# Ideation Phase

SmartSDLC – AI-Enhanced Software Development Lifecycle

Date: 26 June 2025

Team ID: LTVIP2025TMID34234

Project Name: SmartSDLC: AI-Enhanced SDLC Automation Platform

Maximum Marks: 4 Marks

## Brainstorm & Idea Prioritization Template

SmartSDLC reimagines the Software Development Lifecycle by automating key stages such as requirement classification, code generation, bug fixing, testing, and documentation using IBM Watsonx.

### Step-1: Team Gathering, Collaboration and Select the Problem Statement

Team Members:

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**Selected Problem Statement:**

How might we use IBM Watsonx to automate and optimize the Software Development Lifecycle phases, reduce manual effort, and enhance development speed and software quality using Generative AI?

### Step-2: Brainstorm, Idea Listing and Grouping

Brainstormed Ideas:

- Use PyMuPDF to extract requirements from PDF documents.

- Classify sentences into SDLC phases using Watsonx prompt engineering.

- Generate Python code from user stories using IBM Granite.

- Auto-detect bugs in pasted code and suggest corrections.

- Generate unit test cases from code or descriptions.

- Summarize existing code to improve onboarding and documentation.

- Offer a floating chatbot to answer general SDLC queries.

- Support multi-turn conversations using Streamlit session state.

### Step-3: Idea Prioritization

Top Priority Ideas for Implementation:

1. Requirement Extraction and Classification via PDF

1. AI Code Generator using Natural Language

1. Bug Detection and Auto-fix module

1. Test Case Generation using Watsonx

Secondary Priority Ideas:

- Code Summarization and Explanation

- Floating Chatbot for SDLC Assistance

- Prompt templating for better AI performance