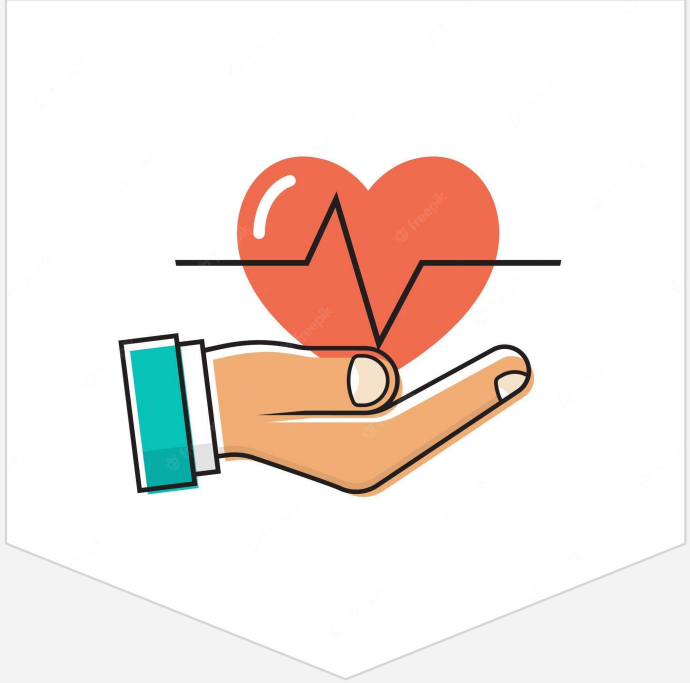


Swasth Seva: Diagnostics to go

By Average PHONK enjoyers

Problem Statement

-All purpose Mobile App aimed at providing

-On-Demand access to accurate and convenient health diagnosis,

-Anytime, Anywhere, Aimed at Rural Areas

Challenges faced in Rural Areas

-speak only in vernacular languages,

-usually cannot read or type either

-bad network coverage

-not technologically sound

-lack of proper medical equipment

Features/Novelty

-easy to use app, with multi-lingual support

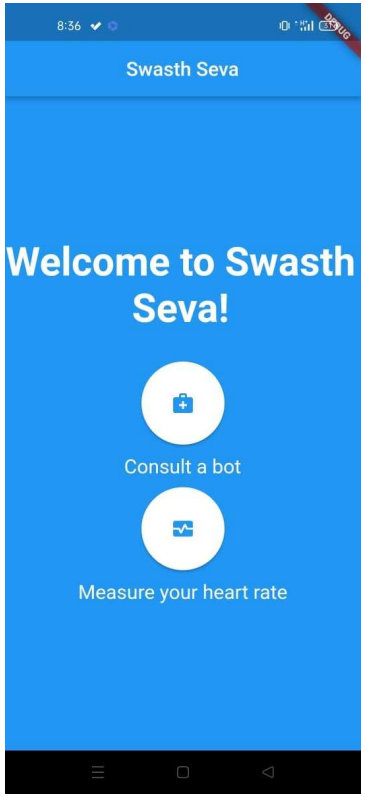
-no equipment heartbeat/SPO2 sensor

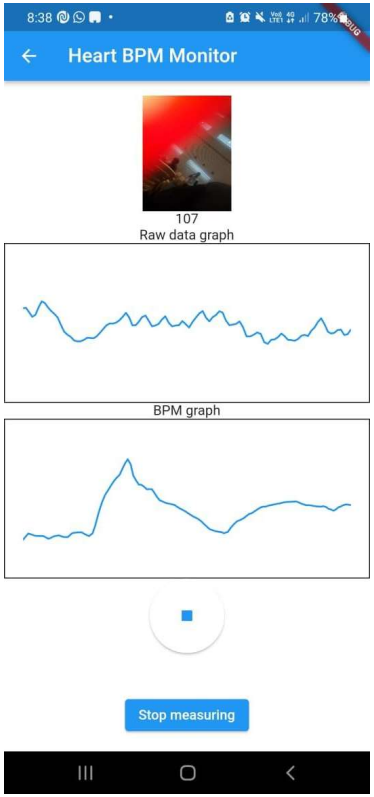
-interactive chat-bot trained on natural language model

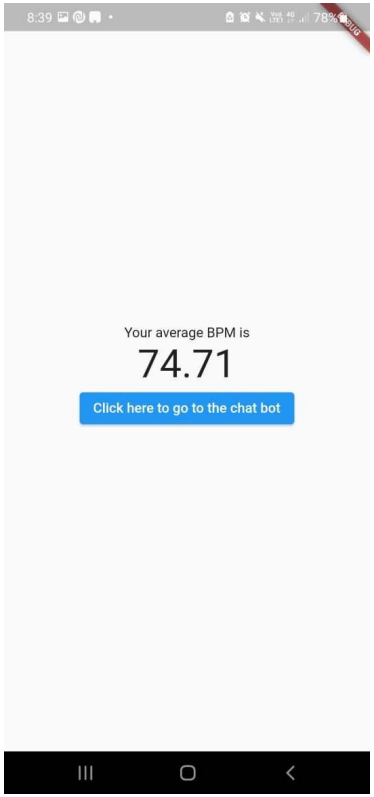
-chat-bot allows users to ask questions and talk about their symptoms, gaining diagnostic information relevant to their query

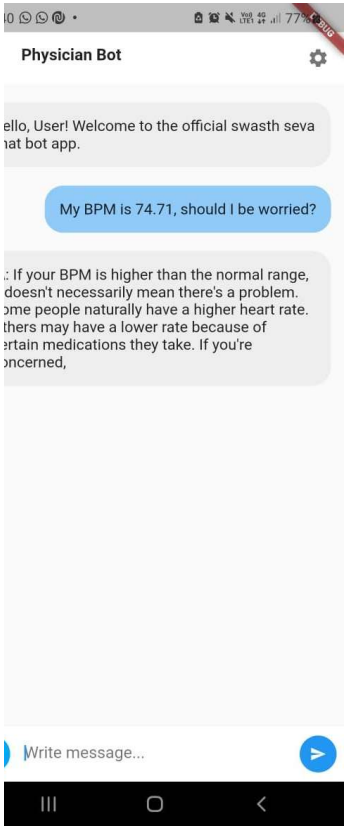
-can suggest over the counter medicines, quick-care tips, general medical advice and educate the user on emergency practices

Demo - heart bpm

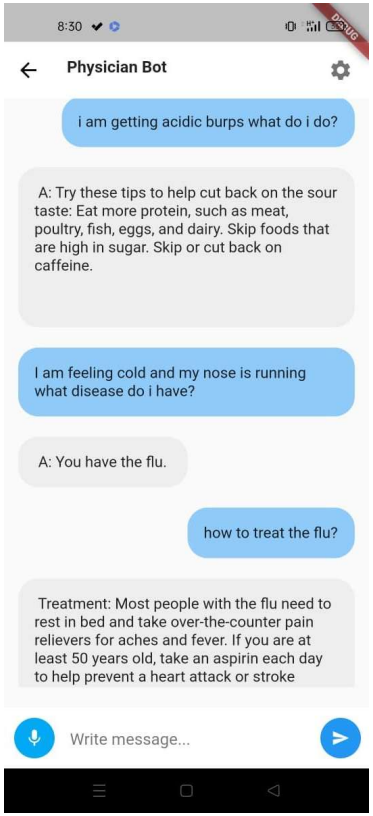


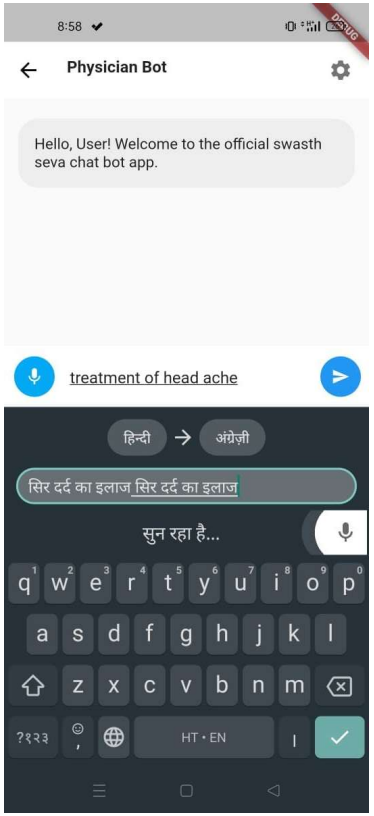


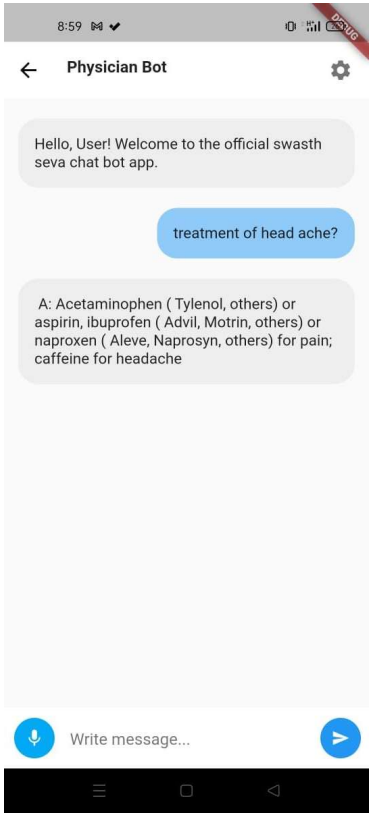


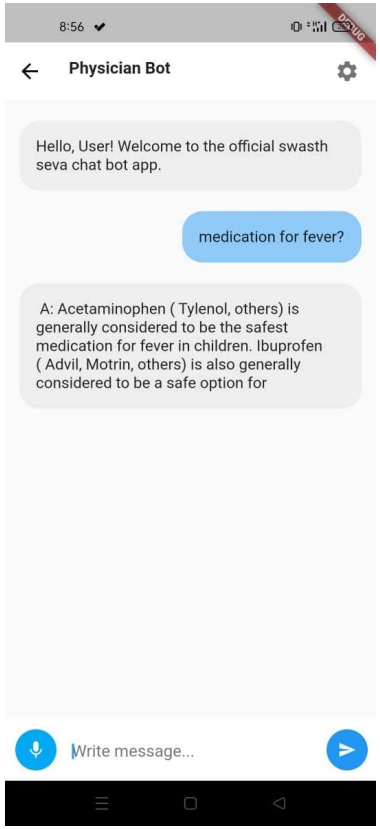


Demo - AI powered ChatBOT



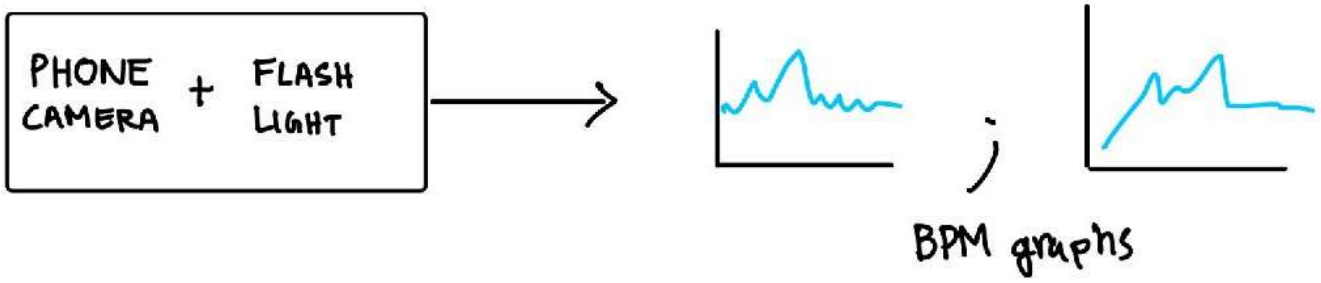






Implementation - Heart BPM

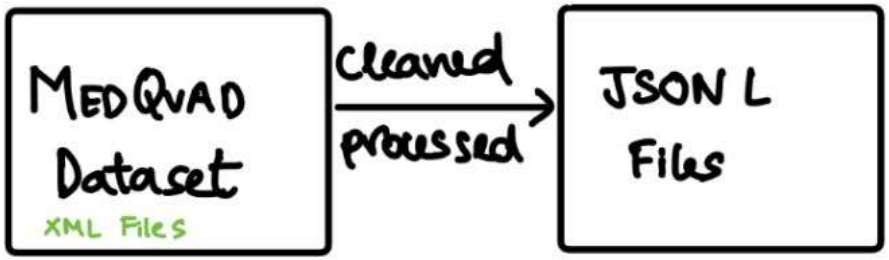
- The phone is equipped with camera and flash
- We use the flash to illuminate the skin on the finger
- This lets the camera record the flow of blood inside the finger in regular intervals which helps us calculate the bpm



Implementation - Natural Language model

- **MedQUAD dataset** is a web scraped data from **12 NIH websites**. 47000 question answer pairs. Along with 37 question types.
- **GPT3** was trained on **general purpose** datasets and was not meeting our medical needs.
- To prioritize medical needs we **fine-tuned GPT3** with our medical corpus.
- Model was fine-tuned with **560,000 medical tokens**.
- This allowed us to fine tune the model to support medical question-answer generation.

DATASET

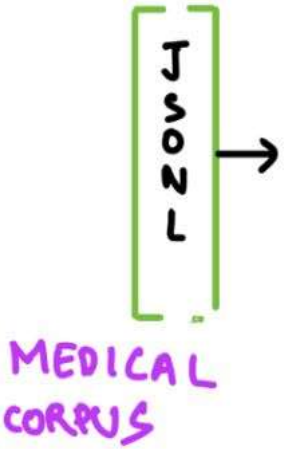


{ "prompt" : " .... ",

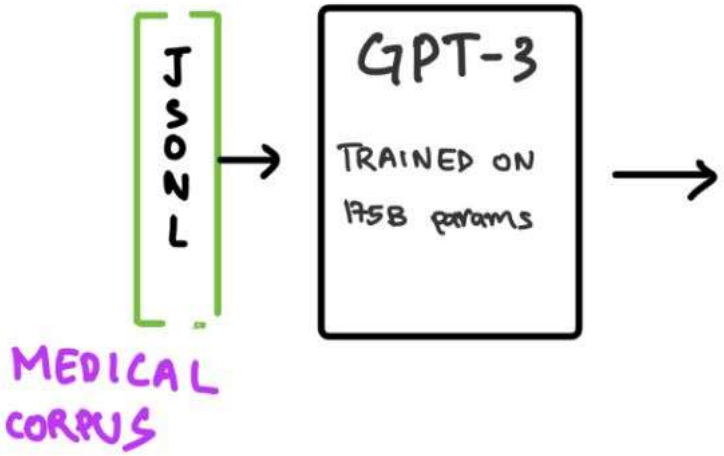
"answer" : " ... "

} Corpus of medical prompt-answer pairs

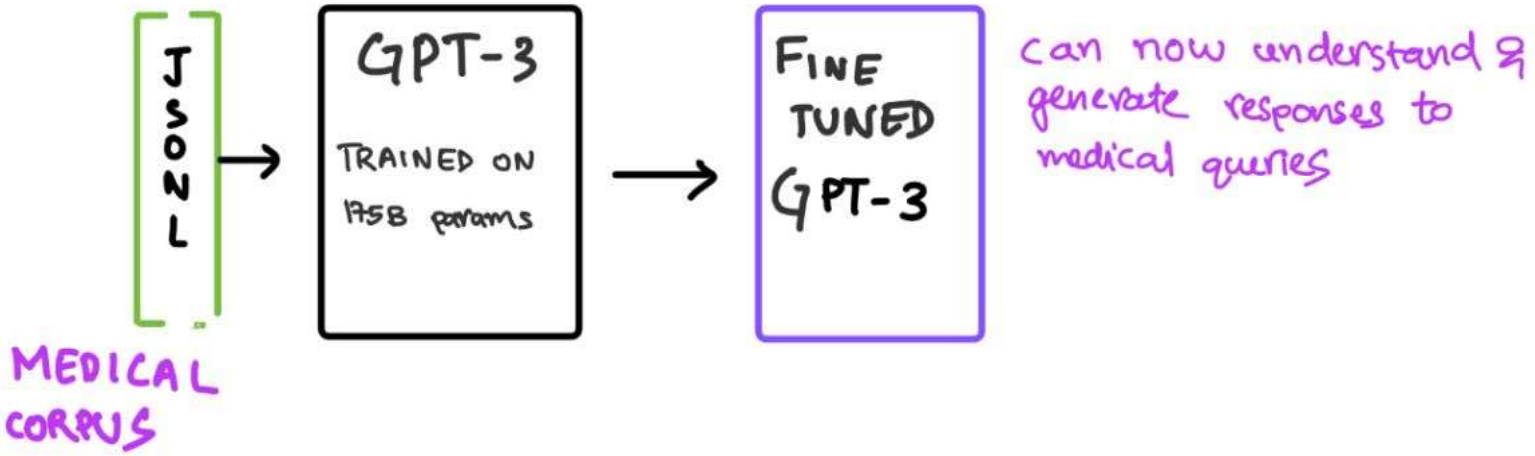
GPT-3



GPT-3



GPT-3


JSONL
MEDICAL CORPUS
GPT-3
TRAINED ON 175B params
FINE TUNED GPT-3
can now understand & generate responses to medical queries

Business Plan

Go-To Market Strategy-

- Engage with govt agencies (funding and networking) and NGO's that are involved with rural healthcare to promote the app
- Run TV ads and social media campaigns
- Build a strong brand identity involving trust with the users, listening to their feedback and constantly working on the app

Business Plan

Monetization Model-

- Data Licensing, sell collected disease data (not user data) to pharmaceutical companies, research orgs and govt agencies.
- Health Insurance Integration- partner with health insurance organizations on a commission basis.
- Software Licensing to govt agencies/ NGO’s that can use the app in the field

Future Plans

- Make app completely offline using Federated Learning. This drastically increases usage in remote and uncovered areas.
- Improve data privacy.
- Add modular attachments a phone can use for advance diagnostics.
- Implementing S.O.S Signals for emergency situations.
- Implement Patient Record, therefore including his past disorders that may factor in his current prediction.
- Adding a secure gateway to transfer details to a given doctor client.

THANK YOU

Ayush Singh

Ayushmaan Kaushik

Ram Selvaraj

Mayank Agarwal