# System Analysis and System Design

## 1. Feasibility Study:-

### 1.1 Problem

Design a Road Repair and Tracking software to automate various record keeping activities associated with road repairs in the Public Works Department of the Corporation of a large City. The design features and functionalities have been provided under the SRS document.

### 1.2 Scope

The Road Repair and Tracking Software is being developed so that it can be used by the Public Works Department (PWD) of the Municipal Corporation of a large city. Residents of different localities may register a complaint about roads which require attention and complaints will be resolved by undergoing under different stages of process like examining the resources required, scheduling the repair etc.

### 1.3 Stakeholders

The main stakeholder of the Road Repair and Tracking Software will be staff of the Public Works Department of the Municipal Corporation of the City. The requirement states that the clerk, supervisor, administrator and the Mayor would be the stakeholders of the system. General residents of the city would also be an indirect stakeholder of the system.

# 2. Requirement Analysis:-

## 2.1 Functional Requirements:

### 2.1.1 Login

**Input:** Login as Clerk, Supervisor, Corporation Administrator or City Mayor.

**Output:** Take the user to the specific area of system for further execution of work

### 2.1.2 Clerk

#### 2.1.2.1 Complaint

**Input:** Enter the complaint delivered to the clerk in written or over phone.

**Output:** Enter the complaint into a database.

#### 2.1.2.2 Print List

Print the list for the supervisors of the various areas, for them to go to the specific areas and examine the severity of the road condition.

## 2.1.3 Supervisor

### 2.1.3.1 Complaint List

Get complaint list that is generated by the clerk for the supervisor.

### 2.1.3.2 Rating

**Input:** Set Rating for a particular complaint based on the basis of the severity of the repair work and the location of the repair.

**Output:** The rating for a complaint is written to a file against the complaint and is needed to determine the priority of the complaint.

### 2.1.3.3 Requirements

**Input:** The requirements for the repair work (raw material, manpower and machines and also their types).

**Output:** All this data is written to a file for to be used by the corporation administrator.

### 2.1.3.4 Receive Work

The supervisor is allocated work by the administrator according to the various constraints of priority and availability of machines, manpower and raw materials.

### 2.1.3.5 Status

**Input:** Enter the status of the undergoing work, whether over or still undergoing for to be used by the administrator.

**Output:** The status is written to a file for to be accessed by the administrator.

## 2.1.4 Administrator

### 2.1.4.1 Complaints

Take complaints from the supervisors regarding their rating and requirements.

### 2.1.4.2 Modify Data

**Input:** Input data regarding modification of no. and types of machines, new or outgoing labour and the new material added.

**Output:** All this data is written to a file to be accessed to allocate work to the supervisors of the various regions.

### 2.1.4.3 Allocation of Work

Allocate work to the supervisors by providing resources and machines.

### 2.1.4.4 Reschedule Work

If anyhow some machine fails or for any reason the administrator wants to reschedule the work.

## 2.1.5 Mayor

### 2.1.5.1 Obtain Statistics

The Mayor has the right to access various road repair statistics such as the number and type of repairs carried out over a period of time and the repair work out standing at any point of time and the utilization statistics of the repair manpower and machines over a period of time.

## 2.2 Non Functional Requirements:

### 2.2.1 Software

The software should be reliable and secure.

### 2.2.2 Database

The database should not leak resources.

### 2.2.3 Platform

The software should be platform independent.

### 2.2.4 Network

Network connection should be available for database connection.

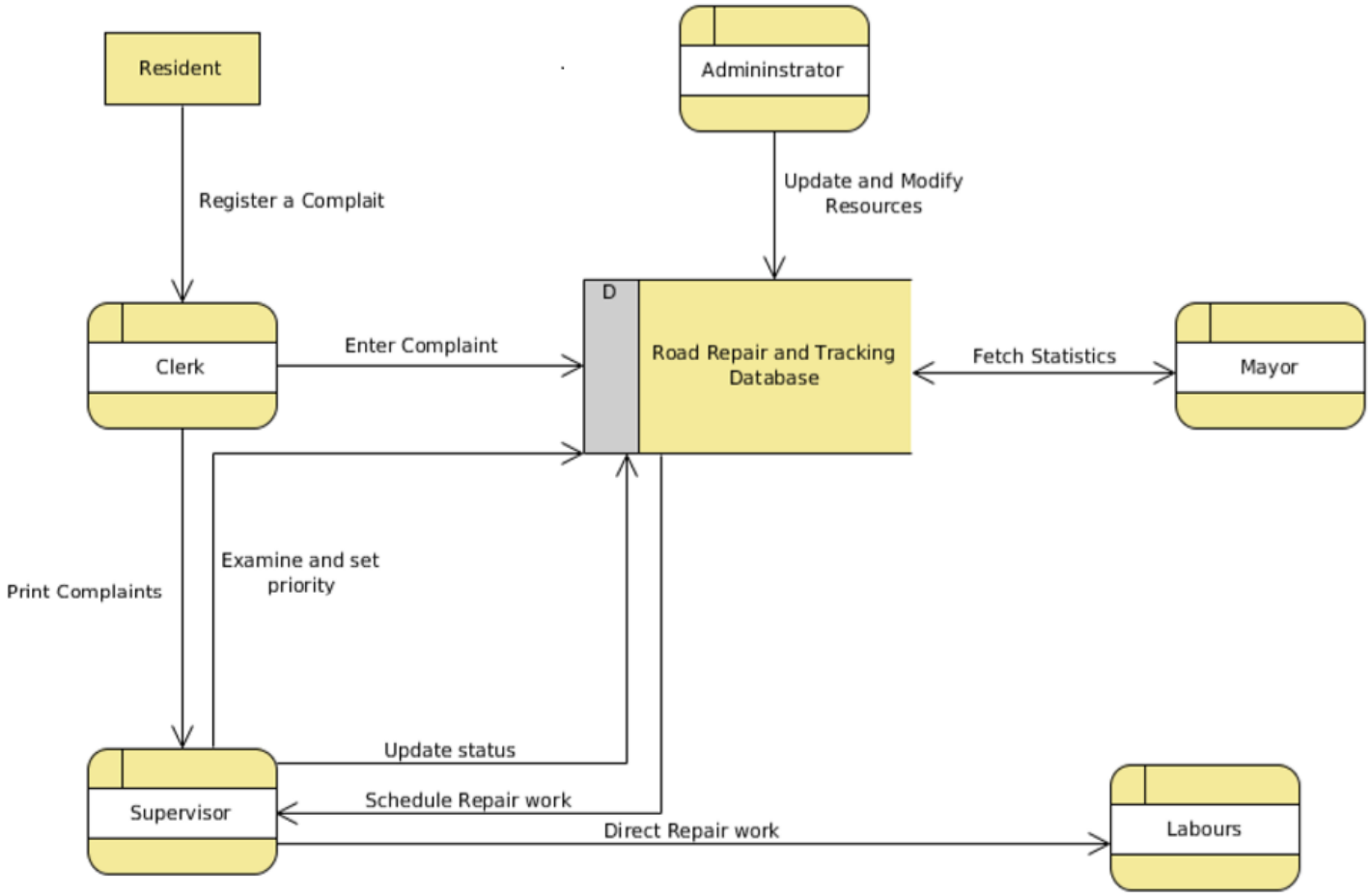
### 2.2.5 Security

Only authorized users with valid login credentials should be given access.

### 2.2.6 Software Maintenance

The software should be easily maintainable.

## 3. Data Flow Diagram:-




## 4. Detailed Design:-

The Road Repair and Tracking software should be platform independent. It should be able to run on any machine irrespective of the operating system used. A central server should be created to store the database. The user interface of the software will consist of icons and wizards.