

FocusFlow Learning Project Management Platform – Software Requirements Specification

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1 Introduction

1.1 Purpose of Writing

This Software Requirements Specification document defines the complete set of requirements for the FocusFlow Learning Project Management Platform. It serves as a formal agreement between stakeholders including developers, designers, instructors, and end-users, ensuring a common understanding of system capabilities and constraints. The document provides a foundation for design, implementation, testing, and project management activities.

1.2 Project Background

Software Name: FocusFlow Learning Project Management Platform

Project Task Proposer: Course Instructor

Project Developer: FocusFlow Development Team

Problem Statement: Modern students face significant challenges in maintaining concentration, organizing academic tasks, and tracking learning progress effectively. While tools like Forest and Notion offer partial solutions, they lack integrated functionality combining focus enhancement, task management, and academic analytics in a unified system. FocusFlow addresses this gap by providing a comprehensive web-based platform that merges these essential features into a cohesive learning management solution.

1.3 References

- IEEE Std 830-1998: Recommended Practice for Software Requirements Specifications
- FocusFlow Design Specification Document
- GB/T 8567-2006 Computer Software Documentation Specification

2 Overall Description

2.1 Objectives

2.1.1 Development Intention

The primary development intention is to create an integrated learning management platform that enhances student productivity through combined task management, focus enhancement, and progress tracking capabilities. The system aims to transform complex productivity methodologies into an

accessible, user-friendly web application that promotes better study habits and academic performance.

2.1.2 Application Goals and Scope

Application Goals:

- Provide students with a centralized platform for academic task organization and execution
- Implement proven focus enhancement techniques through customizable Pomodoro methodology
- Enable comprehensive academic progress tracking and visualization
- Support personalized learning experiences through customizable interfaces and multi-language support

Scope:

The system includes:

- Personal study task management with prioritization and categorization
- Customizable Pomodoro timer with full-screen focus mode
- Academic grade recording with weighted calculations
- Learning analytics and visualization reports
- Multi-language support and basic personalization features

The system excludes:

- Integration with external learning management systems
- Real-time collaboration or social features
- Automated grade import from educational portals

2.1.3 Product Prospects

The current version establishes a robust foundation for student productivity management. Future versions may expand to include advanced features such as AI-powered study recommendations, integration with educational platforms, collaborative study features, and mobile application support. The modular architecture ensures scalability for these future enhancements.

2.1.4 User Scenario

Primary Actor: Students

Core Narrative:

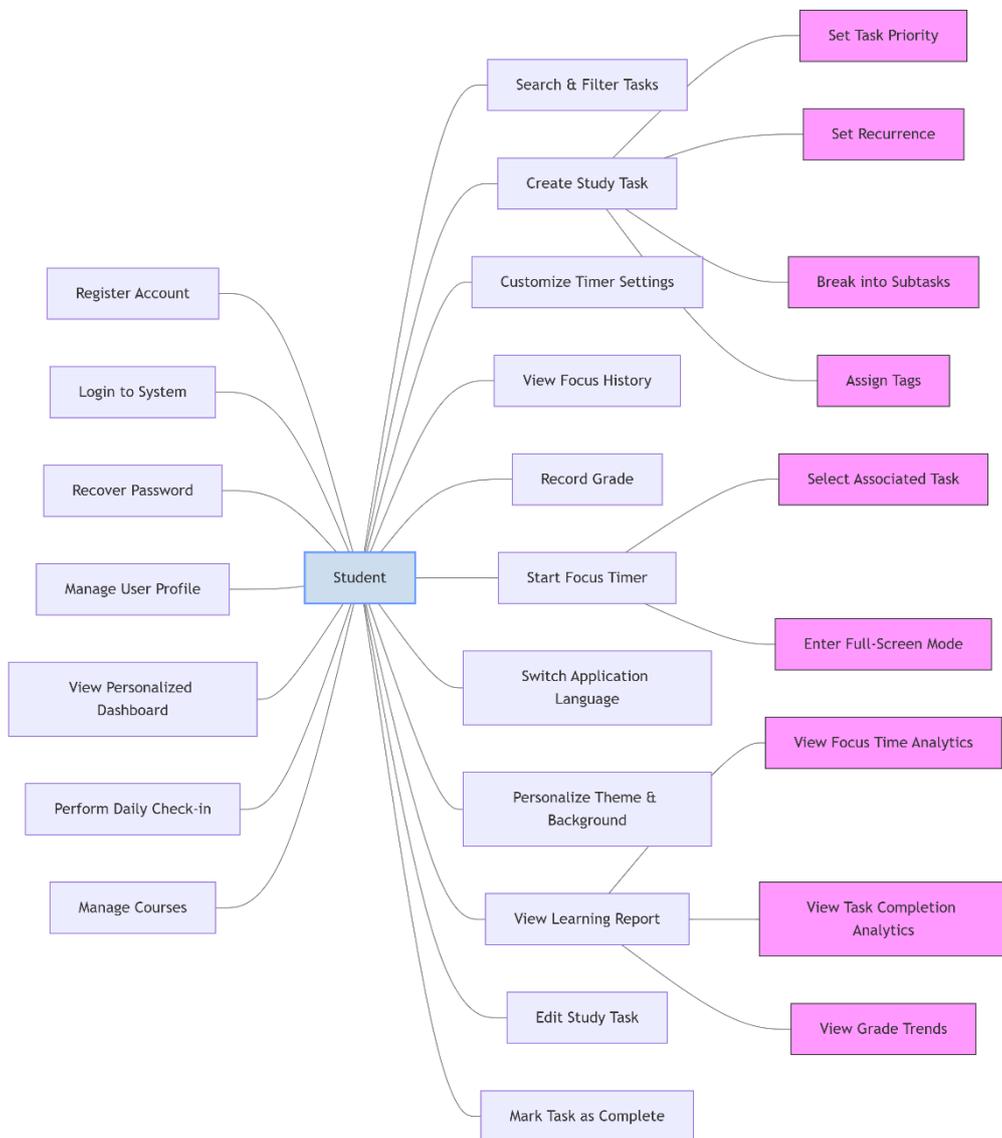
Students can interact with FocusFlow through a structured workflow. After completing account setup and login, they access a personalized dashboard for daily planning.

The core workflow centers on task management, where students create, edit, and complete study tasks. Task creation includes setting priorities, adding subtasks, and applying tags for organization. The focus enhancement feature allows starting timed study sessions linked to specific tasks, with customizable settings and full-screen mode.

For progress tracking, students can record grades and view learning reports that analyze focus time, task completion, and academic trends. The system supports personalization through language selection and theme customization.

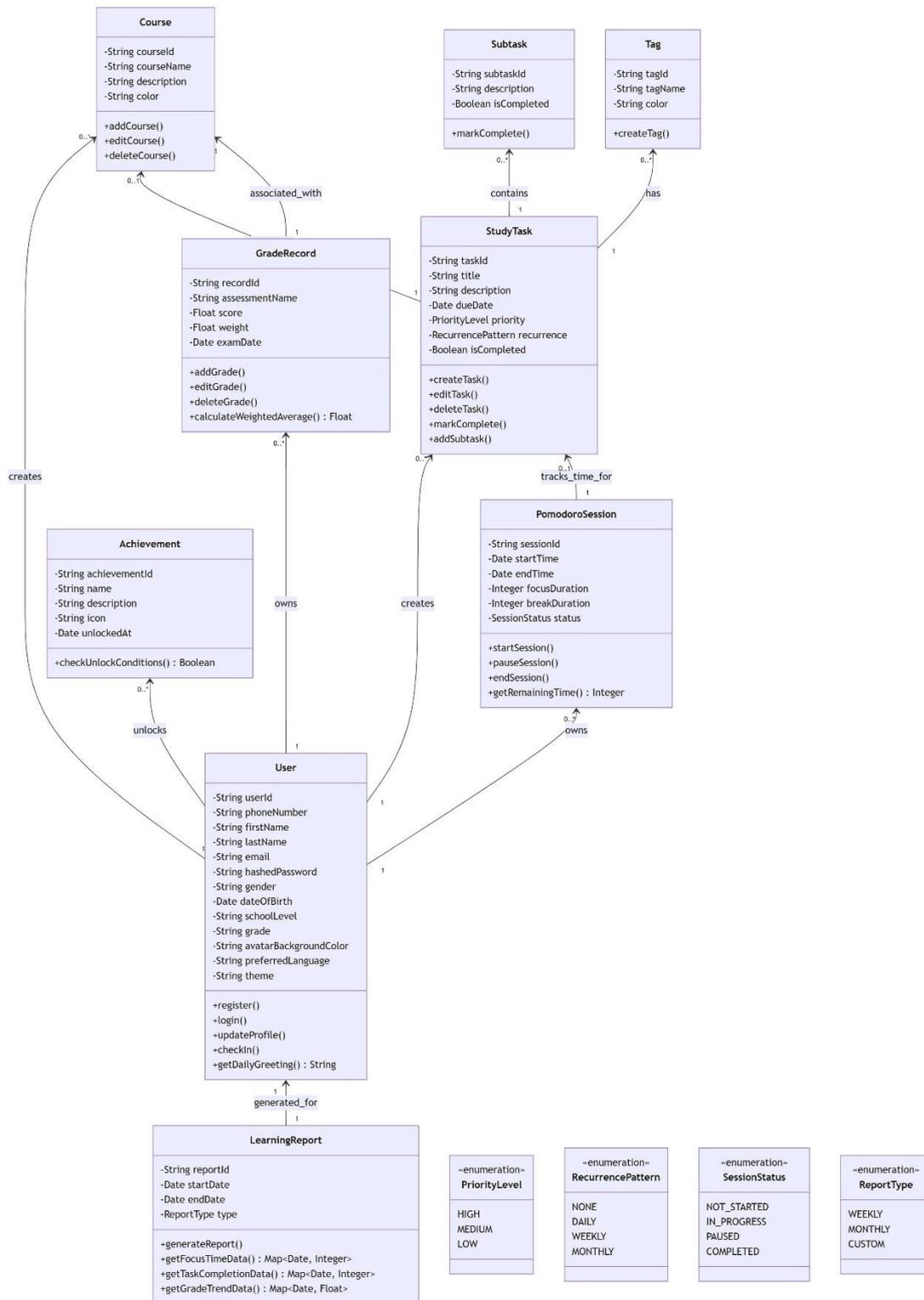
This integrated suite of features supports a continuous cycle of planning, execution, review, and adaptation, empowering students to take control of their learning journey.

The use case diagram is shown as follows.



3 Specific Requirements

3.1 Class Diagram



The system employs a modular class structure with the following core components:

- **User Management Module:** Handles user authentication, profile management, and personalization settings
- **Task Management Module:** Manages study tasks, subtasks, priorities, and categorization
- **Focus Session Module:** Controls Pomodoro timer functionality and session tracking
- **Academic Records Module:** Handles grade input, calculations, and academic progress tracking
- **Analytics Module:** Generates learning reports and visualizations

Key classes include: User, StudyTask, PomodoroSession, GradeRecord, Course, Tag, and LearningReport with appropriate relationships and attributes.

3.2 Properties

3.2.1 Availability

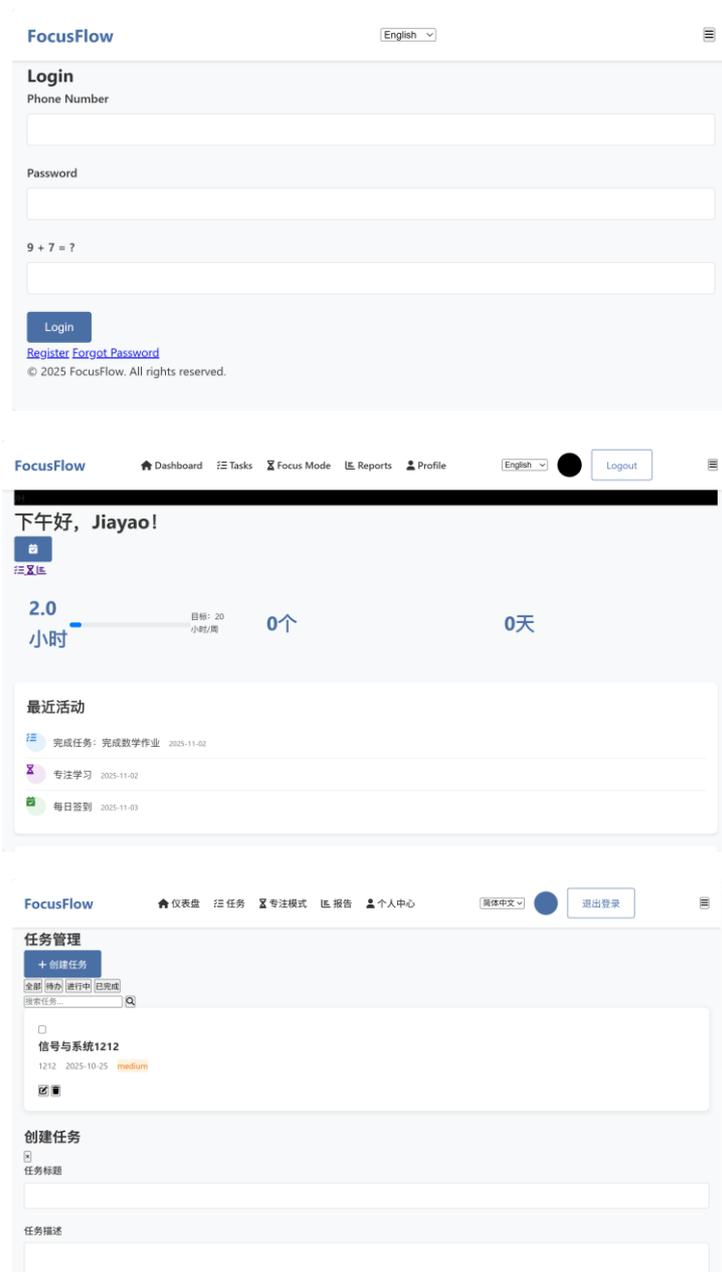
- **System Accessibility:** 99.9% uptime during academic periods
- **Response Time:** Page load under 3 seconds under normal operating conditions
- **Cross-browser Compatibility:** Full functionality on latest versions of Chrome, Firefox, Safari, and Edge
- **Error Handling:** Comprehensive error prevention and user-friendly error messages
- **Data Recovery:** Automated backup system with 24-hour data recovery capability

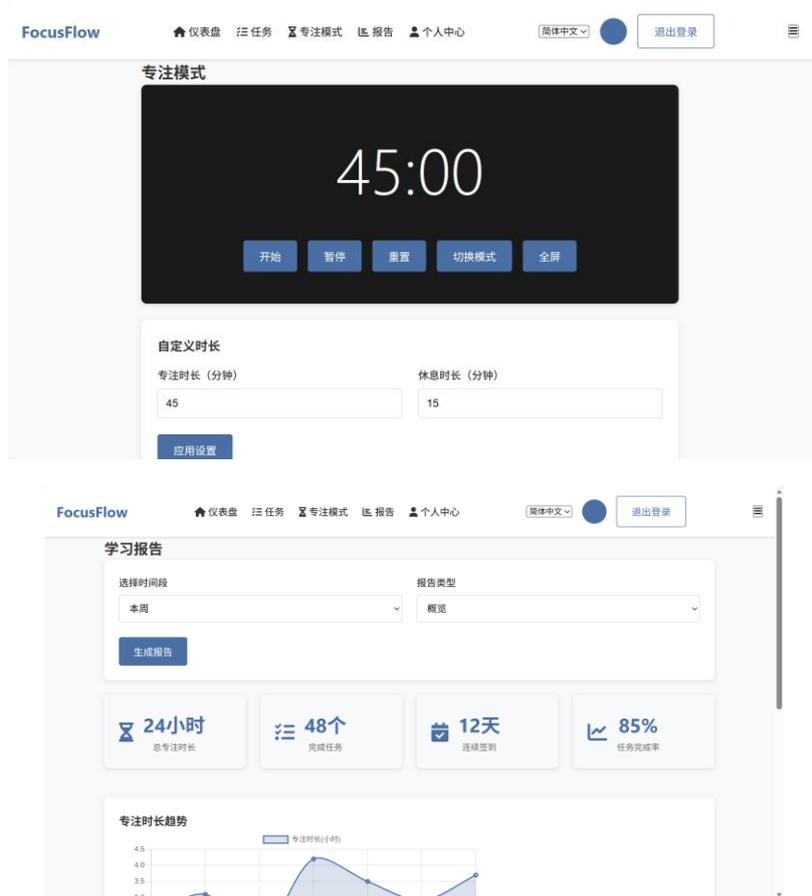
3.2.2 Security

- **Authentication:** Secure login using phone number and password with CAPTCHA protection
- **Password Security:** Strong bcrypt hashing algorithm with no plaintext storage
- **Data Privacy:** Compliance with GDPR and PIPL regulations for user data protection
- **Session Management:** Secure session handling with automatic timeout after 30 minutes of inactivity
- **Input Validation:** Comprehensive client-side and server-side input validation to prevent injection attacks

4 Interface Prototype

Combined with the requirements collection, the basic functional needs have been clarified. The prototype of User Interface for user scenarios is hereby created.





The interface will feature:

- **Welcome Dashboard:** Personalized greeting, daily check-in, and quick task overview
- **Task Management Interface:** Intuitive task creation, editing, and organization with visual priority indicators
- **Focus Timer Interface:** Clean, distraction-free timer display with full-screen capability
- **Academic Records Interface:** Structured grade input forms with automatic calculation features
- **Analytics Dashboard:** Visual reports with charts and progress indicators
- **Settings Panel:** Centralized configuration for personalization and system preferences.

5 Function Description and Acceptance Verification Standards

5.1 Detailed Function Description

User Account System:

- Registration with comprehensive user profile creation
- Secure authentication with multi-factor verification
- Flexible profile management and password recovery
- Personalized user experience with customizable preferences

Task Management:

- Complete task lifecycle management from creation to completion
- Advanced task organization through prioritization, tagging, and categorization
- Task decomposition through subtask functionality
- Intelligent task search and filtering capabilities

Focus Enhancement:

- Customizable Pomodoro timer with adjustable work/break intervals
- Immersive full-screen focus mode
- Automatic time tracking linked to specific tasks
- Session completion notifications and transitions

Academic Tracking:

- Comprehensive grade recording with weighted average calculations
- Flexible academic reporting with customizable date ranges
- Visual learning analytics through charts and progress indicators

5.2 Input and Output Format

Input Formats:

- User Registration: Structured form data with validation
- Task Creation: Text input with categorical selections
- Grade Entry: Numerical scores with weight percentages
- Timer Configuration: Numerical duration settings

Output Formats:

- Learning Reports: Visual charts (bar graphs, trend lines) in PNG/SVG format
- Task Lists: Structured data displays with visual priority indicators
- User Profile: Formatted personal information displays
- Session Records: Time-stamped activity logs

5.3 Interface Acceptance Criteria

- All interactive elements must respond within 500ms of user action

- Navigation must be intuitive with no more than 3 clicks to access core functions
- Visual design must maintain consistency across all browsers and screen sizes
- Color schemes must provide sufficient contrast for accessibility standards
- All form fields must provide clear validation feedback

5.4 Functional Acceptance Criteria

User Management:

- New users can complete registration in under 2 minutes
- Existing users can authenticate successfully in under 30 seconds
- Password recovery process completes within 5 minutes

Task Management:

- Task creation process completes in under 1 minute
- Task search returns results in under 2 seconds
- All task modifications persist correctly after session changes

Focus Sessions:

- Timer starts within 1 second of user command
- Session transitions occur automatically without user intervention
- Time tracking accuracy maintains 99.9% precision

Academic Functions:

- Grade calculations produce accurate results within 1 second
- Reports generate completely within 5 seconds for monthly data
- All data exports maintain formatting integrity