

**Form Based Specification
And
Tabular Specification
For
Road Repair and Tracking System
(RRTS)**

Prepared By: Naveen Kumar Khuntay (121CS0176)

Submitted to : DR. Judhistir Mohapatro, Professor
Software Engineering Lab - CS3074

Date: 23 Jan 2024

Form Based Specification

Complain Registration/RRTS/SRS/3.3.1	
Function	Take complaints and update
Description	Allows residents to submit repair requests, which are then entered into the system by clerks. This ensures a systematic approach to recording and managing repair complaints.
Inputs	location, type of issue, comments
Sources	Residence via phone or written complaints
Outputs	A confirmation message to the resident with the assigned complaint ID, stored complaint data for further processing by supervisors
Destination	To the Supervisor
Action	Clerks input resident-provided data into the system, ensuring accuracy and completeness. The system generates a unique complaint ID for each entry.
Requires	Access to the Complaint Registration module, Valid resident-provided repair requests
Pre-Condition	The data set should be complete and accurate, Clerks have access to the Complaint Registration module
Post-Condition	Unique complaint IDs are generated for each entry, Complaint data is stored in the system for further processing.
Side-effects	Clerks may need training for efficient data entry

Supervisor Assessment/RRTS/SRS/3.3.2	
Function	Evaluate and prioritize repair request
Description	Evaluate and prioritize repair requests. They estimate the required resources for each repair based on the severity of the road condition and the locality type.
Inputs	Complaint data, Supervisor's examination of road conditions and severity, Locality type (e.g., commercial, busy, deserted)
Sources	Database of the Public Works Department, Supervisor's assessment of road conditions, Complaint data
Outputs	Prioritized repair requests with detailed resource estimates. Daily reports for supervisors with area-wise lists of fresh complaints.
Destination	Prioritized repair requests sent for further action; Daily reports provided to supervisors
Action	Supervisors assess the complaints, assigning priority based on severity and locality type. Estimate the raw material, machine types, and personnel required for each repair.
Requires	Access to Supervisor Assessment module, Supervisor's examination of road conditions and severity
Pre-Condition	Complaint data should be available in the system, Locality type must be identified for each repair request
Post-Condition	Daily reports for supervisors are generated, Detailed resource estimates are associated with each repair
Side-effects	Potential delays if supervisors face challenges in assessing severity

Scheduling/RRTS/SRS/3.3.3	
Function	Schedule request based on prioritized repair requests
Description	Efficiently produce repair schedule based on prioritized repair requests, considering the availability of resources such as raw materials, machines, and personnel.
Inputs	Prioritized repair requests, Availability status of raw materials, machines, and personnel, area-wise lists of fresh complaints
Sources	Supervisor Assessment module
Outputs	Detailed repair schedule, including assigned personnel, machines, and estimated completion times, Updated daily reports for supervisors
Destination	Repair schedule communicated to relevant personnel and supervisors
Action	The system schedules repair work, considering priority, and resource availability. Daily reports are updated to reflect scheduled repairs.
Requires	Scheduling Module, prioritized repair request, real-time status of resources, complaint data.
Pre-Condition	All data should be present and valid
Post-Condition	A detailed repair schedule is generated and available for implementation
Side-effects	None

Administrator Management/RRTS/SRS/3.3.4	
Function	Maintain and Update logistics
Description	Maintain and update data on available manpower and machines. Efficient resource allocation and rescheduling of ongoing projects if changes are made.
Inputs	Data on resources like manpower and machines
Sources	Data by supervisor and administrator on resources
Outputs	Updated records of available manpower and machines. Notifications to supervisors if ongoing projects are affected by changes.
Destination	Updated records stored in the database. Notification to supervisor.
Action	The system updates the database with the administrator's changes. If there are ongoing projects, the system triggers a reschedule based on the updated data.
Requires	Data on available manpower and machines Authorization from the city corporation administrator
Pre-Condition	Ongoing projects, if any, are identified
Post-Condition	Records are updated on manpower and machines in the database
Side-effects	Potential disruptions in ongoing projects if rescheduling is triggered

Statistics Reporting /RRTS/SRS/3.3.5	
Function	Produce statistics of the data
Description	Provides insights into the city's repair activities. It involves compiling and processing relevant data based on the request and generating detailed statistical reports.
Inputs	Data from database of the Public Works Department of city, mayor's request of specific statistics
Sources	Data stored in the system on completed and outstanding repairs
Outputs	Detailed statistical reports, including the number and types of repairs over time. Statistics of utilization of resources during repairs.
Destination	Statistical reports delivered to the mayor for review.
Action	The system compiles and processes relevant data based on the mayor's request. Generates statistical reports as per the requested parameters.
Requires	Access to the Statistics Reporting module. Data on completed and outstanding repairs in the system
Pre-Condition	Relevant data on completed and outstanding repairs is available. Mayor's request for specific statistics is received.
Post-Condition	Detailed statistical reports are generated based on the mayor's request. Reports are made available for the mayor's review
Side-effects	Potential system load during the compilation and processing of extensive statistical data

Tabular Specification

Condition	Action
If the username and password are wrong	Do not give authorisation and message to check credentials again.
If resources are not available	Repair request cannot be scheduled
Priority based on region of city	General priority order 1) commercial area, 2) busy area 3) relatively deserted area