Work Distribution for Phase 1

**1. Audio Generator (Input Audio Capture & Processing)**

* **Team Members**: J, Am (Jatin,Amit)
* **Tasks**:
  + J: Work on building the Python backend to capture audio using libraries like PyAudio.
  + Am: Design the user interface for audio recording (React or other front-end tools). (Acha Bana Dena dikega toh yeh hi)
* **Technology**:
  + Backend: Python, PyAudio, Flask.
  + Frontend: React, HTML5 (for microphone access).

**2. Audio-to-Text Conversion (Whisper Integration)**

* **Team Members**: B, A (Bhanu,Anmol)
* **Tasks**:
  + B: Integrate Whisper for audio-to-text conversion.
  + A, B: Set up Firebase and create the database schema to store the transcribed text.
* **Technology**:
  + Backend: Whisper (Python), Flask.
  + Database: Firebase (Realtime DB or Firestore).

**3. Text-to-Audio (Google Text-to-Speech)**

* **Team Members**: J, Bu, A(Jatin,Bhumika,Anmol)
* **Tasks**:
  + J: Integrate Google Text-to-Speech API into the backend.
  + Bhu: Develop the UI for playing back the synthesized audio and handling user feedback.
  + A: Store generated audio logs in Firebase and link them to user sessions.
* **Technology**:
  + Backend: Google Text-to-Speech API, Python.
  + Database: Firebase.
  + Frontend: React for audio playback interface.

**4. Error Handling & Logging**

* **Team Members**: B, A
* **Tasks**:
  + Implement error handling for audio processing failures, transcription errors, and API timeouts.
  + Use Firebase to store error logs and help track system performance and issues.
* **Technology**:
  + Backend: Python logging libraries, Firebase (for logging errors).

**5. User Authentication and Session Management**

* **Team Members**: A, B
* **Tasks**:
  + Set up user authentication using Firebase Authentication (Google, email sign-in).
  + Manage user sessions to save individual progress and data for each user.
* **Technology**:
  + Firebase Authentication.
  + Firebase Realtime Database or Firestore.

**6. Data Analytics and Insights (For Documentaion)**

* **Team Members**: J, B
* **Tasks**:
  + Track and analyze user performance (audio submission quality, word accuracy, usage patterns).
  + Generate reports and visual feedback (using charts or graphs).
* **Technology**:
  + Python (Pandas, Matplotlib for analytics).
  + Firebase (to store performance data).

**7. Documentation**

* **Team Members**: Am, A
* **Tasks**:
  + Document all APIs, setup processes, and integration steps.
  + Create user guidelines for future development stages.
* **Technology**:
  + Markdown (GitHub), Swagger (for API documentation).

**8. Team Collaboration Tools**

* **All Members**:
  + Set up a shared code repository (GitHub) with proper version control.

(Note: Starting only after your allotted work is finished and presently there no dead line for this one, (U can take help from Anmol or others)

**Extra**: **Home Page Design Tasks (Am, Bhu)**

**UI Design:**

* **Design an intuitive and user-friendly layout.**
* **Use modern UI elements (cards, grids, icons, animations) to make the home page visually attractive.**
* **Ensure color schemes and fonts are consistent and appealing.**

**Responsive Design:**

* **Make sure the home page looks good on all screen sizes (desktop, tablet, mobile).**

**Interactive Features:**

* **Add subtle animations (hover effects, transitions) for buttons, text, and images.**

**Technology:**

* **React (for the frontend).**
* **CSS frameworks like Material UI or Bootstrap for styling.**
* **Tools: Figma**

**Phase 1 Deadline:**

* **Start Date**: 12th September 2024
* **Duration**: 2 weeks
* **Deadline**: **26th September 2024**