**Software Requirements Specification**

Version 1.0

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**City Corporation Automation Software (CCAS)**

Team Members:

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| --- | --- |
| **Name** | **Roll no** |
| Tejash | 2006007 |
| Ketan kumar | 2006009 |
| Aayush | 2006012 |
| Ravi Ranjan | 2006013 |
| Namala Venkatarao | 2006014 |
| Shubham Kumar | 2006017 |
| Abhishek kumar | 2006022 |
| Aditya kumar | 2006023 |
| Abhishek | 2006035 |
| Amar ram | 2006037 |
| Ankit | 2006053 |

Prepared for

CSL6402—Software Engineering Lab

Instructor: Anil Kumar sir.

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# 1. Introduction

The City Corporation Automation Software (CCAS) is designed to automate various bookkeeping activities associated with the Municipal Corporation of a large city. The system aims to simplify the bookkeeping process, reduce manual intervention, and improve accuracy and efficiency.

## 1.1. Purpose

The purpose of this document is to present a detailed description of the City Corporation Automation Software (CCAS). It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system and will be proposed to the Regional Historical Society for its approval.

## 1.2. Scope of Project

The development of a City Corporation Automation Software (CCAS) that automates various bookkeeping activities associated with the Municipal Corporation of a large city. The system includes a web-based interface that provides information to residents on the facilities provided by the corporation, as well as a platform for road maintenance activities.

The scope of the information provided is to describe the requirements and features of the CCAS system, including its functionalities, user roles, and data inputs and outputs. It also provides an overview of the system's capability to automate various bookkeeping activities associated with the Municipal Corporation of a large city, including road maintenance activities.

## 1.3. Glossary

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| **Term** | **Defination** |
| supervisor | An administrative officer in charge of a business, government, or school unit or operation. |
| city corporation administrator | Person responsible for the implementation of all policy set by the mayor. |
| residents | One who has a residence in a particular place |
| web interface | Allows the user to interact with content or software running on a remote server through a Web browser. |
| Database | An organized collection of structured information, or data, typically stored electronically in a computer system. |
| Software Requirements Specification | A document that describes what the software will do and how it will be expected to perform. |
| Stakeholder | A person, group or organization with a vested interest, or stake, in the decision-making and activities of a business, organization or project. |
| User | A person who uses or operates something. |

## 1.4. Overview of Document

The system allows residents to raise repair requests for different roads of the city online. The system provides supervisors at different branch offices with the ability to view all new repair requests within their area. The supervisors then visit the road and assess the severity of the condition and estimate the raw material requirement, types, and number of machines required, and the number and types of personnel needed to carry out the repairs. The supervisors then enter this information through a special login in the web site.

Based on the data entered by the supervisors, the system schedules the repair work depending on the priority of the repair work and subject to the availability of raw material, machines, and personnel. The schedule report is used by the supervisors to direct different repair work. The progress of the work is entered periodically by the supervisor, and this can be viewed by the citizens on the web site.

The system also allows the city corporation administrator to enter the available manpower and machine data, which can be changed at any time. Any changes made to the available manpower and machine require a reschedule of the projects. The mayor of the city can request various road repair statistics such as the number and type of repairs carried out over a period of time and the repair work outstanding at any point of time, as well as the utilization statistics of the repair manpower and machine over any given period of time.

# 2. Software requirements specification

# 2a. Functional Requirements

Functional Requirements

The CCAS software shall have the following functional requirements:

2.1. Login Module: The software shall have a login module to authenticate users.

2.2. Department-wise Budgeting: The software shall allow departments to create and manage their budgets based on their requirements.

2.3. Accounting Module: The software shall provide an accounting module that can track financial transactions, including receipts, payments, and expenses.

2.4. Reporting Module: The software shall generate reports on various financial activities, including budget tracking, revenue collection, and expenditure.

2.5. Payroll Module: The software shall allow for the management of employee payroll, including calculating salaries, generating payslips, and tax deductions.

2.6. Asset Management Module: The software shall provide an asset management module to track assets, including their depreciation and maintenance schedules.

2.7. Taxation Module: The software shall allow the management of taxes, including property taxes, vehicle taxes, and other taxes as applicable.

# 2b. Non-Functional requirements

The CCAS software shall have the following non-functional requirements:

2b.1. User Interface: The software shall have a user-friendly interface that is easy to navigate and understand.

2b.2. Security: The software shall maintain the confidentiality, integrity, and availability of the data, and comply with applicable data protection laws.

2b.3. Performance: The software shall be designed to handle large amounts of data and provide real-time processing.

2b.4. Scalability: The software shall be scalable to accommodate the increasing volume of data and users.

2b.5. Compatibility: The software shall be compatible with different operating systems, browsers, and devices.

# 2c. Assumptions and Dependencies

The CCAS software is assumed to be dependent on the availability of the necessary hardware and software infrastructure, including servers, databases, and network connectivity.

Constraints

The development of CCAS is subject to the following constraints:

2c.1. Time: The software development project shall be completed within six months.

2c.2. Budget: The software development project shall be completed within the allocated budget.

# 3. Design

# 3a. Data Flow diagrams

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3a.1 Level-0-DFD

The above diagram is a 0-level DFD that only shows the flow of data between the various and the system. In City corporation automation system, the Supervisor and Administration are the controller of the system and all the decisions are made by Supervisor and Mayor. The Supervisor can view the repair requests of the residents and he can proceed to the action.

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3a.2 Level-1-DFD

The above shown diagram is a 1-level Data Flow Diagram for the City corporation automation system. According to this DFD various process are done after login process. The Supervisor can register requests sent by residents.

# 3b. Use Case diagrams

A use case diagram is used to represent the dynamic behaviour of a system. It encapsulates the system's functionality by incorporating use cases, actors, and their relationships. It models the tasks, services, and functions required by a system/subsystem of an application. It depicts the high-level functionality of a system and tells how the user handles a system.

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3b Use case diagram