**Project Design Phase**

**Solution Architecture**

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| Date | 25 June 2025 |
| Team ID | LTVIP2025TMID48490 |
| Project Name | **Comprehensive Analysis and Dietary Strategies with Tableau** |
| Maximum Marks | 4 Marks |

**Solution Architecture:**

1. User Interface Layer

* Platforms: Web portal, Mobile app
* Functions:
* Meal logging
* Profile setup (goals, BMI, allergies)
* Dashboard view (Tableau embedded)
* Notifications & suggestions

2. Data Ingestion Layer

* Sources:
  + User-entered logs
  + Third-party Nutrition APIs (e.g., USDA, FatSecret)
  + Wearables (optional: Fitbit, Apple Health)
* Mechanism:
* RESTful API calls
* Scheduled data sync
* Webhooks from integrations

3. Data Processing & Analytics Layer

* Tasks:
  + Nutrient tagging per meal
  + Daily & weekly aggregation

4. Visualization & Insights Layer (Tableau)

* Dashboards:
  + Calorie & macronutrient overview
  + Weekly intake trends
  + Nutrient deficiencies
  + Personalized insights
* Filters/Interactivity:
  + Date, Meal type, Nutrient type, Goal alignment
* Embedded Tableau: Hosted via Tableau Server / Tableau Public (for prototyping)

5. Recommendation Engine (Optional Advanced Feature)

* Logic:
  + Rule-based or ML-based guidance engine
  + Suggests food items, portion control tips, timing adjustments
* Output:
* Displayed in dashboard or sent via app notifications

6. Admin Panel

* User management, engagement metrics, anomaly detection (e.g. inconsistent logging)
* Visualization of overall usage trends, heatmaps of engagement