Task 1.1 Project Plan(30%)

# **Project Objective**

Develop and implement a comprehensive desktop-based Employee Management System using WPF technology for New Zealand Finance and Trade Company (NZFTC). The system will centralise HR processes, automate administrative tasks, and provide secure access to employee information while maintaining data privacy and security standards.

# **Project Stages**

### **1. Planning & Analysis (Week 1)**

This stage involves understanding what the client needs and gathering all requirements from stakeholders. We analyze the current processes and define exactly what the system should do before any coding begins.

### **2. Design (Week 1)**

Here we create the blueprint for the entire system including how it will look and work. We design the database structure, user interfaces, and technical architecture that developers will follow.

### **3. Development (Weeks 2-3)**

This is where the actual coding happens to build the software according to our designs. Week 2 focuses on core features like user login and employee data management, while Week 3 adds advanced features like leave requests and payroll.

### **4. Testing (Week 4)**

We thoroughly test everything to make sure it works correctly and fix any bugs we find. This includes checking if all features work together properly and ensuring the system performs well under normal use.

### **5. Deployment (Week 4)**

We install the finished system in the client's environment and train users how to use it. This includes setting up the production database and ensuring everything works in the real workplace.

### **6. Maintenance (Ongoing)**

After the system goes live, we provide ongoing support to fix any issues and keep it running smoothly. This includes regular backups, updates, and helping users with any problems they encounter.

# **Timeframes - Sprints**

**Total Duration**: 4 weeks with each week being a focused sprint on specific deliverables. Each sprint has clear goals and outcomes that build upon the previous week's work.

# **Software Requirements**

* **IDE**: Visual Studio 2022 Professional - The main tool developers use to write and debug the code
* **Database**: MongoDB - A modern database system that stores all employee and company data
* **Framework**: .NET 9.0 - Microsoft's platform that provides the foundation for building the application
* **Language**: C# 12 - The programming language used to write all the business logic and functionality
* **Frontend**: WPF - Microsoft's technology for creating desktop user interfaces with rich graphics
* **OS**: Windows 10 or 11 Desktop - The operating system where the application will run
* **Version Control**: GitHub - Cloud service to store code safely and track all changes
* **Architecture**: MVVM Pattern - A design approach that separates user interface from business logic

# **Key Tasks & Responsibilities**

|  |  |  |
| --- | --- | --- |
| **Task** | **Responsible Team Member** | **Description** |
| Requirements gathering | Team Members | Meet with stakeholders to understand exactly what features they need |
| System architecture design | Team Members | Create the technical blueprint showing how all components will work together |
| Database schema design | Team Members | Design how data will be organized and stored in MongoDB |
| UI/UX mockup creation | Team Members | Create visual designs showing how users will interact with the system |
| Authentication system | Team Members | Build the login system and security features to protect user access |
| Employee CRUD operations | Team Members | Create functionality to add, view, update, and delete employee records |
| Admin dashboard | Team Members | Build the main interface that administrators use to manage the system |
| Leave management system | Team Members | Develop features for employees to request leave and managers to approve it |
| Payroll calculation engine | Team Members | Create automated system to calculate employee pay including taxes and deductions |
| System integration testing | Team Members | Test that all parts of the system work correctly together |
| User training delivery | Team Members | Teach users how to operate the new system effectively |
| Project coordination | Scrum Master | Oversee the entire project to ensure it stays on schedule and meets requirements |

# **Team Structure**

### **Scrum Master**

Responsible for project coordination, timeline management, stakeholder communication, and ensuring adherence to agile practices. Facilitates daily standups, sprint planning, and removes any obstacles that might block the team's progress.

### **Team Members**

Collectively responsible for all technical and functional aspects of the project, working collaboratively to deliver a complete solution. The team shares ownership of:

* **Technical architecture and code quality** - Designing robust system architecture and maintaining high coding standards throughout development
* **WPF frontend development and user experience design** - Creating intuitive, modern desktop interfaces that employees will find easy to use
* **Backend logic, API development, and MongoDB integration** - Building server-side functionality, data processing logic, and seamless database connectivity
* **Comprehensive testing and system reliability** - Ensuring all features work correctly through thorough testing at every level of the system
* **Documentation and user training materials** - Creating clear guides and training resources to help users adopt the new system successfully
* **Requirements gathering and ongoing collaboration with stakeholders** - Maintaining continuous communication with the client to ensure the final product meets their exact needs

Task 1.2 Project Proposal (70%)

# **COMPREHENSIVE EMPLOYEE MANAGEMENT SYSTEM FOR NZFTC**

# **Project Proposal**

**Prepared for:** New Zealand Finance and Trade Company (NZFTC)  
**Prepared by:** Rangitira IT  
**Project Sponsor:** Mr. Glenn Philips, Head of People and Culture  
**Date:** June 17, 2025  
**Project Value:** $16,000 NZD

# **Table of Contents Page No**

1. Introduction 6
2. Project Overview/Background 6
3. Project Objective 6
4. Project Scope 7
5. Methodology 7
6. Project Team 8
7. Project Stages 8
8. Project Deliverables 9
9. Project Budget 10
10. Project Timelines 10
11. Project Risks and Management 11
12. Quality Assurance 11
13. Communication Plan 11
14. Approval 11
15. Sign-off 11

## **1. Introduction**

Rangitira IT is pleased to present this comprehensive project proposal for developing an advanced Employee Management System for New Zealand Finance and Trade Company (NZFTC). This proposal outlines our approach to delivering a robust, scalable, and secure solution that will streamline NZFTC's human resource management processes, enhance operational efficiency, and provide a centralised platform for all HR-related activities.

Our experienced team of ten IT professionals brings extensive expertise in software development, database management, and enterprise system implementation. This proposal demonstrates our commitment to delivering high-quality solutions that meet and exceed client expectations while adhering to industry best practices and security standards.

## **2. Project Overview/Background**

NZFTC currently faces challenges in managing human resource processes efficiently due to fragmented systems and manual processes. The organisation requires a comprehensive desktop-based employee management system to centralise HR activities, improve data accuracy, and enhance administrative efficiency. The proposed WPF solution will serve as a unified platform for managing employee information, leave requests, payroll processing, grievance handling, and holiday scheduling with a modern, intuitive desktop interface.

The system will accommodate two primary user roles with distinct access levels and functionalities. Administrators will have comprehensive access to manage company-wide HR operations, while employees will have controlled access to personal information and self-service features. This role-based approach ensures data security while empowering employees with necessary tools for self-management.

## **3. Project Objective**

The primary objective is to develop and implement a comprehensive Employee Management System that will:

* Streamline HR processes through automation and centralisation
* Enhance data accuracy and accessibility for informed decision-making
* Improve employee satisfaction through self-service capabilities
* Ensure compliance with employment regulations and data privacy requirements
* Reduce administrative overhead and operational costs
* Provide scalable architecture to accommodate future organisational growth
* Implement robust security measures to protect sensitive employee data

## **4. Project Scope**

**Included in Scope:**

* User authentication and role-based access control system
* Employee database management with comprehensive information storage
* Leave management module with application, approval, and tracking capabilities
* Payroll management system with automated calculations and reporting
* Grievance submission and tracking mechanism
* Holiday calendar and company events management
* Modern WPF desktop interface with intuitive navigation
* Database design and implementation with SQL Server/PostgreSQL
* Security implementation including data encryption and user access controls
* User training and comprehensive documentation
* System testing and quality assurance

**Excluded from Scope:**

* Integration with existing third-party systems (unless specified)
* Data migration from legacy systems
* Ongoing maintenance beyond initial warranty period
* Hardware procurement or infrastructure setup
* Customisations beyond specified requirements

## **5. Methodology**

Our development approach follows Agile methodology with iterative development cycles, ensuring continuous client feedback and adaptive project management. The methodology includes:

**Requirements Analysis:** Comprehensive analysis of functional and non-functional requirements through stakeholder consultations and documentation review.

**System Design:** Creation of detailed system architecture, database schema, and user interface mockups with client approval at each stage.

**Iterative Development:** Weekly sprints with regular progress demonstrations

**Testing:** Comprehensive testing including unit testing, integration testing, user acceptance testing, and security testing.

**Deployment:** Staged deployment with user training and support during transition period.

## **6. Project Team**

**Scrum Master:** Responsible for project coordination, timeline management, stakeholder communication, and ensuring adherence to agile practices.

**Team Members:** Collectively responsible for all technical and functional aspects of the project, including:

* Technical architecture and code quality
* WPF frontend development and user experience design
* Backend logic, API development, and MongoDB integration
* Comprehensive testing and system reliability
* Documentation and user training materials
* Requirements gathering and ongoing collaboration with stakeholders

## **7. Project Stages**

**Stage 1: Project Initiation and Planning (Week 1)**

* Detailed requirements gathering and analysis
* System architecture design and database schema creation
* Development environment setup and tool configuration
* User interface mockup creation and client approval

**Stage 2: Core Development (Weeks 2-3)**

* MongoDB database implementation with schema and indexes
* User authentication with BCrypt and role-based access control
* Employee management module with full CRUD functionality
* Core service layer and basic WPF UI structure development
* Unit testing setup for foundational components

**Stage 3: Advanced Features and Integration (Week 3)**

* Leave management with approval workflows
* Payroll module with automated calculation engine
* Real-time notifications and audit logging with IP tracking
* Settings management with themes and localization
* Advanced search, filtering, and reporting features
* Security hardening and data validation

**Stage 4: Testing and Deployment (Week 4)**

* Comprehensive system testing and bug resolution
* User acceptance testing (UAT) with client stakeholders
* Final documentation and user training delivery
* Production deployment and go-live support
* Post-deployment monitoring and feedback collection

## **8. Project Deliverables**

**Software Deliverables**

* EMS Desktop App: Fully functional WPF application
* MongoDB Database: Optimized with indexing, security, and backups
* Source Code: Clean, documented code with version history
* Installer: MSI package with automated setup

**Documentation Deliverables**

* User Manual: Step-by-step guide with visuals
* Admin Guide: System setup and maintenance instructions
* Technical Docs: Architecture, APIs, and dev notes
* Training Materials: Slides and hands-on exercises

**Training & Support**

* User Training: Sessions for admins and end-users
* Knowledge Transfer: Technical handover to IT team
* 90-Day Support: Post-launch bug fixes and assistance
* Maintenance Guide: Ongoing upkeep instructions

## **9. Project Budget**

**Total Project Cost:** $16,000 NZD

**Budget Breakdown:**

* Development and Programming: $10,400 (65%)
* Database Design and Implementation: $1,600 (10%)
* Testing and Quality Assurance: $1,600 (10%)
* Documentation and Training: $1,280 (8%)
* Project Management: $1,120 (7%)

Payment schedule includes 30% advance payment, 50% upon completion of development stage, and 20% upon final delivery and acceptance.

## **10. Project Timelines**

**Project Duration:** 4 weeks from project initiation

**Start Date:** Upon contract signing and advance payment receipt

**Completion Date:** 4 weeks from start date

**Key Milestones:**

* Week 1: Requirements finalisation and design approval
* Week 2: Core modules development completion
* Week 3: Advanced features implementation and integration
* Week 4: Testing completion and system deployment

## **11. Project Risks and Management**

**Technical Risks:** Mitigated through scalable architecture, optimized MongoDB indexing, and rigorous testing.

**Schedule Risks:** Potential delays due to scope changes or technical complexities will be managed through regular progress monitoring and proactive communication.

**Resource Risks:** Addressed through cross-trained team members and backup resource planning.

**Security Risks:** Prevented with strong authentication, data encryption, and continuous security assessments.

**Business Risks:** Reduced through user-friendly UI, comprehensive training, and well-planned data migration.

## **12. Quality Assurance**

Our quality assurance process includes comprehensive testing protocols, code review procedures, and adherence to industry standards. We implement automated testing frameworks, manual testing procedures, and continuous integration practices to ensure system reliability and performance. All deliverables undergo thorough quality checks before client presentation.

## **13. Communication Plan**

Regular communication will be maintained through weekly status meetings, progress reports, and milestone presentations. Project stakeholders will receive timely updates on project progress, issues, and resolutions. A dedicated project communication channel will be established for immediate issue resolution and clarification requests.

## **14. Approval**

This proposal requires approval from Mr. Glenn Philips, Head of People and Culture, and other designated NZFTC stakeholders. Upon approval, a formal contract will be executed outlining terms, conditions, and service level agreements.

## **15. Sign-off**

**Project Developers – Rangitira IT (Student Representatives)**

Name: Santosh Adhikari Signature: santosh Date: 2025/06/27

Name: Samiullah Signature: samiullah Date: 2025/06/27

**NZFTC Representative(Teacher):**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_