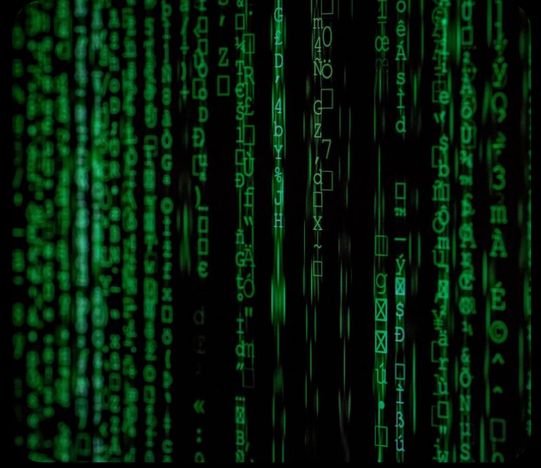


Villain Arc

- Faizan Mahimkar
- Harshal Patil
- Himanshu Maurya

ANALYTIKA X

presents

Datathon 2.0

Where Data Science transforms Ideas into impact

MedIQ Advisor

(Your Personal Healthcare Companion)

Problem Identified:

- Healthcare misinformation is a significant issue, and current challenges lie in harnessing AI chatbots to deliver instant and accurate medical information to the public.
- The challenge involves the need to establish trust in AI-based chatbots as reliable sources of health information, fostering user confidence in seeking guidance on public health issues.

Solution Proposed:

- The project aims to implement a dynamic learning mechanism using machine learning algorithms to continuously update the chatbot's dataset, ensuring accurate responses to evolving health-related queries.
- Project functions with a validation mechanisms within the chatbot architecture to enhance the reliability of information, providing users with trustworthy and up-to-date health insights.

Use Cases

o General Public Seeking Health Information: Individuals looking for instant and reliable information on symptoms, preventive measures, or general health queries can benefit from an AI chatbot.

o Emergency Situations and Outbreaks: During public health emergencies or outbreaks, the chatbot can rapidly disseminate accurate information, offer guidance on protective measures, and address common medical practices.

o Health Education Programs: Educational institutions, public health organizations, and community health programs can integrate the chatbot into health education initiatives, promoting awareness.

o Healthcare Professionals for Reference: Healthcare professionals can use the chatbot as a quick reference tool for general health information, allowing them to focus on more complex medical issues while ensuring that the information provided aligns with current medical knowledge.

Show Stopper

o Reliability in Critical Situations : In critical healthcare scenarios, where immediate and accurate information is crucial, our chatbot demonstrates high accuracy.

o Seamless Integration: Integrating with telehealth services or healthcare providers, enabling users to transition from self-assessment to professional support seamlessly.

o Evidence-Based Algorithms: Using validated and evidence-based algorithms for accurate mental health assessment, increasing user trust in the app's results.

o Personal Mental Health Checkup: Users can use the app to regularly assess their mental health status, helping them identify changes or potential concerns over time.

o Inter-operability with Healthcare Systems: Ensuring seamless integration with existing healthcare systems and other telemedicine platforms is essential for the chatbot to effectively collaborate with healthcare professionals.

Tech Stack

- Front-End: HTML,CSS, React, Xml
- Middleware: Django, Python
- Back-End: Sqlite3, Json

Datasets:

ChatBot:
>>The Gale Encyclopedia Of Medicine
>>Llama-2-7b-chat-hf
>>all-MiniLM-L6-v2

Emotion Detect:
>> survey.csv (combination of PHQ-9, GAD-7 datasets & other important constraints mainly targeting corporate employees)

Algorithms Used:
>> AdaBoost Classifier
>> HaarCascade
>>CosineSimularity

Search Technique:
>> RandomizedSearchCV

- Libraries:

>> OpenCV
>> Dlib
>> Tensorflow
>> Scikit-Learn
>> Streamlit
>> chainlit
>> langchain
>> Joblib
>> Pickle
>> Seaborn
>> Numpy
>> NLTK
>> pinecore

FUTURE ASPECT

This project's applications extend across diverse domains like:

- **Advanced AI and Predictive Analytics:** Implement more advanced AI algorithms and predictive analytics to identify the health issues even before users are fully aware of them.

- **Neuroscience Integration:** This involves incorporating brain-monitoring technologies or neurofeedback mechanisms to provide personalized interventions based on brain activity.

- **Virtual Reality (VR) and Augmented Reality (AR) Support:** Integrate VR and AR technologies to create immersive environments for therapeutic purposes.

- **Personalized Medication Management:** Collaborate with healthcare providers to integrate medication management into the platform.

- In healthcare, it can play a pivotal role in stress reduction and relaxation, offering personalized content recommendations to patients based on their emotional states, thereby improving their well-being.

Work Flow

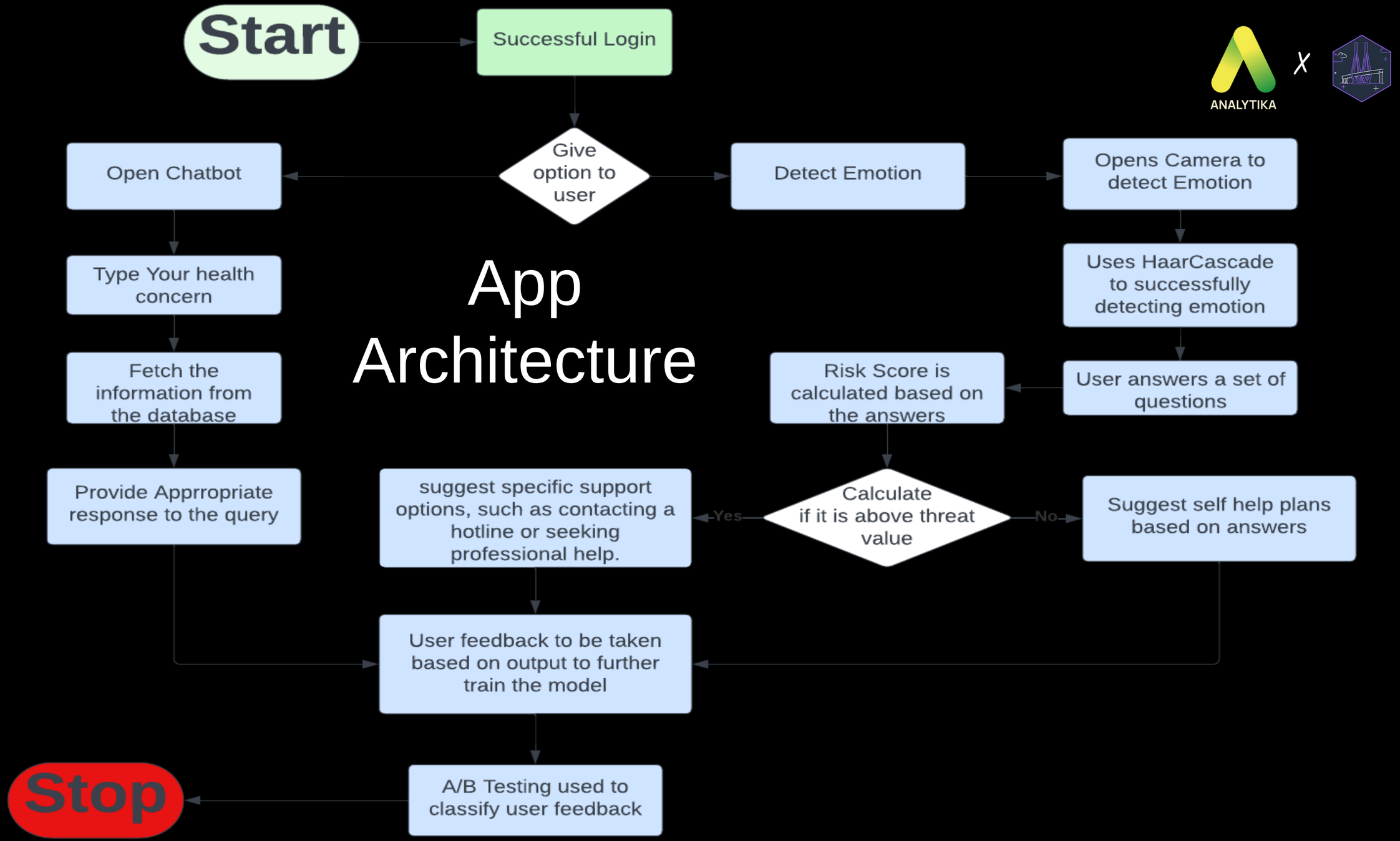
Part1:

- Ask Any query related to your health to our chatbot (MedIQ Advisor) and it will assist you in solving your health concern and provide valid input.
- Our chatbot provides recommendations based on the risk assessment, such as self-help, seeking professional help, or contacting healthcare providers.

Part 2:

- Validated algorithms process user data to assess the risk of mental health disorders and generate a risk score.
- The risk score is interpreted to determine the user's mental health risk level.
- User data is securely stored for future analysis, helping identify mental health support needs.
- Users can provide feedback to improve the app, and it offers additional resources, educational content, and follow-up assessments

App Architecture



The Team

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Back-End Developer, Cloud Engineer

Thank you