Audexa: Smart Audio Learning for Everyone

Team Name : Code Catalysts

Team Members :

1)Harshitha Kakubal

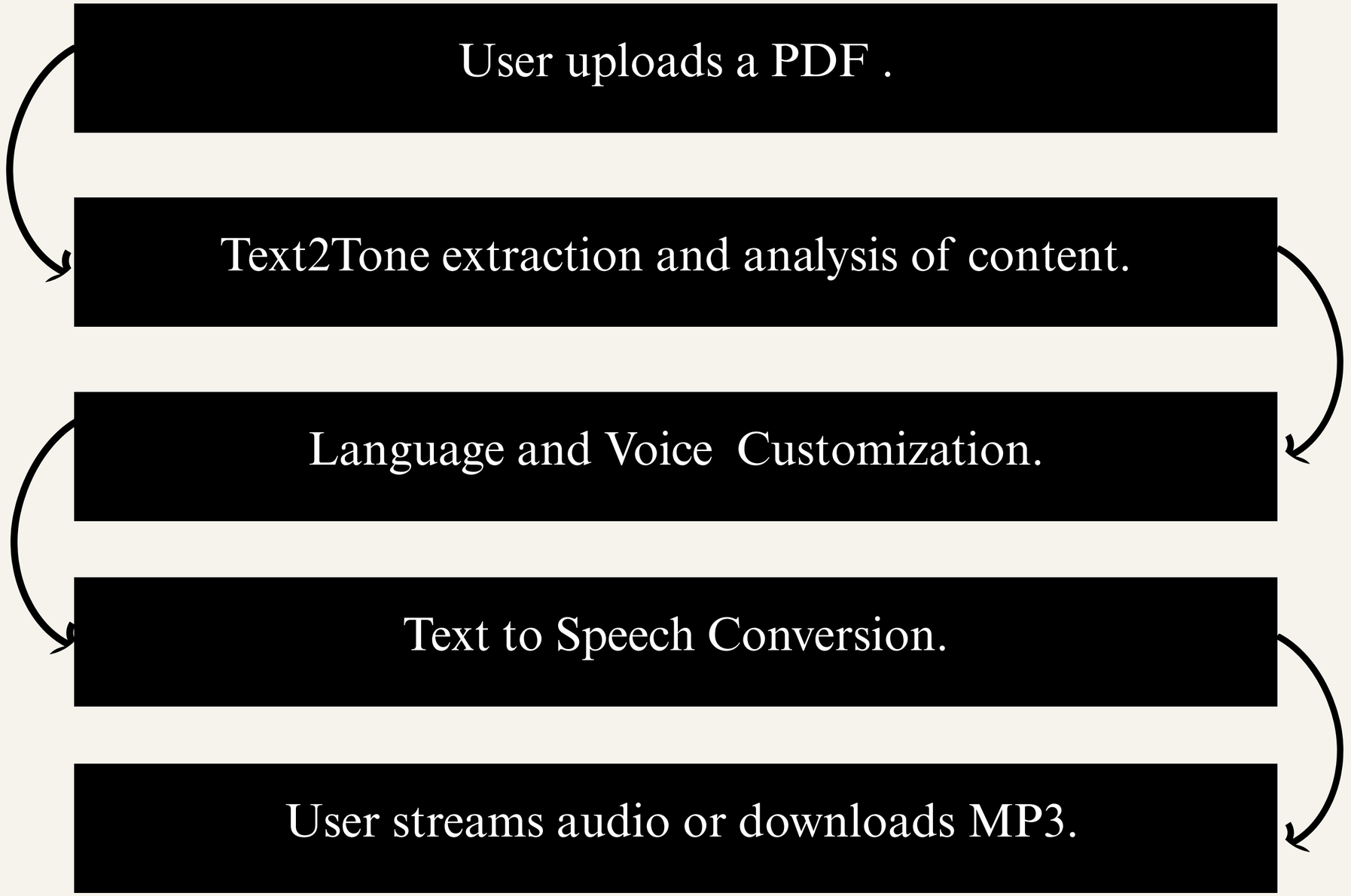
2)Harshini D

3)Y Sohan

Problem Statement & Background

- Reading long PDFs and webpages is time-consuming and overwhelming for many users.
- People with language barriers, busy schedules, or different learning preferences struggle with digital text.
- Existing tools lack personalization, multilingual support, and offline access.

Solution Overview



Technical Implementation

Frontend:

- React.js (Web App)
- JavaScript (Browser Extension)

Backend:

- Python (Flask/Django) or Node.js

APIs & Libraries:

- Text Extraction: PDF.js, PyMuPDF, Tesseract OCR
- Speech Synthesis: VITS , Coqui TTS , Browser TTS
- Translation: MarianMT
- NLP Models: T5 / BART for Summarization & Q&A
- Storage: IndexedDB , SQLite / Firebase

Market Feasibility & Impact

Target Users:

- Students & researchers – Summarization & audio learning.
- Professionals & multitaskers – Listen to reports & articles on the go.
- Elderly users – Comfortable listening instead of straining their eyes.
- Content consumers – Converts articles, blogs, and eBooks into audiobooks

Impact:

- Saves time – No need to read long documents.
- Enhances accessibility – Inclusive digital content.
- Boosts productivity – Listen while multitasking.
- Aids language learning – Improves comprehension.
- Bridges digital gaps – Supports low-literacy users.

Future Scope & Next Steps

- Gesture & Voice Commands – Hands-free control using voice inputs or simple gestures.
- Braille Display Support – Enable integration with refreshable Braille devices.
- Auto-Detection of PDFs & Webpages – Instantly recognize and start reading without manual selection.