

Project design phase -II

Technology stack

Date	01 Nov 2025
Team ID	NM2025TMID06891
Project name	Streamlining Ticket Assignment for Efficient Support Operations
Maximum Marks	4

Technical Architecture:

The **Technical Architecture** of the project “*Streamlining Ticket Assignment for Efficient Support Operations*” is designed as a multi-tier system integrating a user interface, automation engine, database, and analytics module. It ensures seamless communication between components through APIs, enabling efficient data flow, scalability, and real-time performance.

Table 1: Technical Architecture Components

S.No	Component	Description	Technology
1	User Interface (UI)	Provides a front-end platform for customers, agents, and admins to interact with the system.	HTML, CSS, JavaScript

2	Web Server	Hosts the application and handles client requests.	Node.js / Apache
3	Application Layer	Processes business logic, automation rules, and workflows.	Python / Java
4	Automation Engine	Automatically classifies and assigns tickets based on predefined logic.	Python (Rule-based logic)
5	Database	Stores all ticket, agent, and system-related information.	MySQL / Firebase
6	API Layer	Enables communication between the front-end, back-end, and external systems.	RESTful APIs
7	Authentication Module	Ensures secure login and role-based access control.	OAuth 2.0 / JWT
8	Notification Service	Sends real-time alerts and updates to users and agents.	Firebase Cloud Messaging / Email API
9	Analytics Dashboard	Displays metrics on ticket flow, response time, and agent performance.	Power BI / Tableau
10	Logging & Monitoring	Tracks system activity and errors for maintenance.	ELK Stack / CloudWatch
11	Deployment Environment	Hosts and manages the application in a live setup.	AWS / Azure Cloud

Table 2: System Characteristics :

S.No	Characteristic	Description	Technology
1	Scalability	System can handle increasing users, tickets, and data efficiently.	Cloud Infrastructure (AWS / Azure)
2	Security	Protects data through encryption, authentication, and access control.	SSL, OAuth, JWT
3	Reliability	Ensures consistent performance and minimal downtime.	Load Balancer, Backup Server
4	Performance	Optimized for fast ticket processing and quick response times.	Caching, Optimized Database Queries
5	Maintainability	Supports easy updates, debugging, and feature enhancements.	Modular Code Architecture