**Brainstorm & Idea Prioritization – SmartSDLC Ideation Phase**

**Date:** 25 JUNE 2025  
**Team ID:** LTVIP2025TMID31783  
**Project Name:** SmartSDLC  
**Maximum Marks:** 4

**Step 1: Team Collaboration & Problem Selection**

Our team met virtually on June 19, 2025, to explore key challenges in managing software development processes, especially in documentation, classification, and traceability. We identified two main pain points that SmartSDLC aims to solve:

* Manual mapping of project documents to SDLC phases leads to inconsistency, delay, and difficulty in audits.
* Lack of intelligent tools to classify and analyze software documents with contextual relevance.

From this, we decided to create an AI-powered assistant that automates classification of documents into SDLC phases and supports intelligent traceability using language models.

**Step 2: Brainstorming – Idea Listing & Grouping**

We utilized Miro and Google Jamboard to list ideas and cluster them by functionality. Below is a categorized view of our brainstormed features:

**Group A: Document Classification & Mapping**

* Upload document (PDF/DOCX) and extract text.
* Classify content into SDLC phases (Requirements, Design, Development, Testing, Deployment).
* Highlight confidence levels for classification.
* Use zero-shot/few-shot learning models for text classification.

**Group B: Traceability & Audit Support**

* Auto-generate traceability matrix.
* Link related content across SDLC stages.
* (Future) Track change history in evolving documents.
* (Future) Export audit-ready traceability reports.

**Group C: Visual Analytics & Dashboard**

* Phase-wise document summary view.
* Graphical representation of classified content.
* Heatmap of most discussed phases.
* (Future) Risk detection based on imbalance across SDLC.

**Group D: System & UI Enhancements**

* Gradio interface with document upload and output panels.
* Streamlined tabs for classification, traceability, and visualization.
* Session state preservation within Gradio.
* Responsive layout for desktop/laptop view.

**Group E: AI Model & Integration**

* Use "ibm-granite/granite-3.3-2b-instruct" for classification.
* Future option to switch to domain-specific fine-tuned models.
* Token-based secure access for inference.

**Step 3: Idea Prioritization**

We used a Value-Effort Matrix to assess all ideas and assign priorities for initial development.

|  |  |  |
| --- | --- | --- |
| **Priority** | **Feature** | **Reason** |
| High | Document Upload & Text Extraction | Core step to begin classification; user-friendly document intake |
| High | SDLC Phase Classification (using IBM Granite) | Central feature with high user value and proof of AI integration |
| High | Traceability Matrix Generation | Crucial for audits and cross-reference between SDLC components |
| High | Gradio UI with Session State | Simplifies testing and real-time use during development |
| Medium | Visual Analytics Dashboard | Adds strong visibility for stakeholders; important for phase 2 |
| Low | Version History & Change Tracking | Useful for future audits but requires complex document diffing |
| Low | Export Reports (PDF/CSV) | Enhances utility but not core to initial function |
| Low | Risk Zone Identification | Smart insight but depends on analytical maturity and data scale |

**Final Thoughts**

This ideation and prioritization session helped the team clearly break down our vision into actionable modules. Our immediate goal is to build a working prototype that enables intelligent SDLC document classification with interactive traceability support.

**SmartSDLC** thus sets out to:

* **Simplify document management** in SDLC through automation.
* **Enhance software audits and tracking** with smart traceability.
* **Introduce AI in early-stage project reviews**, saving time and improving consistency.

This foundation aligns with our mission to bring intelligence and structure into software development workflows using cutting-edge AI models.