**Requirements Specification Document (RSD)**

**Title: Requirements Specification for Cross-Platform Scheduling Application**

**1. Introduction**

**1.1 Overview** This document outlines the requirements for a cross-platform scheduling application designed to synchronize daily schedules between a Windows PC and an Android device. The application aims to help users manage their time effectively by providing a user-friendly interface and seamless synchronization between devices.

**1.2 Objectives and Goals**

* Develop a cross-platform scheduling application compatible with Windows and Android.
* Ensure synchronization of schedule data between devices.
* Provide a user-friendly interface for managing daily schedules.
* Utilize a cost-effective backend service.

**2. Functional Requirements**

**2.1 User Authentication**

* Users must be able to create an account and log in using Firebase Authentication.
* Support for password reset and account recovery.

**2.2 Task Management**

* Users can create, update, delete, and view tasks.
* Tasks must include a title, description, start time, end time, and date.
* Users can set recurring tasks with specified intervals (daily, weekly, monthly).

**2.3 Synchronization**

* Automatic synchronization of tasks between Windows and Android devices.
* Real-time updates to ensure both devices have the latest task data.

**2.4 Notifications**

* Push notifications to remind users of upcoming tasks.
* Users can customize notification settings (e.g., notification time, sound).

**2.5 User Interface**

* Intuitive and user-friendly interface for both Windows and Android platforms.
* Responsive design to accommodate different screen sizes and orientations.

**3. Non-Functional Requirements**

**3.1 Performance**

* The application must load tasks within 2 seconds.
* Synchronization between devices must occur within 5 seconds.

**3.2 Scalability**

* The backend must support up to 1,000 active users with minimal performance degradation.

**3.3 Security**

* User data must be encrypted during transmission and storage.
* The application must comply with industry standards for data protection and user privacy.

**3.4 Usability**

* The user interface must be intuitive and easy to navigate.
* The application must provide help and support documentation.

**3.5 Compatibility**

* The application must be compatible with Windows 10 and above.
* The application must be compatible with Android 8.0 (Oreo) and above.

**4. User Requirements**

**4.1 User Registration and Login**

* Users must be able to register and log in using their email and password.
* Users must have the option to log in using third-party authentication (Google, Facebook).

**4.2 Task Creation and Management**

* Users must be able to easily create, update, and delete tasks.
* Users must be able to view tasks in a calendar or list view.

**4.3 Synchronization**

* Users must experience seamless synchronization between their Windows PC and Android device.

**4.4 Notifications**

* Users must receive timely notifications for their scheduled tasks.

**4.5 Customization**

* Users must be able to customize the appearance and settings of the application.

**5. System Requirements**

**5.1 Software Requirements**

* Windows 10 or later
* Android 8.0 (Oreo) or later
* Internet connection for synchronization

**5.2 Backend Service**

* Firebase for authentication, database, and cloud functions.

**5.3 Development Tools**

* Android Studio for Android development
* Visual Studio or Visual Studio Code for Windows development
* Firebase SDK for backend integration

**6. Constraints**

**6.1 Budget**

* The application should utilize Firebase's free tier services wherever possible to minimize costs.

**6.2 Time**

* The initial version of the application should be completed within three months.

**7. Assumptions**

**7.1 User Base**

* It is assumed that the primary users will be individuals managing personal schedules.

**7.2 Internet Connectivity**

* It is assumed that users will have a stable internet connection for synchronization.