PROJECT REPORT
Automated Banking Website Using Agile Methodology

1. Introduction

With rapid advancements in information technology, the banking sector has undergone a significant digital transformation. Traditional banking systems that required customers to visit physical bank branches are now being replaced by **automated and online banking systems**. An **Automated Banking Website** provides customers with the convenience of performing financial transactions anytime and anywhere using the internet.

This project focuses on the development of an **Automated Banking Website using Agile Software Development Methodology**. The system aims to automate basic banking operations such as account management, fund transfers, balance inquiry, transaction history, and administrative control in a secure and efficient manner.

Agile methodology is adopted to ensure flexibility, continuous improvement, faster delivery, and better alignment with user requirements.

2. Objectives of the Project

The primary objectives of this project are:

- To design and develop a secure and user-friendly automated banking website
- To enable customers to perform banking operations online
- To minimize manual banking processes and paperwork
- To improve transaction accuracy and efficiency
- To implement role-based access for users and administrators
- To develop the system using Agile methodology for iterative enhancement

3. Scope of the Project

The scope of the **Automated Banking Website** defines the boundaries and functionalities covered in this project.

Included in Scope:

- User registration and secure login
- Bank account creation and management
- Balance inquiry and account details view
- Fund transfer between accounts
- Transaction history and statements
- Password change and profile update
- Admin panel for managing users and accounts
- Secure data storage and authentication
- Incremental feature development using Agile sprints

Excluded from Scope:

- Integration with real banking networks
- Real-time interbank transaction systems
- ATM hardware integration
- Mobile banking application

These advanced features can be incorporated as future enhancements.

4. Agile Methodology Overview

4.1 What is Agile?

Agile is a **modern software development methodology** that focuses on iterative development, collaboration, customer feedback, and flexibility. Instead of delivering the whole system at once, Agile delivers the product in small, usable parts called **iterations or sprints**.

4.2 Agile Principles

- Customer satisfaction through continuous delivery
- Welcome changing requirements
- Frequent delivery of working software
- Close collaboration between business and development teams

- Continuous improvement

4.3 Agile Framework Used

This project uses the **Scrum framework**, which includes:

- Product Backlog
- Sprint Planning
- Daily Stand-ups
- Sprint Review

5. Functional Requirements

User Module

- User registration and login
- View account details and balance
- Transfer funds between accounts
- View transaction history
- Change password and update profile

Admin Module

- Admin login
- Approve or block user accounts
- Manage users and transactions
- Monitor system activities

6. Non-Functional Requirements

- High security and data confidentiality
- Fast response time
- Reliability and availability
- Scalability
- User-friendly interface

7. System Architecture

The Automated Banking Website follows a **three-tier architecture**, ensuring modularity and security.

1. Presentation Layer (User Interface Layer):

- User Interface for customers and admin
- Web pages for login, dashboard, transactions

Technologies used: HTML, CSS, JavaScript

2. Application Layer (Business Logic Layer)

- Business logic implementation
- Fund transfer validation
- Authentication and authorization

Technologies used: Java / Python / PHP

3. Data Layer (Database Layer)

- Stores customer details, accounts, transactions
- Ensures data integrity and consistency

Database used: MySQL

Architecture Workflow

1. User sends a request through the web interface
2. The request is processed by the application layer
3. Required data is fetched or updated in the database
4. The response is sent back to the user interface

8. Tools and Technologies Used

- **Frontend:** HTML, CSS, JavaScript
- **Backend:** Java / Python / PHP
- **Database:** MySQL
- **IDE:** Visual Studio Code, Eclipse
- **Version Control:** Git
- **Methodology:** Agile

9. Testing Strategy

- **Unit Testing:** Testing individual modules
- **Integration Testing:** Testing communication between modules
- **System Testing:** Complete system validation
- **User Acceptance Testing:** Ensuring system meets user needs
- **Security Testing:** Preventing unauthorized access

Testing was performed continuously in each Agile sprint.

10. Advantages of the Automated Banking System

- 24/7 banking services availability
- Reduced manual workload
- Improved transaction accuracy
- Enhanced customer satisfaction
- Faster service delivery

11. Future Enhancements

- Integration with real-time banking APIs
- Mobile banking application
- Biometric authentication
- AI-based fraud detection
- SMS and email alerts

11. Conclusion

The **Automated Banking Website developed using Agile Methodology** successfully demonstrates the effective use of modern web technologies to automate core banking operations in a secure, reliable, and user-friendly manner. The system provides essential features such as user registration, secure authentication, balance inquiry, fund transfer, transaction history, and administrative control, fulfilling the primary objectives of the project.

By adopting Agile methodology, the project achieved iterative development, continuous testing, and regular feedback incorporation, which helped in improving system quality and reducing development risks. Each sprint contributed to incremental improvements, ensuring that the application remained adaptable to changing requirements and user needs.

The implemented system minimizes manual intervention, improves transaction accuracy, and enhances overall banking efficiency. Its modular architecture and well-defined requirements make the system scalable and easy to maintain.

In conclusion, this project highlights the effectiveness of Agile methodology in developing complex applications like banking systems. The **Automated Banking Website** serves as a strong foundation for future enhancements such as real-time banking integration, mobile application support, and advanced security mechanisms, making it suitable for real-world banking environments.