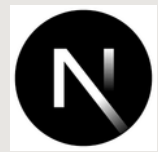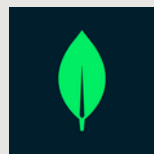# AVATAR LAB

Building smart realistic AI avatars
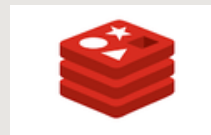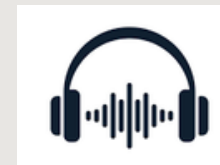
Tech stack

Next js

MongoDB

Redis + BullMQ

PostgreSQL

Models used

Diffdub

Small e
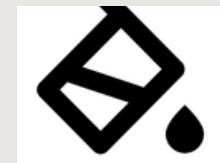
RVM

Model selection & Reasoning

Model	Cost Effective/Multi Lingual	realistic	choosen?
SadTalker	✅ Yes ⌄	❌ No ⌄	❌ No ⌄
Synctalk	✅ Yes ⌄	✅ Yes ⌄	❌ No ⌄
Diff Dubb	❌ No ⌄	✅ Yes ⌄	✅ Yes ⌄
Small - e	❌ No ⌄	✅ Yes ⌄	✅ Yes ⌄
Vall - e	✅ Yes ⌄	✅ Yes ⌄	❌ No ⌄
VO-VAE 2	❌ No ⌄	❌ No ⌄	❌ No ⌄
Robust Video Mating	❌ No ⌄	✅ Yes ⌄	✅ Yes ⌄

Architecture & workflow
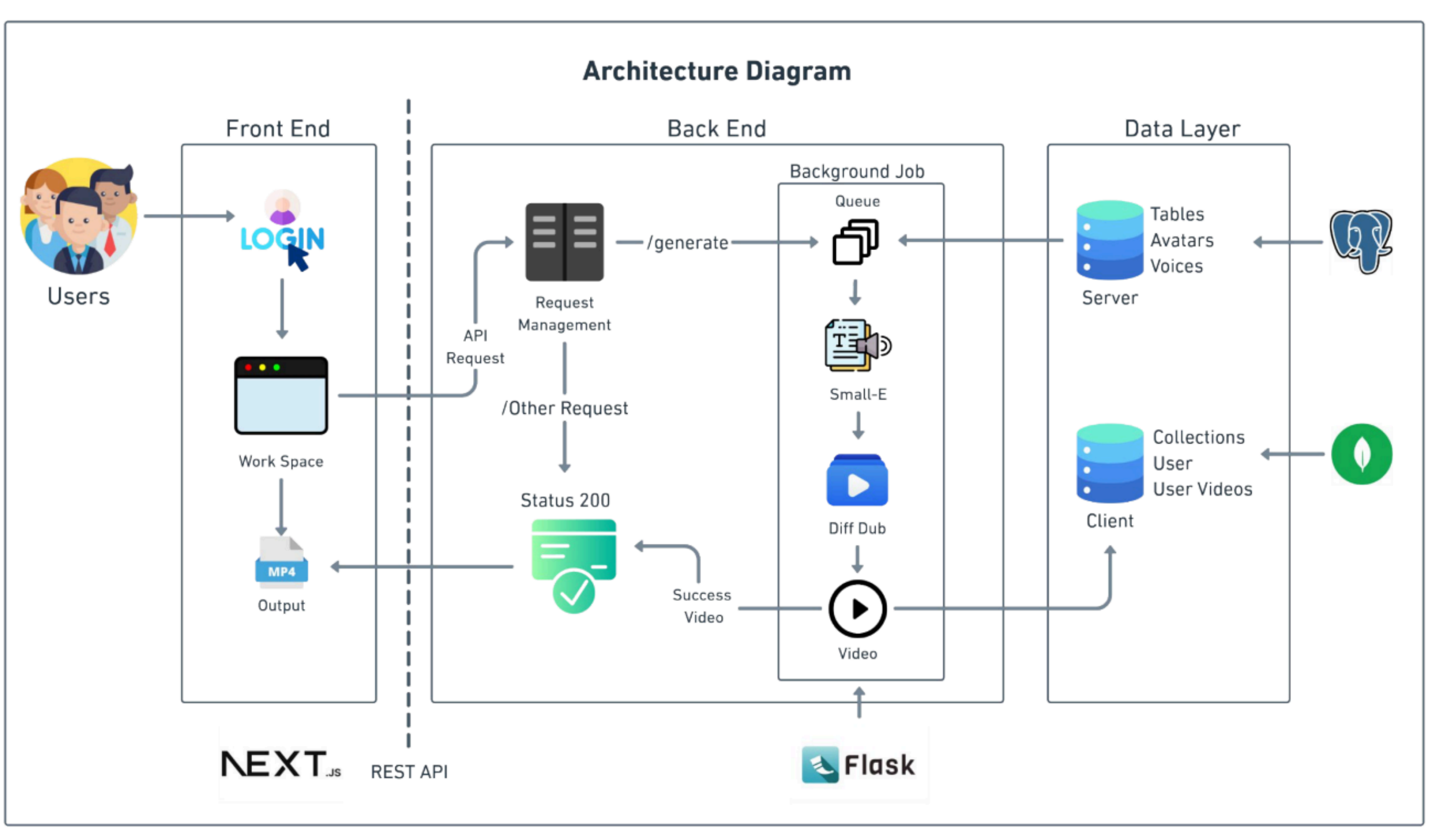
Key learnings & Road blocks

- Mastered Next.js and APIs

- Worked with PostgreSQL, MongoDB

- Improved database skills with Prisma, PostgreSQL, and MongoDB

- Used GridFS for streaming large video file

- New tech had a steep learning curve

- Lacked cloud deployment knowledge

- File crashes on large media → moved to Grid FS

- State lost on refresh → fixed with localStorage tracking

Deployment decisions & future plans

- Evaluated options like Vercel, Render, or AWS for hosting, considering cost and scalability.

- Enhance the models

- Make it Multi lingual

- Increase the video resolution

- Gather feedback and iterate quickly to improve UX and performance.

THANK YOU

For Listening

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