PDF to Audiobook Converter

Abstract:
The PDF to Audiobook Converter is a desktop-based Python application designed to transform text content from PDF documents into spoken audio. It offers an accessible way for users to listen to books, research papers, or study materials instead of reading them manually. The project integrates text extraction and text-to-speech (TTS) capabilities, allowing playback and MP3 export for offline listening.

Introduction:
The goal of this project is to simplify document consumption by converting text-based PDF files into clear and audible speech. It benefits users such as students, professionals, and visually impaired individuals who prefer listening to reading. By combining PyMuPDF, TTS engines, and a simple GUI, the system ensures an interactive and user-friendly audiobook experience.

Tools Used:
1. **Python** – Programming language for the entire project.
2. **PyMuPDF** – To extract text from PDF pages.
3. **pyttsx3 / gTTS** – For converting extracted text into speech (offline/online modes).
4. **Tkinter** – To design a simple GUI interface.
5. **pygame** – To enable audio playback within the app.

Steps Involved in Building the Project:
1. **Loading the PDF:** The user selects a PDF file using the Tkinter file dialog.
2. **Extracting Text:** PyMuPDF reads and extracts text from each page, ignoring empty ones.
3. **Cleaning Data:** Unwanted characters and extra spaces are removed for better TTS results.
4. **Text-to-Speech Conversion:** The text is processed by pyttsx3 (offline) or gTTS (online) to produce spoken audio.
5. **Playback and Export:** Users can play the audio or export it as an MP3 file.
6. **User Controls:** Options to adjust speech rate, volume, and chunk size for custom output.

Conclusion:
The PDF to Audiobook Converter effectively combines PDF reading and audio playback technologies to deliver a practical accessibility solution. It enhances learning and convenience for users who prefer auditory information. Future enhancements may include voice selection, sentence-level chunking, and mobile app integration.