

Assignment 2

DPIT 121 Object Oriented Design And Programming



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# UML Diagrams

A diagram of a person's data

Description automatically generated with medium confidence

# Program Description

This Python program is designed as a **Dietary Recommendation System** that provides tailored dietary guidelines based on user-specific attributes such as age, gender, pregnancy, and breastfeeding status. Its key features include:

**User Input and Validation:**

* + Collects user data (age, gender, and special conditions like pregnancy or breastfeeding).
  + Validates the inputs to ensure accuracy and handle exceptional cases.

**Dietary Recommendations:**

* + Generates personalized daily recommendations for the five main food groups: vegetables, fruits, grains, meats, and dairy.
  + Incorporates detailed single-serving examples for each food group.

**Export Capability:**

* + Allows users to export their recommendations to a text file for future reference.

**Error Handling:**

* + Handles invalid inputs gracefully with descriptive error messages.

**Object-Oriented Design:**

* + The program uses OOP principles for modularity and scalability:
    - Person class handles user-specific data and validation.
    - DietRecommendation class calculates and displays personalized dietary suggestions.
    - FileHandler class manages file export operations.
  + This structure makes the program easy to extend for additional functionalities.

**Static Methods:**

* + Serving details and file export functionalities are implemented as static methods to emphasize their independence from instance attributes.

**Extensibility:**

* + The DietRecommendation class includes multiple conditions based on age groups, making it adaptable for future updates or new dietary rules.

**Input Validation:**

* + Age must be between 1 and 120.
  + Gender must be either "male" or "female."
  + Pregnancy and breastfeeding conditions are invalid for minors (<18 years).

**Graceful Error Recovery:**

* + try-except blocks catch invalid inputs and unexpected exceptions to prevent crashes.
  + User-friendly messages guide users to correct their inputs.

# User Output Screenshot

Male 18 Years Old – Export file Named by default:

A black screen with white lines

Description automatically generated

A screenshot of a computer screen

Description automatically generated

Female 20 – pregnant – Export File Named “fem” :

A black screen with white text

Description automatically generated

A screenshot of a computer

Description automatically generated

Female 8 years old:

A black screen with white text

Description automatically generated

A black screen with white text

Description automatically generated

# Unit Test Screen Shot

## Terminal Report

A screenshot of a computer

Description automatically generated

A screen shot of a computer

Description automatically generated

## HTML Report

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated