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Project Design Phase-II

Technology Stack (Architecture & Stack)

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Technical Architecture:

The architecture for the **Metro Ticket Generating System** follows a multi-tier model centered on the **ServiceNow Now Platform**. It connects metro passengers through a **ServiceNow Service Portal** to backend automation that handles fare calculation, QR-code-based ticket generation, ticket validation, and notification delivery using **Flow Designer** and **Integration Hub**.

Table-1: Component Details:

S.No	Component	Description	Technology
1.	User Interface	Web portal for booking metro tickets and accessing digital QR tickets.	ServiceNow Service Portal
2.	Process Logic	Automation of fare calculation, ticket generation, and validation workflows.	ServiceNow Flow Designer
3.	Integration Layer	API-based QR code generation and notification delivery services.	ServiceNow Integration Hub (REST APIs)
4.	Data Storage	Storage of ticket details, fare rules, and transaction history.	ServiceNow Tables (RaptorDB)
5.	Security Interface	Secure authentication and role-based access for users and administrators.	RBAC, OAuth, TLS
6.	Cloud Hosting	High-availability hosting for the metro ticketing application.	ServiceNow Multi-Instance Cloud

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Libraries used for scripting and interface customization.	JavaScript, ServiceNow Script Engine
2.	Security Implementations	Access control and encrypted transmission of ticket data.	RBAC, TLS, AES-256
3.	Scalable Architecture	Infrastructure designed to handle high volumes of ticket booking requests.	Multi-Instance ServiceNow Architecture
4.	Availability	Continuous 24/7 access for metro ticket booking services.	Advanced High Availability (AHA)
5.	Performance	Fast fare calculation and instant QR ticket generation.	Asynchronous Flow Processing