

Rate Schedule and Estimate Preparation Software For DWASA



Company: Coder De Dhaka Ltd.

Email: info@coderdedhaka.com

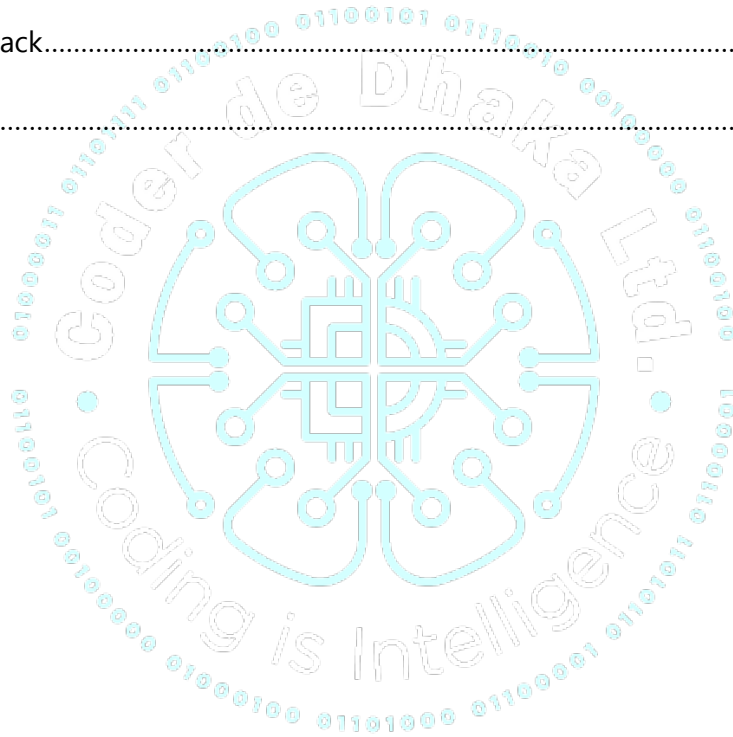
**Address: House No.45/A, Dilu Road, New Eskaton,
Dhaka 1217.**

Mobile: +(88) 01915 636 758

Rate Schedule and Estimate Preparation Software for Dhaka WASA

TABLE OF CONTENTS

Content	Page
1. Introduction.....	03
2. Functional Requirements	03
3. Non-functional Requirements	09
3.5. Basic Flowchart	10
4. Technical Stack.....	13
5. Conclusion	13



1. Introduction

1.1 Purpose

The Rate Schedule and Estimate Preparation Software for DWASA aims to streamline the process of creating, managing, and analyzing rate schedules and estimates for construction projects undertaken by the Dhaka Water Supply and Sewerage Authority.

1.2 Scope

This software will cover the entire lifecycle of rate schedule and estimate preparation, including creation, validation, approval workflows, storage, and reporting. It will integrate seamlessly with existing DWASA systems and databases.

2. Functional Requirements

2.1 Rate Schedule Management

The Rate Schedule Management Software is designed to automate and streamline the rate scheduling process for Dhaka WASA. This software aims to enhance efficiency, accuracy, and transparency in managing rates.

Objectives:

Automate Rate Schedule: Develop a user-friendly interface to automate the creation, modification, and deletion of water supply rate schedules.

Transparency: Ensure transparency in rate calculations, allowing stakeholders to understand the basis of the rates.

Data Security: Implement robust data security measures to protect sensitive rate-related information.

Accessibility: Provide authorized personnel with secure access to rate schedules from anywhere at any time.

User Management:

- Admin Panel for user roles and permissions management.
- Users: Super Admin, Admin, Data Entry Operators.

Admin Panel:

- Login/Logout functionality.
- Admin user management (create, edit, delete).
- User roles and permissions management.

Regular Users:

- Login functionality.
- View rate schedules based on permissions.
- Search and filter rate schedules.

Analytics Dashboard:

- Visualize rate data with charts and graphs.
- Monitor trends and make data-driven decisions.

Rate Schedule Creation:

- Ability to define new rate schedules including tariff details, effective dates, and applicable zones.
- Support for different types of rates: residential, commercial, industrial, etc.

Edit Rate Schedule:

- Modify existing rate schedules.
- Track changes with version history.

View Rate Schedule:

- Display current and historical rate schedules.
- View rates based on date range.

Rate Calculation:

- Automated rate calculation based on predefined formulas considering consumption, type of usage, and other relevant factors.

Rate Modification and Deletion:

- Allow authorized users to modify existing rate schedules and set expiration dates.
- Provide a log of modifications for auditing purposes.

Rate Schedule Approval Workflow:

- Implement an approval process for rate schedules involving multiple stakeholders.
- Notifications for pending approvals and status updates.

Reporting:

- Generate customizable reports on existing rate schedules, consumption patterns, revenue generated, etc.
- Support for exporting reports in common formats like PDF, Excel, CSV.

Security:

- Data encryption during transmission and storage.
- Role-based access control to ensure data confidentiality.
- Regular security audits and vulnerability assessments.

Performance:

- System response time should be optimized for efficient usage.
- Scalability to handle a large volume of rate schedule data.

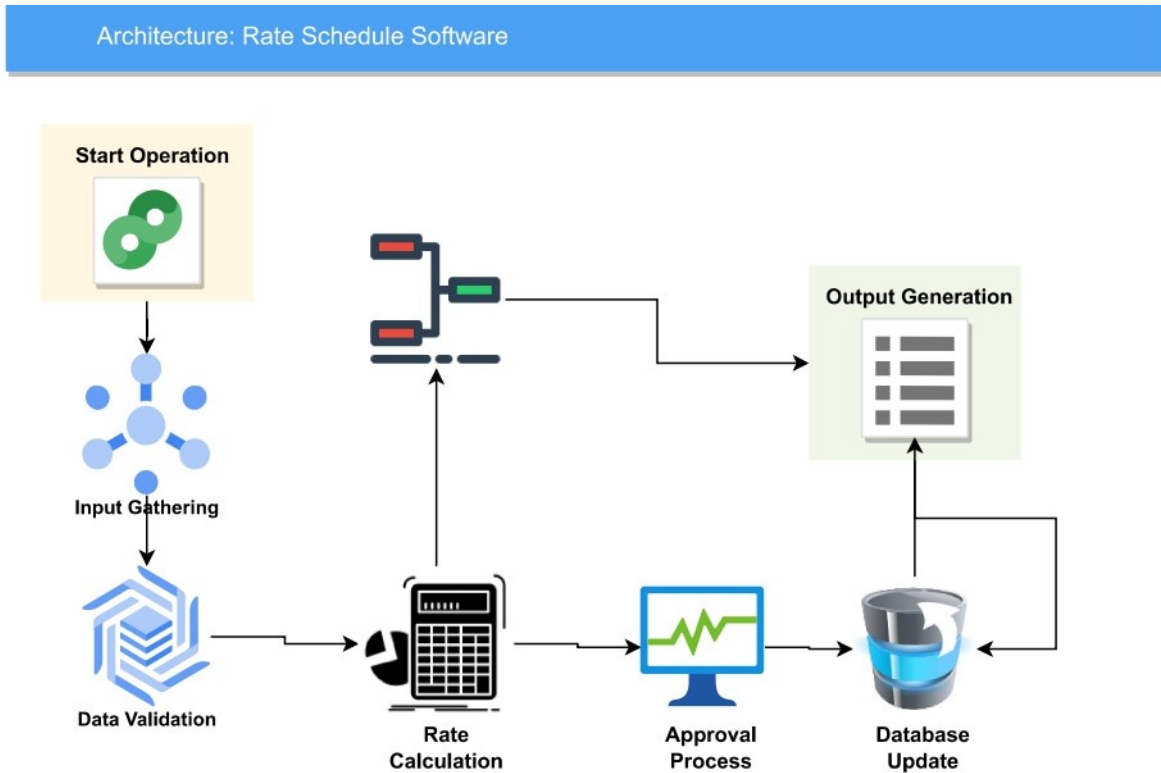
Reliability:

- Regular data backups and disaster recovery mechanisms in place.
- Minimal downtime for maintenance activities.

User Experience:

- Intuitive user interface with easy navigation.
- Multi-language support (English and Bengali).

Rate Schedule Software Architecture:



2.2. User Interface (UI) and User Experience (UX):

Intuitive Dashboard: A user-friendly dashboard displaying relevant project information, quick access to tools, and notifications.

Customizable Interface: Users can customize the layout, colors, and widgets according to their preferences.

Responsive Design: Ensures seamless experience across various devices and screen sizes.

2.3 Authentication and Authorization:

Secure Login: Encrypted login system with multi-factor authentication for enhanced security.

Role-Based Access Control: Admin, estimator, and client roles with specific access permissions.

2.4 Estimate Preparation

Project Details: Input project specifics, client details, and project deadlines.

Estimate Generation: Engineers should be able to create project estimates using approved rate schedules and project specifications.

Auto-Calculation: Automatic calculation of total costs based on quantities specified in the estimate.

Comparison Tools: Provide tools to compare estimates against historical data and industry standards to ensure competitiveness.

Customization: Users should be able to customize rate schedules, estimate templates, and reports according to the specific requirements of their projects or organization.

Task Breakdown: Add tasks, subtasks, and milestones. Define dependencies and task durations.

Material Estimation: Integrate a database of materials, allowing users to select and estimate material costs easily.

Labor Estimation: Allocate labor resources to tasks, specifying hourly rates and work hours.

Equipment Estimation: Include equipment costs based on usage duration and equipment rates.

Contingency and Overhead: Allocate contingency and overhead costs as a percentage of the total estimate.

Collaboration: Allow collaboration among team members, enabling real-time editing and comments.

Multi-Project Management: Capability to manage estimates for multiple projects simultaneously.

2.5 Cost Estimation:

The software calculates total project costs based on the provided rates and quantities. It should be able to break down costs into different categories, such as labor, materials, equipment, overheads, and profit margins.

2.6 Integration and Data Management

Database Integration: Integrate with DWASA databases to fetch project data, historical cost information, and other relevant details.

Data Import/Export: Allow bulk import and export of rate schedules and estimates in standard formats like CSV or Excel.

Data Security: Ensure data security through encryption, role-based access control, and regular backups.

2.7 Reporting and Analysis

Custom Reports: Engineers and administrators should be able to generate custom reports, including cost breakdowns, project-wise expenses, and comparative analyses.

Visualization Tools: Implement charts and graphs for visual representation of cost data for better decision-making.

Real-time Dashboards: Provide real-time dashboards displaying ongoing projects, costs, and rate schedule statuses.

2.8 Collaboration:

Collaboration features such as user permissions, version control, and comments are essential for teamwork and ensuring that everyone involved in the project is on the same page.

2.9 Notifications and Alerts:

Email/SMS Notifications: Notify users about approaching deadlines, task assignments, and project updates.

Alerts: Instant alerts for rate changes, cost overruns, and project delays.

Security and Compliance:

Data Encryption: Encrypt data both in transit and at rest to ensure data security.

Compliance: Adhere to data protection regulations and industry standards.

3. Non-functional Requirements

3.1 Performance

- The system should handle simultaneous users without performance degradation.
- Ensure responsive performance even with a large dataset of rate schedules and estimates.

3.2 Reliability

The software should be reliable and available 24/7, minimizing downtime for maintenance.

3.3 Support and Training:

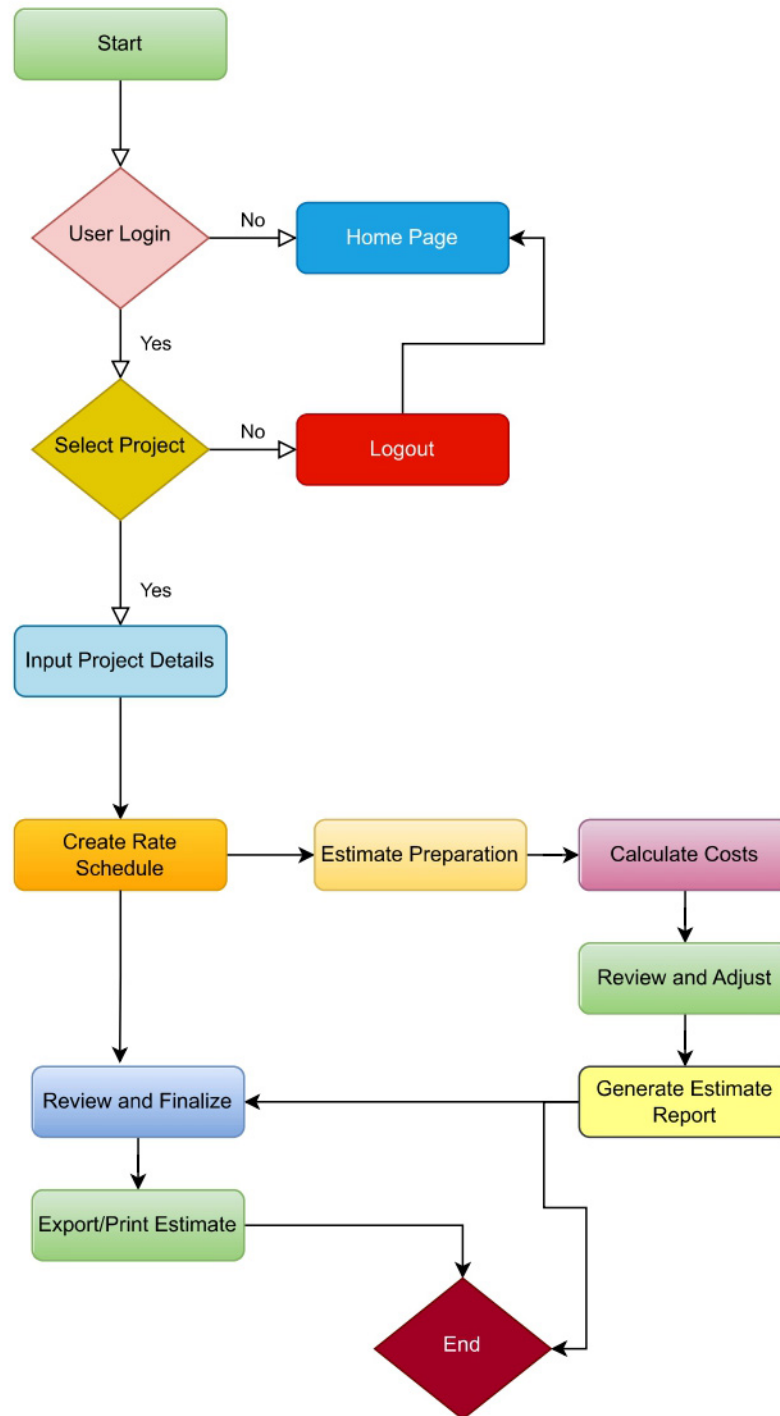
User Guides: Provide comprehensive user guides and tutorials within the software.

Customer Support: Offer responsive customer support via email, chat, or phone.

3.4 Scalability

The architecture should be scalable to handle an increasing number of rate schedules, estimates, and users.

3.5 Basic Flowchart



3.6 Basic Flowchart Details

1. Start:

- User initiates the software.

2. User Login:

- User enters login credentials.
- System validates the user.

3. Select Project:

- User selects the project for which the rate schedule and estimate are to be prepared.

4. Input Project Details:

- User inputs project-specific information (name, location, scope, etc.).

5. Create Rate Schedule:

- User creates a new rate schedule or selects an existing one.
- System provides options to add/edit rates for various tasks, materials, and labor.

6. Estimate Preparation:

- User starts the estimate preparation process.
- System prompts for input: labor hours, material quantities, overhead costs, etc.

7. Calculate Costs:

- System calculates total costs based on input data and rate schedule.
- Calculates labor costs, material costs, overhead costs, and any additional expenses.

8. Review and Adjust:

- User reviews the calculated costs and estimates.
- Option to adjust rates, quantities, or other parameters.

9. Generate Estimate Report:

- System generates a detailed estimate report.
- Includes project details, itemized costs, labor and material breakdown, taxes, and total project cost.

10. Review and Finalize:

- User reviews the generated estimate report.
- If satisfied, user finalizes the estimate for the project.

11. Export/Print Estimate:

- User exports the estimate report in desired format (PDF, Excel, etc.).
- Alternatively, user prints the estimate report for documentation.

12. End:

- Process concludes.

4. Technical Stack

Programming Language:

Database:

Frameworks/Libraries:

Security:

Hosting:

5. Conclusion

This Rate Schedule and Estimate Preparation Software specification outlines the requirements essential for DWASA's specific needs. Continuous collaboration between developers and DWASA representatives is crucial to ensure the software aligns perfectly with DWASA's workflow and standards.