**Health Monitoring System Documentation**

**Architecture Overview**

**Frontend:** ReactJS

* **Purpose:** Provide a user interface for inputting health data and viewing personalized health plans.
* **Components:**
  + Insight: For analyzing health-related queries.
  + HealthPlan: For creating and retrieving personalized health plans.
  + UsersData: For displaying user data based on selected names.

**Backend:** Flask

* **Purpose:** Handle API requests, integrate AI model, and manage database operations.
* **Endpoints:**
  + /api/analyze\_query: Analyze health-related queries.
  + /api/personalized\_plan: Generate and retrieve personalized health plans.
  + /api/user: Create a new user.
  + /api/user\_names: Retrieve the list of user names.
  + /api/user\_data: Retrieve detailed user data based on name.

**Database:** MongoDB

* **Purpose:** Store user profiles and health data.
* **Collection:** users
  + Fields: \_id, name, age, goals, health\_plans (object with plan1 and plan2 fields).

**AI Model Integration:** Hugging Face Transformers

* **Purpose:** Interpret health-related queries and suggest personalized health plans.
* **Model Used:** deepset/roberta-base-squad2 for question-answering.

**API Documentation**

**/api/analyze\_query**

* **Method:** POST
* **Description:** Analyzes a health-related query using an AI model.
* **Request Body:**

{

"question": "string",

"context": "string"

}

* **Response:**

{

"score": "float",

"start": "int",

"end": "int",

"answer": "string"

}

**/api/personalized\_plan**

* **Method:** POST
* **Description:** Generates and retrieves a personalized health plan based on user details.
* **Request Body:**

{

"name": "string",

"age": "int",

"goals": "string"

}

* **Response:**

{

"plan1": "string",

"plan2": "string"

}

**/api/user**

* **Method:** POST
* **Description:** Creates a new user profile in the database.
* **Request Body:**

{

"name": "string",

"age": "int",

"goals": "string"

}

* **Response:**

{

"user\_id": "string"

}

**/api/user\_names**

* **Method:** GET
* **Description:** Retrieves a list of user names.
* **Response:**

[

"name1",

"name2",

...

]

**/api/user\_data**

* **Method:** POST
* **Description:** Retrieves detailed user data based on the user's name.
* **Request Body:**

{

"user\_name": "string"

}

* **Response:**

{

"\_id": "string",

"name": "string",

"age": "int",

"goals": "string",

"health\_plans": {

"plan1": "string",

"plan2": "string"

}

}

**AI Model Integration**

**Model Used:** deepset/roberta-base-squad2

**Purpose:** To interpret health-related queries and generate insights.

**Integration Steps:**

1. **Install Hugging Face Transformers:**

pip install transformers

1. **Initialize the Model in Flask:**

from transformers import pipeline

nlp = pipeline('question-answering', model='deepset/roberta-base-squad2')

1. **Use the Model for Question-Answering:**

@app.route('/api/analyze\_query', methods=['POST'])

def analyze\_query():

data = request.json

question = data['question']

context = data['context']

result = nlp(question=question, context=context)

return jsonify(result)

**React Frontend Components**

**Insight Component**

Handles user input for health-related queries and displays insights.

**HealthPlan Component**

Allows users to input their name, age, and health goals, and retrieves personalized health plans.

**UsersData Component**

Displays user data based on the selected name.