

MUNICIPALITY COMPLAINT MANAGEMENT SYSTEM

A MINI PROJECT REPORT

Submitted by

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CERTIFICATE

Certified that the project work entitled “Municipality Complaint Management System” is an original work carried out by Mr Aditya Tiwari, Mr Gaurav Kumar Das, Mr Shivam Srivastava and Mr Tejas S Pradhan in partial fulfilment for the award of degree of Bachelor of Engineering in Computer Science and Engineering of S.D.M College of Engineering and Technology, Dharwad-580002, during the year 2018-19. The project report has been approved as it satisfies the academic requirements in respect of mini project work prescribed for Bachelor of Engineering Degree.

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1			
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ABSTRACT

In our country we have government bodies (Municipal Corporation) which are responsible for maintaining and running cities. It's all their responsibilities to address the complaint of citizens. For this municipal Corporation has 2 ways, in first cameras or other surveillance devices have to be installed and second way is that citizens could report their problem to the municipal corporation. The second way is mostly used because it is cheaper as compared to first one. But it takes paper work and time too because the citizens has to visit the ward office and report problem faced by them which can be solved by municipal corporation or as due to the emergence of internet and its various capabilities, there has been rise in the number of complaint sites which provides citizens a platform to lodge a complaint online.

The online platform also provides a user facility to view status of lodge complaint until is resolved, while online system will help officers at Municipal Corporation to solve/reject complaint with reasons and monitor the status of complaint. The Aim for creating this Application is to simplify the process of lodging complaint to respective Municipal Corporation and make it quick and cheaper.

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LIST OF ABBREVIATIONS

S. No.	Abbreviation	Full Form
1	HDMC	HUBLI-DHARWAD MUNICIPAL CORPORATION
2	ICT	INFORMATION AND COMMUNICATION TECHNOLOGY
3	BBMP	BRUHAT BENGALURU MAHANAGARA PALIKE
4	PHP	PHP: HYPERTEXT PREPROCESSOR
5	HTML	HYPER TEXT MARKUP LANGUAGE
6	CSS	CASCADING STYLE SHEETS
7	E R DIAGRAM	ENTITY RELATIONSHIP DIAGRAM

CHAPTER 1

INTRODUCTION

Hubli-Dharwad Municipal Corporation is responsible for providing citizens of Hubli-Dharwad basic urban service which lies with Hubli-Dharwar Municipal Corporation. So Hdmc is responsible for administration and providing basic infrastructure for the city. For lodging complaint in Hdmc, much time is require and victim needs to go to municipality office and stand in queue.

Municipality Complaint Management System is a web application that is introduced to facilitate the communication between municipality and citizens. The purpose of the application is to provide an interface that can be used by the user to lodge complaints. So Municipality Complaint Management System reduces people's efforts. The main idea is to make use of the existing web infrastructure to provide an easy, cheap and quick mode of complaint registration enable the citizens of city to lodge complaints anytime, anywhere getting their problems solved online without going to the office regularly until the problem is solved.

1.1 APPLICATIONS

Municipality Complaint Management System has many applications. It's useful in many ways.

- It will be easily accessible by the citizens for lodging complaint online, hence there is no need for them to personally go to municipal office for lodging complaint.
- Officials will be able to handle the complaints easily
- Citizens will be able to keep track for the registered complaints.

1.2 AIMS

This project's main aim is to create a web based application that will be useful to citizens of the city and officials in many possible ways so that problems faced are less. This web application is designed to

- Facilitate the communication between the municipality and people.
- Provide a convenient method for sending complaints and notes about problems from citizens to the municipality
- Provide service for tracking complaints.

1.3 OBJECTIVE

This project's main objective is to simplify the process of lodging complaint into the municipal corporation by saving time and efforts so that

- Quality of municipality's services is increased.

- Complaint lodging process is automated.
- Report of complaint sorted by location, time and other factors is provided
- Accuracy of the complaint is increased.

1.4 REQUIREMENTS

For successful design, basic requirements are:

1.4.1 FUNCTIONAL REQUIREMENTS

The functional requirements are:

- R1)** Profile data can be edited.
- R2)** Password can be changed.
- R3)** Status of complaint can be updated.
- R4)** Images can be uploaded to highlight the situation.

1.4.2 NON-FUNCTIONAL REQUIREMENTS

The non-functional requirements are:

- R1)** Simple user interface.
- R2)** Availability of the system.
- R3)** Software required:
 - R3.1)** WAMP (Windows Apache MySQL PHP)
 - R3.1.1)** Apache/2.2.1
 - R3.1.2)** PHP/5.3.0
 - R3.1.3)** MySQL client version: mysqlnd 5.0.5
 - R3.1.4)** PHP extension: mysqli
 - R3.2)** Windows 7 or higher
 - R3.3)** Notepad++
- R4)** Hardware required:
 - R4.1)** i3 Processor Based Computer or higher
 - R4.2)** Memory: 1 GB RAM or higher

CHAPTER 2

LITERATURE SURVEY

Anyone can state the fact that for any kind of project a basic survey is required so that the present situation can be known. Afterwards, based on the survey, one can think on how the application (software based or hardware based or both) should be designed so that the situation can be improved without complicating the present environment.

For designing this application a survey was conducted. This survey included:

- **The effectiveness of e-Service in local Government: A case study, Mehdi Asgarkhani, New Zealand**

In this paper they have mentioned the interest of public in Internet and continuous growth of e-Technology. They have proposed an idea about the e-Technology, how it can be helpful for enabling effective government through better access to services and the democratic processes. It discusses some of the key aspects of electronic government and e-Service. It examines the value and the effectiveness of e-Services within the public sector with a focus on four specific facets of effectiveness: the view of management and ICT strategists; social, cultural and ethical implications; the implications of lack of access to ICT; and the customers'/citizens' view of the usefulness and success of e-Service initiatives.

- **Smart Complaint Management System, International Journal of Trend in Research and Development, Volume 3(6), ISSN: 2394-9333, www.ijtrd.com**

This paper is useful for acquiring an idea about how the data acquired in survey can be useful for development of the application, designing the framework, different modules, etc.

- **<http://www.hdmc.mrc.gov.in/>**

This is the official website of HDMC, this website provides different information about city, department, services and news. From this website we are getting the idea of different departments, online services, etc. and how the complaint related to different departments are handled. It also consist of information about HDMC. As the proposed system is about Municipal Corporation, this website is useful to get the idea about departments list and services to be provided.

- **<http://bbmp.sahaaya.in/home>**

This is the official website of BBMP SAHAAYA. This website provide a basic idea about the registration form, various fields required for registration and the login page. It also helped to get the idea about how a user can register a complaint and how user can view the status of the complaint.

- **Indian Consumer Complaints Forum, “www.consumercomplaints.in/”**

This website is useful for the consumer to file their complaints online. A complaint message is assumed by consumercomplaint.in to be a description of a situation experienced by a consumer. The complaint registered by consumer can be related to any issues like fake messages, adhaar card mapping, refunds, and poor responses from government employees, fake orders, etc. The type of complaint may vary from person to person depending on their own personal experiences, opinions, etc.

- **W3Schools Online Web Tutorials, <https://www.w3schools.com/>**

This website helps for learning the tools required for development of any web application and their uses like how to design a basic framework, designing of frontend and backend, use of php, html, css, javascript, xml, database connectivity, etc. This is helpful and useful for anyone who wants to learn web development. This websites also gives different examples to work on and practice.

- **GeeksforGeeks | A computer science portal for geeks
<https://www.geeksforgeeks.org/>**

This is another website which is helpful and useful for learning web development. This also provides various types of problems to work on and practice.

CHAPTER 3

PROPOSED WORK

According to the proposed system it saves time of people by directly registering complaint with the help of proposed system. They need not go to the government office for registering the complaints. People can get their problems/issues solved by directly posting it to proposed system. The proposed system contains the following facilities over the present system:

1. People can register their complaints from anywhere with the help of mobiles.
2. People can capture image and upload them while registering complaint.
3. Simple and easy complaint registering page so that even a common layman can also use the system easily.

3.1 PROJECT PLANNING

Project planning is the one most important part of any project. This phase is key to successful project management and focuses on developing a roadmap that everyone will follow. This phase typically begins with setting goals. Two of the more popular methods for setting goals are S.M.A.R.T. and CLEAR:

S.M.A.R.T. Goals – This method helps ensure that the goals have been thoroughly vetted. It also provides a way to clearly understand the implications of the goal-setting process.

Specific – To set specific goals, answer the following questions: who, what, where, when, which, and why.

Measurable – Create criteria that you can use to measure the success of a goal.

Attainable – Identify the most important goals and what it will take to achieve them.

Realistic – You should be willing and able to work toward a particular goal.

Timely – Create a timeframe to achieve the goal.

C.L.E.A.R. Goals – A newer method for setting goals that takes into consideration the environment of today's fast-paced businesses.

Collaborative – The goal should encourage employees to work together.

Limited – They should be limited in scope and time to keep it manageable.

Emotional – Goals should tap into the passion of employees and be something they can form an emotional connection to. This can optimize the quality of work.

Appreciable – Break larger goals into smaller tasks that can be quickly achieved.

Refinable – As new situations arise, be flexible and refine goals as needed.

Task	Start Date	End Date	Duration(in days)
Requirement Gathering	28-Jan-19	29-Jan-19	1
Design of Project	30-Jan-19	09-Feb-19	10
Design development(phase-1)	10-Feb-19	14-Feb-19	4
Design development(phase-2)	23-Feb-19	02-Mar-19	7
Design development(phase-3)	03-Mar-19	10-Mar-19	7
Content Creation	11-Mar-19	14-Mar-19	3
Coding(phase-1)	15-Mar-19	21-Mar-19	6
Coding(phase-2)	25-Mar-19	27-Mar-19	2
Coding(phase-3)	04-Apr-19	14-Apr-19	10
Bug Fixes	15-Apr-19	20-Apr-19	5
Final Testing	21-Apr-19	23-Apr-19	2

Table 3.1 Project Planner (Depicts different phases of project)

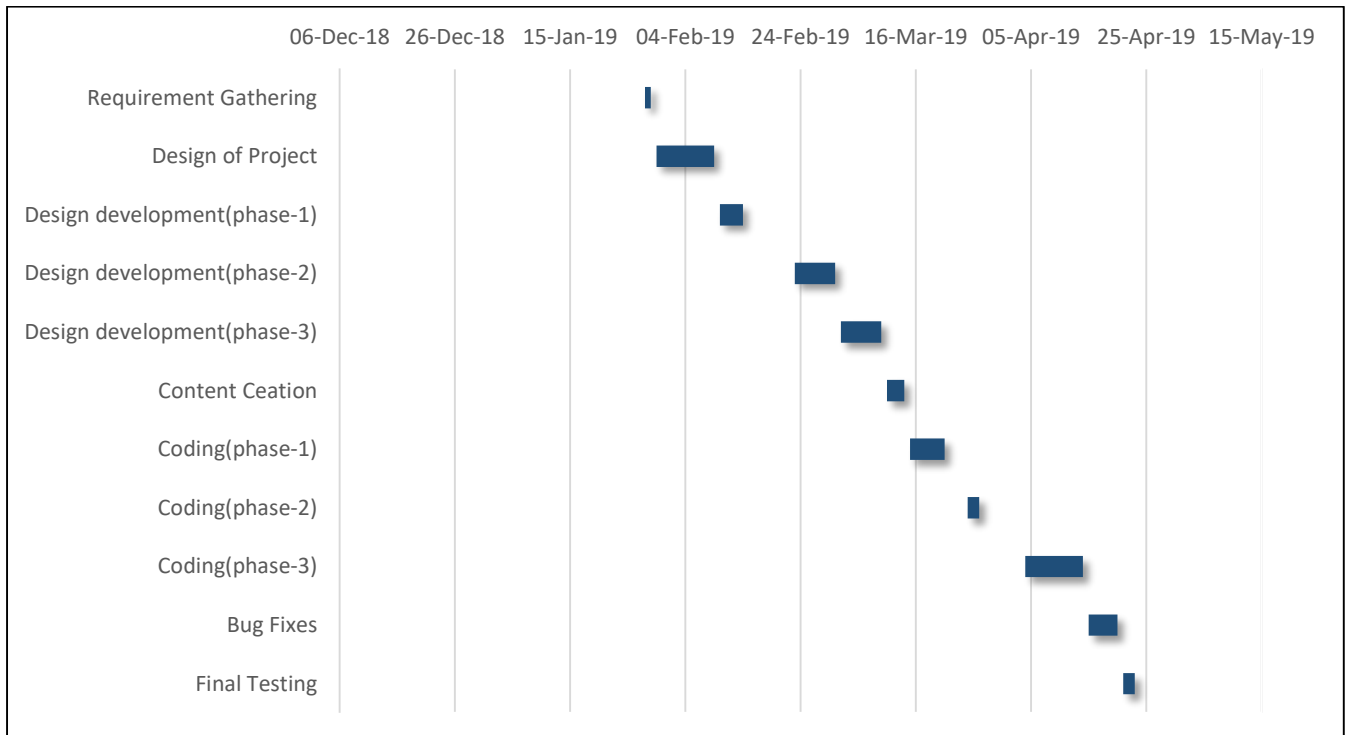


Fig 3.1 Gantt chart (Depicts work done on project)

3.2 FLOW OF THE SYSTEM

There are sections that are divided as applicant, complaint management system and administrator. Applicant and administrator have their individual login section. The user can register himself/herself in the system as a verified user by giving details. When user registers a complaint it is forwarded to respective admin of department. Then the admin of the department will view the complaint. The admin will send the worker to the place to check whether the complaint is true or not, if it's true then he will solve the problem.

During the process admin has power to change the status of complaint as pending, working or cleared. All the status will be visible to the applicant who has registered the complaint.

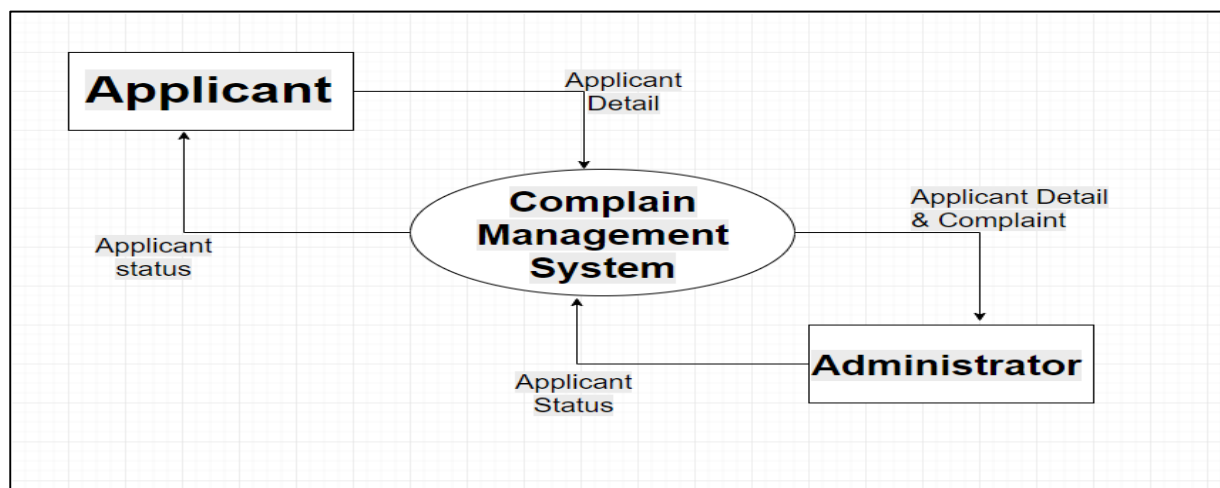


Fig 3.2 Data Flow Diagram (Depicts flow of data throughout the system)

3.3 FUNCTIONAL MODULES

The whole system is divide into three modules. They are complaint module, login module and complaints management and updating module.

1. Login module

Individual login facility is there for every user registered and admin of department. User can register the complaints through their login. Admins are able to see the complaint registered by users, solve them and change the status of complaint which is reflected in user's login.

2. Complaint module

In this user can register their complaints. The complaint form will be simple so that a common layman can use it. User has to give the complaint details in the form. In complaint form user can upload images also.

3. Complaints management and updating module

Admin of the different department can view the complaint that has been registered to particular department. The Admin has the authority to work on the complaint and change its status.

3.4 UI DESIGN

Design for the UI for application:

- Municipality Complaint System home page:
 - User login
 - Admin login
 - User registration
- User home page
 - File complaint
 - Profile
 - Complaint status
 - Change password
 - Logout
- Admin homepage
 - Pending work
 - Ongoing work
 - Change password
 - Logout
- Pending work
 - Status check
 - Status change
 - Back to admin home page
- Ongoing work
 - Status re-check
 - Status change
 - Back to admin home page
- Change password
 - Old password
 - New password
 - Confirm new password
 - Verification & submit

CHAPTER 4

METHODOLOGY

Methodology is the systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge. Typically, it encompasses concepts such as paradigm, theoretical model, phases and quantitative or qualitative techniques.

A methodology does not set out to provide solutions it is therefore, not the same as a method. Instead, a methodology offers the theoretical underpinning for understanding which method, set of methods, or best practices can be applied to a specific case, for example, to calculate a specific result.

4.1 DATABASE DESIGN

Database design for Municipality Complaint Management System.

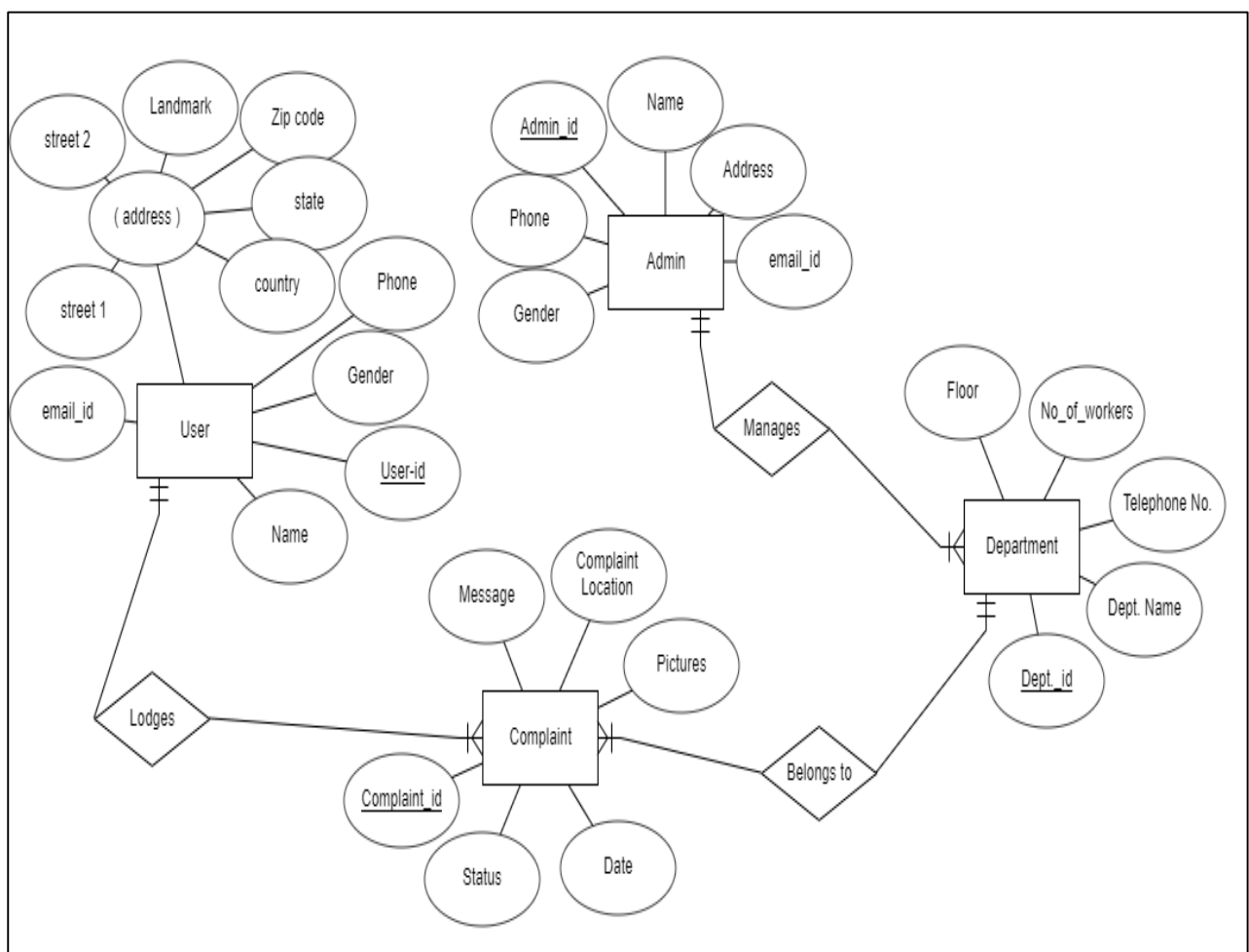


Fig 4.1 E R Diagram (Describes basic design of database used for application)

4.2 APPLICATION DESIGN

Basic architecture:

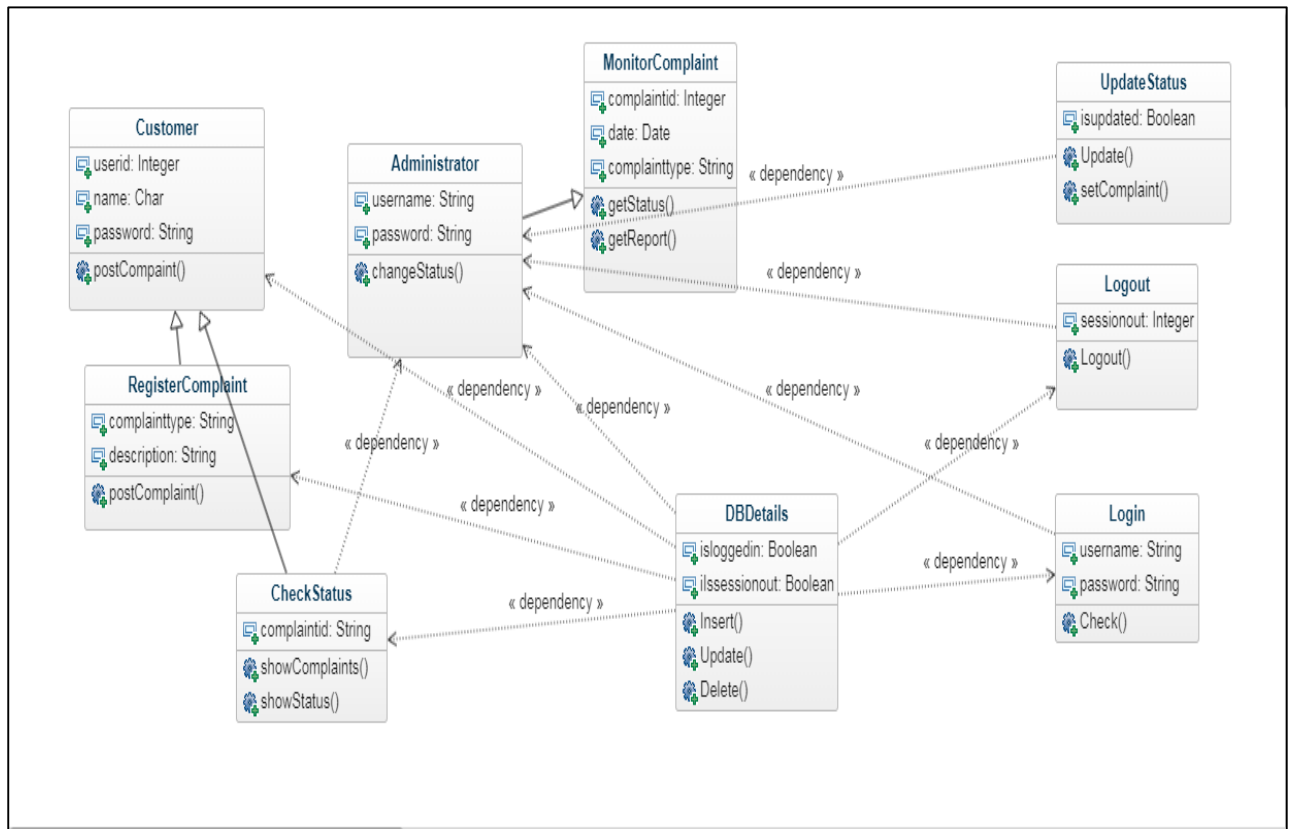


Fig 4.2 Class Diagram (Describes basic architecture of application)

Test cases based on architecture:

- **For User:**
 - Case 1: Views profile
 - Case 2: Registers a complaint
 - Case 3: Views status of complaint
- **For Administrator:**
 - Case 1: Manages department
 - Case 2: Views status of complaint
 - Case 3: Changes status of complaint

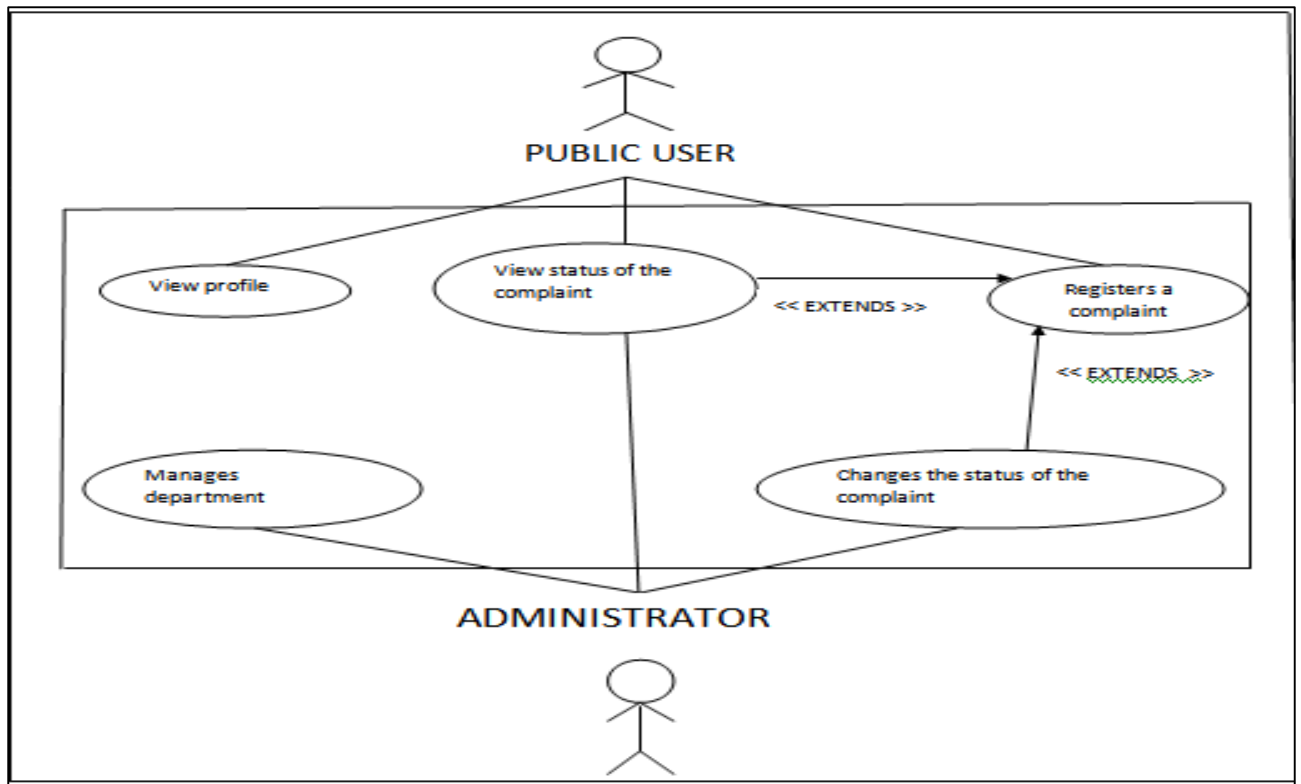


Fig 4.3 Use Case Diagram (Based on different test cases)

Scenarios based on test cases:

- Scenario1: User's interaction with system

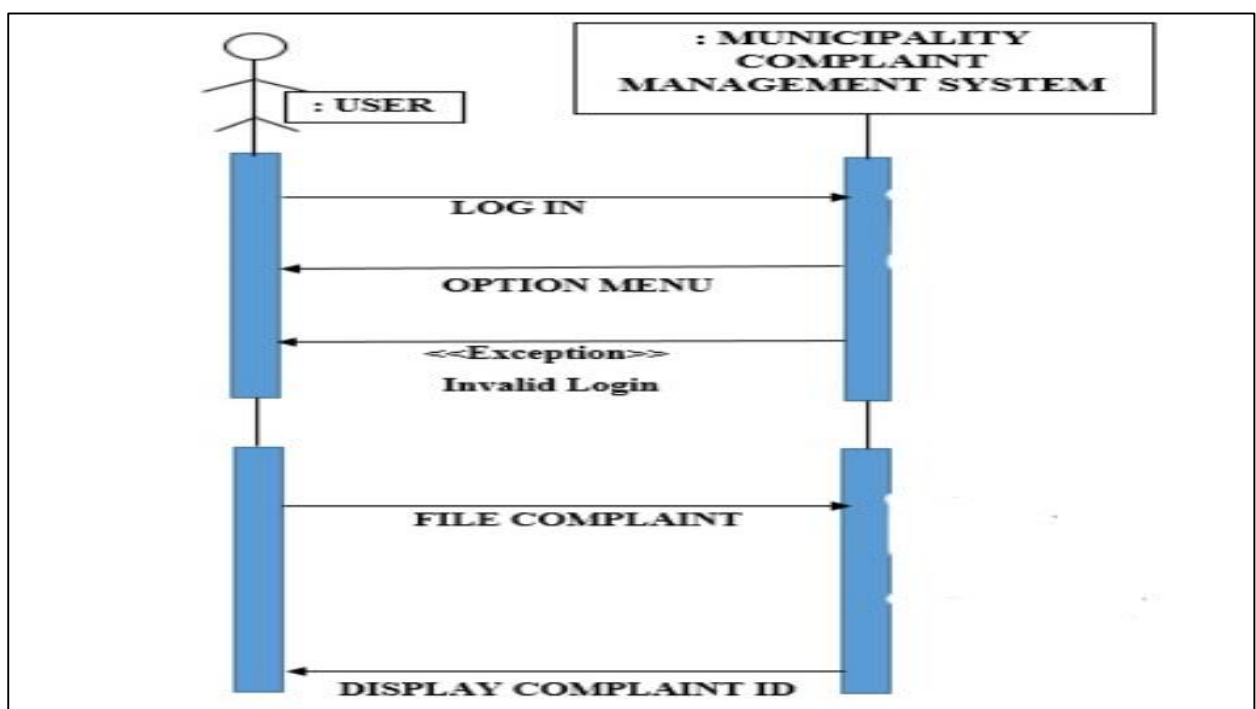


Fig 4.4 Sequence Diagram (Scenario 1: User's interaction with system)

- Scenario2: Admin's interaction with system

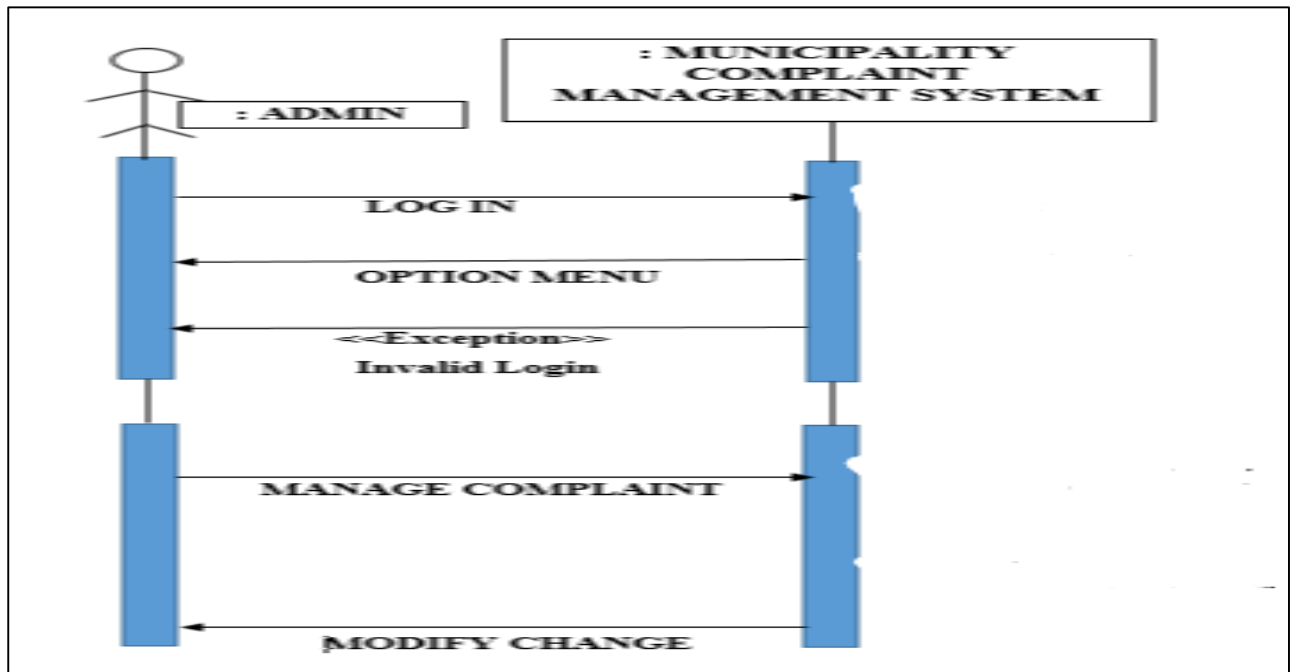


Fig 4.5 Sequence Diagram (Scenario 2: Admin's interaction with system)

CHAPTER 5

ADVANTAGES OF PROPOSED SYSTEM

There are many advantages of the designed web based application for the proposed system.

1. In this technological world, this system is useful for the people to file a complaint with the help of mobile application which will save time of people.
2. In this technological world, this system is useful for the people to file a complaint with the help of mobile application which will save time of people.
3. Also the status of the complaint lodged can be tracked easily i.e. whether the complaint is pending, processing or cleared.
4. It is user friendly and cost effective.

CHAPTER 6

CONCLUSION

We proposed and introduced a web based application for citizens to register complaints against the problems they are facing which can be solved by municipal corporations. Municipality Complaint Management System will increase the quality of municipality services. This project will save time and effort. This project will simplify the process of lodging complaint into the municipal corporation. As nowadays internet is being used frequently by people, the web application designed as a part of system proposed by us provides user interface to citizens to lodge complaint and also helps Municipal Corporation officers to solve the complaint easily. This system also provides admins of respective departments a facility to update the status of the complaint about processing of the complaint which the user can view using the id which will be generated after complaint is registered. This id generated will be reflected in user's login.

APPENDIX A

PROJECT PLANNING

A.1 PROJECT PLANNER

To plan is about organizing, arranging, designing, preparing and scheduling.

Project Planners:

- Work with a Project Manager
- Plan and track costs
- Estimate costs
- Maintain schedules
- Keep project resources on track
- Provide regular project updates
- Maintain contact with project staff
- Intercede to settle conflicts with project staff

A.2 GANTT CHART

A Gantt chart, commonly used in project management, is one of the most popular and useful ways of showing activities (tasks or events) displayed against time. On the left of the chart is a list of the activities and along the top is a suitable time scale. Each activity is represented by a bar; the position and length of the bar reflects the start date, duration and end date of the activity. This allows you to see at a glance:

- What the various activities are
- When each activity begins and ends
- How long each activity is scheduled to last
- Where activities overlap with other activities, and by how much
- The start and end date of the whole project

APPENDIX B

WEB TECHNOLOGY

B.1 PHP

PHP is an acronym for "PHP: Hypertext Preprocessor". It is a widely-used, open source scripting language. PHP scripts are executed on the server. PHP is free to download and use. It is powerful enough to be at the core of the biggest blogging system on the web (WordPress). It is deep enough to run the largest social network (Facebook). It is also easy to be a beginner's first server side language.

B.2 HTML

HTML stands for Hyper Text Markup Language. HTML describes the structure of Web pages using markup. HTML elements are the building blocks of HTML pages. HTML elements are represented by tags. HTML tags label pieces of content such as "heading", "paragraph", "table", and so on. Browsers do not display the HTML tags, but use them to render the content of the page.

B.3 CSS

CSS stands for Cascading Style Sheets. CSS describes how HTML elements are to be displayed on screen, paper, or in other media. CSS saves a lot of work. It can control the layout of multiple web pages all at once. External style sheets are stored in CSS files

B.4 JAVASCRIPT

JavaScript is the Programming Language for the Web. It can update and change both HTML and CSS. It can calculate, manipulate and validate data. It allows you to implement complex things on web pages — every time a web page does more than just sit there and display static information for you to look at — displaying timely content updates, interactive maps, animated 2D/3D graphics, scrolling video jukeboxes, etc. — you can bet that JavaScript is probably involved.

B.5 BOOTSTRAP

Bootstrap is an open-source Javascript framework developed by the team at Twitter. It is a combination of HTML, CSS, and Javascript code designed to help build user interface components. Bootstrap was also programmed to support both HTML5 and CSS3. Also it is called Front-end-framework. Bootstrap is a free collection of tools for creating a websites and web applications.

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