11.4 External Interface Requirements

11.4.1 User Interfaces

Consistent Dashboard:

- The dashboard will present a unified view for users, incorporating features from each use case.
- Customizable widgets allow users to tailor the dashboard to their specific needs.
- Widgets may include quick access links, progress indicators, and summary information relevant to each use case.

Navigation Bar:

- A top-level navigation bar will be present on all screens, offering easy access to distinct functionalities related to each use case.
- Intuitive menu options and labels will guide users seamlessly through the application.

Responsive Design:

- The user interface will adapt fluidly to various screen sizes and resolutions, ensuring optimal viewing and interaction on desktops, laptops, tablets, and mobile devices.
- Responsive elements include flexible layouts, font scaling, and image resizing.

A brief description of how the user interfaces should be looking like has been illustrated as follows for each use case.

1. **Saving and Retrieving Work:**
    - A user-friendly interface for initiating and managing the saving and retrieval of work.
    - Intuitive options for users to interact with stored documents, projects, and configurations.
2. **Customizing Tabs and Tools:**
    - An interface that allows users to easily customize tabs and tools based on their preferences.
    - User-friendly controls for adding, removing, or rearranging tabs and tools.
3. **Using Calendar with Important Dates:**
    - An intuitive calendar interface displaying important dates, events, and deadlines.
    - Options for users to set reminders and receive notifications for upcoming events.
4. **Document Converter:**
    - User-friendly interface for accessing the document converter tool.

- Options for selecting source and output formats, and a straightforward process for document conversion.

5. **Multiple Categorized Notebooks:**
    - An organized interface for creating and managing multiple categorized notebooks.
    - User-friendly controls for creating entries, categorizing content, and accessing notebooks from any compatible device.
6. **Word Count Tool:**
    - A simple and accessible interface for users to upload documents and check word count.
    - User-friendly presentation of the approximate word count for assignments or documents.
7. **Marks Calculation and Visualization:**
    - An interface for the marks calculation tool with options to set target marks.
    - Visual representation of progress towards the target mark using charts or graphs.
8. **Email Address Authentication:**
    - A straightforward interface guiding users through the email address verification process.
    - User prompts for entering email addresses and receiving verification codes.
9. **App Access Permission:**
    - An interface displaying permission requests for accessing specific apps.
    - Clear explanations of why access is needed, allowing users to grant or deny permissions.

11.4.2 Hardware *Interfaces*

Device Compatibility:

- The system is designed to run on standard computing devices, such as desktop computers, laptops, tablets, and smartphones.
- Compatibility with various hardware configurations.
- No specialized hardware requirements are imposed, ensuring accessibility for a broad user base.

11.4.3 Software Interfaces

Standard Browser Compatibility:

- The system will be compatible with modern web browsers, including Chrome, Firefox, Safari, and Edge.
- Compatibility ensures a consistent user experience across different browsers.

Operating System Compatibility:

- The application is platform-independent and accessible from various operating systems, including Windows, macOS, and Linux.
- Users can access the system from their preferred operating system without encountering compatibility issues.

Database Interaction:

- The system will interact with a relational database management system (RDBMS) for storing and retrieving data.
- Compatibility is maintained with standard databases such as MySQL or Mongo DB, ensuring data integrity and security.

11.4.4 Communication Interfaces

Internet Connectivity:

- The system relies on a stable and reliable internet connection for users to access features seamlessly.
- Real-time updates, data synchronization, and interaction with the system are dependent on continuous internet connectivity.

API Integration:

- Utilization of APIs and RESTful services for communication with third-party systems.

Notification Delivery:

- Notifications will be delivered through standard communication protocols such as HTTP/HTTPS.
- Users can receive notifications through the application interface or, if configured, via email or other preferred communication channels.

Security Measures:

- Communication channels shall implement encryption protocols to ensure the confidentiality and integrity of audio and video data.

Audio and Video Quality:

- The system shall have mechanisms to monitor and optimize audio and video quality during communication sessions.