

# Project design phase

## Solution Architecture

Date	02 NOVEMBER 2025
Team ID	NM2025TMID01377
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 AI-based 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
<b>Classification Engine</b>	Uses keywords, categories, and AI to classify tickets by priority, issue type, and department.
<b>Assignment Engine</b>	Core logic that applies business rules and machine learning algorithms to assign tickets automatically.
<b>Agent Profile Database</b>	Stores agent details such as skills, workload, past performance, and availability.
<b>Notification &amp; Alert System</b>	Sends real-time notifications to assigned agents and escalation alerts to supervisors.
<b>Performance Dashboard</b>	Displays metrics such as ticket load, SLA compliance, and average response time.
<b>Integration Layer</b>	Connects to existing ITSM tools (ServiceNow, Jira, Freshdesk) through APIs.
<b>Security Layer</b>	Ensures authentication, authorization, and encryption of all ticket data.

### 3. Development Phases

Phase	Objective	Key Activities	Deliverables
<b>Phase 1: Requirement Analysis</b>	Understand current challenges and define system requirements.	Stakeholder interviews, process mapping, defining success criteria.	Requirement Specification Document
<b>Phase 2: System Design</b>	Develop architecture and data flow models.	Create system diagrams, define modules, select technologies.	Design Blueprint, Data Flow Diagram
<b>Phase 3: Development</b>	Build system modules and integrate functionalities.	Develop frontend, backend, APIs, and database connections.	Working Prototype
<b>Phase 4: Testing &amp; Validation</b>	Ensure system accuracy and reliability.	Unit testing, integration testing, and performance validation.	Test Report, QA Approval
<b>Phase 5: Deployment</b>	Launch the solution in the production environment.	Configure servers, integrate with ITSM platforms, and monitor.	Deployed Application
<b>Phase 6: Monitoring &amp; Maintenance</b>	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.