SOFTWARE REQUIREMENTS SPECIFICATION

For

To-Do Planner

Prepared by:-

Sindhuja.R
Jeevitha.V
Uma Karthikeyan.C
Mitun.G

Academic Year: *2023-20*

1. Introduction

1.1 Purpose

The purpose of the TO-DO Planner is to offer users a powerful and user-friendly task management solution. This software is designed to help individuals and teams streamline their daily activities, prioritize tasks efficiently, and ultimately enhance productivity. Whether it's for personal use to manage daily chores or for professional teams handling complex projects, this TO-DO Planner aims to provide a centralized platform for creating, organizing, and tracking tasks. By offering features like categorization, prioritization, due date management, and user-friendly interfaces, it aspires to empower users to stay organized and focused on their goals.

1.2 Document Conventions

- ➢ Entire document should be justified.
- ➢ Convention for Main title
  - Font face: Times New Roman
  - Font style: Bold
  - Font Size: 14
- ➢ Convention for Sub title
  - Font face: Times New Roman
  - Font style: Bold
  - Font Size: 12
- ➢ Convention for body
  - Font face: Times New Roman
  - Font Size: 12

1.3 Scope of Development Project

The To-Do Planner project aims to transform traditional task management into a modern, web-based application. It will empower users to efficiently organize their tasks, check task status, and set task priorities, all through an intuitive internet interface. This project caters to both planners and users alike, serving as a comprehensive tool for streamlining task management processes

Designed to enhance user productivity, the To-Do Planner offers features such as task creation, categorization, goal tracking, and customization options. It's particularly well-suited for individuals seeking to regain control over their daily lives and stay organized. With the flexibility to adapt and add new features as needed, this project provides a scalable solution for users in various situations.

For development, Java was selected as the programming language due to its advantages in terms of performance, cross-platform compatibility, libraries, and cost-effectiveness. By choosing Java, we ensure a robust and efficient application that can evolve to meet changing requirements, making it an ideal choice for task management and productivity enhancement.

1.4 Definitions, Acronyms and Abbreviations

JAVA: For back-end development and platform independence.
SQL: For efficient database management.

UML: For modeling and documenting project components.
IDE: Such as Eclipse or IntelliJ IDEA for Java development.
SRS: To define detailed project requirements and goals.

1.5 References

Books :

- Books on software development, project management, and productivity.
- Online courses on web development, Java programming, React, and project management.

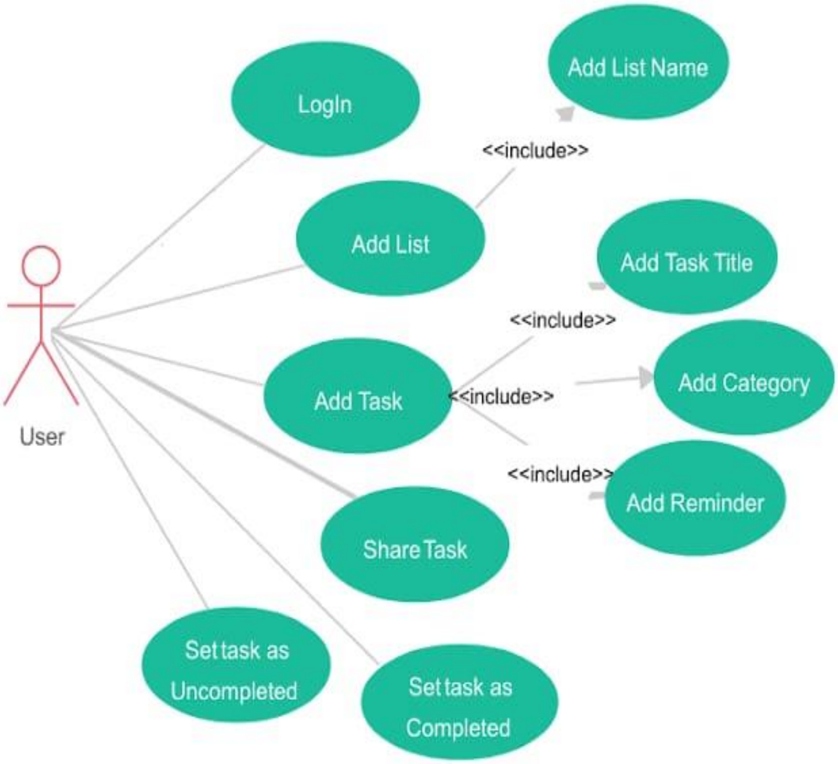
Websites :

- MDN Web Docs
- Coursera

2. Overall Descriptions

2.1 Product Perspective

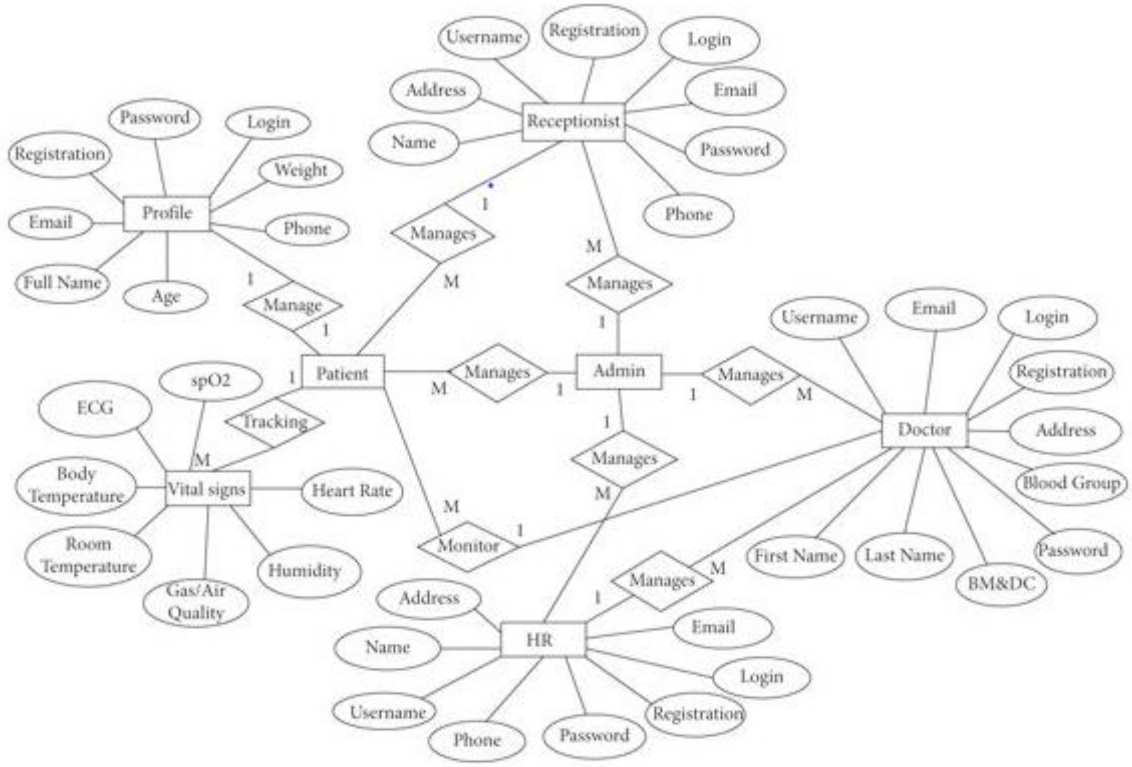
Use Case Diagram



The use case diagram for an activity schedule management To-Do Planner illustrates interactions between actors and the system. The primary actor, "User," represents those utilizing the To-Do Planner. The system comprises key use cases like "Create Task," "Edit Task," "Delete Task," "Set Priority," "Set Due Date," "View Task List," "Organize Tasks," and "Receive Notifications." These use cases encompass fundamental functionalities, facilitating efficient task and schedule management. Lines connecting the actor and use cases depict user actions and interactions, providing a visual framework to understand system functionalities and user roles, aiding in design and development processes.

2.2 Product Function

Entity Relationship Diagram



2.3 User Classes and Characteristics

Individual Users:

- Characteristics:

These users are the core audience, managing personal tasks and schedules.

- Needs:

Features for task creation, priority setting, due date management, and efficient organization of personal tasks are essential.

Team Users:

- Characteristics:

Team users collaborate on tasks and projects with colleagues or team members.

- Needs:

Collaboration features such as task sharing, assignment, and real-time updates are crucial to facilitate teamwork.

Administrators:

- Characteristics:

Administrators manage user accounts and system settings.

- Needs:

User management tools, access control settings, and system configuration options are vital for effective system administration.

Guest Users:

- Characteristics:
  Guest users have limited access without creating full accounts, often for external collaboration.
- Needs:
  Ability to view shared tasks and some interaction capabilities are important to involve external parties.

Mobile Users:

- Characteristics:
  Mobile users access the To-Do Planner through mobile apps for on-the-go task management.
- Needs:
  Responsive design, mobile app availability, and mobile-optimized features are critical for their user experience.

Power Users:

- Characteristics:
  Power users heavily rely on the To-Do Planner for complex task management.
- Needs:
  Advanced features, extensive customization options, and integrations with other tools are essential to support their complex task management needs.

Notification-Dependent Users:

- Characteristics:
  These users depend on notifications to stay updated on task deadlines and changes.
- Needs:
  Customizable notification settings and timely alerts are crucial to help them manage their tasks effectively.

2.4 Operating Environment

The To-Do Planner is tailored for Windows users and functions seamlessly on Internet Explorer, Chrome, and Firefox. It only requires an internet connection for access. The recommended hardware setup includes a 40GB hard disk, a 15” color monitor, and a 122-key keyboard. Basic input devices are the keyboard and mouse, with the monitor serving as the primary output. The environment guarantees cross-browser compatibility and is accessible for Windows users, ensuring a user-centric experience.

2.5 Assumptions and Dependencies

Assumptions:

- Users have reliable internet access.

- Users use modern web browsers.
- Users have devices meeting basic requirements.
- Data privacy is a user expectation.

Dependencies:

- Third-party services for features.
- Browser updates for compatibility.
- ISP reliability for user access.
- Regulatory compliance for data protection.
- Hardware suppliers for equipment.
- Security updates for system integrity.
- User adoption for project success.

2.6 Requirement

Software Configuration:

- Front-End Technology: Java, supported by Sun Microsystems.
- Integrated Development Environment (IDE): NetBeans 7.0.1 for front-end development.
- Back-End Database: Microsoft SQL Server for storing data.
- Operating System Compatibility: Windows NT, Windows 98, Windows XP.

Hardware Configuration:

- Processor: Pentium(R) Dual-core CPU for efficient processing.
- Hard Disk: A minimum of 40GB storage capacity for data and software.
- RAM: 256 MB or more for smooth application performance.

2.7 Data Requirement

Data requirements for the system in your To-Do Planner encompass user profiles, task details, and activity schedules. Collaboration data, if relevant, tracks shared tasks. Notifications, search queries, and calendar events require data storage. System audit logs and configurations are vital for monitoring and settings. Backup records ensure data security. These requirements form the core data framework, facilitating efficient task and schedule management, user collaboration, and system reliability while safeguarding user information

3. External Interface Requirement

1. User Data:

- User Profiles: Store user information, including usernames, passwords, and email addresses.
- User Preferences: Capture user-specific settings and preferences, such as notification preferences and time zone settings.

2. Task and Activity Data:

- Task Details: Record task names, descriptions, priorities, due dates, and categories.
- Activity Schedules: Store details of scheduled activities, including dates, times, locations, and descriptions.
- Task/Activity Status: Track the status of tasks and activities (e.g., pending, completed, in progress).

3. Collaboration Data (if applicable):

- User Collaborations: Maintain information about shared tasks or activities, including collaborators' details.
- Real-Time Updates: Record real-time updates on shared tasks to ensure collaboration transparency.

4. Notifications and Reminders:

- Notification Records: Store information about notifications, including content and delivery timestamps.
- Reminder Settings: Capture user-defined reminder settings for tasks and activities.

5. Search and Filter Data:

- Search Queries: Record user search queries and results for tasks and activities.
- Filter Criteria: Store user-defined filtering criteria for organizing tasks and activities.

6. Calendar Integration (if applicable):

- Calendar Events: Store data related to synchronized events with external calendars.

7. Audit and Logging (for system monitoring):

- Activity Logs: Maintain logs of user actions and system events for monitoring and troubleshooting.

8. System Configuration and Settings:

- System Configuration: Store system-wide settings and configurations.
- Security Settings: Capture security-related configurations and access controls.

9. Backup and Recovery Data:

- Backup Records: Maintain records of system backups, including timestamps and data integrity checks.

4. System Features

- ➢ **Task Management:** Users can create, edit, and organize tasks, setting due dates and priorities for effective organization.
- ➢ **Activity Scheduling:** Schedule and manage activities with details like dates, times, locations, and descriptions, viewable in a calendar format.
- ➢ **User Collaboration (if applicable):** Facilitate task sharing, assignment, and real-time updates for teams collaborating on projects.
- ➢ **Notifications and Reminders:** Automated notifications keep users informed about upcoming tasks and activities.
- ➢ **Search and Filtering**: Users can search for tasks and activities by keywords and apply custom filters for efficient organization.
- ➢ **Data Backup and Recovery:** Regular data backups and a recovery mechanism are in place to safeguard against data loss.

5. Other Non-functional Requirements

- Performance:
  - Load Balancing: Implement load balancing to distribute user requests evenly across multiple servers, optimizing performance.
  - Caching Mechanisms: Utilize caching for frequently accessed data to reduce database load and improve response times.
  - Scalability Planning: Develop a clear plan for scaling resources as user numbers grow, including provisioning additional servers or cloud resources.
- Security:
  - Regular Security Audits: Conduct periodic security audits and vulnerability assessments to identify and mitigate potential threats.
  - Data Encryption Standards: Adhere to industry-standard encryption protocols (e.g., SSL/TLS) for data in transit and at rest.
  - Security Patch Management: Stay up-to-date with security patches and updates for all system components to address known vulnerabilities.
- Scalability:
  - Auto-scaling: Implement auto-scaling mechanisms that automatically adjust resource allocation based on real-time usage metrics.
  - Database Optimization: Optimize database queries and indexing to ensure efficient data retrieval and storage as the user base expands.
- User-Friendly Interface:
  - User Feedback Integration: Provide a feedback mechanism within the interface to gather user input for continuous improvement.
  - User Assistance: Offer contextual help, tooltips, and user guides to assist users in navigating and utilizing the system effectively.
- Data Privacy and Compliance:
  - Data Minimization: Collect and store only the minimum necessary user data required for system functionality.
  - User Data Access Control: Implement user-controlled data access settings, allowing users to manage who can view their information.
- Data Backup and Recovery:
  - Backup Frequency: Specify the frequency of backups based on data change rates, ensuring minimal data loss in case of failures.
  - Backup Storage: Safely store backups in geographically distributed locations to mitigate data loss risks.
- Accessibility:
  - Screen Reader Compatibility: Ensure compatibility with popular screen reader software for users with visual impairments.
  - Keyboard Navigation: Enable full keyboard navigation for users who rely on keyboard input.
- Reliability and Availability:
  - Service Level Agreements (SLAs): Define SLAs that guarantee a certain level of uptime and performance for users.
  - Proactive Monitoring: Implement proactive monitoring tools that detect and address

issues before they impact users

6. Other Requirements

6.1 Data and Category Requirements

The system will have various categories of users, including individuals managing activities, team members, administrators, and others. Each category of users will have specific access rights. Administrators will have the authority to modify, delete, and append data, while other users, except for specific roles like managers, will generally have read-only rights for data retrieval. Additionally, the system will include different categories of activities and tasks, and the relevant data associated with each category will be presented in a structured format.

6.2 Appendix

- A: Admin, Abbreviation, Acronym, Assumptions
- C: Categories, Classifications, Client
- D: Data Requirements, Dependencies
- G: GUI (Graphical User Interface)
- K: Key Features
- U: User, User Classes and Characteristics, User Requirements

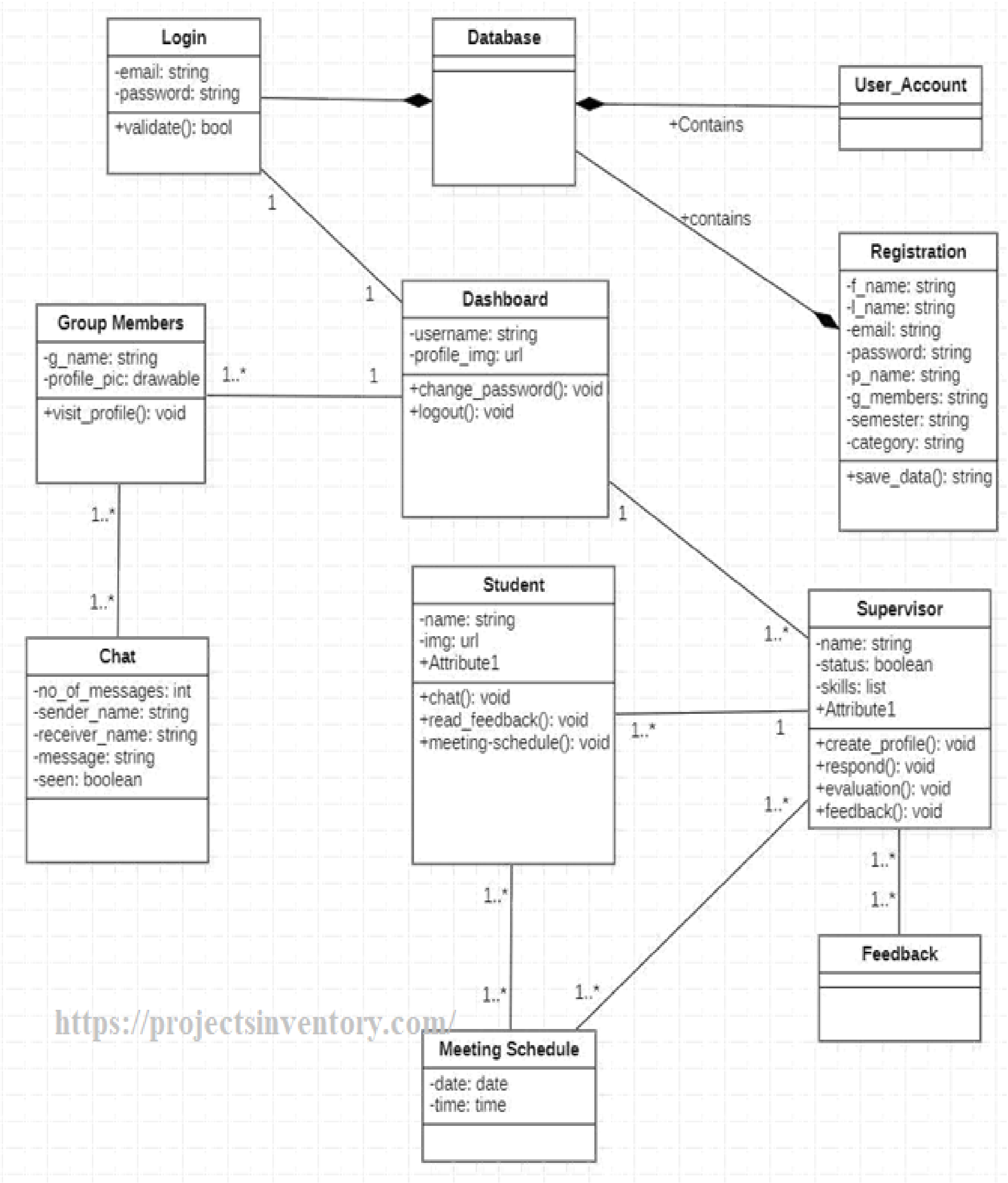
6.3 Glossary

The following glossary provides definitions and explanations for key terms and acronyms used in this document and the project:

- Administrator: A user role with administrative privileges for system management.
- User: A general login role assigned to most system users.
- Client: Refers to the intended users or stakeholders of the system.
- SQL: Abbreviation for Structured Query Language, used for querying and retrieving data from databases.
- SQL Server: A database server used for organized data storage.
- Layer: Represents different sections or components of the project.
- User Interface Layer: The part of the system that users directly interact with.
- Application Logic Layer: The web server component responsible for processing computations and logic.
- Data Storage Layer: The component where data is stored and managed.
- Use Case: A high-level diagram illustrating the system's functionality and interactions.
- Class Diagram: A static structure diagram depicting the system's classes, attributes, and relationships.
- Interface: A means of communication between different system components.
- Unique Key: A database attribute used to distinguish entries uniquely.

6.4 Class Diagram

A class diagram represents the structure of a system by showing classes, their attributes, and relationships between classes. In the context of "Activity Schedule Management," certain main classes, such as "Tasks," "Activities," and "Users," are central to the system's functionality. Relationships between these classes, including associations, aggregations, and generalizations, are depicted with role names and multiplicities to illustrate how data is organized and accessed within the system.


Login
-email: string
-password: string
+validate(): bool
Database
User_Account
+Contains
+contains
Registration
-f_name: string
-l_name: string
-email: string
-password: string
-p_name: string
-g_members: string
-semester: string
-category: string
+save_data(): string
1
1
Dashboard
-username: string
-profile_img: url
+change_password(): void
+logout(): void
Group Members
-g_name: string
-profile_pic: drawable
+visit_profile(): void
1..*
1
1..*
1..*
1
Chat
-no_of_messages: int
-sender_name: string
-receiver_name: string
-message: string
-seen: boolean
Student
-name: string
-img: url
+Attribute1
+chat(): void
+read_feedback(): void
+meeting-schedule(): void
1..*
Supervisor
-name: string
-status: boolean
-skills: list
+Attribute1
+create_profile(): void
+respond(): void
+evaluation(): void
+feedback(): void
1..*
1
1..*
1..*
1..*
Feedback
1..*
1..*
1..*
Meeting Schedule
-date: date
-time: time