

Project Design Phase-II

Data Flow Diagram & User Stories

Date	18 February 2026
Team ID	LTVIP2026TMIDS57846
Project Name	Civil Engineering Insight Studio
Maximum Marks	4 Marks

Part-1: Data Flow Diagrams (DFD)

DFD Level 0

Example: (Simplified)

Flow

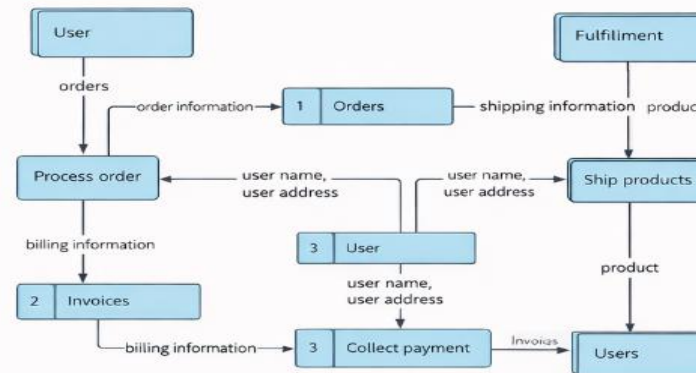


1. User configures credentials for the Watson Natural Language Understanding service and starts the app.
2. User selects data file to process and load.
3. Apache Tika extracts text from the data file.
4. Extracted text is passed to Watson NLU for enrichment.
5. Enriched data is visualized in the UI using the D3.js library.

Example: (Simplified)

User type	User	Functional Reqsoss
1.	User Interface	Python, CSS, Javastript / arigular Js

Example: DFD Level 0 (Industry Standard)

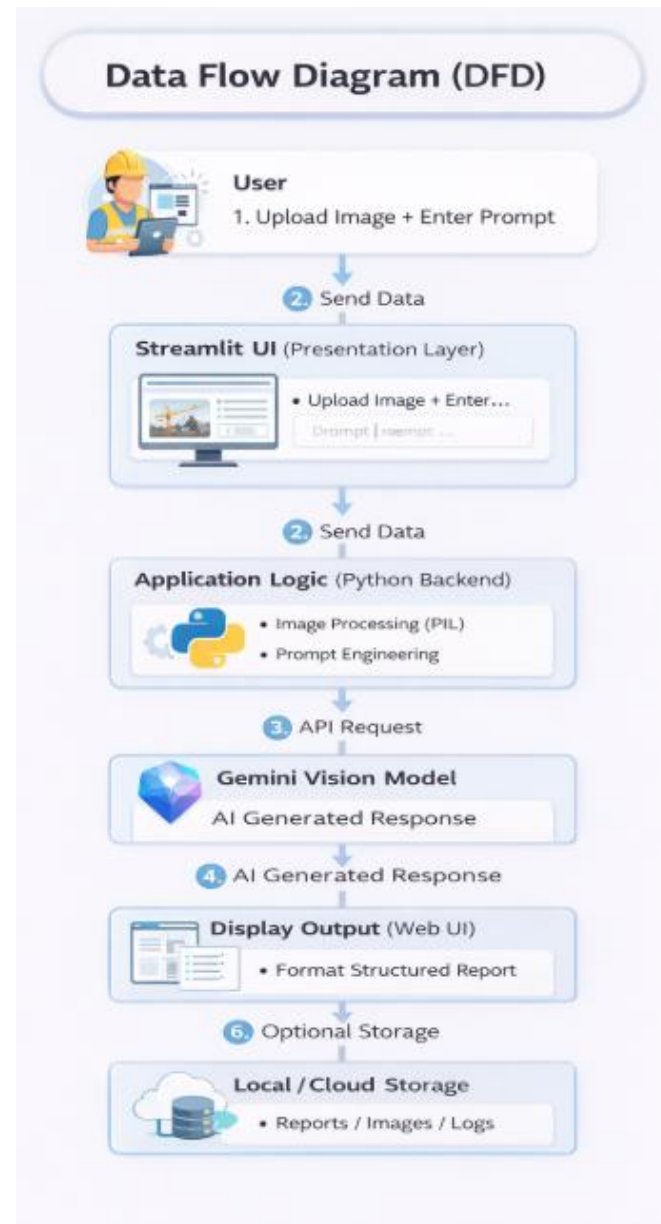


Example: DFD Level 0

Example: DFD Level 0 (Industry Standard)

User Story	Priorittieess	Release	Release
USN-1	High	High	Sprint-1

DFD Level 1 (Detailed Flow)



Part-2: User Stories

User Types

- Civil Engineer (Web User)
- Project Manager
- Administrator

User Stories Table

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority	Release
Civil Engineer (Web User)	Image Upload	USN-1	As a civil engineer, I can upload a construction site image for analysis	I can successfully upload JPG/PNG images	High	Sprint-1
Civil Engineer (Web User)	Prompt Input	USN-2	As a user, I can enter a text prompt describing what analysis I need	I can type and submit a prompt successfully	High	Sprint-1
Civil Engineer (Web User)	AI Analysis	USN-3	As a user, I can receive a detailed structural description after submission	The system generates structured output with materials, components, and insights	High	Sprint-1
Civil Engineer (Web User)	Material Detection	USN-4	As a user, I can identify construction materials from the image	Materials such as concrete, steel, and bricks are listed in the response	High	Sprint-1
Project Manager	Progress Monitoring	USN-5	As a project manager, I can analyze project progress from site images	The response includes completed and planned elements	High	Sprint-1
Project Manager	Report Generation	USN-6	As a manager, I can generate a structured report from the AI output	The report is displayed in a clear, structured format	Medium	Sprint-2

Administrator	System Monitoring	USN-7	As an admin, I can monitor application usage and API performance	Usage logs and system performance data are accessible	Medium	Sprint-2
Administrator	API Management	USN-8	As an admin, I can securely manage API keys and configurations	API key stored securely in environment variables	High	Sprint-1
Civil Engineer	Error Handling	USN-9	As a user, I receive an error message if no image is uploaded	System shows warning when image is missing	High	Sprint-1
Project Manager	Documentation Storage	USN-10	As a manager, I can store generated reports for future reference	Reports are saved locally or in cloud storage	Medium	Sprint-2