PROG6212: DcumENtation

COMPLETE DOCUMENTATION OF PROG6212 PART 1

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Table of Contents

[**Contract Monthly Claim System - Prototype Documentation** 2](#_Toc207988438)

[**1.0: Project Overview** 2](#_Toc207988439)

[**2.0: System Architecture** 3](#_Toc207988440)

[**3.0: UML Class Diagram Structure** 4](#_Toc207988441)

[**4.0: Project Plan & Timeline** 5](#_Toc207988442)

[**5.0: GUI Design Philosophy** 6](#_Toc207988443)

[**6.0: Core Functionality** 7](#_Toc207988444)

[**7.0: Compliance & Next Steps** 8](#_Toc207988445)

# **Contract Monthly Claim System - Prototype Documentation**

GITHUB LINK: <https://github.com/HChristopherNaoyuki/contract-monthly-claim-system-cs.git>

## **1.0: Project Overview**

The Contract Monthly Claim System (CMCS) is a comprehensive web-based application designed to streamline the monthly claim submission and approval process for independent contractor lecturers. This prototype represents the initial development phase, focusing on core functionality while maintaining a user-centric design approach. The system addresses the complex administrative challenges of claim management through an intuitive interface that serves three distinct user roles: lecturers, program coordinators, and academic managers.

## **2.0: System Architecture**

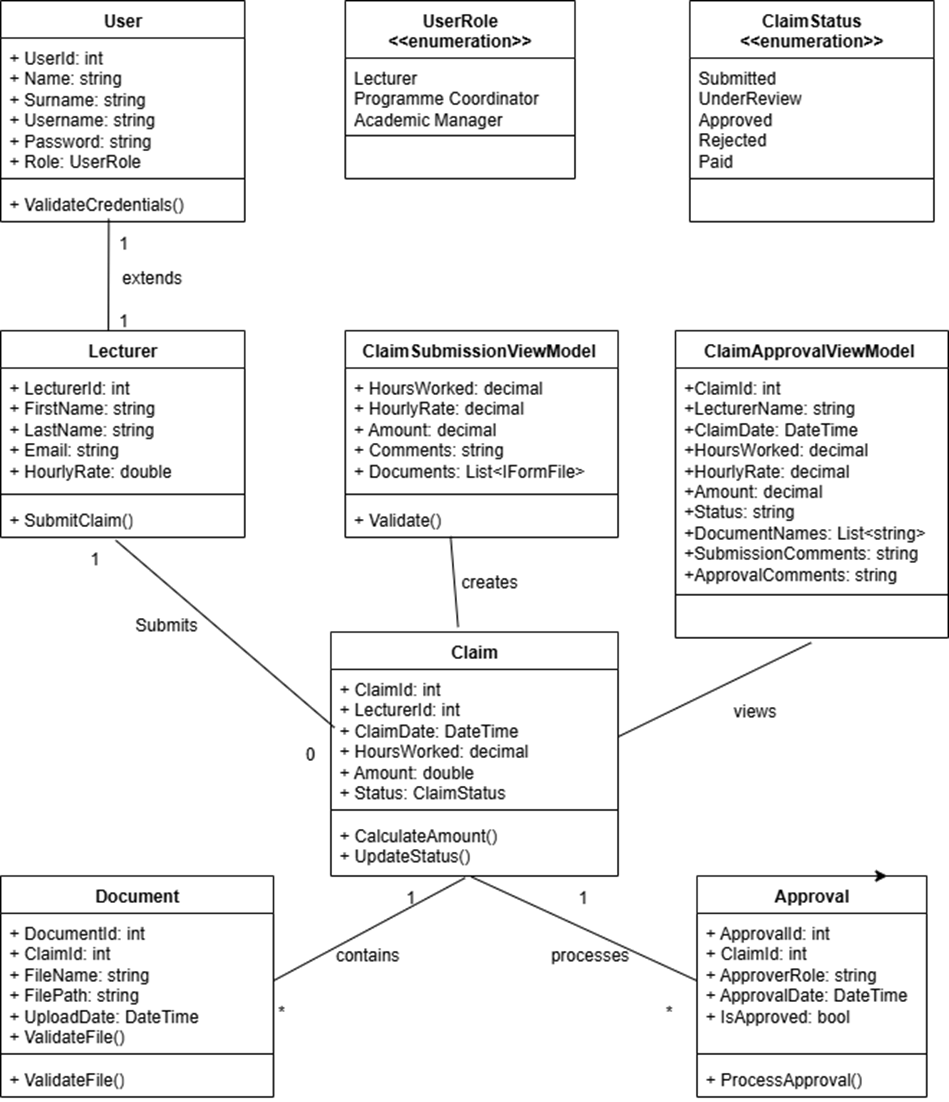
The prototype is built on ASP.NET Core MVC framework using C# 7.0, following industry-standard development practices. Architecture employs the Model-View-Controller pattern, ensuring clear separation of concerns and maintainable code structure. Key technical components include session-based authentication, client-side validation, and in-memory data storage for the prototype phase. The frontend utilizes modern CSS features including Grid and Flexbox for responsive design, ensuring optimal user experience across various devices.

## **3.0: UML Class Diagram Structure**

The system's data model is represented through a comprehensive UML class diagram featuring several key entities:

* User Class: Manages authentication with attributes for user identification, credentials, and role assignment
* Lecturer Class: Extends user functionality with specific attributes for contract details and hourly rates
* Claim Class: Core entity handling claims submissions with properties for hours worked, rates, and status tracking
* Document Class: Manages supporting file uploads and associations with specific claims
* Approval Class: Tracks review processes with timestamps, decisions, and approver comments
* Relationships between classes include one-to-many associations between lecturers and claims, and claims to documents, ensuring logical data structure and integrity.

**UML Diagram:**



## **4.0: Project Plan & Timeline**

The prototype development followed an agile methodology with two weeks sprints:

* Week 1-2: Requirements analysis and UML diagram completion
* Week 3-4: Core framework setup and authentication system implementation
* Week 5-6: Claim submission module with validation and calculation features
* Week 7-8: Review and approval interface development
* Week 9-10: Tracking system and user interface refinement
* Week 11-12: Testing, documentation, and final adjustments

## **5.0: GUI Design Philosophy**

The interface adopts a minimalist aesthetic characterized by:

* Clean, uncluttered layouts with strategic white space utilization.
* Consistent typography using system fonts with proper hierarchy.
* Subtle animations and transitions for enhanced user feedback.
* Intuitive navigation with visually distinct interactive elements.
* Accessibility-focused design including keyboard navigation support.
* Responsive design ensuring functionality across desktop and mobile platforms.

## **6.0: Core Functionality**

The prototype delivers essential features including:

* Role-based authentication and session management.
* Dynamic claim form with real-time amount calculation.
* File upload system with type and size validation.
* Dual-comment system for submission notes and approval feedback.
* Status tracking with visual indicators for different claim states.
* Responsive data tables for efficient information review.

## **7.0: Compliance & Next Steps**

This prototype meets all Part 1 requirements while establishing a solid foundation for future development. The system is prepared for database integration, enhanced security features, and additional functionality in subsequent phases. The modular architecture ensures scalability while maintaining the user-friendly experience that defines the initial design vision.