**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

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| --- | --- |
| Date | 31 january 2025 |
| Team ID | PNT2022TMIDxxxxxx |
| Project Name | Project - xxx |
| Maximum Marks | 4Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Registration | Registration through Form  Registration through Gmail  Registration through LinkedIN |
| FR-2 | User Confirmation | Confirmation via Email  Confirmation via OTP |
| FR-3 | Fabric Pattern Classification | Upload fabric image Classify pattern type (e.g., floral, striped, geometric) Store pattern category in database |
| FR-4 | Real-time Pattern Recognition | Use device camera for live recognition Instant classification output on screen |
| FR-5 | Pattern Search Engine | Search by image Search by keyword (e.g., "polka dots") Filter by color, type, or texture |
| FR-6 | Defect Detection in Fabric | Detect irregularities in repeating patterns Highlight defect regions in output |

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

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| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | The UI should be intuitive for designers, with minimal training required. |
| NFR-2 | **Security** | User data, fabric images, and logins should be secured using HTTPS and encrypted storage |
| NFR-3 | **Reliability** | The system must ensure consistent classification results with minimal downtime or crashes. |
| NFR-4 | **Performance** | Classification results should be returned within 2–3 seconds for normal uploads and <1 second in real-time recognition. |
| NFR-5 | **Availability** | The platform should be available 24/7 with 99.9% uptime, supporting global access. |
| NFR-6 | **Scalability** | The system should handle increased users and datasets without performance degradation, including horizontal scaling support. |