**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

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| Date | Jnue2025 |
| Team ID | LTVIP2025TMID48073 |
| Project Name | Visualizing Housing Market Trends An Analysis of Sale Prices and Features using Tableau |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Registration | Registration through Form  Registration through Gmail  Registration through LinkedIN |
| FR-2 | User Confirmation | Confirmation via Email  Confirmation via OTP |
| FR-3 | Data Import & Management | Upload CSV/Excel files Connect to APIs .  Auto-sync with Google Sheets |
| FR-4 | Data Cleaning & Preprocessing | Remove null/duplicate values  Normalize column names/units  Apply filters (location, price range) |
| FR-5 | Data Analysis | Calculate average prices, % changes Group by city, ZIP, property type  Time series trends |
| FR-6 | Visualization Creation | Create bar, line, pie, donut charts Implement filters and slicers  Generate heat maps and KPIs |
| FR-7 | Dashboard Management | Save custom dashboards  Export as PDF/PNG Schedule report updates |
| FR-8 | User Interaction with Dashboard | Apply filters (e.g., location/date) Hover for tooltips  Drill-down into data |
| FR-9 | Notifications & Updates | Send alerts when trends shift Email weekly/monthly reports Notify when new data is uploaded |
| FR-10 | User Feedback Collection | Allow comments on dashboard Star rating or survey  Suggest new features or charts |
| FR-11 | Role-based Access Control | Admin, Analyst, Viewer roles Restrict edit permissions  Audit logs of dashboard changes |
| FR-12 | System Integration | Connect with Tableau Public/Server Export data to Excel  Embed dashboard in website |

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

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| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | The system should have an intuitive and user-friendly interface so users (analysts, buyers, sellers) can interact with dashboards and reports without needing technical expertise. Tooltips, filters, and visual clarity must support smooth navigation. |
| NFR-2 | **Security** | Ensure secure access through authentication (email, Google, LinkedIn). Only authorized users can upload, edit, or delete datasets or dashboards. Use HTTPS and encrypt stored user data. |
| NFR-3 | **Reliability** | The system must consistently perform data loading, visualization rendering, and export tasks with minimal failure. Error logs should track any data or connection issues. |
| NFR-4 | **Performance** | Dashboards should load in under 3 seconds for most queries. Even large datasets (e.g., thousands of property records) should not cause lag in filtering or chart rendering. |
| NFR-5 | **Availability** | The service (especially if hosted on Tableau Public/Server) should be accessible 24/7 with 99.9% uptime to support daily business needs. |
| NFR-6 | **Scalability** | The platform should be able to support increased data volume and user traffic, such as additional real estate locations or more users from different roles accessing dashboards simultaneously. |