**Project Design Phase-II**

**Data Flow Diagram & User Stories**

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| Date | 31 JANUARY 2025 |
| Team ID | LTVIP2025TMID20355 |
| Project Name | PATTERN SENSE |
| Maximum Marks | 4 Marks |

**🧩 Data Flow Diagrams (DFDs)**

We’ll use two levels:

1. **Level 0 (Context Diagram)** – High-level overview
2. **Level 1 DFD** – Internal processes and data stores

**🔷 DFD Level 0: Context Diagram**

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| Fashion Designer |

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| Pattern Sense System|

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| Textile QC |--------| Interior Designer |

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🟢 **Description**:

* External actors (Fashion Designer, Textile QC, Interior Designer) interact with the *Pattern Sense System*.
* The system takes input (fabric images), processes them, and returns pattern type or defect detection feedback.

**🔷 DFD Level 1: Internal System Diagram**

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| User Upload Image |

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| Image Preprocessing |<------->| Pattern Dataset |

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| Deep Learning Model |

| (TensorFlow Inference) |

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| Pattern Classification |--------->| User Interface/API |

| & Defect Detection | +---------------------+

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🟢 **Data Stores**:

* **Pattern Dataset**: Stores labeled training images.
* **Model Weights**: Used for inference during classification.

🟢 **Processes**:

1. Image uploaded by user.
2. Image preprocessing and resizing.
3. TensorFlow model performs classification.
4. Output sent to user via API or UI.

**✅ User Stories (Agile Format)**

| **ID** | **As a...** | **I want to...** | **So that...** |
| --- | --- | --- | --- |
| US1 | Fashion Designer | upload a fabric image and get its pattern classified | I can quickly categorize fabrics for a new clothing line |
| US2 | Textile QC Inspector | scan a batch of fabrics to detect any irregularities or defects | I can prevent defective patterns from entering production |
| US3 | Interior Designer | browse or search for fabrics based on a desired pattern style | I can match materials with interior design requirements |
| US4 | System Admin | update the dataset and retrain the model periodically | the system adapts to new pattern styles or fabric types |
| US5 | Developer | access a REST API to classify patterns from third-party apps | I can integrate classification with other tools/platforms |
| US6 | End User | get a confidence score with the predicted label | I can assess how reliable the classification is |