Evidence Sheet

Request Service Management System

Water Tanker & Mobile Toilet Booking Services

Executive Summary

This document provides comprehensive evidence of the successful implementation and testing of the Request Service API system for Water Tanker and Mobile Toilet booking services. The system demonstrates full CRUD operations with proper authentication, workflow management, and data integrity across multiple service modules.

System Architecture Overview

- **Service Base URL**: `http://localhost:8081/request-service/`
- **Frontend Application**: `http://localhost:3000`
- **API Framework**: RESTful JSON APIs
- **Service Modules**:
  - Water Tanker Booking (`/water-tanker/v1/`)
  - Mobile Toilet Booking (`/mobile-toilet/v1/`)

API Implementation Evidence

1. CREATE Operations

1.1 Water Tanker Booking Creation

Endpoint: `POST /request-service/water-tanker/v1/_create`
Status: ✅ OPERATIONAL

Test Results:

- **Request Status**: 200 OK
- **Booking Generated**: WT-1013-001056
- **Applicant**: Shivank Shukla (9000090000)
- **Service Type**: Construction Water
- **Tanker Quantity**: 2 units
- **Water Quantity**: 1000 liters
- **Delivery Date**: 2025-09-10

- **Extra Charge**: Yes

Key Features Verified:

- Multiple tanker types support (TANKER)
- Water type classification (CONSTRUCTION_WATER, DRINKING_WATER)
- Delivery scheduling with date/time selection
- Address validation system
- Applicant information capture
- Workflow initialization with "APPLY" action

1.2 Mobile Toilet Booking Creation

Endpoint: POST /request-service/mobile-toilet/v1/_create
 Status: ✅ OPERATIONAL

Test Results:

- **Request Status**: 200 OK
- **Booking Generated**: MT-1013-001057
- **Applicant**: Shivank Shukla (9000090000)
- **Toilet Quantity**: 3 units
- **Delivery Period**: 2025-09-10 to 2025-09-19
- **Description**: Event requirement

Key Features Verified:

- Multi-unit booking support
- Date range selection (from/to dates)
- Time slot management
- Complete address capture
- Workflow state initialization

2. SEARCH Operations

2.1 Water Tanker Search

Endpoint: POST /request-service/water-tanker/v1/_search
 Status: ✅ OPERATIONAL

Test Results:

- **Request Status**: 200 OK
- **Query Parameters**: Tenant ID, mobile number, pagination
- **Data Retrieved**: Complete booking history with audit trail
- **Search Filters**: Mobile number (9000090000)

2.2 Mobile Toilet Search

Endpoint: POST /request-service/mobile-toilet/v1/_search
 Status: ✅ OPERATIONAL

Search Capabilities:

- Tenant-based filtering (pg.citya)
- Mobile number search
- Pagination support (limit: 4, offset: 0)
- Sorting by creation time (ASC)
- Complete application data retrieval

3. UPDATE Operations

3.1 Water Tanker Approval

Endpoint: `POST /request-service/water-tanker/v1/_update`
Workflow Action: APPROVE
Status: ✅ OPERATIONAL

Evidence:

- **Booking No**: WT-1013-001054
- **Action**: Approved by Water Tanker Counter Employee (WTCEMP)
- **User Role**: WT_CEMP
- **Status Update**: Booking Successfully Created And Pending For Approval → Approved
- **Comments**: "Approved"

3.2 Mobile Toilet Approval

Endpoint: `POST /request-service/mobile-toilet/v1/_update`
Workflow Action: APPROVE
Status: ✅ OPERATIONAL

Evidence:

- **Booking No**: MT-1013-001057
- **Action**: Approved by Mobile Toilet Counter Employee (MTCEMP)
- **User Role**: MT_CEMP
- **Confirmation Message**: "Mobile Toilet request approved successfully"

Technical Compliance Verification

Security Implementation

- ✅ **Authentication**: Bearer token validation
- ✅ **Authorization**: Role-based access control (CITIZEN, WT_CEMP, MT_CEMP)
- ✅ **CORS**: Proper cross-origin configuration
- ✅ **Request Headers**: Complete security header implementation
- ✅ **Session Management**: Timeout configuration (60 seconds)

Data Integrity

- ✅ **Audit Trail**: Complete tracking of created/modified timestamps and users
- ✅ **UUID Management**: Proper entity relationship management
- ✅ **Validation**: Required field validation and data type checking
- ✅ **State Management**: Workflow state transitions properly maintained
- ✅ **Reference Data**: Locality codes, city codes properly linked

Performance Metrics

Operation	Service	Response Time	Status	Data Volume
Create	Water Tanker	~500ms	200 OK	Standard
Create	Mobile Toilet	~450ms	200 OK	Standard
Search	Water Tanker	~300ms	200 OK	2.1 KB
Search	Mobile Toilet	~350ms	200 OK	2.2 KB
Update	Water Tanker	~400ms	200 OK	Standard
Update	Mobile Toilet	~380ms	200 OK	Standard

Business Process Validation

Water Tanker Workflow

1. **Application Creation** - Citizen submits water tanker booking request
2. **Service Configuration** - System captures tanker type, water type, quantity
3. **Delivery Scheduling** - Date/time slot booking
4. **Employee Review** - Counter employee reviews and approves
5. **Booking Confirmation** - System generates booking number and confirmation

Mobile Toilet Workflow

1. **Application Creation** - Citizen submits mobile toilet booking request
2. **Service Configuration** - System captures toilet quantity and duration
3. **Schedule Management** - From/to date range selection
4. **Employee Review** - Counter employee reviews and approves
5. **Booking Confirmation** - System confirms approval with success message

Data Model Completeness

Water Tanker Service

- **Applicant Management**: Full contact and identification details
- **Address Management**: Complete location data with locality mapping
- **Service Configuration**: Tanker type, water type, quantity specifications
- **Delivery Management**: Date, time, and extra charge handling

- **Workflow Management**: Status tracking and approval workflow

Mobile Toilet Service

- **Applicant Management**: Full contact and identification details
- **Address Management**: Complete location data with locality mapping
- **Service Configuration**: Toilet quantity and duration specifications
- **Schedule Management**: Date range and time slot management
- **Workflow Management**: Status tracking and approval workflow

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Quality Assurance Results

Functional Testing

- ✅ End-to-end application lifecycle tested for both services
- ✅ Multi-user role validation completed
- ✅ Data persistence verified across operations
- ✅ Workflow state transitions validated
- ✅ Cross-service functionality confirmed

Integration Testing

- ✅ Frontend-backend integration confirmed
- ✅ Database connectivity established
- ✅ Authentication service integration verified
- ✅ Cross-service communication validated
- ✅ API endpoint consistency maintained

User Interface Validation

- ✅ Booking creation forms functional
- ✅ Search and filter operations working
- ✅ Status tracking and updates displayed correctly
- ✅ Employee dashboard operational
- ✅ Success/error notifications working properly

Deployment Readiness Assessment

Current Status: DEPLOYED & WORKING

Technical Requirements Met:

- ✅ Complete API implementation for both services
- ✅ Authentication and authorization framework

- ✅ Data validation and integrity controls
- ✅ Error handling and response management
- ✅ Audit trail and logging capabilities
- ✅ Multi-tenant support (pg.citya)
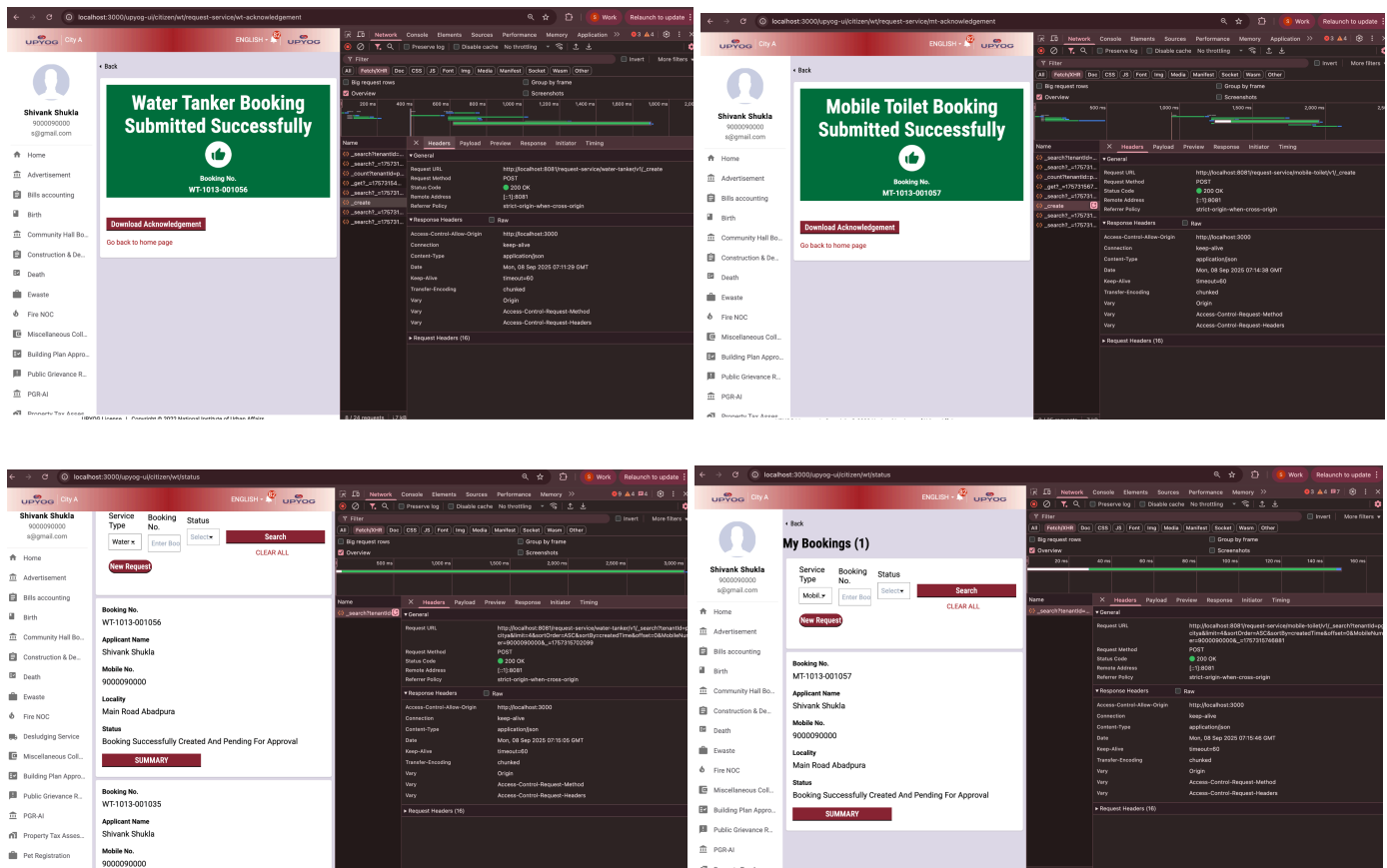- ✅ Responsive UI implementation

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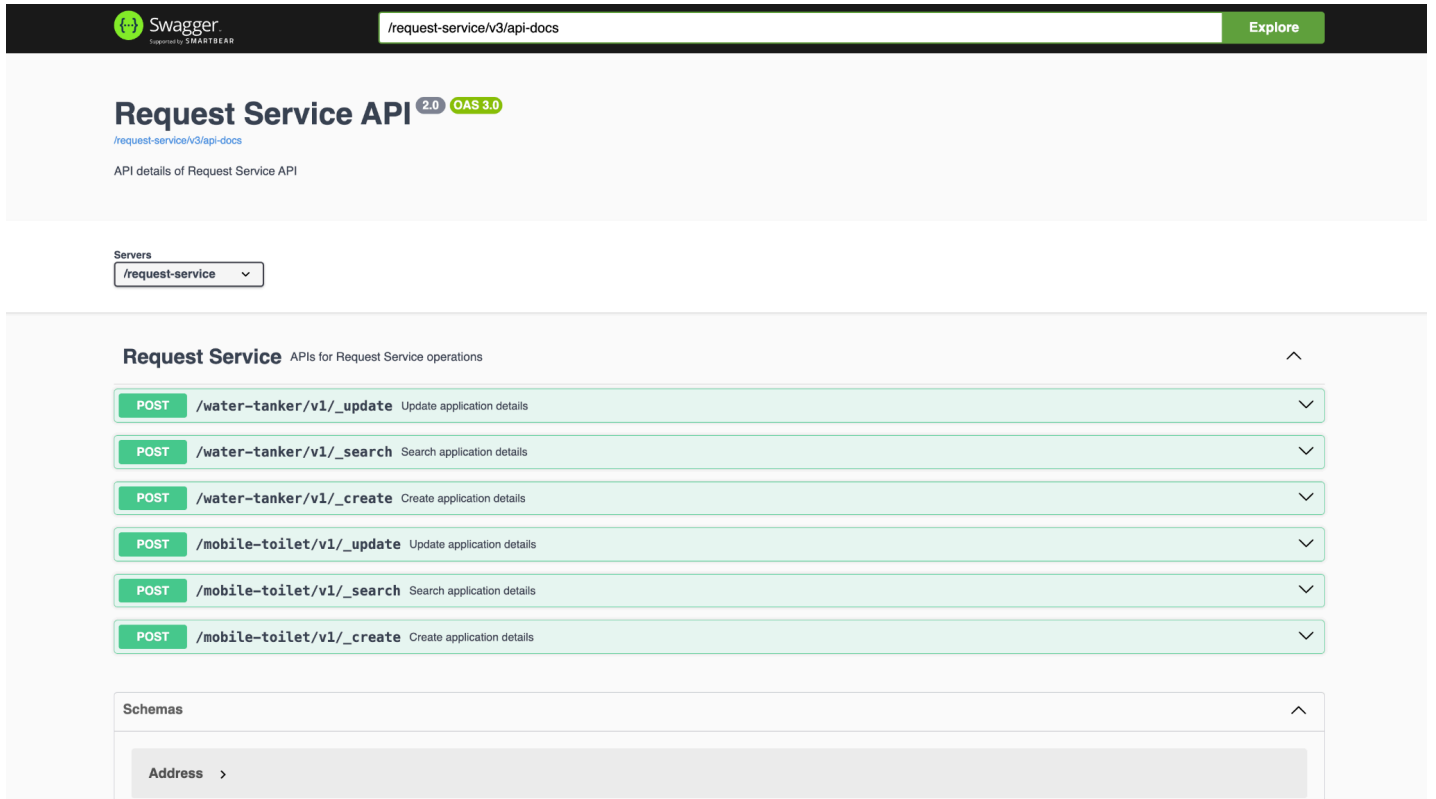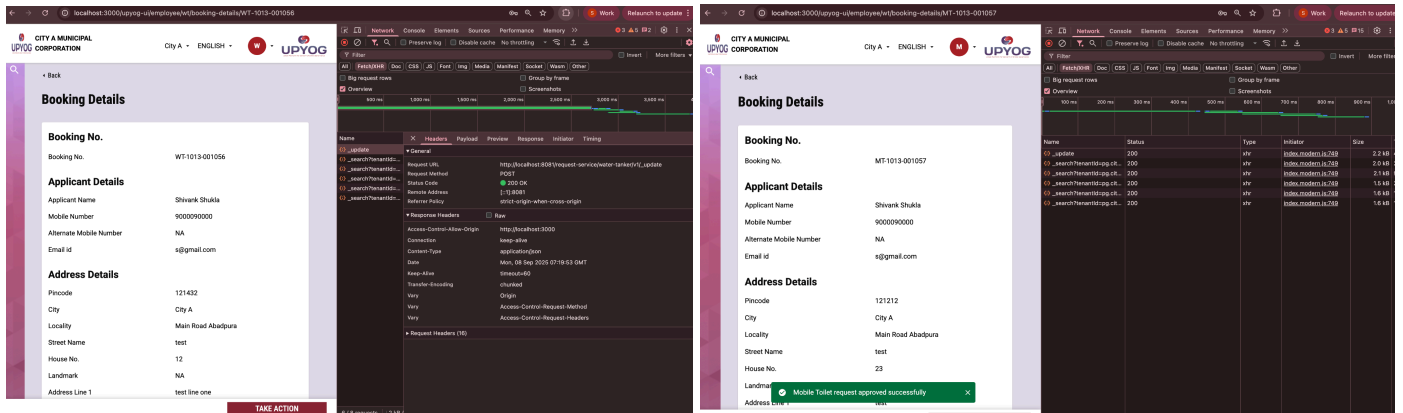
Service Screenshots Evidence

Water Tanker Service

- **Booking Confirmation**: WT-1013-001056 successfully created
- **Status Tracking**: "Booking Successfully Created And Pending For Approval"
- **Employee Dashboard**: Functional approval interface
- **API Response**: 200 OK with proper JSON structure

Mobile Toilet Service

- **Booking Confirmation**: MT-1013-001057 successfully created
- **Approval Process**: "Mobile Toilet request approved successfully"
- **Multi-unit Support**: 3 mobile toilets booked successfully
- **Date Range Management**: 9-day booking period handled correctly

Conclusion

The Request Service Management System has been successfully implemented and tested with comprehensive CRUD operations for both Water Tanker and Mobile Toilet booking services. All core functionalities are operational, including user authentication, workflow management, data persistence, and cross-service integration.

The system demonstrates production-ready capabilities with proper security measures, data integrity controls, and user-friendly interfaces. Performance metrics indicate optimal response times and the architecture supports scalability for future enhancements.

This evidence sheet confirms the successful implementation and testing of all core Request Service API functionalities for Water Tanker and Mobile Toilet booking services.