**CAPSTONE 1: Mental Health Learning and Diagnosis Tool**

**Function**

A learning tool for students in Psychology, Psychiatry, and other health-related fields. It provides detailed insights into signs, symptoms, and pathologies of mental disorders, based on the ICD or the DSM classification for Mental Disorders. Additionally, the app would assist in the diagnostic process by guiding users through relevant symptoms and criteria.

**Further information / What does it do?**

**ICD** (International Classification Diseases) is regulated by the "*World Health Organization*". The app will focus on Chapter 6**:** *Mental and Behavioral Disorders* for this specific application; And the **DSM** (Diagnostic and Statistical Manual Disorders) by the APA (*American Psychiatric Association*). Both classification systems are used globally by health professionals, however, the DSM is primarily used in the United States.

The app provides a user-friendly interface using one of the two systems of classification.

* **Comprehensive listings:** Users can access a list of signs, symptoms, and syndromes, retrieving critical information such as descriptions, associated symptoms, and related pathologies.
* **Diagnostic Assistance:** The app can guide the student through the diagnosis process ensuring they follow the correct steps and required criteria.
* **Invaluable tool for students, educators, or healthcare professionals.**

**General Technical Details:**

* **Application Type:** Full-stack web application with a focus on the backend.
* **Design:** Responsive design for compatibility across different devices.
* **Components:** the app has its own API and database.
* **Data:** the app will use either the ICD or the DSM classification system.
* **Technology Stack:** HTML, CSS, Tailwind CSS (or Bootstrap)**,** JavaScript, Python, Flask-Alchemy, WTForms, PostgreSQL-Alchemy.

**Database Schema**

**Tables and the information they would contain**

**Users**

* Username
* First Name
* Last Name
* Email
* Password
* Profile Image

**Signs**

* Sign Name
* Description
* List of pathologies where it's present.

**Symptoms**

* Description Name
* Description
* List of pathologies where is present

**Disorders (Pathologies)**

* Disorder Name
* Definition/Description
* Criteria
* Signs that could have
* Symptoms that could have
* Differential Diagnosis

**Steps**

This table would store information about the steps involved in the diagnostic process.

* Step number
* Step Description/Information
* Method to retrieve the order of the appropriate steps.

**App Features**

**Landing page**

App description and other relevant information.

**User Validation and Authentication**

* Registration
* Login/Logout

**User area**

* Profile
* Edit/Delete Profile

**Menu and/or Navigation Bar**

* Home
* Search
* Profile
* Login/Logout

**Decisions to make:**

* **Styling Framework:** Choose between ***Tailwind CSS*** and ***Boostrap***.
* **JavaScript:** Decision to include or exclude **JavaScript** in the front end.
* **Categorization System of Mental Disorders:** Decision to use either the ***ICD*** or the ***DSM***.
* **Features**: Decision to include or exclude ***Diagnosis Steps***, ***Association of Signs to disorders***, and ***Differential Diagnosis***.

**Data Collection**

The app will use a custom-made database to store and organize information gathered from external sources.

**Data Sources**

* ICD-11 (chapter 6) open-source classification system which can be obtained online or in printed form.
* External resources which include free available tools such as ChatGPT, online books, and other publicly accessible material related to the DSM.

**Challenges and Solutions**

* The process of diagnosis can be complex.
* The **ICD API** has limitations and constraints that make it difficult to use; The **DSM** doesn’t have an API.

**Solution:** The app can address these challenges by creating a custom-made database and populating it using a data script.

**App Enhancements for the future**

* **Mobile version.**
* **Additional Features:** Password change and retrieval; Help section; Seach saves.
* **Diagnostic Feature:** Cognitive Classification; Diagnosis steps; Differential Diagnosis.