**Skill Swap Mobile Application: Software Requirements Specification (SRS)**

**1. Introduction**

**1.1. Purpose**

This document defines the requirements for the Skill Swap mobile application. The primary purpose of this application is to create a peer-to-peer skill exchange network where users can offer their skills and learn new ones from others without the need for monetary transactions. The application will serve as a platform to facilitate the discovery, exchange, and management of skill-based sessions between users.

**1.2. Scope**

**In Scope for Initial Version**

* User Profiles: Creation and management of user profiles with personal information and skill listings.
* Skill Listings: Functionality for users to post and search for available skills.
* Booking System: A system to allow users to book and schedule skill exchange sessions.
* Ratings and Reviews: A mechanism for users to rate and review each other after a session.

**Out of Scope for Initial Version**

* In-app payments or any form of monetary transactions.
* In-app communication features like video calling or instant messaging.

**1.3. Definitions and Acronyms**

| Term | Description |
| --- | --- |
| Tutor | A user offering a skill. |
| Learner | A user seeking a skill. |
| Skill Swap | The act of trading skills without money. |
| CRUD | Create, Read, Update, Delete - basic storage functions |
| MVP | Minimum Viable Product |
| UML | Unified Modeling Language |

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**2. Overall Description**

**2.1. User Roles**

| Role | Key Permissions & Goals |
| --- | --- |
| Student (Tutor/Learner) | Can switch between roles (tutor or learner). Can create and edit a personal profile. Can post offers for skills they possess and requests for skills they want to learn. Can book sessions with other users and leave ratings and reviews. |
| Admin | Can view all user data, including profiles and posts. Can remove inappropriate content and suspend or delete user accounts as necessary to maintain platform integrity. |

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**2.2. User Stories**

* As a learner, I want to filter tutors by skill and rating so that I can quickly find a reliable helper.
* As a tutor, I want to set my available time slots so that learners can only book me when I am free.
* As a student, I want to see a history of my past and upcoming sessions so that I can keep track of my commitments.
* As an admin, I want to flag and remove inappropriate skill offers so that I can maintain a safe and professional community.

**3. Functional Requirements**

* **FR1:** The system shall allow a user to register an account using a valid email address and a password.
* **FR2:** The system shall allow a registered user to log in and log out securely.
* **FR3:** The system shall allow a user to create and edit their profile, including fields for name, bio, and profile picture.
* **FR4:** The system shall allow a user to create a new "Skill Offer" with fields for title, description, category, and duration.
* **FR5:** The system shall allow a user to search for skill offers based on keywords, categories, and user location.
* **FR6:** The system shall display a list of skill offers, including the offer details and the profile of the tutor.
* **FR7:** The system shall allow a user to book a session for a specific skill offer and time slot.
* **FR8:** The system shall notify both the tutor and the learner upon a successful session booking.
* **FR9:** The system shall allow a user to rate and write a review for another user after a completed session.
* **FR10:** The system shall calculate and display the average rating for each user profile.
* **FR11:** The system shall allow a user to delete their own skill offers or cancel a booked session.
* **FR12:** The system shall allow an admin to delete any skill offer or user account.
* **FR13:** All user data, including profiles, offers, and ratings, shall be stored persistently in a database.
* **FR14:** The system shall display the number of available sessions a tutor has left to offer.
* **FR15:** The system shall provide a mechanism for users to report inappropriate content or behavior.

**4. Non-Functional Requirements**

| NFR Type | Description |
| --- | --- |
| Usability | The UI shall be intuitive for a non-technical user to post a skill offer within three taps. Navigation must be clear and consistent. |
| Performance | No screen shall take longer than 2 seconds to load on standard Wi-Fi. The app should handle concurrent sessions smoothly. |
| Security | User passwords shall be securely encrypted (hashed and salted). All data transmission must use HTTPS/SSL. |
| Reliability | The app must have a minimum uptime of 99.9%. Regular data backups must be performed to prevent loss. |

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**5. Database Schema**

The application will use a NoSQL database such as MongoDB.

| Collection Name | Fields | Description |
| --- | --- | --- |
| Users | \_id, email, password Hash, name, bio, profile Pic, skills[], avg Rating | Stores user info |
| Offers | \_id, title, description, category, created By (User.id), created At | Skill offers posted |
| Sessions | \_id, offer Id, tutor Id, learner Id, scheduled Time, status | Session booking/status |
| Reviews | \_id, from User, to User, rating, comment, created At | Ratings & reviews |

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**6. UML Diagrams**

**6.1. Use Case Diagram**

*Placeholder: Insert a diagram showing actors (Student, Admin) and use cases (Login, Post Offer, Book Session, etc.).*

**6.2. Class Diagram**

*Placeholder: Insert a diagram showing classes (User, Offer, Session) with attributes/methods and their relationships.*

**7. MVP Frontend Development (React Native)**

*Placeholder: Insert code for the React Native prototype, organized by screen.*

**7.1. Login/Signup Screen**

**Description:** Two forms for login or account creation.

**Dummy Data:**

* email: 'test@student.com'
* password: '12345'

**7.2. Home Feed Screen**

**Description:** Scrollable list of skill offer cards.

**7.3. Create Post Screen**

**Description:** A form with text inputs and a button to submit a new skill offer.

**Functionality:** On "Post," the data is logged and the user is navigated back to the Home Feed.

**7.4. Profile Screen**

**Description:** Displays personal info, skills, and bio.

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