# Technology Stack:

## Technology Stack (Architecture & Stack)

**Date**: 24 June 2025

**Team ID**: LTVIP2025TMID30883

**Project Name**: Public Transport Management System using Salesforce

**Maximum Marks**: 4 Marks

## Technical Architecture:

This project is designed to modernize and streamline the operations of a public transport system (RTC) using Salesforce. The system efficiently manages bus stations, trips, employees, and ticket fare data. Key functionalities include:

* Managing employee data, designations, and assignments
* Organizing trips, drivers, conductors, and ticket fare logic
* Passenger count and revenue tracking
* Real-time operational insights through dashboards and reports
* Validation and automation via triggers and flows

The application enhances user experience, data accuracy, and operational visibility across the RTC department.

## Table-1: Components & Technologies

|  |  |  |  |
| --- | --- | --- | --- |
| S.No | Component | Description | Technology |
| 1 | User Interface | Central interface for managing RTC operations | Salesforce Lightning App Builder |
| 2 | Application Logic-1 | Logic for trips, fare, and employee assignment | Salesforce Flows / Apex |
| 3 | Application Logic-2 | Passenger count tracking, total fare computation | Salesforce Flows / Apex |
| 4 | Application Logic-3 | Automation of validations and dependencies | Process Builder / Flows / Apex |
| 5 | Database | Stores all RTC-related data | Salesforce Standard & Custom Objects |
| 6 | Cloud Database | Secure and scalable object storage | Salesforce Platform Database |
| 7 | File Storage | Optional storage for reports, fare sheets, etc. | Salesforce Files / ContentVersion |

## Table-2: Application Characteristics

|  |  |  |
| --- | --- | --- |
| S.No | Characteristics | Description / Technology |
| 1 | Open-Source Frameworks | Not directly applicable as Salesforce is a managed platform / N/A |
| 2 | Security Implementations | Object-level, field-level, role-based access, profile control / Salesforce Security Model, IAM |
| 3 | Scalable Architecture | Built on Salesforce multi-tenant cloud architecture / Salesforce Platform Architecture |
| 4 | Availability | Highly available through Salesforce global infrastructure / Salesforce Load Balancing, CDN |
| 5 | Performance | Optimized via indexing, governor limits, efficient data access / SOQL, Caching, Asynchronous Apex |

## Milestones Implemented:

Milestone 1: Created a Salesforce Developer Org for project setup  
Milestone 2: Designed and created custom objects – Bus Station, Bus, Trip, Ticket Fare, Employee  
Milestone 3: Created custom tabs for each object for easy navigation  
Milestone 4: Built the Lightning App – "Public Transport" for centralized access  
Milestone 5: Added fields including standard, picklist, formula, lookup, and checkbox fields  
Milestone 6: Customized page layouts for all objects to streamline data entry and viewing  
Milestone 7: Implemented validation rules on Employee, Trip, and Bus objects  
Milestone 8: Developed flows for role automation, ticket fare calculation, and other logic  
Milestone 9: Created Apex trigger and handler to validate trip-related employee roles  
Milestone 10: Built reports for insights such as Employees by Bus Station  
Milestone 11: Designed dashboards for real-time metrics like passenger count and revenue  
Milestone 12: Finalized project with a summary of outcomes, benefits, and system impact

## References:

- https://www.salesforce.com/products/platform/overview/  
- https://c4model.com/  
- https://developer.ibm.com/patterns/  
- https://help.salesforce.com/s/articleView?id=sf.flow\_build.htm