# Data Flow Diagram & User Stories

Date: 26 June 2025

Team ID: LTVIP2025TMID20490

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

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| 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 and receive a corrected version. | Fixed code is returned with no syntax or logical errors. | High / Sprint-2 |
| 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 |