DEDOC

APPLYING FEDERATED LEARNING WITH SMART CONTRACTS IN HEALTHCARE

MANSOOR BUTT   **19K-1114**

KHIZER JILANI   **19K-1057**

SARMAD JAMAL   **19K-1116**

SUPERVISOR : DR FARRUKH SHAHID

CO-SUPERVISOR : PROF SHAHBAZ SIDDIQUE

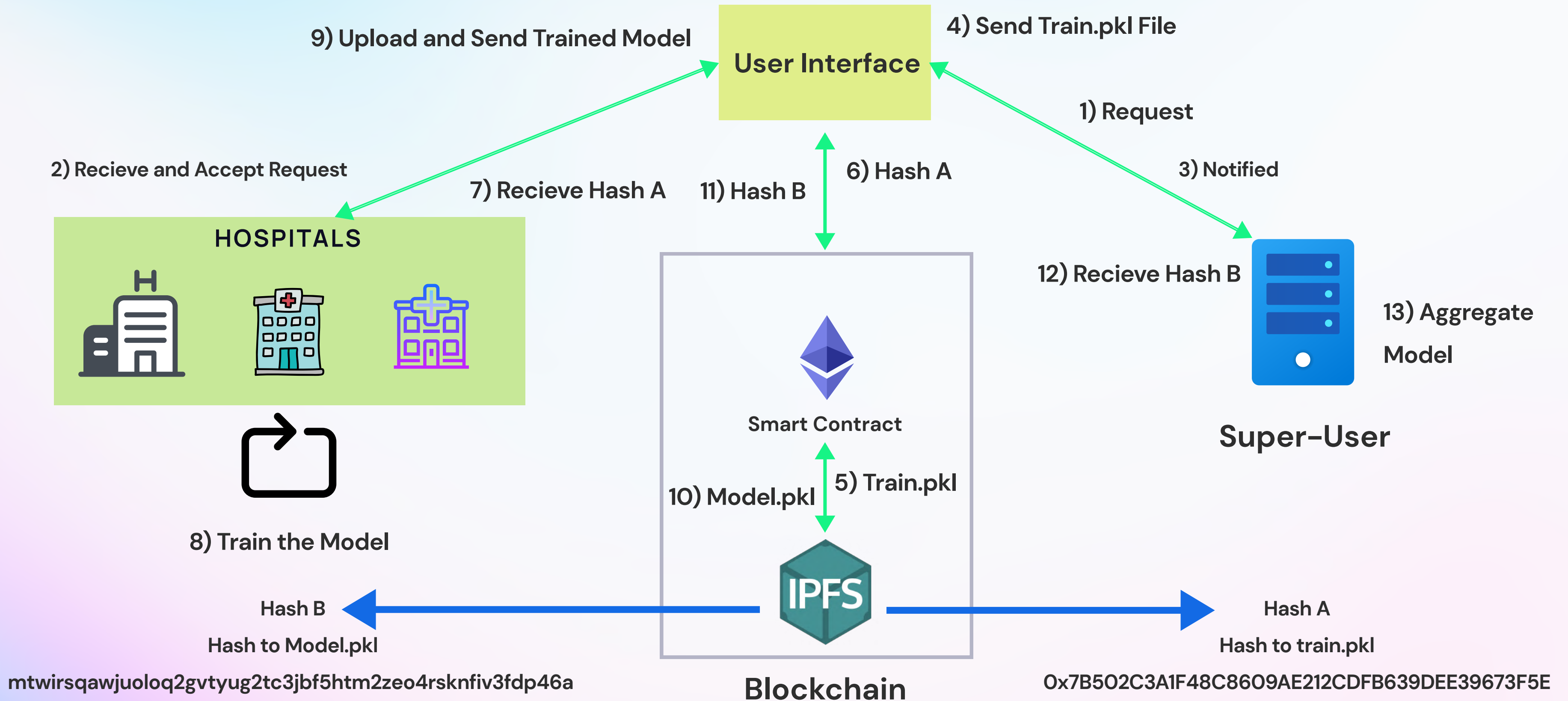# Table of Content

1) RECAP OF FYP 1

2) ARCHITECTURE DIAGRAM

3) PROTOTYPES

4) TIMELINE OF FYP II
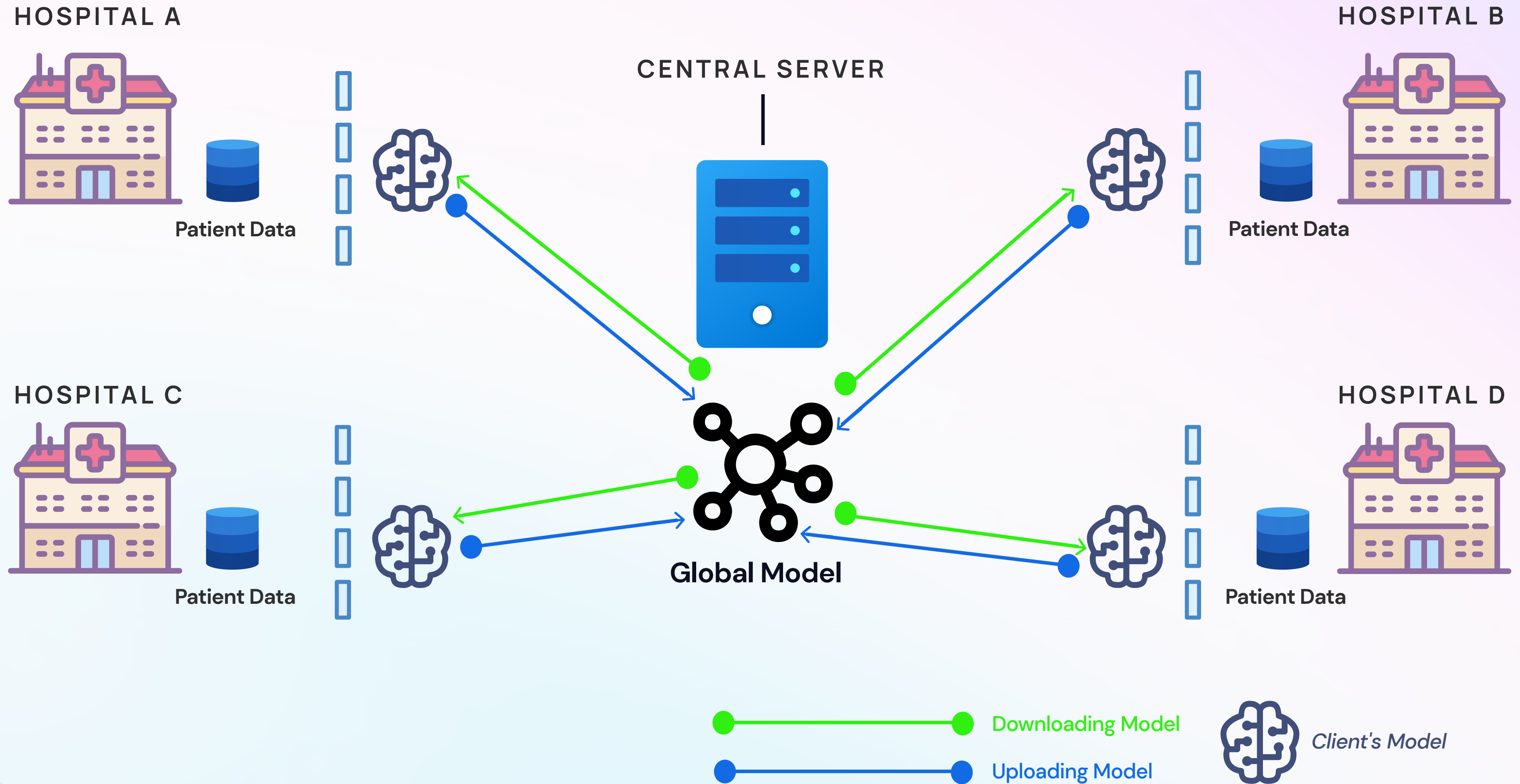
5) FL MODEL

RECAP

- **Provide a Coordination Platform for Healthcare Sector**

- **Allow Model Sharing between hospitals through Federated Learning**

- **Develop a Secure mechanism , upholding security and privacy of all participants**

- **Use Smart Contracts as a Protocol Enforcing Entity to maintain Integrity and Trust between all Hospitals**

- **Achieve Interoperability between Blockchain and AI**

Architecture Diagram

WORKFLOW OF FL IN HOSPITALS

HOSPITAL A

Patient Data

CENTRAL SERVER

HOSPITAL B

Patient Data

HOSPITAL C

Patient Data

Global Model

HOSPITAL D

Patient Data

Downloading Model
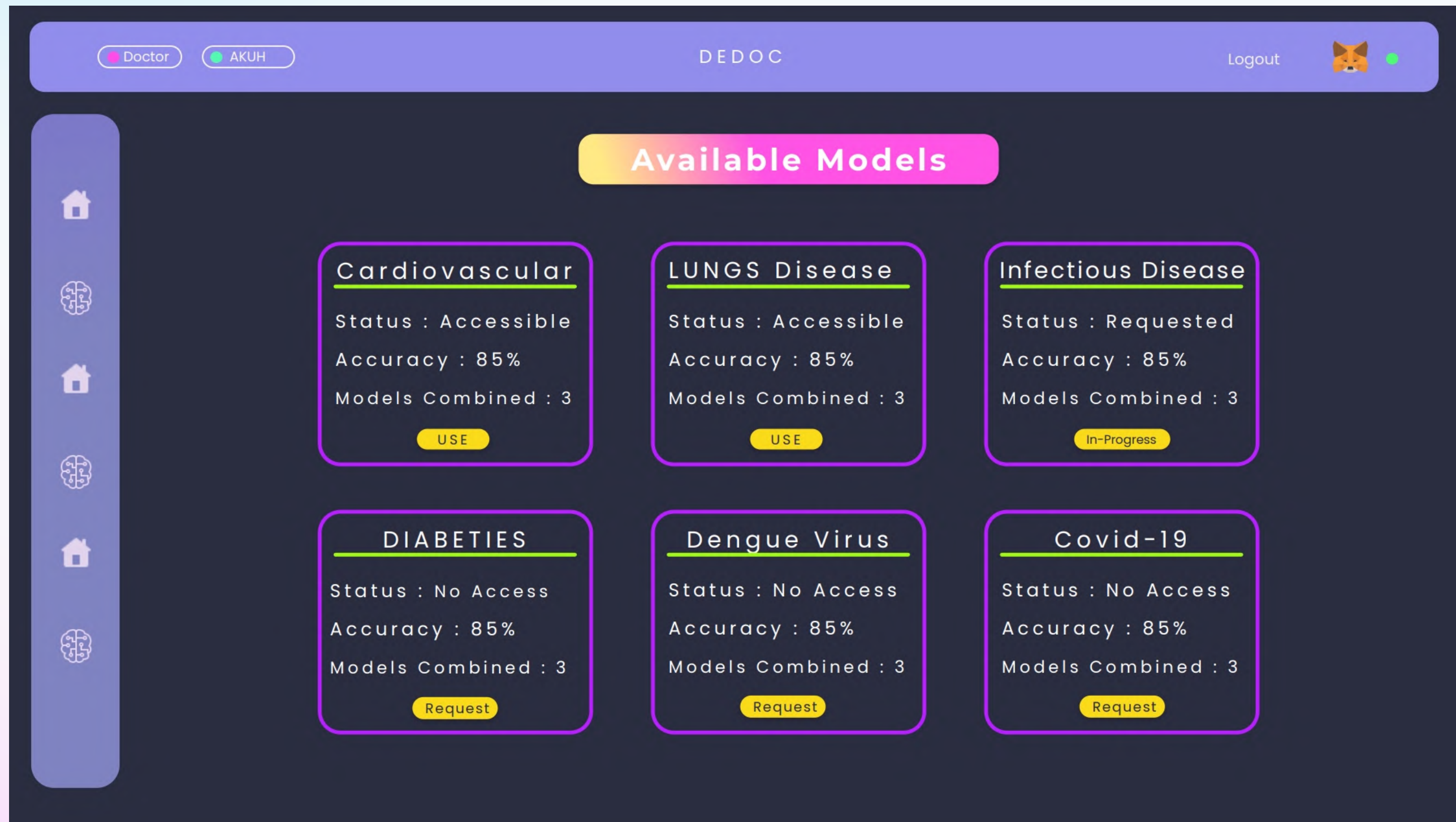
Uploading Model

Client's Model

Prototypes

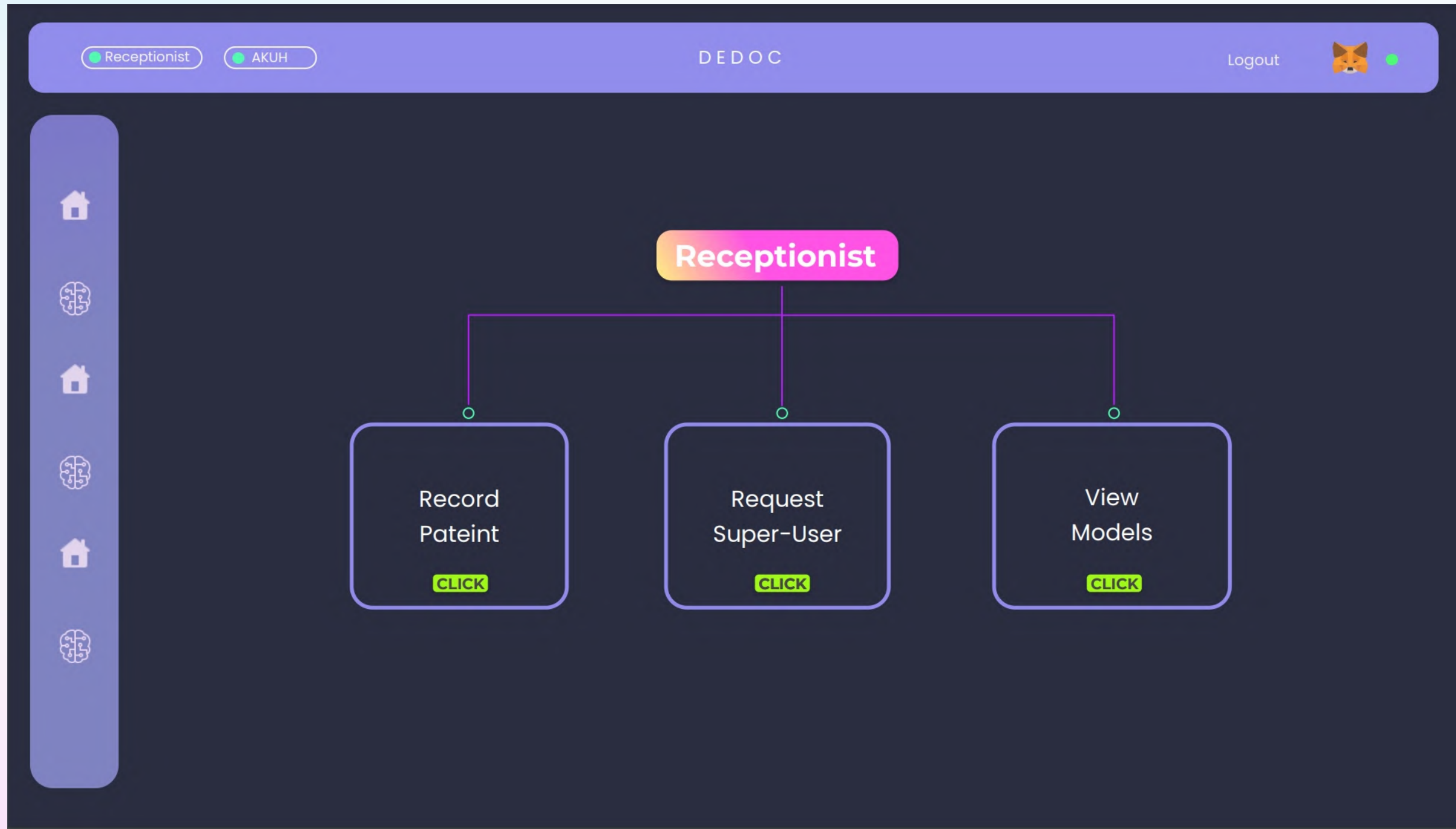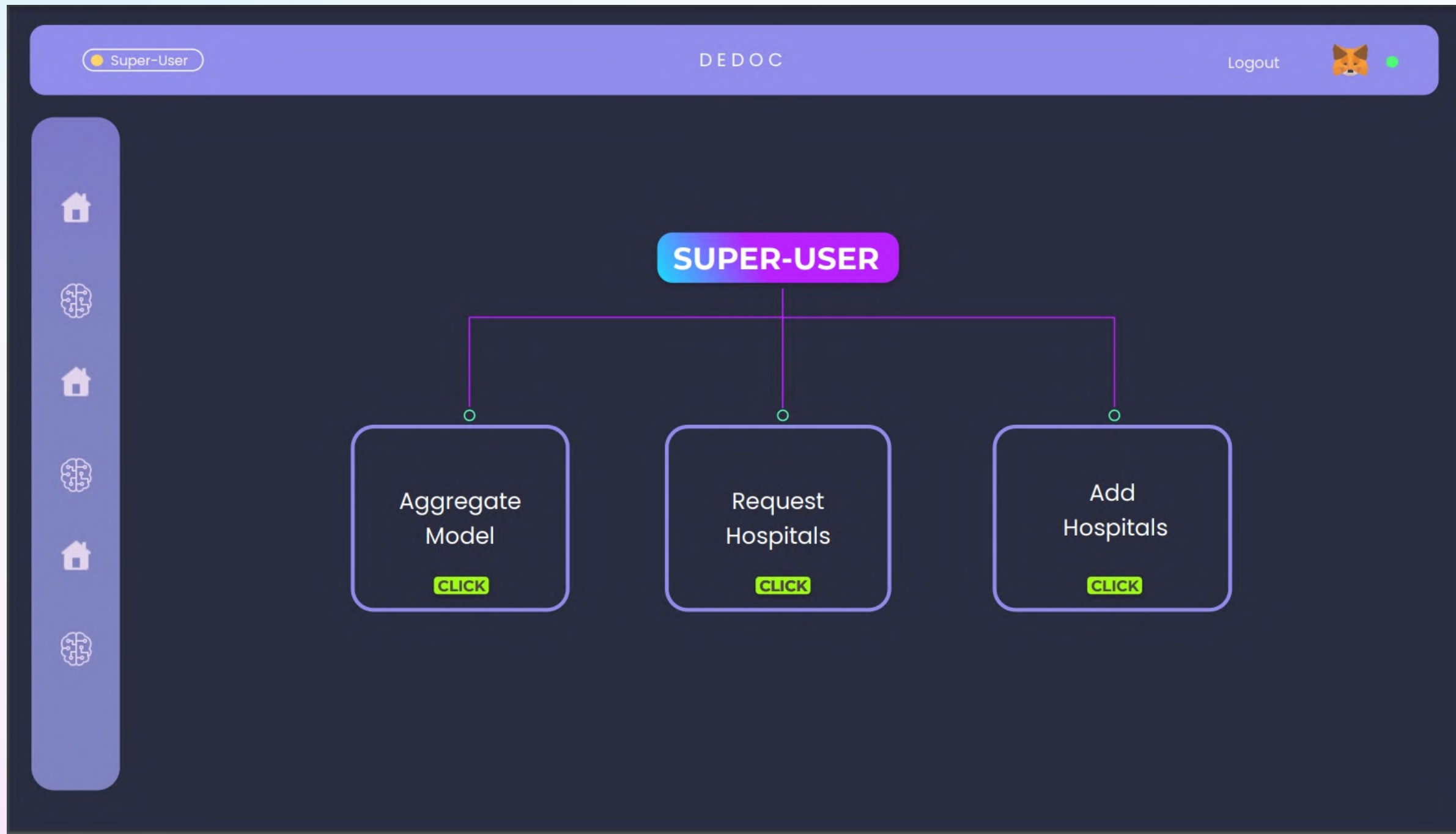# Frontend & Smart Contracts

Frontend & Smart Contracts

Frontend & Smart Contracts

Frontend & Smart Contracts

TIMELINE OF FYP II

2.1 TIMELINE (till Mid 1)

·   Federated Learning model done with data analysis data validation data preprocessing & built with dataset model

2.2 TIMELINE (Mid 1 till Mid 2)

·   Fl model will be deployed & integrated with blockchain and our web application interface

2.3 TIMELINE (Mid 2 till Final)

·   Fully operated system with full documentation tested with every possible scenario & blockchain will be tested on hardhat.

Pitch

Thank you