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| Date | 30 June 2025 |
| Team ID | LTVIP2025TMID31783 |
| Project Name | smartSDLC-AI-enhanced software develpoment life cycle |
| Maximum Marks | 2 Marks |

# 1. Problem Statement (Problem to be solved)

The software development lifecycle (SDLC) involves several repetitive, manual tasks such as code generation, bug fixing, writing test cases, and summarizing code. These tasks slow down the overall development process, introduce errors, and lead to inefficiencies in team collaboration. There is a need for an intelligent solution that automates these tasks to improve speed, accuracy, and collaboration in SDLC processes.

# 2. Idea / Solution Description

SmartSDLC is an AI-powered platform that automates the entire SDLC using NLP and Watsonx. It transforms unstructured requirements into user stories, generates code, detects and fixes bugs, writes test cases, summarizes code, and provides chatbot support. This solution helps teams reduce manual effort, improve collaboration, and accelerate development cycles by integrating AI into the software development process.

# 3. Novelty / Uniqueness

The uniqueness of SmartSDLC lies in its ability to integrate advanced NLP techniques and Watsonx to automate a wide range of SDLC tasks. Unlike other platforms, SmartSDLC handles both high-level tasks (requirement analysis and user story creation) and low-level tasks (bug fixing and code generation), providing end-to-end automation. Its seamless integration of multiple functionalities into a single platform is what sets it apart from traditional SDLC tools.

# 4. Social Impact / Customer Satisfaction

SmartSDLC enhances developer satisfaction by reducing manual, tedious tasks, allowing them to focus on creative and strategic aspects of development. It improves collaboration between teams, enhances project management, and ensures faster delivery times. For customers, this results in a more efficient and productive development process, with fewer errors and delays.

# 5. Business Model (Revenue Model)

SmartSDLC will operate on a subscription-based revenue model, offering various tiers based on usage, team size, and features. Additional revenue streams will include offering custom AI solutions, integrations with other tools, and premium customer support services.

# 6. Scalability of the Solution

SmartSDLC is designed to be scalable, capable of supporting small teams as well as large enterprises. Its cloud-based architecture ensures that it can handle increasing workloads and adapt to a growing number of users. Furthermore, its modular design allows for easy integration with new tools and systems as needed, ensuring long-term scalability and adaptability.