## **SmartSDLC – Planning Logic**

### **Key Concepts Used (as per reference doc)**

* **Epic** – Major functional modules (e.g., Code Generation, Chatbot)
* **Story** – Subtasks of each epic (e.g., API routing, UI integration)
* **Story Point** – Effort estimation using the Fibonacci sequence (1, 2, 3, 5, 8, ...)

## **Sprint 1:** **(5 Days)**

|  |  |  |
| --- | --- | --- |
| Story | Description | Story Points |
| Collection of Requirements | Upload and extract text from PDF (via PyMuPDF) | 2 |
| Classification into SDLC phases | NLP-based classification using LLM | 3 |
| API routing for PDF classification | Setup FastAPI route + fallback to Groq | 2 |
| UI input and file upload | Streamlit interface for input and classification preview | 3 |

## **Sprint 1 Total**: **10 Story Points**

## **Sprint 2:** **(5 Days)**

|  |  |  |
| --- | --- | --- |
| Story | Description | Story Points |
| Prompt-to-code generation | Generate code from text using AI model | 5 |
| Bug fixing module | Detect and correct Python errors | 3 |
| Backend endpoints | Implement FastAPI endpoints for generation/fixing | 3 |
| UI integration | Streamlit input/output box for code + fixes | 2 |

## **Sprint 2 Total**: **13 Story Points**

## **Sprint 3:** **(5 Days)**

|  |  |  |
| --- | --- | --- |
| Story | Description | Story Points |
| Pytest test case generation | Generate test cases for user-provided code | 3 |
| Code summarization module | Explain logic in natural language | 2 |
| API support | Backend endpoints for both modules | 2 |
| Frontend integration | Streamlit outputs for summaries and test cases | 2 |

## **Sprint 3 Total**: **9 Story Points**

## **Sprint 4:** **(5 Days)**

|  |  |  |
| --- | --- | --- |
| Story | Description | Story Points |
| SDLC Chatbot logic | Model prompt + responses for dev queries | 5 |
| GPU detection + fallback (Groq) | Dynamic switch when model fails | 3 |
| Logging + Error Handling | Structured logs + error JSON | 2 |
| Final UI tuning | Responsive Streamlit UI integration | 3 |

**Sprint 4 Total**: **13 Story Points**

**Velocity Calculation**

|  |  |  |  |
| --- | --- | --- | --- |
| **Metric** | | **Value** | | --- |  |  | | --- | |  | |
| |  | | --- | |  |   Total Story Points | |  | | --- | | 10 + 13 + 9 + 13 = **45** | |
| Total Sprints | 4 |
| Team Velocity | 45 / 4 = **11.25** Story Points per Sprint |