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# Introduction

Zoom is a popular video conferencing app that has become essential for remote communication and collaboration, especially during the Covid-19 pandemic. The app allows users to participate in virtual meetings, webinars, and online events from anywhere in the world, making it easy for people to stay connected and work together remotely. The purpose of this document is to provide a detailed specification of the Zoom app, including its functional and non-functional requirements, system architecture, user interface, data management, testing and quality assurance, deployment and maintenance procedures, legal and regulatory requirements, and glossary of key terms.

In this document, we will discuss the key features and functionalities of the Zoom app, including its video and audio conferencing capabilities, screen sharing and recording features, chat and messaging functions, integration with other tools, security and privacy features, and pricing plans. We will also highlight the challenges facing the Zoom app, such as security and privacy issues, reliability, compatibility issues, bandwidth and internet connection problems, user interface, meeting management, audio and video quality, pricing, user limits, integration with other tools, language barriers, accessibility, user behavior, recording and storage, and the learning curve.

Overall, this document aims to provide a comprehensive specification of the Zoom app, which will help developers and users understand its features, requirements, and limitations. By addressing these challenges and improving the app's functionality, security, and user experience, Zoom can continue to be a valuable tool for remote communication and collaboration in the future.

## 1.1 Purpose:

The purpose of the Zoom video conferencing app is to provide a reliable, easy-to-use, and comprehensive platform for remote communication and collaboration. The app is designed to overcome the challenges of distance and time, allowing people to connect and work together from anywhere in the world. With the rise of remote work, distance education, and virtual events, the need for a robust and user-friendly video conferencing tool has become more crucial than ever.

The primary goal of the Zoom app is to provide a seamless and secure user experience, enabling people to participate in virtual meetings, webinars, and online events with ease. By providing high-quality audio and video conferencing, screen sharing and recording, chat and messaging, whiteboarding, virtual backgrounds, breakout rooms, scheduling and calendar integration, integration with other tools, security and privacy features, and pricing plans, the app aims to cater to the needs of individuals, businesses, and organizations of all sizes.

The broader purpose of the Zoom app is to facilitate remote work, distance education, and virtual events, while promoting collaboration, productivity, and innovation. The app enables people to work and learn in a flexible and dynamic environment, which can enhance their creativity and motivation. By fostering a sense of community and connection, the app can help to combat isolation and promote social interaction in a virtual setting.

Overall, the purpose of the Zoom app is to provide a comprehensive and versatile platform for remote communication and collaboration, which can help to bridge the gap between distance and time. The app aims to provide a reliable, user-friendly, and inclusive experience, which can support the needs of users from diverse backgrounds and industries. By empowering people to connect and collaborate virtually, the Zoom app can help to promote innovation, productivity, and growth in the digital age.

## 1.2 Scope:

The scope of the Zoom app is broad and encompasses a wide range of features and functionalities. The app is designed for use by individuals, businesses, and organizations of all sizes, and it can be used for a variety of purposes, including team meetings, webinars, virtual events, distance education, and online training. The app is available on multiple platforms, including Windows, macOS, iOS, Android, and web browsers, making it accessible to users on different devices.

The key features and functionalities of the Zoom app include video and audio conferencing, screen sharing and recording, chat and messaging, whiteboarding, virtual backgrounds, breakout rooms, scheduling and calendar integration, integration with other tools, security and privacy features, and pricing plans. The app also supports multiple languages and accessibility features, making it inclusive and user-friendly for people with disabilities.

The scope of this document is to provide a detailed specification of the Zoom app, including its functional and non-functional requirements, system architecture, user interface, data management, testing and quality assurance, deployment and maintenance procedures, legal and regulatory requirements, and glossary of key terms. This document aims to help developers and users understand the features, requirements, and limitations of the Zoom app, and to provide a framework for its development and implementation.

## 1.3 Definitions, Acronyms, and Abbreviations:

Definitions:

* Zoom app: A video conferencing application developed by Zoom Video Communications, Inc.
* User: A person who uses the Zoom app to participate in virtual meetings, webinars, and online events.
* Host: A user who initiates and manages a Zoom meeting or webinar.
* Participant: A user who joins a Zoom meeting or webinar initiated by a host.
* Audio conferencing: A feature of the Zoom app that enables users to communicate with each other using voice over the internet.
* Video conferencing: A feature of the Zoom app that enables users to communicate with each other using video and voice over the internet.
* Screen sharing: A feature of the Zoom app that enables users to share their computer screen with other participants in a meeting or webinar.
* Breakout rooms: A feature of the Zoom app that enables hosts to split participants into smaller groups for discussion or collaboration.
* Virtual background: A feature of the Zoom app that enables users to replace their real background with a virtual image or video.

Acronyms:

* SRS: Software Requirements Specification
* UI: User Interface
* API: Application Programming Interface
* SDK: Software Development Kit
* QA: Quality Assurance
* UX: User Experience
* GDPR: General Data Protection Regulation

Abbreviations:

* App: Application
* Sec: Security
* Req: Requirement
* Dev: Development
* Doc: Document
* OS: Operating System
* CPU: Central Processing Unit
* RAM: Random Access Memory

## 1.4 References

* Zoom Help Center:<https://support.zoom.us/hc/en-us>
* Zoom Developer Center:<https://marketplace.zoom.us/docs/guides>
* Zoom Security Whitepaper:<https://zoom.us/docs/doc/Zoom-Security-White-Paper.pdf>
* Zoom Privacy Policy:<https://zoom.us/privacy>
* IEEE Format Reference : [Here](https://www.studocu.com/in/document/jawaharlal-nehru-technological-university-hyderabad/software-engineering/srs-template-2-ieee-format-for-the-students/25871615)

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## 1.5 Overview

This section of the document provides an overview of the Zoom app, including its features, benefits, and target users. The overview aims to provide a high-level understanding of the app's purpose and scope, as well as its key capabilities and value proposition.

The Zoom app is a video conferencing application that enables users to participate in virtual meetings, webinars, and online events. The app provides a range of features, including audio and video conferencing, screen sharing, recording, chat and messaging, whiteboarding, virtual backgrounds, breakout rooms, scheduling and calendar integration, integration with other tools, security and privacy features, and pricing plans.

The Zoom app is designed to cater to the needs of individuals, businesses, and organizations of all sizes, who require a reliable, easy-to-use, and comprehensive platform for remote communication and collaboration. The app aims to provide a seamless and secure user experience, enabling users to connect and work together from anywhere in the world.

The Zoom app is compatible with various devices and operating systems, including desktop and laptop computers, mobile devices, and web browsers. The app can be accessed through its website or downloaded as a desktop or mobile application. The app offers a range of pricing plans, including free, pro, business, and enterprise, to cater to the needs of users with different budgets and requirements.

Overall, the Zoom app is a versatile and powerful tool that can help to facilitate remote work, distance education, and virtual events, while promoting collaboration, productivity, and innovation. The app aims to provide a comprehensive and inclusive platform for users to connect and collaborate virtually, regardless of their location or background.

# 2. The Overall Description

## 2.1 Product Perspective:

This section of the document provides an overview of the product perspective of the Zoom app. It describes the system interfaces, hardware and software interfaces, communication interfaces, memory constraints, and operational requirements of the app.

The Zoom app is a standalone video conferencing application that can be accessed via its website or downloaded as a desktop or mobile application. The app is designed to operate on various devices and operating systems, including Windows, Mac OS, iOS, and Android. The app provides a range of features, including audio and video conferencing, screen sharing, recording, chat and messaging, whiteboarding, virtual backgrounds, breakout rooms, scheduling and calendar integration, integration with other tools, security and privacy features, and pricing plans.

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#### 2.1.1 System Interfaces:

The Zoom app is designed to operate as a standalone system, without any direct integration with other systems or applications. However, the app provides APIs and SDKs that enable developers to integrate the Zoom features and functionalities into their own systems or applications. These system interfaces enable users to access the Zoom features and functionalities from within other applications or systems.

#### 2.1.2 User Interfaces:

The user interface of the Zoom app is designed to be intuitive, user-friendly, and easy to navigate. The app provides a range of UI elements, such as buttons, menus, icons, and controls, that enable users to access the different features and functionalities of the app. The app provides a range of customization options, such as virtual backgrounds, camera settings, and layout options, that enable users to personalize their virtual meeting experience

#### 2.1.3 Hardware Interfaces:

The Zoom app requires certain hardware specifications to function optimally. The minimum hardware requirements for the app are:

* CPU: Intel i5 or AMD equivalent processor
* RAM: 4 GB or higher
* Hard drive: 1 GB of free space or higher
* Webcam: Built-in or external USB webcam
* Microphone: Built-in or external microphone
* Speakers: Built-in or external speakers

The app is designed to work with various hardware interfaces, such as webcams, microphones, and speakers, to enable users to communicate and collaborate effectively.

#### 2.1.4 Software Interfaces:

The Zoom app is designed to work on various operating systems, including Windows, Mac OS, iOS, and Android. The app requires certain software specifications to function optimally. The minimum software requirements for the app are:

* Windows: Windows 7 or higher, 64-bit
* Mac OS: Mac OS X 10.9 or higher
* iOS: iOS 8.0 or higher
* Android: Android 4.0 or higher

The app provides software interfaces that enable users to access the Zoom features and functionalities from within other applications or systems. The app also provides APIs and SDKs that enable developers to integrate the Zoom features and functionalities into their own systems or applications.

#### 2.1.5 Communications Interfaces:

The Zoom app requires an internet connection to function optimally. The app uses various communication interfaces, such as Wi-Fi, Ethernet, and cellular data, to enable users to connect and communicate with each other. The app uses secure communication protocols, such as SSL/TLS, to ensure the privacy and security of user data.

#### 2.1.6 Memory Constraints:

The Zoom app has certain memory constraints that need to be taken into consideration. The app requires a certain amount of free disk space to be available for recording and storing meeting data. The app also has certain memory requirements for video and audio processing, which can impact the performance of the app if not met.

#### 2.1.7 Operations:

The Zoom app is designed to operate in a wide range of scenarios and environments. The app can be used for virtual meetings, webinars, online classes, and other collaborative activities. The app provides a range of features and functionalities that enable users to communicate and collaborate effectively, regardless of their location or device.

The app can be used for one-on-one meetings, as well as for group meetings with up to 1,000 participants (depending on the pricing plan). The app provides various scheduling and calendar integration features that enable users to schedule and join meetings easily. The app also provides a range of security and privacy features, such as end-to-end encryption, password protection, and waiting rooms, that ensure the safety and confidentiality of user data.

#### 2.1.8 Site Adaptation Requirements:

The Zoom app can be adapted to different sites and environments, depending on the specific needs and requirements of the users. The app provides a range of customization options, such as virtual backgrounds, camera settings, and layout options, that enable users to personalize their virtual meeting experience. The app also provides APIs and SDKs that enable developers to integrate the Zoom features and functionalities into their own systems or applications, thereby adapting the app to specific site requirements.

## 2.2 Product Functions:

The Zoom app provides a range of functions that enable users to communicate and collaborate effectively. These functions include:

* Video conferencing: The app enables users to have high-quality video conferences with up to 1,000 participants (depending on the pricing plan).
* Audio conferencing: The app enables users to have audio conferences with participants who do not have video capabilities.
* Screen sharing: The app enables users to share their screens with other participants, which is useful for presentations, demonstrations, and remote support.
* Recording: The app enables users to record their meetings for future reference or for participants who could not attend the live session.
* Chat: The app provides a chat feature that enables participants to communicate via text during the meeting.
* Virtual backgrounds: The app provides a feature that enables users to change their backgrounds, which is useful for privacy, branding, or entertainment purposes.
* Breakout rooms: The app enables users to create breakout rooms, which are separate virtual rooms where smaller groups can have discussions or activities.

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## 2.3 User Characteristics:

The Zoom app is designed for users who need to communicate and collaborate remotely, regardless of their location or device. The users may have different levels of technical proficiency, from beginners to advanced users. The app is suitable for a range of use cases, such as online classes, business meetings, webinars, virtual events, and social gatherings.

## 2.4 Constraints:

The Zoom app is subject to various constraints, such as:

* Internet connectivity: The app requires a stable and high-speed internet connection for optimal performance.
* Hardware and software compatibility: The app may have compatibility issues with some devices or operating systems.
* Pricing: The app offers various pricing plans with different features and limitations, which may constrain the users' choices.
* Regulatory and legal requirements: The app must comply with various regulations and laws regarding data privacy, security, and accessibility.

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## 2.5 Assumptions and Dependencies:

The Zoom app assumes that:

* The users have access to a stable and high-speed internet connection.
* The users have compatible devices and software.
* The users have the necessary skills and knowledge to use the app effectively.
* The app complies with relevant regulations and laws.

The app depends on:

* Third-party services and technologies, such as cloud computing, content delivery networks, and APIs.
* The users' feedback and suggestions for continuous improvement.

## 2.6 Apportioning of Requirements:

The requirements for the Zoom app can be apportioned into different phases or releases, depending on the priorities and resources of the development team. Some possible apportioning strategies are:

* Basic functionality first: Develop the core features and functionalities of the app, such as video conferencing, audio conferencing, and screen sharing, before adding more advanced features.
* User feedback-driven: Prioritize the features and functionalities that are most requested or needed by the users, based on their feedback and suggestions.
* Incremental improvements: Release frequent updates and improvements to the app, based on a continuous improvement process, rather than waiting for major releases.
* Platform-specific features: Develop features and functionalities that are specific to certain platforms or devices, such as mobile apps, desktop apps, or web apps, depending on the target audience and use cases.
* Integration with third-party apps: Develop integrations with other apps or services that are commonly used by the users, such as Google Drive, Dropbox, or Salesforce.
* Accessibility and security: Improve the accessibility and security of the app by complying with relevant standards and guidelines, such as WCAG 2.1, HIPAA, or GDPR.
* Performance and scalability: Improve the performance and scalability of the app by optimizing the code, using caching and load balancing techniques, and leveraging cloud computing resources.

The apportioning of requirements should be based on a clear understanding of the users' needs, the market trends, and the available resources, and should be communicated and prioritized effectively to the development team and stakeholder

# 3. Specific Requirements

## 3.1 External interfaces:

The Zoom Video Conference App will have the following external interfaces:

* User Interface: The app will have a user interface that is intuitive, easy to use, and visually appealing. It should provide users with the ability to easily join meetings, schedule meetings, share screens, and use other features.
* Web Interface: The app will have a web interface that allows users to access meetings from their web browsers. The web interface should provide all the functionalities of the app's desktop and mobile versions.
* APIs: The app will have APIs that allow other apps or services to integrate with it. The APIs should be well-documented, secure, and flexible.

## 3.2 Functions:

The Zoom Video Conference App will have the following functions:

* Meeting Management: Users should be able to create, schedule, and manage meetings easily. They should also be able to invite other users to join the meeting.
* Audio and Video Conferencing: Users should be able to participate in audio and video conferences easily. The app should provide high-quality audio and video.
* Screen Sharing: Users should be able to share their screens with others during the meeting.
* Recording: Users should be able to record meetings and save them for future reference.

## 3.3 Performance Requirements:

The Zoom Video Conference App should meet the following performance requirements:

* Response Time: The app should respond quickly to user actions, such as joining a meeting or sharing screens.
* Scalability: The app should be able to handle a large number of users and meetings at the same time.
* Reliability: The app should be reliable and available 24/7.

## 3.4 Logical Database Requirements:

The Zoom Video Conference App will have the following logical database requirements:

* User Information: The app should store user information, such as name, email address, and profile picture.
* Meeting Information: The app should store meeting information, such as meeting ID, date and time, and attendees.

## 3.5 Design Constraints:

### 3.5.1 Standards Compliance:

The Zoom Video Conference App should comply with the following standards:

* Accessibility: The app should be accessible to users with disabilities, in compliance with the Web Content Accessibility Guidelines (WCAG) 2.1.
* Security: The app should comply with relevant security standards, such as HIPAA or GDPR.

## 3.6 Software System Attributes:

### 3.6.1 Reliability:

The Zoom Video Conference App should be reliable, with a minimal risk of failure or downtime. The app should have the following attributes:

* Fault Tolerance: The app should be able to recover from hardware or software failures without affecting the user experience.
* Error Handling: The app should handle errors gracefully and provide meaningful error messages to the user.

## 3.6.2 Availability:

The Zoom Video Conference App should be available 24/7, with minimal downtime or maintenance windows. The app should have the following attributes:

* Redundancy: The app should have redundant systems to ensure availability.
* Disaster Recovery: The app should have a disaster recovery plan in place to recover from catastrophic events.

## 3.6.3 Security:

The Zoom Video Conference App should be secure, with a minimal risk of data breaches or cyber attacks. The app should have the following attributes:

* Authentication and Authorization: The app should have robust authentication and authorization mechanisms to ensure that only authorized users can access the app and the data.
* Data Protection: The app should protect user data from unauthorized access, disclosure, or alteration.

## 3.6.4 Maintainability:

* The system should be modular and easy to maintain.
* The system should have proper documentation for developers and users.
* The system should be easily upgradable to incorporate new features and functionalities.

## 3.6.5 Portability:

* The system should be compatible with different platforms and devices.
* The system should be easily deployable on different cloud infrastructures.

## 3.7 Organizing the Specific Requirements

### 3.7.1 System Mode

There are two system modes in Zoom: the host mode and the participant mode.

### 3.7.2 User Class:

The user classes for Zoom are as follows:

* Hosts: users who create and manage meetings.
* Participants: users who join meetings created by hosts.

### 3.7.3 Objects:

The objects in Zoom are as follows:

* Meetings: a scheduled or ongoing session with a host and participants.
* Participants: individuals who attend a meeting.
* Files: documents, images, or videos shared during a meeting.
* Polls: a way to conduct surveys during a meeting.

### 3.7.4 Feature:

The features in Zoom are as follows:

* Audio and video conferencing: the ability to communicate through audio and video.
* Screen sharing: the ability to share screens with other participants.
* Remote desktop control: the ability to control another participant's computer.
* Chat: the ability to communicate through text.
* File sharing: the ability to share files with other participants.
* Polling: the ability to conduct surveys during a meeting.

### 3.7.5 Stimulus:

The stimuli in Zoom are as follows:

* Users joining or leaving a meeting.
* Users sharing screens or files.
* Users conducting polls.
* Users communicating through audio, video, or chat.

### 3.7.6 Response:

The responses in Zoom are as follows:

* Participants joining or leaving a meeting.
* Screen sharing and remote desktop control starting or ending.
* Files and polls being shared or concluded.
* Audio, video, and chat communication being initiated or terminated.

### 3.7.7 Functional Hierarchy:

The functional hierarchy in Zoom is as follows:

* Meeting management: scheduling, starting, and ending meetings.
* User management: inviting, adding, and removing participants.
* Communication: audio, video, chat, screen sharing, and remote desktop control.
* File and poll management: sharing and managing files and conducting polls.

## 3.8 Additional Comments:

Zoom has become a popular video conferencing app due to its user-friendly interface and extensive features. The app has gained prominence during the COVID-19 pandemic as many people have been forced to work from home, and Zoom has enabled them to connect with colleagues and clients remotely. Zoom's extensive security features and privacy policies have also made it a preferred choice for companies and organizations that require secure communication platforms. However, Zoom has faced criticism and scrutiny for its privacy and security practices, leading to several updates and enhancements to address these concerns.