

Configuration Manual – SMART HYDRATION APP – X23436786

This document explains how to set up and run the Smart Hydration Planning application from the provided ZIP package.

1. Introduction

The Smart Hydration Planning system predicts the amount of water a person should drink before and during a planned workout. It uses a machine learning model trained on both public exercise datasets and personal workout logs, and it is presented through an easy-to-use Streamlit web application.

2. What's in the ZIP File

When you open the ZIP, you will see the main application file (`app.py`), a 'models' folder containing the trained stacked ensemble model (`stacked_model.pkl`), a 'requirements.txt' file listing the Python packages required to run the application, as well as a `README.txt` with a short overview of the project.

3. Prerequisites

Before running the application, ensure you have Python 3.9 or newer installed on your computer, along with Pip (Python's package manager). You should have at least 4 GB of RAM, though 8 GB is recommended for smoother performance, and a modern web browser such as Google Chrome, Firefox, or Safari.

4. Installation Steps

First, download the ZIP file from the submission portal and extract it to a folder on your computer. Open a terminal (Command Prompt on Windows or Terminal on macOS/Linux) and navigate to the extracted folder. Create a virtual environment using the command `'python -m venv .venv'`. Once created, activate the virtual environment. On Windows, this is done with `'.venv\Scripts\activate'`, while on macOS/Linux, use `'source .venv/bin/activate'`. With the virtual environment active, install the dependencies by running `'pip install -r requirements.txt'`. Finally, confirm that the trained model file `'stacked_model.pkl'` is inside the 'models' directory.

5. Running the Application

To start the application, ensure the virtual environment is active and run `'streamlit run app.py'` from the project folder. After a few seconds, your default web browser will open automatically displaying the interface. If it does not open, copy the URL displayed in the terminal (e.g., `http://localhost:8501`) into your browser.

6. Using the Application

The interface allows you to enter details about your planned workout, including type, duration, intensity, and location. You will also enter personal information such as age, gender, height, and weight, as well as the expected environmental temperature in Celsius.

Once submitted, the application will calculate and display your recommended water intake in liters, along with guidance for both pre- and during-exercise hydration.

7. Troubleshooting

If you see 'Module not found' errors, check that your virtual environment is active and that all dependencies were installed. If the application cannot find the model file, make sure 'stacked_model.pkl' is in the 'models' folder. If the default application port is in use, you can start the app on another port by running 'streamlit run app.py --server.port 8502'.