Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	02 November 2025
Team ID	NM2025TMID07661
Project Name	Streamlining Ticket Assignment for Efficient Support Operation
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://www.freshworks.com/freshservice/it-ticketing-system/

Guidelines:

- Include all the processes such as Ticket Assignment, Workload Monitoring, Ticket Prioritization, Notifications, and Reporting *(as application logic / technology blocks)*
- Provide infrastructural demarcation by showing:
  - **Local side** → Users (Customer, Agent, Team Lead)
  - **Cloud side** → Backend services, Authentication, Database, Analytics
- Indicate external interfaces such as:

- Email / SMS Notification API

- Optional CRM / ITSM integration API

- Indicate Data Storage components / services such as:

  - Ticket Database
  - Agent Skill & Workload Database
  - Logs / History Database
- Indicate interface to Machine Learning Models *(if applicable)* for:
  - Automatic ticket prioritization
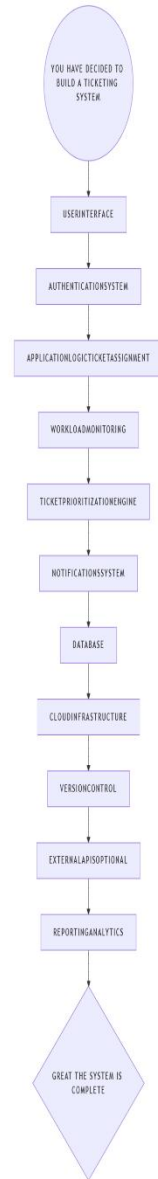 - Smart workload-based ticket routing

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       (  YOU HAVE DECIDED TO  )
       (  BUILD A TICKETING     )
       (  SYSTEM                )
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      ┌─────────────────┐
      │   USERINTERFACE  │
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      │ AUTHENTICATIONSYSTEM │
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│ APPLICATIONLOGICTICKETASSIGNMENT │
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      │ WORKLOADMONITORING   │
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    │ TICKETPRIORITIZATIONENGINE │
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      │ NOTIFICATIONSSYSTEM  │
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        │ DATABASE   │
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    │ CLOUDINFRASTRUCTURE  │
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    │ REPORTINGANALYTICS   │
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Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web portal for customers, agents & leads to raise, view and manage support tickets	ServiceNow Web UI
2.	Application Logic-1	Automatically assigns tickets based on priority, skill & workload	ServiceNow Flow Designer, Script
3.	Application Logic-2	Tracks agent workload in real-time for fair ticket distribution	GlideRecord in Server Script
4.	Application Logic-3	Sends notifications for new assignments, escalations & SLA alerts	ServiceNow Notifications
5.	Database	Stores tickets, user profiles, skillset & workload details	ServiceNow CMDB, Incident Tables
6.	Cloud Database	ServiceNow-managed backend database	ServiceNow Cloud Database
7.	File Storage	Stores activity logs & system records internally	ServiceNow system logs
8.	External API-1	Integration with CRM or email/SMS gateways for ticket alerts	REST API in ServiceNow
9.	External API-2	Not applicable	-
10.	Machine Learning Model	For predictive ticket routing and smart assignment decisions	-
11.	Infrastructure (Server / Cloud)	Fully hosted and managed in ServiceNow environment	ServiceNow Cloud (SaaS)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Not applicable (ServiceNow is proprietary)	-
2.	Security Implementations	Secure role-based access for Customers, Agents & Leads. Ensures only authorized users can view/modify tickets.	ACLs, Scoped Applications
3.	Scalable Architecture	Supports increasing number of tickets and support agents seamlessly through cloud scalability	ServiceNow Cloud Architecture
4.	Availability	Platform remains active 24/7 ensuring continuous support operations globally	Load-balanced ServiceNow Instances
5.	Performance	Fast ticket assignment & workflow execution with optimized queries and processing	GlideRecord, Asynchronous Flows, Background Scripts