

REQUIREMENT ANALYSIS PHASE

Metro Ticket Generating System using ServiceNow

4. REQUIREMENT ANALYSIS PHASE

The **Requirement Analysis Phase** is one of the most critical phases in the project lifecycle. In this phase, detailed requirements of the **Metro Ticket Generating System using ServiceNow** are identified, analyzed, validated, and documented. This phase ensures that the system is developed according to user needs, operational goals, and technical feasibility.

For the Metro Ticket Generating System, requirement analysis focuses on understanding passenger expectations, administrative needs, system behavior, data handling, and ServiceNow platform capabilities.

4.1 Requirement Gathering Techniques

To gather accurate and complete requirements, the following techniques are used:

- **Stakeholder Interviews** – Understanding expectations from passengers and metro administrators
- **Observation** – Studying current manual ticketing processes
- **Questionnaires** – Collecting user feedback on pain points
- **Document Analysis** – Reviewing existing metro ticketing workflows
- **ServiceNow Platform Analysis** – Understanding platform constraints and features

These techniques help in identifying both functional and non-functional requirements.

4.2 Stakeholder Requirements

4.2.1 Passenger Requirements

- Easy and quick ticket booking process
- Clear selection of source and destination stations
- Accurate fare calculation
- Confirmation of ticket generation
- Reduced waiting time

4.2.2 Metro Administrator Requirements

- Ability to manage routes and fares
- View and track ticket requests
- Generate reports and analytics
- 1• Control user access and permissions

4.2.3 System Administrator Requirements

- Easy configuration and maintenance
- Secure role-based access control
- Workflow monitoring and troubleshooting

4.3 Functional Requirements

Functional requirements describe what the system should do.

FR1: User Authentication

- The system shall allow users to log in using ServiceNow credentials

FR2: Ticket Request Submission

- The system shall provide a Service Catalog item for metro ticket booking
- Users shall select source station and destination station

FR3: Fare Calculation

- The system shall automatically calculate fare based on selected stations

FR4: Ticket Generation

- The system shall generate a unique ticket ID for each request
- The system shall store ticket details in a database table

FR5: Workflow Automation

- The system shall trigger an automated flow upon ticket request submission

FR6: Notifications

- The system shall notify users after successful ticket generation

FR7: Admin Management

- Admin users shall manage routes, stations, and fares

FR8: Reporting

- The system shall generate reports on ticket usage and revenue

4.4 Non-Functional Requirements

Non-functional requirements define system quality attributes.

Performance

- The system shall generate tickets within minimal response time

Security

- Role-based access control shall be implemented
- Sensitive data shall be protected

Usability

- Forms shall be user-friendly and easy to navigate

Scalability

- The system shall handle increased number of ticket requests

Reliability

- The system shall ensure data accuracy and consistency

4.5 Data Requirements

The system requires structured data storage for effective operation.

Key Data Entities

- Metro Ticket
- Passenger Details
- Station Information
- Route Details
- Fare Details

Data Fields Example (Metro Ticket Table)

- Ticket ID
- Passenger Name
- Source Station
- Destination Station
- Fare Amount
- Date and Time
- Ticket Status

4.6 User Interface Requirements

- Simple Service Catalog form
- Dropdown selection for stations
- Auto-calculated fare field (read-only)
- Submit and confirmation message
- Admin forms for route and fare management

4.7 System Requirements (ServiceNow Mapping)

Requirement	ServiceNow Component
Ticket Booking	Service Catalog items
Data Storage	Custom Tables
Automation	Flow Designer
Notifications	Email Notifications
Reporting	Reports & Dashboards

4.8 Assumptions and Constraints

Assumptions

- Users have access to ServiceNow portal
- Fare structure is predefined

Constraints

- Project limited to ServiceNow platform
- No real-time payment integration
- Academic project time limitation

4.9 Requirement Validation

All requirements are validated through: - Stakeholder review - Mentor approval - Prototype demonstration

Validated requirements reduce rework and ensure clarity.

Conclusion of Requirement Analysis Phase

The Requirement Analysis Phase successfully identified and documented all functional and non-functional requirements for the Metro Ticket Generating System using ServiceNow. This phase ensures a clear understanding of system expectations and provides a solid foundation for the **Design and Development Phases**.

By aligning user needs with ServiceNow capabilities, the project is positioned for efficient implementation and successful completion.