PERSONALIZED HEALTH AND WELLNESS ASSISTANT

USE CASE DIAGRAM

Course Title – Software Engineering

Slot – G2 + TG2

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Introduction –

The 'Personalized Health and Wellness Assistant' will serve as a new generation mobile application that will include artificial intelligence and machine learning components to suggest a recommended health and wellness plan based on data inputted by the user. This is a new concept which will include a chatbot and will assist the users with medication and prescription guidance; therefore, the usage of the app will be enhanced while appropriate health support will be provided. The most important one is to educate and give specific recommendations concerning the state of one's health and help to make the right decision.

To accomplish the mentioned above proposed objective of a well-structured and efficient manner of development, Software Development Life Cycle, namely the Incremental Model has been chosen. This way the application is develop in phases including this feedback of users and can be improved gradually by incorporating more features. Thus, when realizing the project in stages, it is also possible to ensure that each of the elements is functional and the final outcome is a usable application that will meet the needs of end-users. It also shows the concrete description of Incremental Model in the framework of the 'Personalized Health and Wellness Assistant', as well as naming all the activities of each phase and their outcomes.

Use Case Diagram Entities –

The Use Case Diagram for the "Health Assistant" project represents the interactions between the system and various actors, such as Users, Firebase Backend, and the Chatbot. Key use cases include registering and logging into the system, inputting health data, receiving health predictions through an AI-powered ML Model, viewing health tips and recommendations and chatting with a chatbot. The diagram also highlights several include relationships, where processes like receiving health predictions rely on data input or storage. The chatbot functionality depends on receiving health predictions to provide accurate responses, and health reports are generated based on the model's predictions. The extend relationships illustrate optional features like updating health records or managing chatbot responses, which may occur conditionally, enhancing the base functionalities. This use case diagram effectively outlines the core and extended interactions within the system, showing how users engage with the app and its AI-driven features.

Actors:

- ➢ Patient
- ➢ Admin
- ➢ ML Model
- ➢ Firebase
- ➢ Chatbot

Use Cases:

- ➢ Register
- ➢ Login
- ➢ Input Health Data
- ➢ View Health Tips & Recommendations
- ➢ Receive Health Predictions
- ➢ Chat with Chatbot
- ➢ Update Profile & Health Records
- ➢ Manage User Accounts
- ➢ Update Health Database
- ➢ Monitor and Retrain ML Model
- ➢ Manage Chatbot Responses
- ➢ Store and Retrieve Data

Final Use Case Diagram –