Project design phase

Solution Architecture

Date	02 NOVEMBER 2025
Team ID	NM2025TMID04781
Project Name	Streamlining Ticket Assignment for Efficient Support Operations
Maximum Mark	4 Marks

1. Goals

The primary goal of the Solution Architecture is to **automate and optimize the ticket assignment process** in IT support operations to achieve greater efficiency, accuracy, and transparency.

Below are the key goals:

Goal	Description
Automation	Eliminate manual ticket assignment by using intelligent rules and AIbased matching.
Efficiency	Reduce ticket resolution time and improve SLA adherence.
Accuracy	Ensure each ticket is assigned to the most suitable agent based on skills, workload, and availability.
Scalability	Design a flexible system that can scale with increasing ticket volume and user base.
Integration	Seamlessly connect with existing ITSM tools like ServiceNow or Jira.
Visibility	Provide real-time dashboards and reports for managers to monitor performance and workloads.
Security & Compliance	Protect sensitive ticket and user data with role-based access and encrypted communication.

2. Key Components

Component	Description
Ticket Intake Module	Collects tickets from multiple sources (email, web portal, chatbots) and logs them into the system.

Component	Description
Classification Engine	Uses keywords, categories, and AI to classify tickets by priority, issue type, and department.
Assignment Engine	Core logic that applies business rules and machine learning algorithms to assign tickets automatically.
Agent Profile Database	Stores agent details such as skills, workload, past performance, and availability.
Notification & Alert System	Sends real-time notifications to assigned agents and escalation alerts to supervisors.
Performance Dashboard	Displays metrics such as ticket load, SLA compliance, and average response time.
Integration Layer	Connects to existing ITSM tools (ServiceNow, Jira, Freshdesk) through APIs.
Security Layer	Ensures authentication, authorization, and encryption of all ticket data.

3. Development Phases

Phase	Objective	Key Activities	Deliverables
Phase 1: Requirement Analysis	Understand current challenges and define system requirements.	Stakeholder interviews, process mapping, defining success criteria.	Requirement Specification Document
Phase 2: System Design	Develop architecture and data flow models.	Create system diagrams, define modules, select technologies.	Design Blueprint, Data Flow Diagram
Phase 3: Development	Build system modules and integrate functionalities.	Develop frontend, backend, APIs, and database connections.	Working Prototype
Phase 4: Testing & Validation	Ensure system accuracy and reliability.	Unit testing, integration testing, and performance validation.	Test Report, QA Approval
Phase 5: Deployment	Launch the solution in the production environment.	Configure servers, integrate with ITSM	Deployed Application

		platforms, and monitor.	
Phase 6: Monitoring & Maintenance	Continuously improve performance and address issues.	Collect feedback, monitor KPIs, and implement updates.	Maintenance Logs, Performance Reports

Solution Architecture Design

The solution architecture is designed with **multi-layered automation and intelligence** to optimize ticket handling.
It includes a **frontend dashboard** for users, an **AI-powered backend** for automatic ticket classification and routing, and a **secure database** for ticket and agent data management.
The system integrates with ITSM tools like **ServiceNow** and **Jira**, ensuring seamless data exchange.
Analytics dashboards monitor ticket flow, agent performance, and SLA compliance.