Data Flow Diagram & User Stories

Date: 26 June 2025

Team ID: LTVIP2025TMID34234

Project Name: SmartSDLC: AI-Enhanced SDLC Automation Platform

Maximum Marks: 2 Marks

Data Flow Diagrams:

Level 0 DFD:

The user interacts with the SmartSDLC application via a Streamlit interface. Uploaded documents or inputs (requirements, code, queries) are handled by the Python-based application logic, which sends prompts to IBM Watsonx AI. Responses are returned to the UI. Temporary session data is handled via Streamlit session state.

Level 1 DFD:

Each SmartSDLC module (e.g., Code Generator, Bug Fixer) processes user input, formats an AI prompt, and sends it to the Watsonx API. The AI response is parsed and rendered in the appropriate UI component (text box, code block, etc.).

User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority / Release
Developer	Requirement Classifier	USN-1	As a developer, I can upload a PDF of raw requirements and see them categorized by SDLC phase.	The model classifies input into Requirements, Design, Development, Testing, Deployment.	High / Sprint-1
Developer	Code Generator	USN-2	As a user, I can describe a feature and get production-ready Python code.	Python code is generated with function structure and validations.	High / Sprint-2
Developer	Bug Fixer	USN-3	As a user, I can paste buggy code	Fixed code is returned with no syntax or	High / Sprint-2

			and receive a corrected version.	logical errors.	
Tester	Test Case Generator	USN-4	As a tester, I can input functions and get auto-generated unit tests.	Relevant test cases are returned using pytest/unittest.	Medium / Sprint-3
Developer	Code Summarizer	USN-5	As a user, I can paste code and get a functional summary.	Explanation includes inputs, logic, and output.	Medium / Sprint-3
User	Chatbot Assistant	USN-6	As a user, I can ask questions about SDLC concepts and get helpful answers.	Chatbot provides accurate and contextual replies.	Medium / Sprint-4