**Project Design Phase**

Date: 26 June 2025

Team ID: LTVIP2025TMID32004

Project Name: SmartSDLC: 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 |
| 1 | Problem Statement (Problem to be solved) | Developers and software teams spend excessive time managing fragmented SDLC phases like requirements, coding, testing, and documentation manually. This leads to inefficiencies, delays, and inconsistencies. |
| 2 | Idea / Solution description | SmartSDLC is an AI-powered assistant that automates SDLC tasks using IBM Watsonx and the Granite model. It offers requirement classification, code generation, bug fixing, test case generation, and code summarization within a single Streamlit interface. |
| 3 | Novelty / Uniqueness | Unlike basic development tools, SmartSDLC integrates natural language processing, real-time AI code assistance, and phase-wise organization to streamline the entire SDLC intelligently and efficiently. |
| 4 | Social Impact / Customer Satisfaction | SmartSDLC boosts productivity, reduces errors, and shortens development cycles. It helps both novice and expert developers focus on core logic while AI handles repetitive and documentation tasks. |
| 5 | Business Model (Revenue Model) | Freemium model: Basic SDLC utilities are free; premium features like team collaboration, advanced analytics, and export capabilities are subscription-based. Target markets include tech startups, freelancers, and enterprise teams. |
| 6 | Scalability of the Solution | Built on IBM Cloud, SmartSDLC scales across regions and projects. It supports modular feature additions, model fine-tuning, and integration with DevOps pipelines for large teams. |