**Project Design Phase-II**

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

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| Date | 03 August 2025 |
| Team ID | LTVIP2025TMID59168 |
| Project Name | SmartSDLC – AI-Enhanced Software Development Lifecycle |
| 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 | Requirement Classification | Upload requirements in plain text format |
|  |  | Automatic classification into Functional/Non-Functional/UI |
| FR-2 | Bug Fixing AI | Paste buggy code to receive AI-suggested fixes |
|  |  | Show side-by-side comparison of original and fixed code |
| FR-3 | Code Generation | Input natural language requirement for code output |
|  |  | Enable download and copy of generated code |
| FR-4 | Dashboard & Deployment | Provide Streamlit-based dashboard UI |
|  |  | Generate and share ngrok link for public access |

**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 SmartSDLC platform should offer a simple, user-friendly interface using Streamlit. |
| NFR-2 | Security | Secure access with API key protection, input validation, and safe code execution handling. |
| NFR-3 | Reliability | The system must provide consistent AI responses and handle failures gracefully. |
| NFR-4 | Performance | The platform should process and respond within 2–3 seconds under standard load. |
| NFR-5 | Availability | The application should be accessible via public ngrok URL or hosted environment 24/7. |
| NFR-6 | Scalability | The modular design should support easy integration of new AI services and user growth. |