**Documentation: Fitness Chatbot on AWS Lightsail with Streamlit**

**Key Aspects of Personalization of this Chatbot**

1. **User Preferences:**
   * **Explicit Collection:** Directly asking the user:
     + Goals (weight loss, muscle building, endurance, etc.)
     + Experience level
     + Equipment availability
     + Injury limitations
   * **Implicit Tracking:** Monitoring the user's choices and interactions:
     + Preferred muscle groups based on frequent queries
     + Difficulty level progression over time
2. **Exercise/Content Database:**
   * **Rich Metadata:** Your exercise database (or other content) needs attributes like:
     + Muscle groups targeted
     + Equipment required
     + Difficulty levels (beginner, intermediate, advanced)
     + Potential variations (with/without equipment, modifications)
   * **Additional Dimensions:** Could include:
     + Cardio vs. strength-focused
     + Target duration (short burst, extended workout)
3. **Recommendation Techniques:**
   * **Collaborative Filtering:** This looks at the preferences of *similar* users to suggest new items or workouts. This requires tracking data across multiple users.
   * **Content-Based Filtering:** Focuses on exercise attributes. If a user likes squats (legs, bodyweight, intermediate), you might recommend lunges or step-ups.
   * **Hybrid Approaches:** Combine collaborative and content-based techniques for more refined recommendations.

**The 'Logic' in Action**

Here's a simplified workflow of how the pieces come together:

1. **New User:** The system gathers basic preferences (goal, experience, etc.).
2. **Query about Leg Workout:**
   * The system filters exercises for "Legs" and matches the user's experience level.
   * Depending on your methods:
     + **Content-Based:** Recommends exercises similar in equipment and difficulty to ones the user has asked about previously.
     + **Collaborative:** If this is a multi-user system, it finds users with similar profiles and sees what leg exercises *they've* engaged with.
3. **Preference Update:** The user indicates they enjoy a recommended workout. This reinforces preferences for "Legs" and the suggested difficulty level.

**I. Introduction of Project Setup**

* **Project Summary:** A concise description of the chatbot's core features (exercise knowledge, integration with Cohere), the purpose it serves, and technologies used (Python, Streamlit, Cohere, AWS Lightsail).
* **Prerequisites:**
  + An AWS account
  + Basic familiarity with the command line, Python environments, and web concepts.

**II. Application Setup (Local)**

1. **Project Structure:**
   * List core files within your project (main.py, requirements.txt, potentially a .env file for secret storage)
   * Briefly outline their roles.
2. **Cohere API Key**:
   * Guide on retrieving a Cohere API Key.
   * **Security:** Stress the importance of *not* committing the key into version control.
   * Instructions on using .env with python-dotenv.
3. **Dataset Integration (if applicable):**
   * Instructions on where to place your dataset file
   * <https://www.kaggle.com/datasets/niharika41298/gym-exercise-data?resource=download> download this data Set and save this into code folder
   * This code use in the app.py file
4. **Dependency Installation:**
   * pip install -r requirements.txt within a virtual environment

**III. AWS Lightsail Deployment**

1. **Instance Creation:**
   * Step-by-step walkthrough on the AWS Lightsail console.
   * **Instance Type:** Provide a recommendation based on expected bot traffic (initially can start with the smaller options). Suggest Linux/Unix and a distribution you're comfortable with (Ubuntu is common).
2. **SSH Access:**
   * How to use the browser-based terminal or set up SSH keys (consider your user audience's technical level).
3. **Code Upload:**
   * Choices: git clone (if code is in a repository), SFTP with tools like FileZilla, SCP from a local machine. Pick one and illustrate.
4. **Environment Setup on Lightsail:**
   * Python installation (if not preinstalled on your chosen image)
   * Virtual environment creation
   * pip install -r requirements.txt
5. **Running the Streamlit App:**
   * streamlit run main.py (adjust to your script name)
   * **Port Considerations:** Emphasize opening any necessary ports within your Lightsail instance's firewall settings.

**IV. Accessing the Chatbot**

* **Getting the Public IP:** Guide how to locate your Lightsail instance's public IP address.
* **Constructing the URL:** Likely in the format of http://<public\_ip>:<port\_used\_by\_streamlit>

**Test Queries**

* **Exercise Specific**, Muscle Building **,** Endurance**:**
  + Weight Loss :-

“Suggest a full-body workout routine to burn fat. I have some experience with weights"

* + Muscle Building :-

“What’s a good muscle-building routine I can do at home with dumbbells and resistance bands?"

* + Endurance :-

“I'm training for a 10k run and get bored easily. Can you suggest a workout plan to improve my stamina that incorporates different activities?”

* **General Fitness:**
  + "Suggest a workout to build leg strength"
  + "What are good exercises for improving cardio?"
  + "I'm bored with my usual routine, give me something new"