</div>

<!-- Transactions History -->
<div class="card"  style="width: 80%">
  <h2>Transaction History</h2>
  <table class="table">
    <thead>
      <tr>
        <th>Date</th>
        <th>Account</th>
        <th>Customer</th>
        <th>Type</th>
```

```
            <th>Amount</th>
            <th>Description</th>
          </tr>
        </thead>
        <tbody>
          <?php foreach ($transactions as $transaction): ?>
          <tr>
            <td><?php echo date('M d, Y H:i', strtotime($transaction['transaction_date'])); ?></td>
            <td><?php echo $transaction['account_number']; ?></td>
            <td><?php echo $transaction['first_name'] . ' ' . $transaction['last_name']; ?></td>
            <td>
              <span class="badge <?php echo $transaction['transaction_type'] == 'deposit' ? 'badge-success' : 'badge-warning'; ?>">
                <?php echo ucfirst($transaction['transaction_type']); ?>
              </span>
            </td>
            <td>$<?php echo number_format($transaction['amount'], 2); ?></td>
            <td><?php echo $transaction['description']; ?></td>
          </tr>
          <?php endforeach; ?>
        </tbody>
      </table>
    </div>
  </div>
</body>
</html>
```

HEADER PAGE

```
<header class="header">
  <h1>Bank Management System</h1>
  <nav class="navbar">
    <a href="dashboard.php" class="<?php echo basename($_SERVER['PHP_SELF']) == 'dashboard.php' ? 'active' : ''; ?>">Dashboard</a>
    <a href="view_customers.php" class="<?php echo basename($_SERVER['PHP_SELF']) == 'view_customers.php' ? 'active' : ''; ?>">Customers</a>
    <a href="view_accounts.php" class="<?php echo basename($_SERVER['PHP_SELF']) == 'view_accounts.php' ? 'active' : ''; ?>">Accounts</a>
    <a href="transactions.php" class="<?php echo basename($_SERVER['PHP_SELF']) == 'transactions.php' ? 'active' : ''; ?>">Transactions</a>
    <a href="logout.php" class="btn btn-danger">Logout (<?php echo $_SESSION['username']; ?>)</a>
  </nav>
</header>
```

STYLE CSS

```
* {
    margin: 0;
    padding: 0;
    box-sizing: border-box;
}

body {
    font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;
    background: linear-gradient(135deg, #667eea 0%, #764ba2 100%);
    min-height: 100vh;
}

.container {
    max-width: 1200px;
    margin: 0 auto;
    padding: 20px;
}

.header {
    background: white;
    padding: 1rem 2rem;
    border-radius: 10px;
    box-shadow: 0 4px 6px rgba(0, 0, 0, 0.1);
    margin-bottom: 2rem;
    display: flex;
```

```
.navbar a {
    text-decoration: none;
    color: #333;
    font-weight: 500;
    padding: 0.5rem 1rem;
    border-radius: 5px;
    transition: all 0.3s ease;
}    justify-content: space-between;
    align-items: center;
}

.navbar {
    display: flex;
    gap: 2rem;
}



.navbar a:hover, .navbar a.active {
    background: #667eea;
    color: white;
}

.card {
    background: white;
    border-radius: 10px;
```

```
    padding: 2rem;
    box-shadow: 0 4px 6px rgba(0, 0, 0, 0.1);
    margin-bottom: 2rem;
    width: 80%;
}

.form-group {
    margin-bottom: 1.5rem;
}

.form-group label {
    display: block;
    margin-bottom: 0.5rem;
    font-weight: 500;
    color: #333;
}

.form-control {
    width: 100%;
    padding: 0.75rem;
    border: 2px solid #e2e8f0;
    border-radius: 5px;
    font-size: 1rem;
    transition: border-color 0.3s ease;
}
```

```
.form-control:focus {
    outline: none;
    border-color: #667eea;
}

.btn {
    padding: 0.75rem 1.5rem;
    border: none;
    border-radius: 5px;
    font-size: 1rem;
    font-weight: 500;
    cursor: pointer;
    transition: all 0.3s ease;
    text-decoration: none;
    display: inline-block;
    text-align: center;
}

.btn-primary {
    background: #667eea;
    color: white;
}

.btn-primary:hover {
    background: #5a6fd8;
    transform: translateY(-2px);
```

```
}

.btn-success {
    background: #48bb78;
    color: white;
}

.btn-danger {
    background: #f56565;
    color: white;
}

.alert {
    padding: 1rem;
    border-radius: 5px;
    margin-bottom: 1rem;
}

.alert-success {
    background: #c6f6d5;
    color: #22543d;
    border: 1px solid #9ae6b4;
}

.alert-error {
    background: #fed7d7;
```

```
    color: #742a2a;
    border: 1px solid #feb2b2;
}

.table {
    width: 100%;
    border-collapse: collapse;
    margin-top: 1rem;
}

.table th,
.table td {
    padding: 1rem;
    text-align: left;
    border-bottom: 1px solid #e2e8f0;
}

.table th {
    background: #f7fafc;
    font-weight: 600;
    color: #2d3748;
}

.table tr:hover {
    background: #f7fafc;
}
```

```
.dashboard-stats {
    display: grid;
    grid-template-columns: repeat(auto-fit, minmax(250px, 1fr));
    gap: 2rem;
    margin-bottom: 2rem;
}

.stat-card {
    background: white;
    padding: 2rem;
    border-radius: 10px;
    box-shadow: 0 4px 6px rgba(0, 0, 0, 0.1);
    text-align: center;
}

.stat-card h3 {
    color: #667eea;
    font-size: 2.5rem;
    margin-bottom: 0.5rem;
}

.stat-card p {
    color: #718096;
    font-weight: 500;
}
```

```
.login-container {
    display: flex;
    justify-content: center;
    align-items: center;
    min-height: 100vh;
    padding: 2rem;
}

.login-form {
    background: white;
    padding: 3rem;
    border-radius: 10px;
    box-shadow: 0 10px 25px rgba(0, 0, 0, 0.1);
    width: 100%;
    max-width: 400px;
}

.login-form h2 {
    text-align: center;
    margin-bottom: 2rem;
    color: #333;
}

.action-buttons {
    display: flex;
```

```
    gap: 0.5rem;
}

.badge {
    padding: 0.25rem 0.75rem;
    border-radius: 15px;
    font-size: 0.875rem;
    font-weight: 500;
}

.badge-success {
    background: #c6f6d5;
    color: #22543d;
}

.badge-warning {
    background: #feebc8;
    color: #744210;
}
```

LOGOUT PAGE

```
<?php
include 'config.php';
session_destroy();
header("Location: login.php");
exit();
?>
```

CONCLUSION

This Bank Management System represents a significant step forward in banking technology, demonstrating how modern web applications can revolutionize traditional financial operations. The project successfully balances technical sophistication with practical usability, creating a solution that delivers immediate value while providing a foundation for future innovation.

The system stands as a testament to effective software engineering principles, showcasing proper database design, secure coding practices, and user-centered design. It serves as both a functional banking solution and an educational exemplar of full-stack web application development.

By addressing the core needs of financial institutions while anticipating future requirements, this Bank Management System provides a sustainable digital foundation that can evolve alongside the changing landscape of banking technology and customer expectations.

FUTURE SCOPE

Mobile Banking *- Develop customer mobile apps with biometric login and push notifications for real-time alerts.*

Digital Payments *- Integrate UPI, mobile wallets, QR payments, and online bill payment systems.*

Loan Management *- Add online loan applications, EMI calculator, digital document upload, and loan tracking.*

Multi-Branch Support *- Enable centralized management for multiple branches with inter-branch fund transfers.*

AI Features *- Implement chatbots, fraud detection, voice banking, and personalized customer offers.*

Cloud Migration *- Move to cloud infrastructure with microservices and containerization for better scalability.*

Advanced Security *- Add multi-factor authentication, behavioral biometrics, and blockchain for secure transactions.*

Bibliography

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- *CSS Official Documentation*.
- *JS Official Documentation*.
- *PHP Official Documentation*.
- *Online tutorials from W3Schools and JavaTpoint*.
- *MySQL Official Documentation*.