Stakeholders

Customers/experts – The main customers of the app we are trying to develop are experts at the singing field such as composers and singers, also teachers for voice tuning and rabbi that are teaching children for their bar mitzvah.

The teachers will be interested in the app because of its ability to let their students practice alone with the help of pre recorded recordings of the teachers.

The experts will be interested in the app for its ability to write the notes of their songs in a much simpler and faster way, they would also be able to practice their singing/tuning more precisely with the app.

Direct users – the direct users of the app will be kids getting ready for their bar mitzvah or the students of the voice teachers. It is also possible that a user will be someone who wants to sing for fun in their spare time.

the users that will be interested in the functionality we enable vary between private users with personal needs (i.e. fun and entertainment or learning alone) and different organizations for their business purposes (i.e. singing coach or a rabbi).

**Use Cases-The Actors**

1. **User (Individual Practitioner):**
   * One of the primary users of the system who employs the voice coaching app for personal skill improvement. This can include individuals seeking to enhance public speaking, language pronunciation, singing abilities, or social communication skills.
2. User (Student):
   * The second primary users of the system, this type of user will use our app for learning the recordings of their teachers and to enhance their ability to perform the assigned tasks given by the teacher/rabbi.
3. **Teacher/Rabbi:**
   * In scenarios involving teaching, a teacher or rabbi may act as a primary user. They use the app to guide and assess students, providing feedback and personalized exercises for improvement.

Use Cases

1. **Use Case: Recording and Comparing Voice Samples**

* **Primary Actor:** User (Student)
* **Description:** The user, a student or individual, utilizes the voice coaching app to record a voice sample for practice and receives feedback by comparing it with their own attempt.
* **Stakeholders and Interests:**
  + *User:* Aims to improve vocal skills by recording and comparing voice samples for targeted practice.
  + *Teacher/Rabbi:* Provides guidance and assesses student progress using the app.
* **Preconditions:**
  + The user has the voice coaching app installed on a compatible device.
  + The user's device has a functioning microphone.
* **Postconditions:**
  + The user receives feedback on their recorded voice sample and personalized insights for improvement.

**Main Success Scenario:**

1. The user accesses the app and selects the "Record and Compare" feature.
2. The app prompts the user to record a voice sample of a specific text or song.
3. After recording, the user receives the option to attempt the same text or song.
4. The app records the user's attempt and compares it with the original voice sample.
5. The app provides feedback on areas such as pitch accuracy, tone, pacing, and pronunciation.
6. The user receives personalized recommendations to address identified areas for improvement.

**Alternative Flows:**

* *Recording Failure:*
  + If there is an issue with the recording, the app prompts the user to re-record or troubleshoot the microphone.
* *Comparison Glitch:*
  + If there is a glitch in the comparison process, the app informs the user and suggests reattempting the exercise.
* *Teacher/Rabbi Review:*
  + In a teaching scenario, the teacher or rabbi may have access to the student's recordings for assessment and guidance.

1. **Use Case: Teaching Singing with Voice Comparison**

* **Primary Actor:** Teacher/Rabbi
* **Description:** The teacher or rabbi utilizes the voice coaching app to guide and teach students by comparing their voice recordings with the original samples.
* **Stakeholders and Interests:**
  + *Teacher/Rabbi:* Aims to provide effective vocal coaching and assess student progress.
  + *Student:* Receives personalized feedback to improve singing skills.
* **Preconditions:**
  + The teacher or rabbi has the voice coaching app installed on a compatible device.
  + Students have the app installed and have submitted their recorded voice samples.
* **Postconditions:**
  + Students receive constructive feedback, and the teacher or rabbi can track their progress.

**Main Success Scenario:**

1. The teacher or rabbi accesses the app and selects the "Review Student Recordings" feature.
2. The app displays a list of student submissions with recorded voice samples.
3. The teacher or rabbi selects a student's recording to review.
4. The app compares the student's recording with the original voice sample, highlighting areas for improvement.
5. The teacher or rabbi provides personalized feedback, suggestions, and additional exercises for the student.
6. The app updates the student's progress and stores the feedback for future reference.

**Alternative Flows:**

* *Technical Issues in Reviewing:*
  + If there are technical issues in reviewing student recordings, the teacher or rabbi may request students to resubmit or provide feedback through alternative means.
* *Student Feedback Loop:*
  + Students may have the option to respond to feedback, ask questions, or request further clarification from the teacher or rabbi within the app.

**3. Use Case: Reviewing Song Performance Feedback**

* **Primary Actor:** User (Singer or Musician)
* **Description:** The user, a singer or musician, utilizes the voice coaching app to review feedback on their song performance. The app provides detailed insights, including pinpointing mistakes in the tune, graphical representations of recordings, and identification of mispronounced words.
* **Stakeholders and Interests:**
  + *User:* Aims to assess and improve their song performance based on detailed feedback.
  + *Teacher/Music Coach:* May provide guidance and assess the user's progress using the app.
* **Preconditions:**
  + The user has the voice coaching app installed on a compatible device.
  + The user has previously recorded a performance using the app.
* **Postconditions:**
  + The user gains a comprehensive understanding of their song performance, including areas for improvement and specific feedback on tune and pronunciation.

**Main Success Scenario:**

1. The user accesses the app and navigates to the "Song Feedback" feature.
2. The app displays a list of previously recorded song performances.
3. The user selects a specific song performance for review.
4. The app generates detailed feedback, including graphical representations of the recording, highlighting mistakes in the tune.
5. The user receives feedback on mispronounced words, pitch accuracy, and overall pacing.
6. Graphs and visual aids illustrate specific points of improvement within the song.
7. The app offers personalized recommendations and exercises to address identified areas for enhancement.

**Alternative Flows:**

* *Unavailable Song Recordings:*
  + If there are no recorded song performances available, the app informs the user and prompts them to record a new performance for assessment.
* *Technical Glitch in Feedback Display:*
  + If there is a glitch in displaying feedback, the app notifies the user and suggests troubleshooting steps or contacting support.
* *Teacher/Music Coach Review:*
  + In a teaching scenario, the user may choose to share their song performance and feedback with a teacher or music coach for additional guidance and assessment.

**Use Case: User Login**

• **Primary Actor**: User

• **Description**: The user enters the voice coaching app to access their personalized account by logging in, allowing them to utilize app features and track their progress.

• **Stakeholders and Interests**:

User: Aims to access the app's functionalities, including recording, feedback, and personalized coaching.

App Developer: Ensures a secure login process for user satisfaction and data protection.

• **Preconditions**:

1. The user has successfully installed the voice coaching app on their compatible device.
2. The user has a valid account registered with the app.
3. The network is working and satisfy the app demands.
4. The server is up and running on the server computer.

• **Postconditions**:

1. The user successfully logged in to the system.
2. The app head page is displayed.

**Main Success Scenario:**

1. The user launches the app on his device.

2. The app presents a login screen requesting the user's credentials (username and password).

3. The user enters his valid username and password.

4. The app verifies the entered credentials against the stored user data (using the hashed password for maximum security).

5. Upon successful verification, the app grants access to the user's account.

6. The user gains entry to the app's main page, where they can access various features, including recording and feedback functionalities.

**Alternative Flows**:

• Incorrect Credentials:

If the user enters incorrect credentials, the app prompts an informative error message notifying the user what’s went wrong and allows the user to retry.

• Account Lockout:

After a certain number of unsuccessful login attempts, the app locks the account temporarily for security reasons. The user receives instructions on unlocking their account or resetting the password.

• Social Media Login (if applicable):

The app may offer an alternative login method through social media platforms. The user can choose to log in using their social media credentials.

• Password Recovery:

In case the user forgets their password, the app provides a "Forgot Password" option, guiding them through a secure password recovery process.

**Use Case: User Registration**

• **Primary Actor**: User

• **Description**: The user initiates the registration process to create a new account within the voice coach app, enabling personalized access to the application's features.

• **Stakeholders and Interests**:

User: Aims to create a new account to utilize the app's recording, feedback, and coaching functionalities.

Developer: Ensures a user-friendly and secure registration process to enhance user onboarding.

• **Preconditions**:

The user has downloaded and installed the voice coaching app on their compatible device.

• **Postconditions**:

The user successfully completes the registration process and gains access to their newly created account.

**Main Success Scenario**:

1. The user launches the app on their device.
2. The app presents a registration screen requesting essential information, such as username, email address, role, and password.
3. The user enters the required information, ensuring compliance with any specified password complexity criteria.
4. The app validates the entered information, checking for unique usernames and valid email formats.
5. Upon successful validation, the app creates a new user account, associating it with the provided username and email address.
6. The user receives a confirmation message indicating successful registration.
7. The app automatically logs in the newly registered user, granting immediate access to the app's main interface.

**Alternative Flows:**

• Existing Email or Username:

If the entered email or username already exists in the system, the app prompts the user to choose a different and unique combination.

• Password Strength:

If the entered password does not meet the specified strength criteria, the app prompts the user to create a more secure password.

**Use Case: Handling Incoming Call During App Usage**

• **Primary Actor**: User

• **Secondary Actor**: Incoming Call

• **Description**: The user is actively using the voice coaching app when an incoming call is received on their mobile device. The app must gracefully handle the call without disrupting the current state or losing user data.

• **Stakeholders and Interests**:

User: Aims to seamlessly handle an incoming call without losing progress or experiencing disruptions in the app.

App Developer: Ensures the app maintains a user-friendly and reliable experience even during external interruptions like incoming calls.

• Preconditions:

1. The user has the voice coaching app open and is actively engaged in an ongoing session or task.

• Postconditions:

1. The user successfully handles the incoming call without losing progress in the app.

**Main Success Scenario**:

1. While using the voice coaching app, the user receives an incoming call on their mobile device.

2. The app detects the incoming call and temporarily pauses the ongoing activity, saving the current state.

3. The app displays a notification or overlay indicating the incoming call and providing options to answer or decline.

4. The user chooses to answer the call or declines it.  
If the call is answered, the app remains in the background while the user engages in the call.

**Alternative Flows**:

• **Call Declined**:

If the user declines the incoming call, the app continues uninterrupted, and the user remains in the current state.

• **App Termination**:

If the user chooses to exit the app during the call, the app can gracefully terminate, ensuring a smooth transition back to the app when the call ends.

• **App Paused State**:

The app may save the current state periodically during active sessions to minimize potential data loss in the event of unexpected interruptions.