Team Name	**:**	**Singularity Squad**
Team Size	**:**	**3**
Bussiness Challenge	**:**	**EchoVerse – An AI-Powered Audiobook Creation Tool**

General Description

EchoVerse is a next-generation, AI-powered audiobook creation platform that transforms any written content — from novels and blogs to academic notes and research papers — into expressive, multilingual, and fully customizable audio experiences.

The system combines **IBM Watsonx Granite LLM** for tone-aware rewriting, **IBM Watson Text-to-Speech** for natural narration, and advanced AI modules for **language translation, summarization, and contextual background effects**. Users can upload text or paste content, select a tone (Neutral, Suspenseful, Inspiring), choose a preferred voice, and optionally translate the narration into their desired language.

Novelty / Uniqueness:

EchoVerse is not just another text-to-speech tool. Its uniqueness lies in **multi-layered content transformation**:

1. **Language Translation:** Breaks language barriers by translating text into multiple Indian and global languages before narration.
2. **Personalized Voiceover:** Users can pick from multiple AI voices, making the audiobook experience unique to their taste.
3. **Summary Listening Mode:** Creates a concise version of the content for time-limited users.
4. **Voice Commands:** Enables hands-free navigation (“Skip to Chapter 3,” “Summarize last section”).

5. **Cinematic Background Audio** — Adds immersive, scene-appropriate ambience for storytelling depth.

This fusion of **generative rewriting**, **voice personalization**, and **immersive audio design** in a single, lightweight application is rare in current audiobook creation tools.

Business / Social Impact:

Business Impact:

- **Content Publishers & Podcasters:** Rapidly repurpose written material into engaging audio, reducing production costs.
- **EdTech Platforms:** Deliver study material in multiple languages and voices for diverse learners.
- **API Integration Opportunities:** Offer audiobook-as-a-service for third-party apps.

Social Impact:

- **Accessibility:** Provides visually impaired users with an independent reading experience.
- **Inclusive Education:** Bridges language gaps by translating and narrating in regional languages.
- **Time Efficiency:** Summary mode supports busy professionals and students in consuming knowledge faster.
- **Cultural Preservation:** Supports narration of literature in native languages, preserving linguistic heritage.
- Through the **personalized voiceover feature**, users can record audiobooks or messages in their own voice, making distance feel smaller and connections with loved ones warmer — perfect for sending heartfelt stories, letters, or greetings in an intimate, familiar tone."

Technology Architecture:

Layer	**Technology**
Frontend	Streamlit (Python), HTML/CSS
Backend	Python, Flask/FastAPI (if extended API support is needed)

Layer	Technology
Tone Rewriting	IBM Watsonx Granite LLM (prompt chaining for tone control)
Text-to-Speech	IBM Watson Text-to-Speech (Lisa, Michael, Allison, Kate voices)
Language Translation	IBM Language Translator API
Summarization	IBM Watsonx Granite / Hugging Face T5
Background Audio Mixing	Python PyDub, Web Audio API
Voice Commands	Web Speech API (browser-based)
File Handling	PyMuPDF / text parsing libraries
Storage	IBM Cloud Object Storage
Security	Environment variables via python-dotenv

Scope of the Work:

Phase 1 – Core MVP (Hackathon Submission)

- Text input/upload (.txt) , pdfs & parsing
- Tone-adaptive rewriting with IBM Watsonx Granite
- Multi-voice narration via IBM TTS
- Side-by-side original vs rewritten text view
- Audio streaming & MP3 download

Phase 2 – Enhancement Features

- Language translation before narration
- Summary listening mode
- Background sound effects integration
- Voice command playback control

Phase 3 – Future Expansion

- Multi-character voice assignment for dialogues
- Marketplace for user-generated audiobooks
- Cloud-hosted API for external integration