

Solution Requirements (Functional & Non-functional)

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Team ID: LTVIP2025TMID32004

Project Name: SmartSDLC: AI-Enhanced Software Development Lifecycle

Functional Requirements

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Requirement Classification	User uploads PDF, AI returns SDLC classification
FR-2	AI Code Generation	Prompt to code conversion
FR-3	Bug Fixing	Correct buggy Python code
FR-4	Test Generation	Create unittest or pytest cases
FR-5	Summarization & Chat	Summarize or explain code via assistant

Non-functional Requirements

NFR No.	Non-Functional Requirement
NFR-1	Usability – Easy Streamlit UI
NFR-2	Security – .env for API key handling
NFR-3	Reliability – Stable Watsonx AI integration
NFR-4	Performance – Fast response, caching
NFR-5	Scalability – Cloud-ready, container support