

# PROJECT DESIGN PHASE I

## TECHNOLOGY STACK (ARCHITECTURE AND STACK)

Date	02 NOV 2025
Team ID	NM2025TMID06943
Project Name	Streamlining Ticket Assignment for efficient support operations
Maximum mark	4 marks

## Architecture & Platform Core

The **streamlined ticket assignment solution** is designed to operate fully within the **ServiceNow cloud environment**, leveraging its robust **foundational data model**, **workflow automation engines**, and **native integration capabilities**. This ensures seamless compatibility with existing ServiceNow modules, scalability across support teams, and efficient management of ticket routing logic through the platform’s configurable tools and script

Component	Description	Role in Assignment Streamlining
Now Platform	The foundational cloud-based Platform-as-a-Service (PaaS) layer that hosts all ServiceNow applications, workflows, and data, providing scalability, security, and extensibility.	Provides the core database, application services, and user interface that support the entire streamlined assignment solution.
IT Service Management (ITSM)	The core application suite managing service delivery operations, including the <b>Incident</b> and <b>Task</b> tables that form the basis for ticket creation, tracking, and resolution.	Serves as the primary application where tickets are created, categorized, and managed throughout their lifecycle.
Common Service Data Model (CSDM)	A standardized framework that defines how service-related data is structured, classified, and managed within the Now Platform, ensuring consistency across applications.	Ensures consistent categorization and accurate linkage of tickets to the correct <b>Service/Offering</b> and <b>Configuration Item (CI)</b> —critical elements for automated and accurate routing.
Agent Workspace	A unified and intuitive interface that consolidates ticket views, actions, and tools, enabling support agents to efficiently manage and resolve assigned tasks.	Provides a modern, real-time environment where agents can seamlessly receive, prioritize, and act on auto-assigned tickets.

# Technology Stack: Automation & Intelligence :

## 1. Core Workflow Engine

The **streamlining technology stack** integrates multiple **automation and AI-driven tools** within the ServiceNow platform to enhance efficiency, accuracy, and intelligence in ticket assignment. By combining these capabilities, the system enables data-driven decision-making, minimizes manual intervention, and ensures that tickets are routed to the right agent or group with optimal speed and precision

Technology	Purpose	Assignment Use
Flow Designer	The primary tool for building, automating, and managing workflows through a no-code/low-code interface.	Used to <b>orchestrate complex, multi-step assignment processes</b> , such as triggering dynamic routing flows, updating assignment groups based on multiple conditions, and notifying agents of new assignments.
Business Rules	Enables server-side scripting and logic execution on database records during insert, update, delete, or query operations.	Used for <b>simple, conditional automatic assignment</b> when a record is saved — for example, <i>if Category is “Email,” set Assignment Group to “Messaging.”</i>
Assignment Rules	A dedicated configuration table for defining criteria that determine which group or user should receive a ticket.	Used for <b>declarative, condition-based assignment</b> of the <i>Assignment Group</i> , ensuring tickets are routed to the appropriate team based on predefined attributes like category, service, or configuration item (CI).

## 1.AI and Machine Learning (Predictive Intelligence)

**Predictive Intelligence (PI)** is the key technology that makes the ticket assignment process truly *intelligent*. It is ServiceNow's **proprietary machine learning framework**, designed to enhance automation and decision-making within ITSM workflows.

### *Key Capabilities*

#### **Classification Solution:**

The PI model is trained on historical, resolved ticket data — including attributes such as *Short Description*, *Category*, and *Assignment Group*.

When a new ticket is created, the model automatically **predicts the most appropriate Category, Subcategory, and Assignment Group**, enabling accurate, data-driven routing and minimizing manual intervention.

#### **Similarity Solution:**

This feature leverages natural language processing (NLP) to **analyze the text of a new ticket** and suggest the most relevant **Knowledge Articles** or **similar past Incidents**.

It assists agents during manual triage by providing contextually similar cases, improving both accuracy and resolution speed.

## 2. Queue Management & Capacity

Advanced Work Assignment (AWA) — also referred to as Agent Chat Routing — is a specialized ServiceNow system that intelligently routes work items, such as *Incidents* or *Tasks*, to the most appropriate agents based on capacity and skills.

This technology plays a crucial role in ensuring fair, balanced, and efficient workload distribution across the support team.

### Key Capabilities

- **Capacity Logic:**

Continuously monitors agent workload using metrics such as the number of active tickets, time spent on tasks, or other custom parameters. This ensures that new tickets are routed only to agents with sufficient available capacity.

- **Skill Matching:**

Aligns the required skills on a ticket (e.g., *Linux*, *SAP*, *Network Administration*) with the skills listed in the agent's profile, ensuring that tickets are assigned to agents best equipped to handle them.

- **Load Balancing:**

Utilizes AWA's configurable assignment strategies — such as Round Robin or Agent Capacity — to automatically assign tickets to the next best-suited individual (populating the *Assigned To* field). This maintains equitable distribution and optimizes team performance.

## Reporting and Feedback :

**Performance Analytics (PA)** serves as ServiceNow's **integrated reporting and analytics solution** for monitoring, trending, and forecasting operational performance. It plays a vital role in evaluating the effectiveness of the streamlined ticket assignment solution and ensuring continuous improvement.

### **Key Capabilities**

#### **Performance Measurement:**

PA is used to track and visualize key metrics that reflect the success and efficiency of the automated assignment process, including:

**Assignment Accuracy Rate** — Measures the predictive accuracy of the *Predictive Intelligence (PI)* model.

**Mean Time to Assignment (MTTA)** — Evaluates how quickly tickets are routed to the correct agent or group.

**Ticket Reassignment Count** — Identifies recurring routing errors or process bottlenecks.

**Data Feedback Loop:**  
The **final outcome of each ticket** — specifically, the *resolved group or user* — is fed back into the **Predictive Intelligence training dataset**.  
This continuous **feedback loop** enables the PI model to learn from real-world results and **improve future prediction accuracy** over time, ensuring the system becomes more reliable and efficient with ongoing use.