ProjectDesignPhase-II

SolutionRequirements(Functional&Non-functional)

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| Date | 3 July 2025 |
| TeamID | LTVIP2025TMID60948 |
| ProjectName | Measuringthepulseofprosperity:anindexof  economicfreedom |
| MaximumMarks | 4 Marks |

# FunctionalRequirements:

Followingarethefunctionalrequirementsoftheproposedsolution.

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| **FR No.** | **FunctionalRequirement(Epic)** | **SubRequirement(Story/Sub-Task)** |
| FR-1 | User Registration | Registration through Form RegistrationthroughGmail  RegistrationthroughLinkedIn |
| FR-2 | User Confirmation | ConfirmationviaEmail  ConfirmationviaOTP |
| FR-3 | DataIngestion&Management | UploadDataset(e.g.,CSV,Excel,fromexternalAPIs) Data Validation and Cleaning  DataStorageandOrganization(e.g.,database) |
| FR-4 | EconomicFreedomIndex Calculation | DefineandConfigureIndexComponents  ApplyWeightingSchemes(configurablebyuser/admin) CalculateCompositeIndexScoresforcountries/regions |
| FR-5 | DataAnalysis&Visualization | GenerateInteractiveCharts(e.g.,Bar,Line,Scatter, Bubble)  CreateGeographicVisualizations(e.g.,Choropleth Maps)  ProvideTrendAnalysisoverTime  Enable Comparison between Countries/Regions DisplayCorrelationMatricesbetweenindicators |
| FR-6 | Reporting& Export | Generate Customizable Reports (e.g., PDF, HTML) Export Raw and Processed Data (e.g., CSV, Excel) ExportVisualizations(e.g.,ImageformatslikePNG,  JPEG) |
| FR-7 | UserAuthentication&Authorization | User Login/Logout  Role-basedAccessControl(e.g.,Admin,Analyst,  Viewer) |
| FR-8 | Search&FilterFunctionality | SearchbyCountryName,Year,IndexComponent  FilterDatabyvariouscriteria(e.g.,region,income level) |

# Non-functionalRequirements:

Followingarethenon-functionalrequirementsoftheproposedsolution.

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| **FR No.** | **Non-FunctionalRequirement** | **Description** |
| NFR-1 | **Usability** | The system should have an intuitive and user- friendlyinterface,allowinguserstoeasilynavigate, interact with data, and interpret results without  extensivetraining. |
| NFR-2 | **Security** | Thesystemmustprotectsensitiveuserdata(ifany) and ensure the integrity and confidentiality of the economicdata.Thisincludessecureauthentication, authorization, and protection against unauthorized  accessordatabreaches. |
| NFR-3 | **Reliability** | Thesystemshouldconsistentlyperformitsfunctions accurately and without significant errors. Data calculations, visualizations, and report generation  shouldbereliableandrepeatable. |
| NFR-4 | **Performance** | Thesystemshouldrespondquicklytouserrequests, especially during data processing, index calculation, and visualization generation, even with large datasets. Data loading and rendering times should  beminimal. |
| NFR-5 | **Availability** | Thesystemshouldbeaccessibletoauthorizedusers whenever needed, with minimal downtime. This includes considerations for server uptime, data  accessibility,anddisasterrecovery. |
| NFR-6 | **Scalability** | Thesystemshouldbeabletohandleanincreasing amount ofdata (e.g.,more countries, more years, new indicators), a growing number of concurrent users, and additional features without significant  degradationinperformance. |
| NFR-7 | **Maintainability** | Thesystem'scodebaseandarchitectureshouldbe well-documented,modular,andeasytomodifyor extend to accommodate future enhancements or  bugfixes. |
| NFR-8 | **Data Accuracy** | The system must ensure the highest level of accuracy for all ingested data, calculations, and visualizationstoreflectreliableeconomicinsights. |