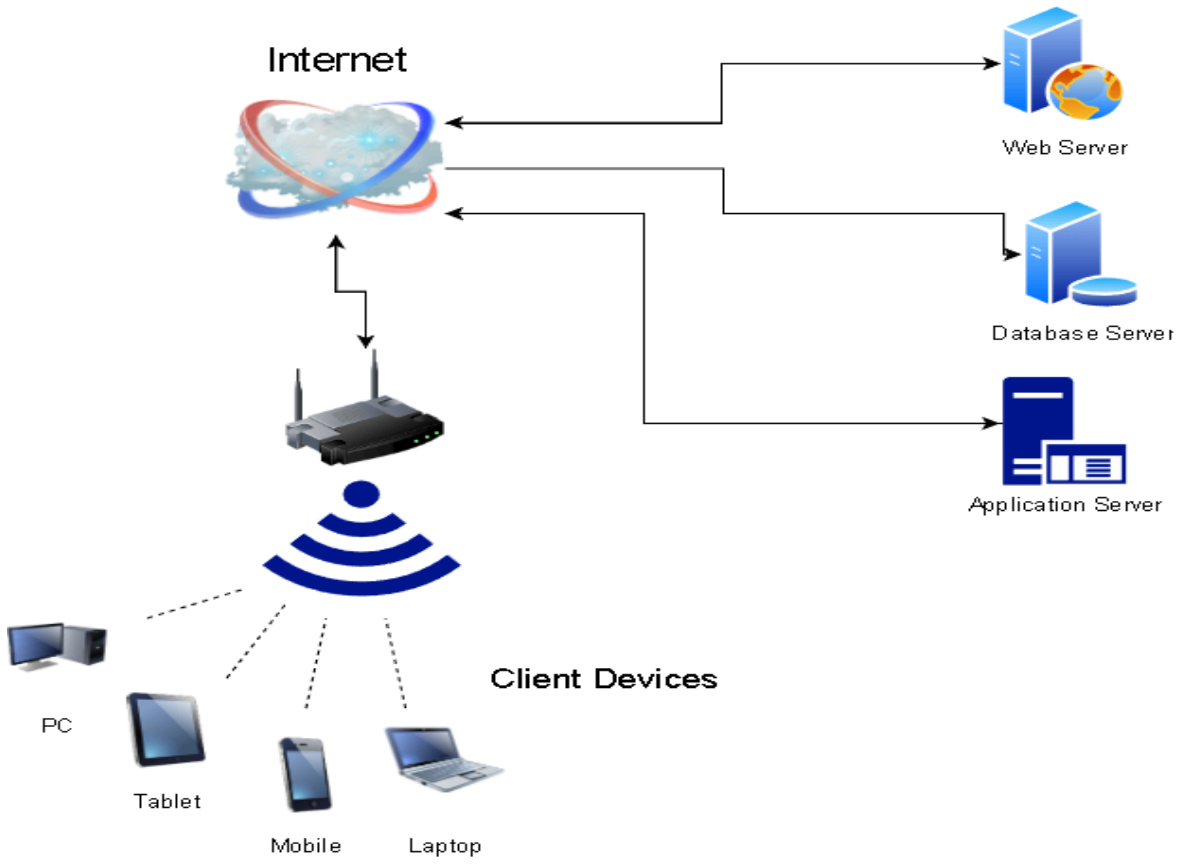
4.5 Deployment Diagram

The deployment diagram illustrates the physical arrangement of hardware and software components within the EmpOps system. This diagram provides a high-level view of how different modules and components are distributed across servers and devices on the internet. The deployment diagram includes:



Deployment Diagram

- **Web Server:**
  Hosting the user interface components and handling user requests.
- **Application Server:**
  Managing the core business logic and processing user requests.
- **Database Server:**
  Storing and managing the employee-related data.

- **Client Devices:**
  Devices used by users (employees, administrators) to access the EmpOps system.
- **Network Connections:**
  Representing the connections between different servers and client devices.

The deployment diagram provides insights into the physical architecture of the system, facilitating a better understanding of how various components interact and communicate in a real-world deployment scenario. This information is crucial for system administrators and developers responsible for maintaining and managing the EmpOps system.

4.6 Architectural Design

The architectural design of the EmpOps system involves the structuring and organization of its components to achieve the desired functionalities. This section delves into various aspects of the architectural design, including subsystem decomposition, component diagram, persistent modeling, access control and security, global software control, and boundary conditions.

4.6.1 Subsystem Decomposition

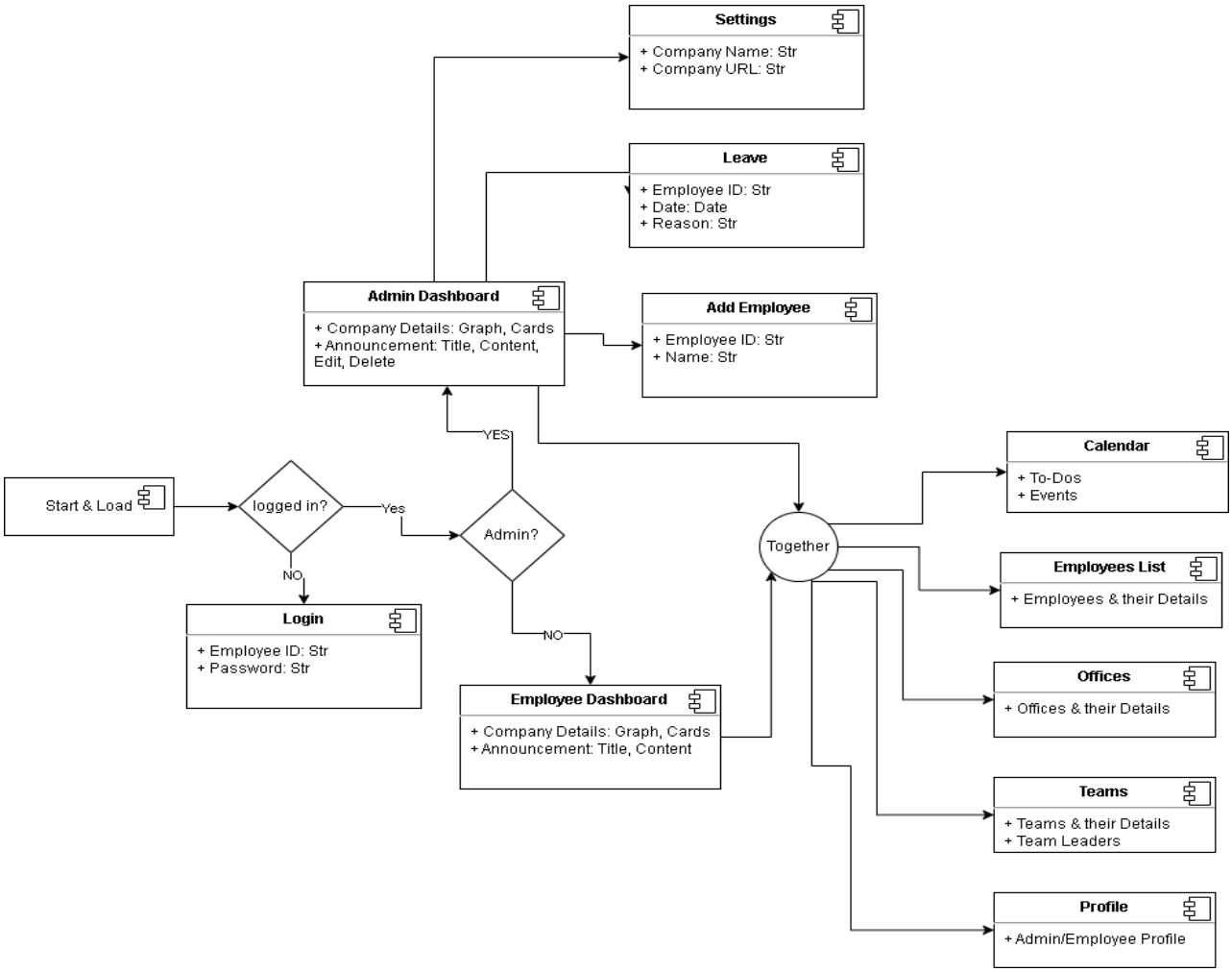
Subsystem decomposition involves breaking down the system into smaller, more manageable subsystems, each responsible for specific functionalities. The key subsystems identified for the EmpOps system include:

- ***User Management Subsystem:***
  Responsible for handling user authentication, registration, and profile management.
- ***Employee Information Subsystem:***
  Manages employee data, including personal information, positions, and department details.
- ***Communication Subsystem:***
  Facilitates communication through announcements, messaging, and other collaborative features.
- ***Leave Management Subsystem:***
  Manages employee leave requests, approvals, and maintains leave-related records.
- ***Reporting Subsystem:***
  Handles the generation and presentation of various reports related to employee performance, attendance, and other metrics.

4.6.2 Component Diagram

The component diagram provides a visual representation of the components within the EmpOps system and their relationships.

Component Diagram



4.6.3 Project Structure Description

Main Folder: `Emps-ops-frontend Structure Overview Documentation`:

Subfolder: `*assets*`

1. Subfolder: `*Css*`

- ***Purpose*:** Stores CSS codes for consistent visual styling, layout design, and data visualization within the employee profile interface.

- Visual Styling and Branding: Maintains a consistent visual style across components.
- Layout and Structure: Defines page layout and structure.

2. Subfolder: `*Fonts*`

- ***Purpose*:** Contains web font files crucial for readability and aesthetics within the employee profile documentation.
- ***Readability and Aesthetics*:** Enhances readability and contributes to the visual appeal of text-based content.

3. Subfolder: `*Img*`

- ***Purpose*:** Stores all images used in the project.

4. Subfolder: `*Js*`

- ***Purpose*:** Houses JavaScript files for enhancing functionality, interactivity, and user experience.
- ***User Interface Enhancements:*** Adds interactive components like dropdown menus and slide-in panels.

5. Subfolder: `*Plugins*`

- ***Purpose:*** Utilized for data presentation and visualization within the employee profile interface.
- ***Data Presentation and Visualization:*** Enhances the presentation of employee data through interactive charts and graphs.

4.6.4 Persistent Modeling

Persistent modeling focuses on how data is stored and managed within the EmpOps system. The database design ensures data persistence and retrieval accuracy. It includes:

- ***Database Schema:***
  Defines the structure of the database, specifying tables, relationships, and constraints.
- ***Data Storage Mechanisms:***
  Describes how employee data is stored, ensuring efficient retrieval and updates.

4.6.4 Access Control and Security

Access control and security measures are crucial for safeguarding sensitive employee information. This involves:

- ***Authentication Mechanism:***
  Implements secure login processes to verify user identity.
- ***Authorization Controls:***
  Defines user roles and permissions to control access to different system functionalities.
- ***Data Encryption:***
  Utilizes encryption techniques to secure data during transmission and storage.

4.6.5 Global Software Control

Global software control ensures consistency and coherence across different modules and functionalities. This involves:

- ***Version Control:***
  Implements version control systems to manage software changes.
- ***Code Standardization:***
  Adheres to coding standards for uniformity and ease of maintenance.

4.6.6 Boundary Conditions

Boundary conditions define the limits and constraints within which the EmpOps system operates. This includes:

- ***User Limits:***
  Specifies the maximum number of users supported by the system concurrently.
- ***Data Volume:***
  Defines limits on data volume and storage capacities.
- ***Response Time:***
  Sets expectations for system response times to ensure optimal performance.