

## Project Design Phase

### Problem – Solution Fit Template

Date	27 June 2025
Team ID	LTVIP2025TMID29152
Project Name	SmartSDLC – AI-Enhanced Software Development Lifecycle
Maximum Marks	2 Marks

#### Problem–Solution Fit (SmartSDLC)

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

<b>1. Customer Segments</b> Final-year engineering students, junior developers, software teams.	<b>6. Customer Constraints</b> Limited time, low coding confidence, high expectations, lack of advanced tools.	<b>5. Available Solutions</b> Manual coding, ChatGPT, Stack Overflow, GitHub, IDE autocomplete.
<b>2. Jobs-To-Be-Done / Problems</b> Write code, debug bugs, generate test cases, understand complex code quickly.	<b>9. Problem Root Cause</b> Many manual steps and tools, lack of unified AI assistant for SDLC.	<b>7. Behaviour</b> Switching tools frequently, delaying tasks, low-quality output due to pressure.
<b>3. Triggers</b> Assignment deadlines, project evaluations, internship tasks, exams.	<b>10. Your Solution</b> SmartSDLC: AI tool using Watsonx that automates SDLC tasks in one platform.	<b>8. Channels of Behaviour</b> YouTube, coding forums, AI tools, GitHub, ChatGPT, peer discussions.
<b>4. Emotions Before / After</b> Before: Overwhelmed, confused, unmotivated. After: Confident, productive, stress-free.		