Hydro\_Chat

**📝 Technical Report (Pipelines & Architecture)**

**1️⃣ Architecture Overview**

graphql

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│ User Interface │

│ (ipywidgets Chat Interface) │

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│ Input Processing Layer │

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│ Agent Router │

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│ Workout Agent │ │ Analysis Agent │

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│ Swim Workouts │ │ Pace Analysis │

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│ Dryland Plan │ │ Injury Advice │

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│ Feedback Logger │

│ (feedback.csv) │

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**2️⃣ Pipeline Breakdown**

**1. Input Processing:**

* Captures user questions via a text box (ipywidgets).
* Routes user input based on intent (workout, analysis, injury advice).

**2. Swim Workout Generator:**

* Pulls randomized warm-ups, drills, main sets, and cool-downs inspired by the Masters Plan.
* Supports customization based on style, intensity, and duration.

**3. Dryland Workout Generator:**

* Creates strength, core, and mobility-focused dryland plans.

**4. Pace Analysis:**

* Accepts lap times and calculates average pace.
* Provides performance feedback based on thresholds.

**5. Injury Advice:**

* Suggests recovery exercises and treatment for common swimming injuries.

**6. Feedback Logger:**

* Captures each interaction and logs user questions and chatbot responses into feedback.csv.