**Project Design Phase**

**Proposed Solution Template**

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| Date | 15 February 2025 |
| Team ID | LTVIP2025TMID32102 |
| Project Name | SmartzSDLC – AI-Enhanced Software Development Lifecycle |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

Project team shall fill the following information in the proposed solution template.

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| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | SDLC phases (requirement analysis, code generation, bug fixing, testing, documentation) are highly **manual, repetitive, and error-prone**, leading to delays, inconsistent output, and developer burnout. |
|  | Idea / Solution description | **SmartSDLC** is an AI-powered assistant that automates each SDLC phase:  • Upload raw PDF → auto-classify requirements, design, code, tests, docs  • Generate production-ready code from user stories  • Suggest bug fixes for code snippets  • Create unit test cases automatically  • Summarize code into human-readable explanations  • Include a floating AI chatbot for real-time SDLC assistance |
|  | Novelty / Uniqueness | • Integrates **end-to-end SDLC automation** in one platform  • Integrates **end-to-end SDLC automation** in one platform  • Includes a **floating AI chatbot** trained specifically on SDLC best practices  • Offers offline-friendly deployment (Gradio/FastAPI) suitable for organizations |
|  | Social Impact / Customer Satisfaction | • Saves developers hours across every project  • Eliminates miscommunication and onboarding friction  • Provides consistent code quality and documentation  • Boosts team morale by reducing tedious tasks |
|  | Business Model (Revenue Model) | • **Freemium** tier: basic requirement classification + chatbot  • **Premium** tier (via subscription): AI code generation, bug fixer, test generator  • **Enterprise package**: self-hosted deployment + collaboration tools + SLA support |
|  | Scalability of the Solution | • Built with modular architecture—easily add new AI capabilities (e.g., design pattern suggestions, UI generators)  • Docker/Cloud-ready backend allows horizontal scaling  • Easy to integrate into CI/CD pipelines or internal developer portals |