

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

```

graph LR
    User((User)) --> TIKA((TIKA))
    TIKA --> NLU((Watson NLU))
    NLU --> Visualize(( ))
    
```

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

Example: DFD Level 0 (Industry Standard)

```

graph TD
    User[User] -- "orders" --> ProcessOrder[Process order]
    User -- "user name, user address" --> ShipProducts[Ship products]
    User -- "user name, user address" --> CollectPayment[Collect payment]
    ProcessOrder -- "order information" --> Orders[1 Orders]
    Orders -- "shipping information" --> ShipProducts
    Orders -- "user name, user address" --> Invoices[2 Invoices]
    Invoices -- "billing information" --> CollectPayment
    Invoices -- "user name, user address" --> Users[Users]
    ShipProducts -- "product" --> Users
    CollectPayment -- "Invoices" --> Users
    
```

Example: DFD Level 0

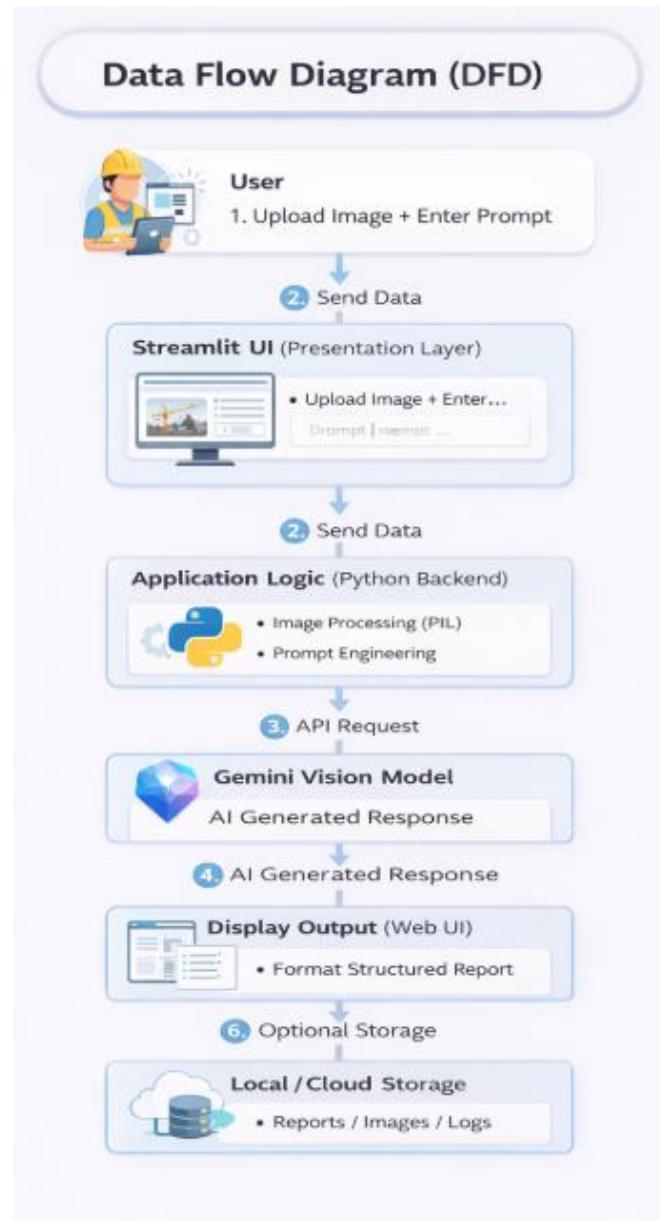
Example: (Simplified)

User Type	Functional Reqosss
1. User Interface	Python, CSS, Javascript / angular Js

Example: DFD Level 0 (Industry Standard)

User Story	Priorittees	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