Project Design Phase-II

Technology Stack (Architecture & Stack)

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| Date | June 2025 |
| Team ID | LTVIP2025TMID58213 |
| Project Name | ResolveNow: Your Platform for Online Complaints |
| Maximum Marks | 4 Marks |

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2 Example: Order processing during pandemics for offline mode

Reference: https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/

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|  | | | | |  | | --- | | Guidelines:  Include all the processes (As an application logic /  Technology Block)  Provide infrastructural demarcation (Local / Cloud) Indicate external interfaces (third party API’s etc.) Table-1 :  Components & Technologies:  Indicate Data Storage components / services  Indicate interface to machine learning models (if  Table-2: Application Characteristics: applicable) | | | |
| S.No | Component | Description | | Technology |
| 1 | User Interface | How user interacts with the application (e.g., Web UI) | | HTML, CSS, JavaScript, React.js |
| 2 | Application Logic-1 | User registration and login process | | Node.js, Express.js |
| 3 | Application Logic-2 | Complaint submission and tracking | | Node.js, Express.js |
| 4 | Application Logic-3 | Real-time chat between user and agent | | Socket.io (optional), Express.js |
| 5 | Database | Stores complaint, user, agent data | | MongoDB |
| 6 | Cloud Database | Cloud-hosted scalable database | | MongoDB Atlas |
| 7 | File Storage | Store user-uploaded complaint images | | MongoDB GridFS / Base64 (optional) |
| 8 | External API-1 | Email service for notifications | | Nodemailer |
| 9 | External API-2 | OTP verification (if implemented) | | Twilio / Firebase OTP |
| 10 | Machine Learning Model | (Not used currently, optional) | | (N/A) |
| 11 | Infrastructure (Server / Cloud) | Local development environment | | Node.js server, localhost |

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| S.No | Characteristics | Description | Technology Used |
| 1 | Open-Source Frameworks | Use of free, community-maintained frameworks | React.js, Node.js, Express.js |
| 2 | Security Implementations | Password hashing, secure Mongo URI, role-based access | bcrypt.js, dotenv |
| 3 | Scalable Architecture | Modular frontend/backend, MongoDB Atlas handles scaling | Express.js, MongoDB Atlas |
| 4 | Availability | Can be deployed on cloud servers or local servers for 24/7 availability | MongoDB Atlas, Vercel  (optional) |
| 5 | Performance | REST APIs, optimized frontend, lazy loading | Axios, React.js, Express.js |

References: https://c4model.com/ https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/ https://www.ibm.com/cloud/architecture https://aws.amazon.com/architecture https://medium.com/the-internal-startup/howto-draw-useful-technical-architecture-diagrams-2d20c9fda90d