### **ML Technical Challenge: Basic Personalized Health Recommendation Model**

#### **Context:**

Felix Vita is an innovative health assistant platform designed to help users manage their health through personalized recommendations. The goal is to develop a basic machine learning model that can predict personalized health recommendations based on a user's initial onboarding data.

#### **Objective:**

Develop a basic machine learning model to predict personalized health recommendations using synthetic user data.

#### **Requirements:**

1. **Data Preprocessing:**
   * Analyze the provided synthetic dataset.
   * Perform necessary preprocessing steps such as handling missing values and normalization.
2. **Model Development:**
   * Develop a machine learning model to predict personalized health recommendations.
   * Use relevant features from the dataset to train the model.
3. **Evaluation:**
   * Evaluate the model using appropriate metrics such as accuracy.
   * Implement basic cross-validation to ensure model robustness.
4. **Documentation:**
   * Include a README file in your repository with the following information:
     + Project overview
     + Instructions for setting up and running the project locally
     + Description of the model and evaluation results

#### **Deliverables:**

This challenge is designed to be completed in 4 hours. If you find that additional time is needed, please provide an explanation of your thought process and recommendations for addressing the remaining aspects of the challenge.

1. **Code Repository:**
   * Share a link to a public or private repository (e.g., GitHub) with your implementation.
   * Include clear instructions on how to set up and run the project locally.
2. **Model and Evaluation Report:**
   * A brief report explaining the data preprocessing steps, model development, and evaluation results.

#### **Synthetic Dataset:**

A synthetic dataset can be found using the link below. This dataset includes user profiles, omics test results, symptoms, and personalized recommendations. The dataset has an ample set of features that you can choose from to complete your challenge.

<https://drive.google.com/file/d/164DBbrt-M-hpdvxASonVJW0EO38gNv9B/view?usp=sharing>

#### **Evaluation Criteria:**

1. **Functionality:**
   * The solution meets the requirements and performs as expected.
2. **Model Performance:**
   * The model achieves reasonable accuracy and reliability in predictions.
3. **Code Quality:**
   * The code is clean, well-organized, and follows best practices.
4. **Documentation:**
   * Clear and comprehensive documentation is provided.

#### **Freedom to Innovate:**

You have the freedom to make decisions on any aspects not explicitly specified in the challenge. You can choose the machine learning algorithms, tools, and methods that you are most comfortable with and that you believe will best showcase your skills and approach.

Good luck! We look forward to seeing your technical expertise and innovative approach through your work on this challenge.