**Project Design Phase**

**Problem – Solution Fit Template**

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| Date | 27 June 2025 |
| Team ID | LTVIP2025TMID29404 |
| Project Name | SmartSDLC – AI-Enhanced Software Development Lifecycle |
| Maximum Marks | 2 Marks |

**Problem–Solution Fit (SmartSDLC)**

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| **Section** | **Content** |
| **Customer Segment(s)** | Final-year engineering students, early-career software developers, and IT teams working on frequent SDLC tasks. |
| **Jobs-to-be-Done / Problems** | Need to generate code, write test cases, debug issues, and summarize code manually—often repetitive, time-consuming, and error-prone. |
| **Triggers** | Time pressure to submit projects or meet deadlines, lack of guidance or expert support for coding or debugging, inefficiency in understanding legacy codebases. |
| **Emotions (Before / After)** | **Before**: Confused, stressed, overwhelmed. **After**: Confident, relieved, productive. |
| **Available Solutions** | Manual coding, ChatGPT (not SDLC-specific), peer help, YouTube tutorials, Stack Overflow, random code snippets. |
| **Customer Constraints** | Limited coding knowledge, lack of time, access to cloud compute tools, unclear understanding of test generation/debugging concepts. |
| **Behaviour** | Use random tools/tutorials, procrastinate, or submit low-quality work. Some try to write code but miss edge cases or testing. |
| **Channels of Behaviour** | GitHub, Stack Overflow, educational platforms, Google Search, ChatGPT, coding forums. |
| **Problem Root Cause** | Repetitive SDLC tasks, lack of centralized intelligent support, and time/resource constraints in completing them manually. |
| **Our Solution** | SmartSDLC automates all key SDLC tasks using AI (IBM Watsonx), reducing manual effort and boosting developer productivity with one unified tool. |

**Problem–Solution Fit (SmartSDLC)**

