**Slide 1: PEAS Framework Overview**

**PEAS** stands for:

* **P**: Performance Measure
* **E**: Environment
* **A**: Actuators
* **S**: Sensors

Used to model intelligent agents — helps design and understand AI systems.

**🟩 Slide 2: SmartDietAdvisor – PEAS Summary**

| **Component** | **What It Does in Our Project** |
| --- | --- |
| Performance | Measures success of plan (diet/workout relevance) |
| Environment | User inputs + rule database |
| Actuators | UI output of recommendations |
| Sensors | Form fields and internal logic (BMI, calorie calc) |

**🟢 Slide 3: Performance Measure (P)**

SmartDietAdvisor is judged by:

* Accuracy of recommended meal and workout plans
* BMI and calorie calculations
* Fitness-goal alignment (e.g., bulk → high calorie)
* User satisfaction and usability

**🟢 Slide 4: Environment (E)**

The environment consists of:

* User inputs: name, age, height, weight, etc.
* User goal: bulk, lean, strength
* Activity level: light, moderate, intense
* Internal rule-based knowledge from diet\_rules.json

**🟢 Slide 5: Actuators (A)**

Our actuators are the **outputs** the user sees:

* Personalized daily meal plan
* Workout type suggestion
* Calorie and macronutrient breakdown
* BMI status and health summary

**🟢 Slide 6: Sensors (S)**

SmartDietAdvisor senses:

* Input from form (name, weight, gender, etc.)
* Calculates:
  + BMI (based on height and weight)
  + BMR (based on gender and age)
  + Calorie & macronutrient needs
* Selects plan from diet\_rules.json

**🟦 Slide 7: Environmental Parameters (Overview)**

Your AI works within these parameters:

* Age
* Gender
* Height & Weight
* Body Type
* Activity Level
* Workout Type
* Current Diet
* Fitness Goal

**🟦 Slide 8: Parameter Influence Example**

| **Parameter** | **Influence** |
| --- | --- |
| Height & Weight | Used to calculate BMI |
| Age & Gender | Used in calorie (BMR) formula |
| Activity Level | Determines calorie multiplier |
| Goal | Decides which diet/workout plan to apply |
| Workout Type | Triggers advice (e.g., switch to weight training) |

**🟦 Slide 9: Example Flow – From Input to Output**

**User Input** → Height = 165, Weight = 75, Goal = Strength  
↓  
**BMI = Overweight**, Calories = 2400  
↓  
**Rule Match** → strength → overweight → intense  
↓  
**Output** → Power training macros + lean strength meal plan

**✅ Slide 10: Summary of PEAS in Our AI**

* **SmartDietAdvisor is a rule-based intelligent agent**
* Inputs act as **sensors**
* Processed through **logic & calculations**
* Output delivered via **actuators** (UI)
* Performance measured by **accuracy & user alignment**

WORKING

**Slide 1: System Architecture Overview**

**Flow Diagram (Simple):**

User Inputs

↓

Form Validation

↓

BMI & BMR Calculation

↓

Calorie & Macro Estimation

↓

Rule Lookup (diet\_rules.json)

↓

Meal Plan + Workout Suggestion

↓

Output Display (UI)

* Follows a **modular pipeline**
* Rule-based decision logic

**Slide 2: Input Collection (Sensors)**

* User fills out a form:
  + Name, Age, Gender
  + Height, Weight
  + Body Type
  + Activity Level
  + Workout Type
  + Diet Type
  + Fitness Goal

→ These are stored in a structured user dictionary.

**🔹 Slide 3: Processing Logic**

* Step 1: **BMI Calculation**  
  Formula: BMI = weight / (height in m)^2
* Step 2: **BMR Calculation (Mifflin-St Jeor)**  
  Adjusted using gender, age, and activity level
* Step 3: **Calorie Adjustment**  
  Based on goal:
  + Bulk → +500 kcal
  + Lean → -500 kcal
  + Strength → maintain or adjust moderately
* Step 4: **Macro Split**  
  40% carbs, 30% protein, 30% fat

**🔹 Slide 4: Diet Plan Selection (Rules Engine)**

* Uses:
  + Goal (bulk, lean, strength)
  + Body Type (skinny, muscular, overweight)
  + Activity Level (light, moderate, intense)

→ Matches to a predefined entry in diet\_rules.json

✅ Output:

* Diet Type Description
* 4-part meal plan (breakfast, lunch, dinner, snack)

**🔹 Slide 5: Final Output (Actuators)**

**User Sees:**

* BMI and health status
* Daily calorie & macro needs
* Personalized meal plan
* Workout suggestion (e.g., “Switch to weight training”)

👉 Delivered using **Streamlit web interface**

**🔹 Slide 6: Summary – How It All Works**

* SmartDietAdvisor is **deterministic, not predictive**
* Uses a **hybrid of health formulas + logic rules**
* Delivers fast, simple, personalized advice
* Easily expandable to add:
  + ML model
  + Nutrition APIs
  + Progress tracking