**Project Design Phase-II**

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

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| Date | 25June2025 |
| TeamID | LTVIP2025TMID51580 |
| ProjectName | Visualizing Housing Market Trends:An Analaysis Of Sale Prices And Features Using Tableau |
| MaximumMarks | 4 Marks |

**FunctionalRequirements:**

Followingarethefunctionalrequirementsoftheproposedsolution.

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| **FR No.** | **FunctionalRequirement(Epic)** | **SubRequirement(Story/Sub-Task)** |
| FR-1 | User Registration | Registration through Form  Registration through G mail  Registration through Linked In |
| FR-2 | User Confirmation | Confirmation via Email Confirmation viaOTP |
| FR-3 | DataIngestion&Management | Upload Dataset(e.g.,CSV,Excel,from external API s) Data  Validation and Cleaning  Data Storage and Organization(e.g.,database) |
| FR-4 | Economic Freedom Index  Calculation | Define and Configure Index Components  Apply Weighting Schemes(configurable by user/admin)  Calculate Composite Index Scores for countries/regions |
| FR-5 | Data Analysis&Visualization | Generate InteractiveCharts(e.g.,Bar,Line,Scatter, Bubble)  Create Geographic Visualizations(e.g., Choropleth Maps)  Provide Trend Analysis over Time  Enable Comparison between Countries/Regions  Display Correlation Matrices between indicators |
| FR-6 | Reporting& Export | Generate Customizable Reports (e.g., PDF, HTML)  Export Raw and Processed Data (e.g., CSV, Excel)  Export Visualizations(e.g.,Image formats likePNG, JPEG) |
| FR-7 | User Authentication& Authorization | User Login/Logout  Role-basedAccessControl(e.g.,Admin,Analyst, Viewer) |
| FR-8 | Search& Filter Functionality | Search by Country Name,Year,Index Component  Filter Data by various criteria(e.g.,region,income level) |

**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,allowing users to easily navigate, interact with data, and interpret results without extensive training. |
| NFR-2 | **Security** | The system must protect sensitive user data(if any) and ensure the integrity and confidentiality of the economic data.This includes secure authentication, authorization, and protection against unauthorized access or data breaches. |
| NFR-3 | **Reliability** | The system should consistently perform its functions accurately and without significant errors. Data calculations, visualizations, and report generation should be reliable and repeatable. |
| NFR-4 | **Performance** | The system should respond quickly to user requests, especially during data processing, index calculation, and visualization generation, even with large datasets. Data loading and rendering times should be minimal. |
| NFR-5 | **Availability** | The system should be accessible to authorized users whenever needed, with minimal downtime. This includes considerations for server uptime, data accessibility,and disaster recovery. |
| NFR-6 | **Scalability** | The system should be able to handle an increasing amount of data (e.g.,more countries, more years, new indicators), a growing number of concurrent users, and additional features without significant degradation in performance. |
| NFR-7 | **Maintainability** | The system's code base and architecture should be well-documented,modular,and easy to modify or extend to accommodate future enhancements or bug fixes. |
| NFR-8 | **Data Accuracy** | The system must ensure the highest level of accuracy for all ingested data, calculations, and visualizations to reflect reliable economic insights. |