



User

Client

Server

opens web app
and uploads
youtube link

sends POST request
with youtube URL

downloads and
extracts MP3 audio

sends JSON with
YT audio graph info

converts MP3 to
visual waveform data

generate graph on
homepage and animates
sound playback

pushes "start
recording"

sends recording
to server for
processing

converts user recordings
to MP3 and extracts
waveform data

sends JSON with
user audio graph info

converts MP3 to
visual waveform data

generate graph on
homepage and animates
sound playback

pushes "analyze"

sends API request

uses Google Gemini AI to
analyze and provide
improvement feedback

sends JSON with
Gemini information

recives and displays
structured AI-generated
feedback