INTRODUCTION

A web-based database system resides on an Internet server. The database can be accessed through a web browser. A distributed system is a system consisting of a collection of autonomous machines connected by communication networks and equipped with software systems designed to produce an integrated and consistent computing environment. Distributed systems are helpful in letting the users to co-operate all the activities in a more effective and efficient manner. The key purpose of the distributed systems is represented by resource sharing, openness, concurrency, scalability, fault tolerance and transparency.

Web-services provide a standard means of interoperating between different software applications running on a variety of platforms and/or frameworks. Web applications use web documents written in a standard format such as HTML, CSS, bootstrap, JavaScript and python, which are supported by a variety of web browsers. Advantages of web-based distributed databases are easy maintenance and updating, reusability and modularity, distribution of data update and security. The architecture used for the web-based distributed database is the Client/Server model. In this model, client sends request to the web server. The request is then transferred to the database server. The results are sent back to the web browser in the client side after the database server processes the requests by the clients.

In this project, we designed and build a lost and found web application with basic functions like the lost and found portals available online: user registration, login/logout, changing user password, posting lost stuff, posting found stuff, validation and authentication.

CHAPTER 2

LITERATURE SURVEY

2.1 DISTRIBUTED DATABASES

A distributed database system allows applications to access data from local and remote databases. Distributed databases use a client/server architecture to process information requests.

Advantages of using distributed databases:

• Management of distributed data with different levels of transparency like network transparency, fragmentation transparency, replication transparency, etc
• Increase reliability and availability.
• Easier expansion
• Protection of valuable data and information.
• Improved performance.
• Less cost.
• Systems can be modified, added and removed from the distributed database without affecting other modules.
• Reliable transactions.
• Distributed query processing can improve performance.

2.2 HTML

Hyper Text Markup Language, commonly abbreviated as HTML, is the standard markup language used to create web pages. Along with CSS, and JavaScript, HTML is a cornerstone technology used to create web pages as well as to create user interfaces for mobile and web applications.

Web browsers can read HTML files and render them into visible or audible web pages. HTML describes the structure of a website semantically. It helps in the presentation or appearance of the document (web page), making it a mark-up language, rather than a programming language.

HTML elements form the building blocks of HTML pages. HTML allows images and other objects to be embedded and it can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items.

HTML can embed scripts written in languages such as JavaScript which affect the behaviour of HTML web pages. HTML mark-up can also refer the browser to Cascading Style Sheets (CSS) to define the look and layout of text and other material.

Advantages:

- Its plain text so is easy to edit.
- It is fast to download.
- Is very easy to learn.
- It is now a standard.
- It is supported by most browsers across most if not all platforms.
- Simple to edit only requires a text editor.
- Can be used to present just about any kind of data.

2.3 CASCADING STYLE SHEETS

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language. Along with HTML and JavaScript, CSS is a cornerstone technology used by most websites to create visually engaging webpages, user interfaces for web applications, and user interfaces for many mobile applications.

CSS is designed primarily to enable the separation of document content from document presentation, including aspects such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple HTML pages to share formatting by specifying the relevant CSS in a separate .css file, and reduce complexity and repetition in the structural content.

It can also be used to display the web page differently depending on the screen size or device on which it is being viewed. Readers can also specify a different style sheet, such as a CSS file stored on their own computer, to override the one the author has specified.

Features:

• Separation of content from presentation.
• Site-wide consistency.
• Bandwidth.
• Page reformatting.
• Accessibility.

2.4 JavaScript

JavaScript is a high level, dynamic and interpreted programming language. Alongside HTML and CSS, it is one of the three core technologies of Web content production; the majority of websites employ it and it is supported by all modern Web browsers without plug-ins.

JavaScript is prototype-based with first-class functions, making it a multi-paradigm language, supporting object-oriented, imperative, and functional programming styles. It has an API for working with text, arrays, dates and regular expressions, but does not include any I/O, such as networking, storage, or graphics facilities, relying for these upon the host environment in which it is embedded The syntax of JavaScript is actually derived from C, while the semantics and design are influenced by the self and Scheme programming languages. It is also used in game development, the creation of desktop and mobile applications, and server-side network programming with runtime environments such as Node.js.

2.5 BOOTSTRAP

Bootstrap is a front-end framework that is developed to support creating dynamic websites and web applications. It is one of the most preferred front-end frameworks as it aids an easy and fast processing to develop a website. It supports all major browsers and fast loading responsive web pages.

Bootstrap consists of HTML and CSS-based design templates for various interface components and is aimed to ease web development. By updating the CSS, you can adapt to modern trends quickly. The developers should concentrate more on interaction components as the bootstrap itself will take care of standard views of data, which can be altered later if you wish to.

Bootstrap is compatible with almost all the latest version browsers such as Internet Explorer, Google Chrome, Opera, Firefox, and Safari. It supports the responsive web design and dynamically adjusts the layout of web pages by considering the characteristics of the device used.

Advantages:

- Speed of development
- Responsiveness
- Consistency
- Customizable
- Support

2.6 PYTHON

Python is a general-purpose programming language. Hence, you can use the programming language for developing both desktop and web applications. Also, you can use Python for developing complex scientific and numeric applications. Python is designed with features to facilitate data analysis and visualization.

2.7 FLASK

Flask is a micro web framework written in python. It is classified as a micro framework because it does not require particular tools or libraries.[3] It has no database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions.

CHAPTER 3

REQUIREMENT SPECIFICATION

The lost and found web application uses the following hardware and software systems:

1. Windows 10 OS 4GB RAM Intel i5 core Processor 7th Gen 64-bit Operating system.
2. Sublime Text 3 and google chrome for HTML and CSS web development
3. Sublime Text 3 and google chrome for write webpages and test them in the Internet Explorer
4. Firebase as a database to maintain and store data and information
5. HTML, CSS, JAVASCRIPT and Bootstrap for client-side interface.
6. Python is used to connect the front-end web pages to the firebase server.

CHAPTER 4

DESIGN AND IMPLEMENTATION

The first page of our website is HOME in Home we have login button:

4.1 LOGIN:

The user should prove their identity, they have to type their username and password in order to gain access to the information available for them. If they are using the website for the first time then they need to sign up to the website.

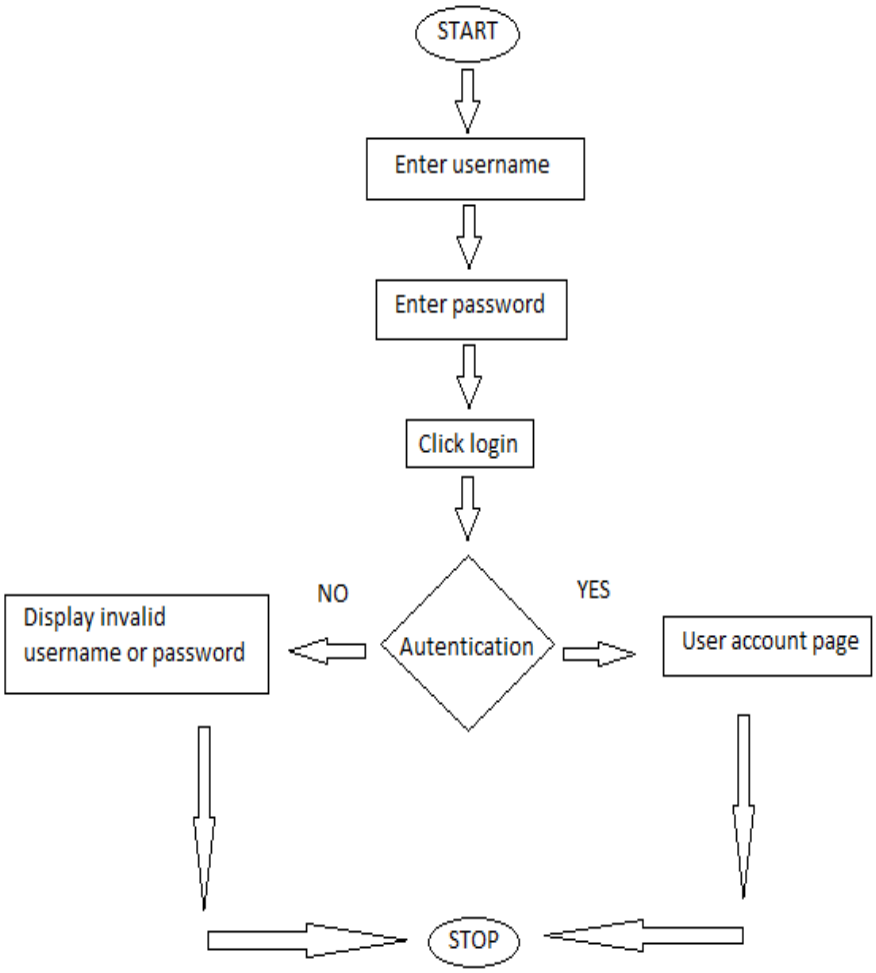

Figure: Login

4.2 SIGNUP:

Only signed up people can login to the website. To get sign up they have to enter the following details:

The information needed is:

1.Name

2.Email

3.Phone number

4.Password

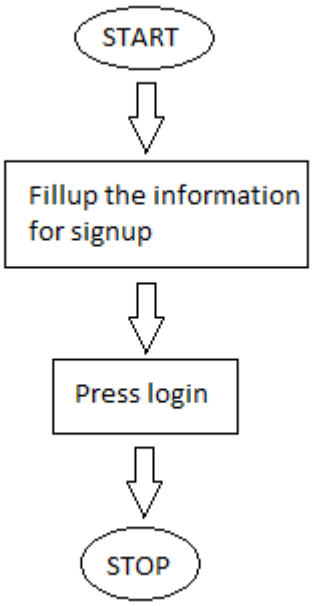

Figure: Sign-up page

4.3 LOST ITEM INSERTION

User can add the information about his lost item to the website using add lost item page By providing the following information.

1.Object name

2. lost seen date

3. lost seen location

4.Upload the image of lost item

5.Description about the item

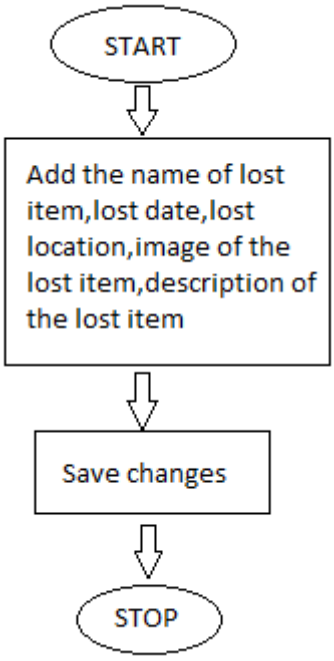

Figure: Lost item Insertion

4.4 FOUND ITEM INSERTION

User can add the information about his found item to the website using add found item page

By providing the following information.

1.Object name

2. Found date

3. Found location

4.Upload the image of found item

5.Description about the item

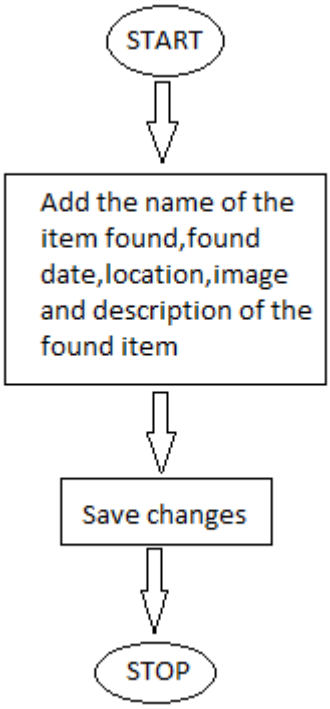

Figure: To add the lost item

CHAPTER 5

RESULTS

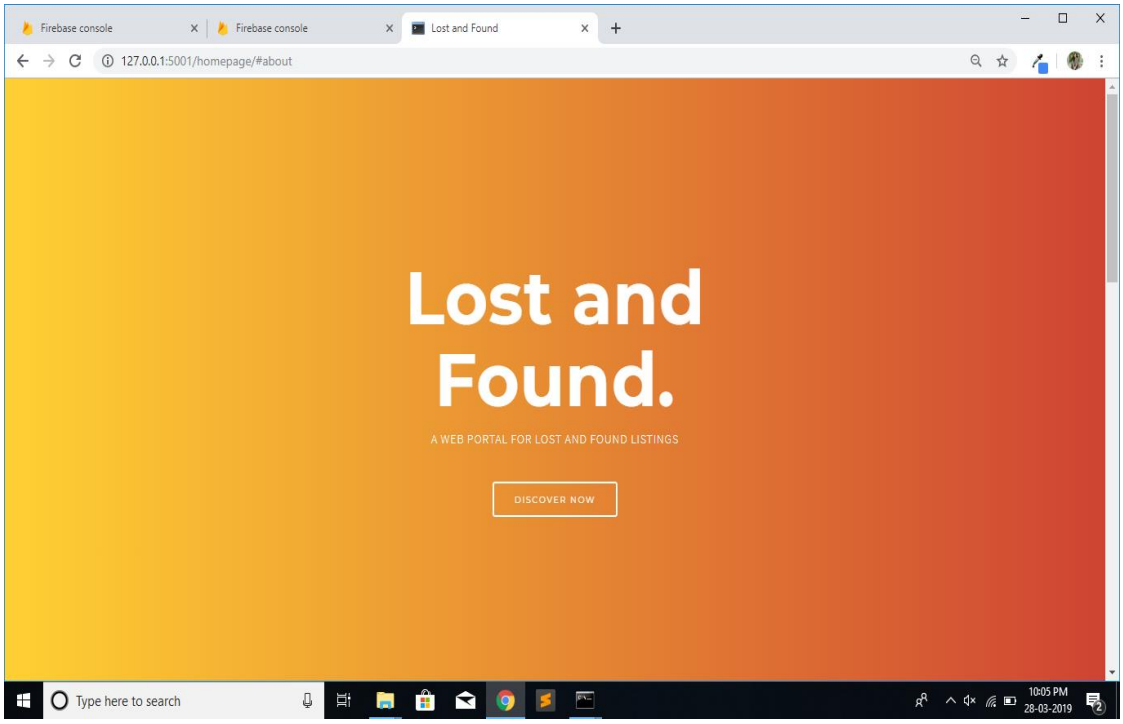

Figure 1: User homepage

As soon as we open our web portal the User homepage will appear on the screen. If we click on the Discover now button it will scroll down to reach login and sign-up page.

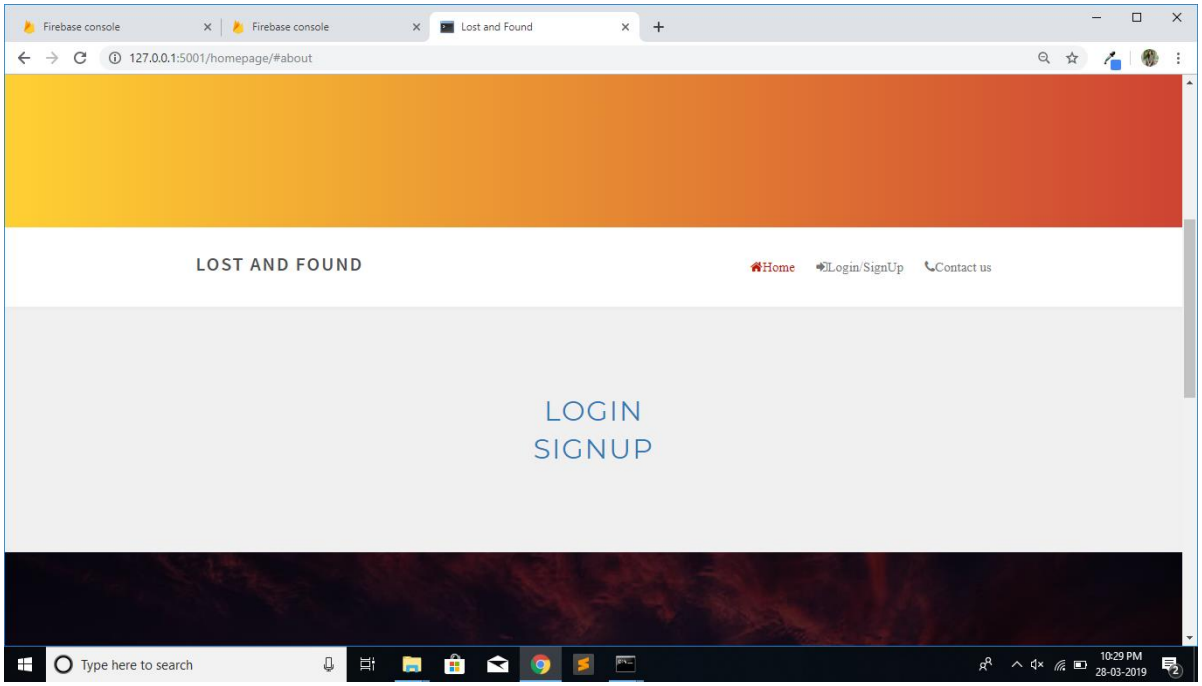

Figure 2: Home page for login and sign up

If we click on login it pops up the login page. If we click on Sign up page it pops up the Sign up page.

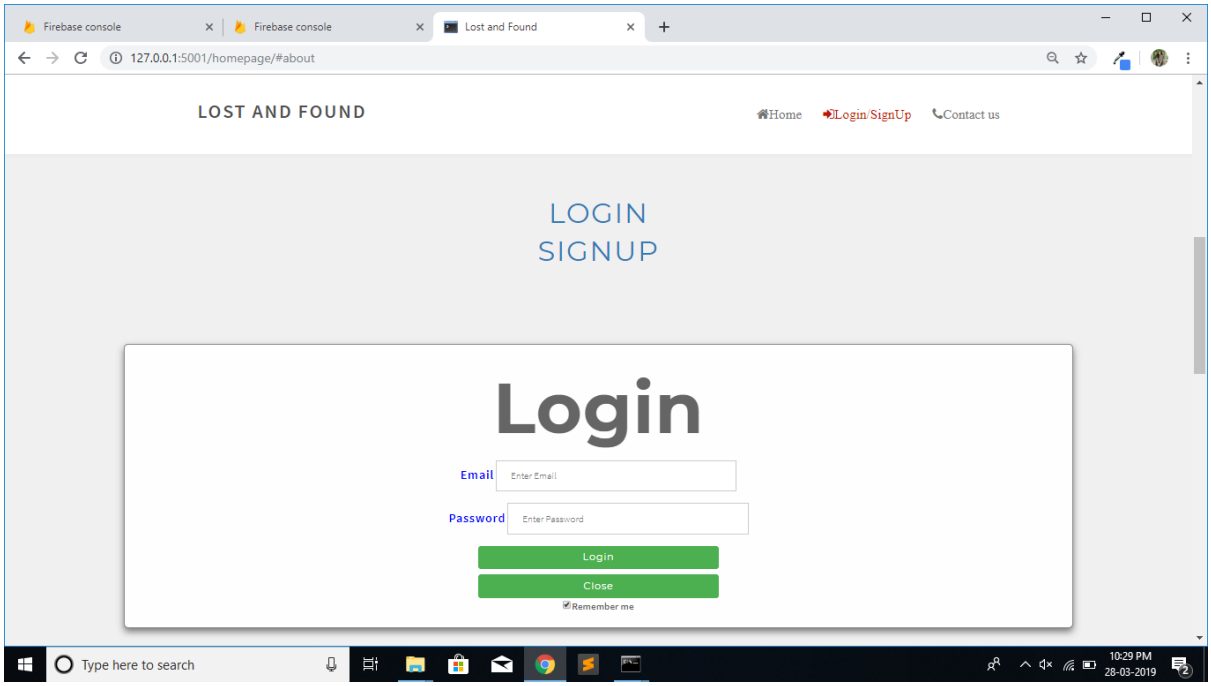

Figure 3: Login page

If the user is already sign-up to this web portal can login again to our portal by entering his Email – id and Password.

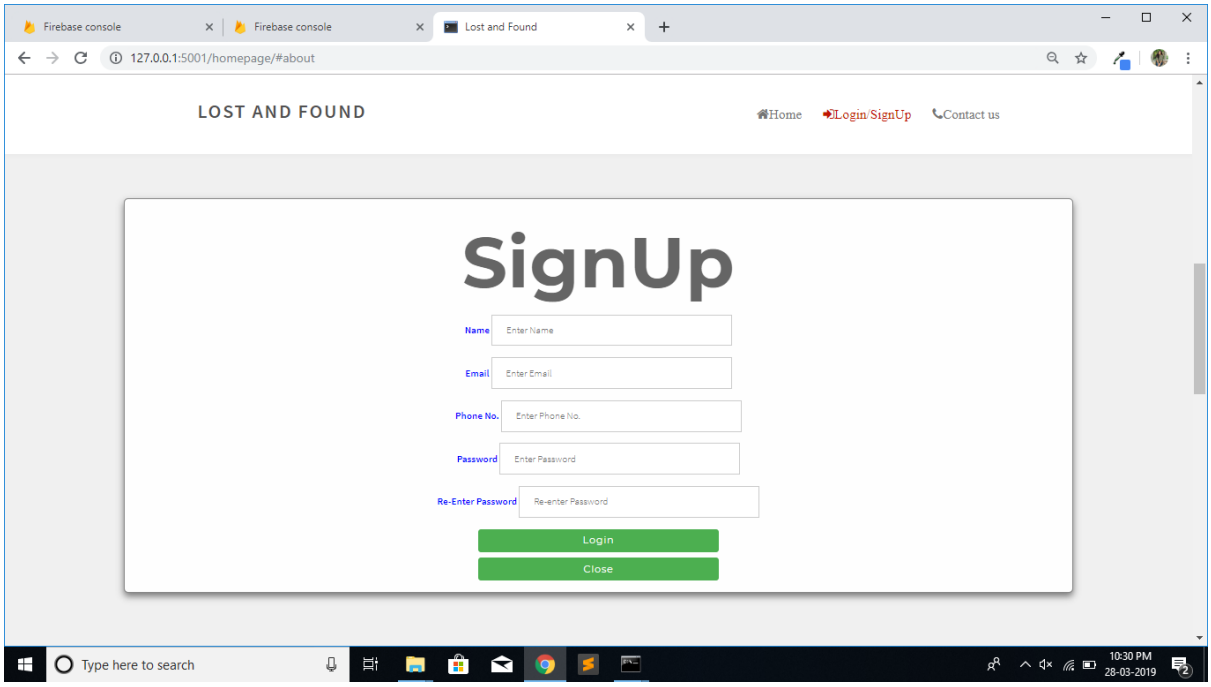

Figure 4: Sign up page

If the user don't have an account to login then they can sign up to our web portal by entering the above required details.

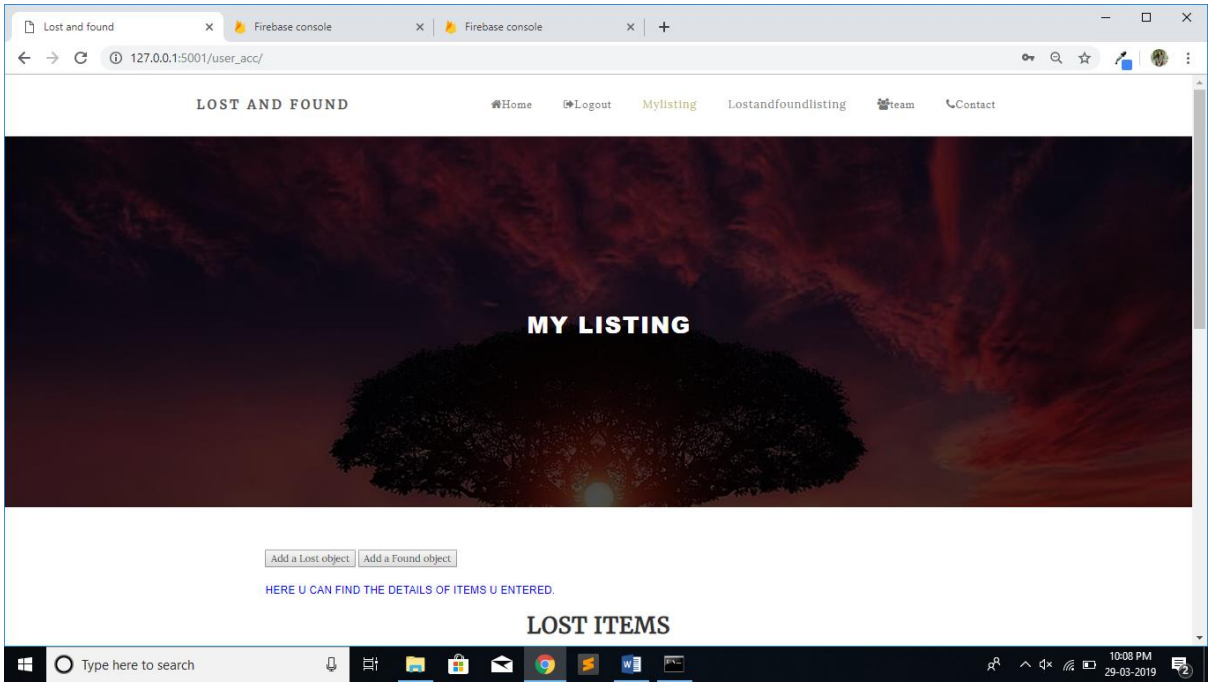

Figure 5: Home page of user account

Once the user login to lost and found web portal he will move on to the Home page of user account.

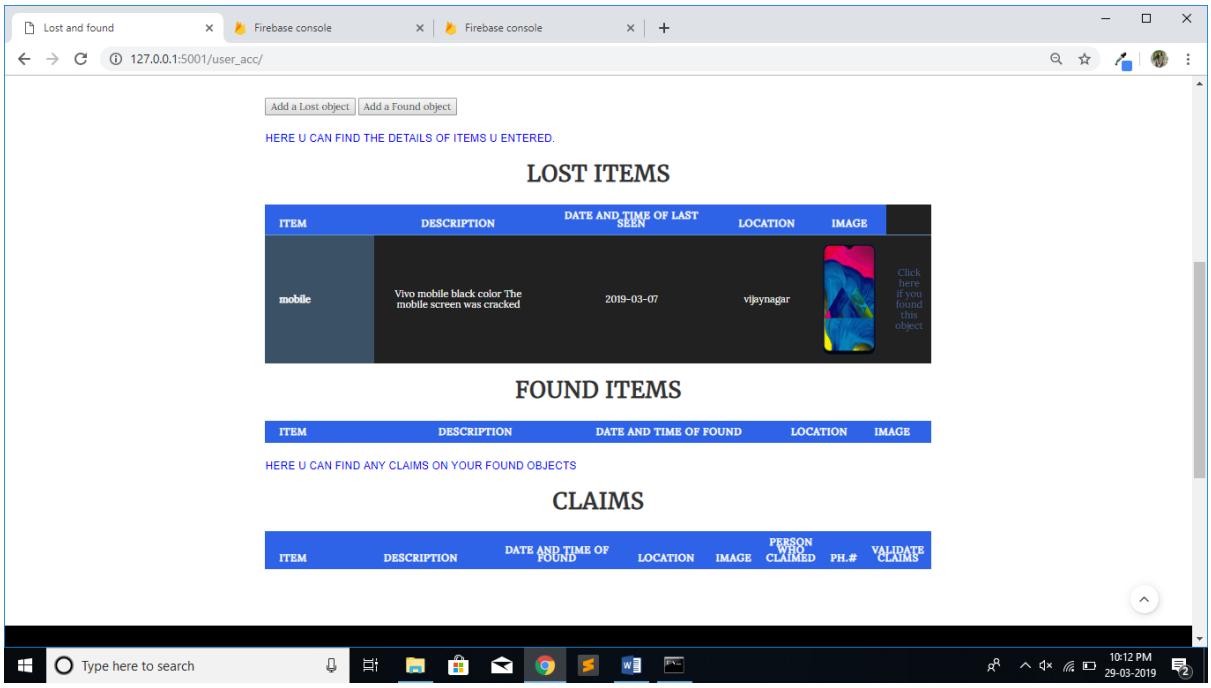

Figure 6: Lost and found lists

In user's account user can see the lost items list, found items list and Claims which are done by him. He can also add the lost item and found item by click on the bottons of respective options.

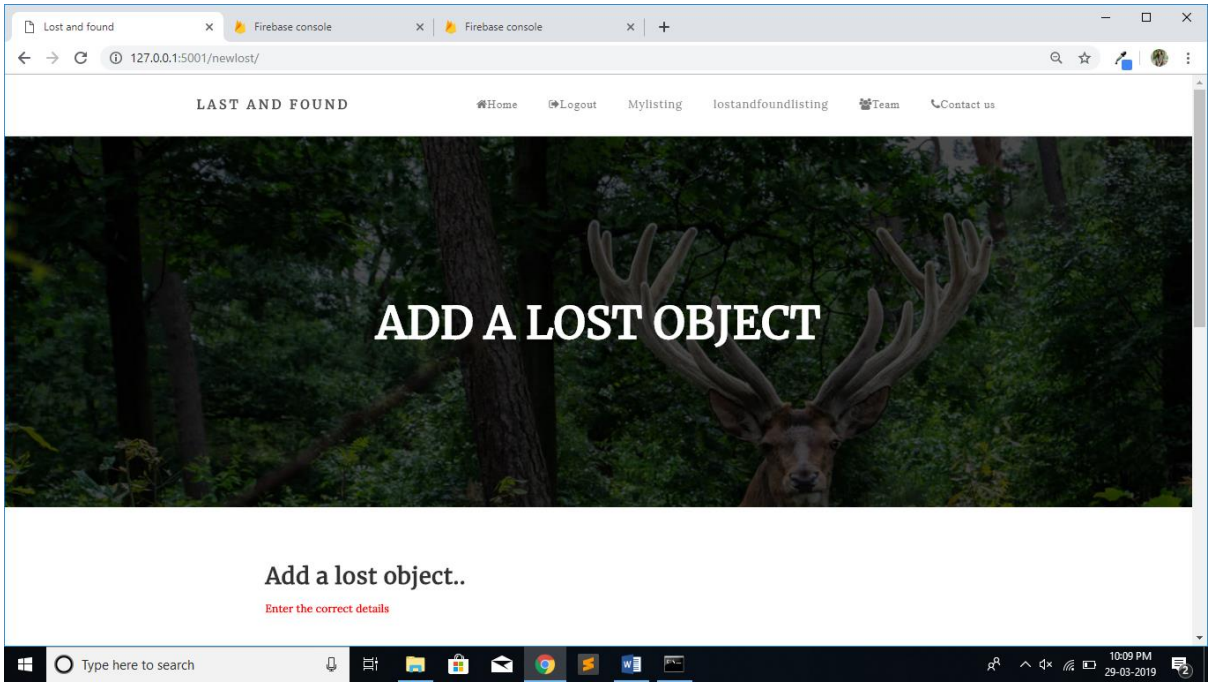

Figure 7: Page to add the lost object

If the user clicks on the add lost object then he will move on to the add lost object and can add lost objects with its details.

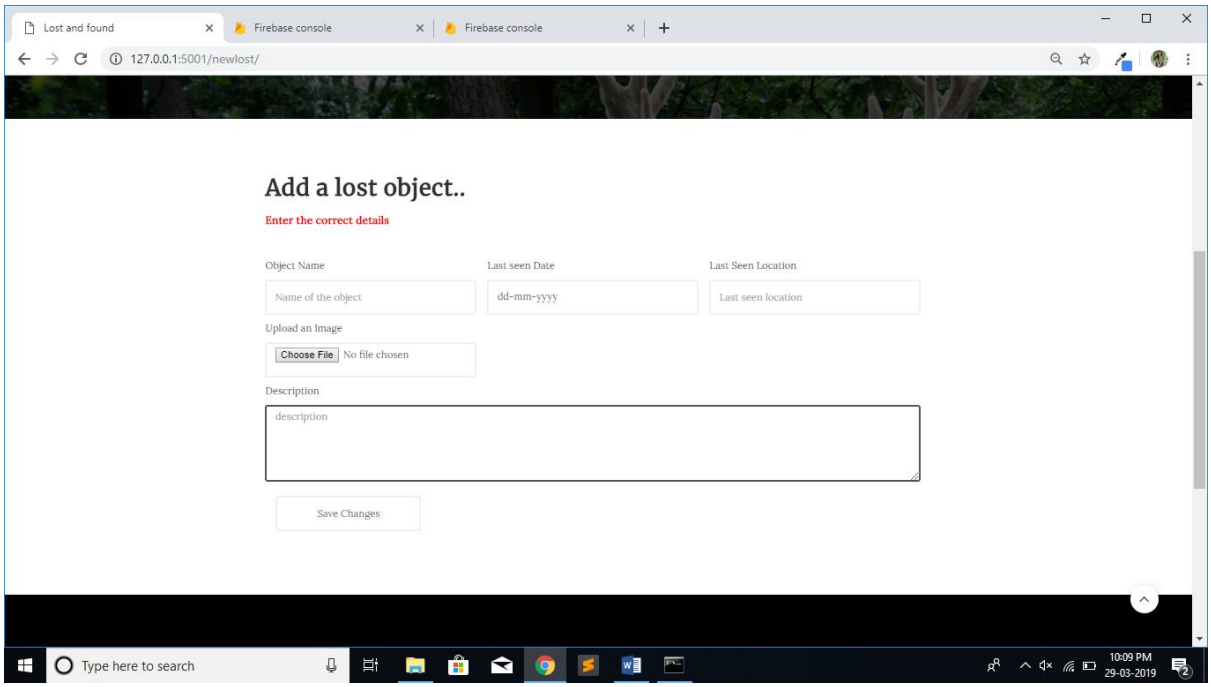

Figure 8: Page to add the details of lost object

To add a lost object the user has to enter the object name, Last seen date, last seen location and image of an object and description about the object. Once they are done they have to click on the Save changes button. This information will appear on their lost list as well as lost and found listing.

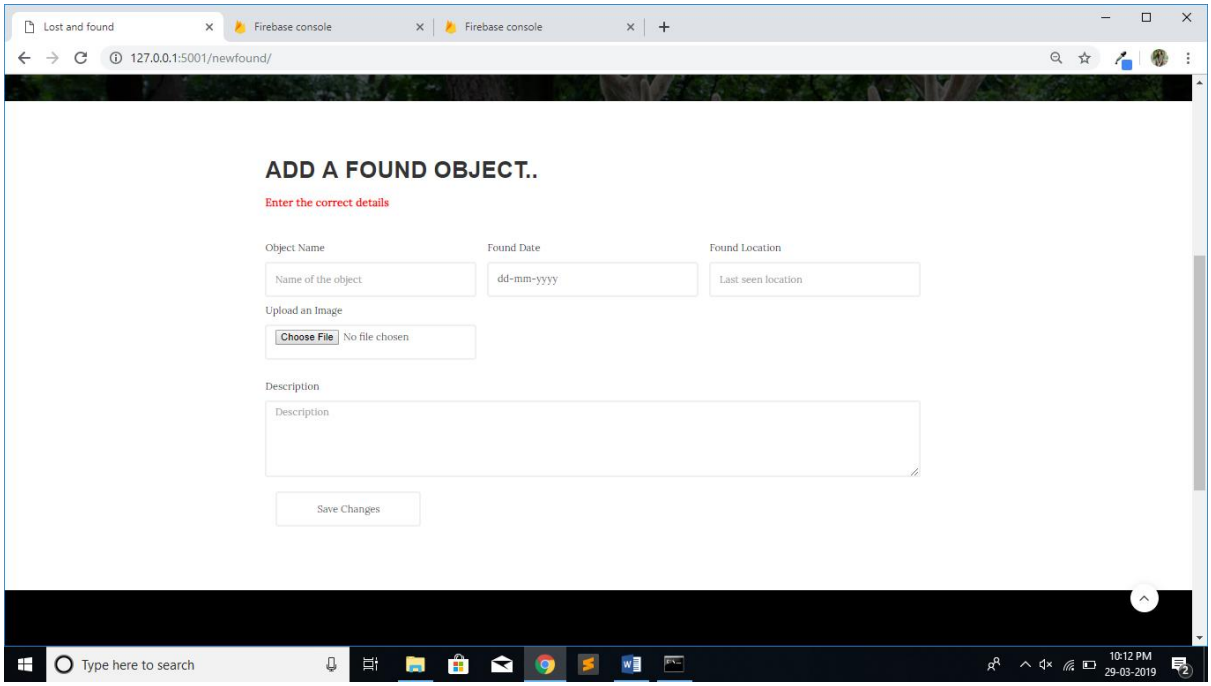

Figure 9: Page to add the found object

To add a found object the user has to enter the object name, found date, found location and image of an object and proper description about the object. Once they are done they have to click on the Save changes button. This information will appear on their found list as well as lost and found listing.

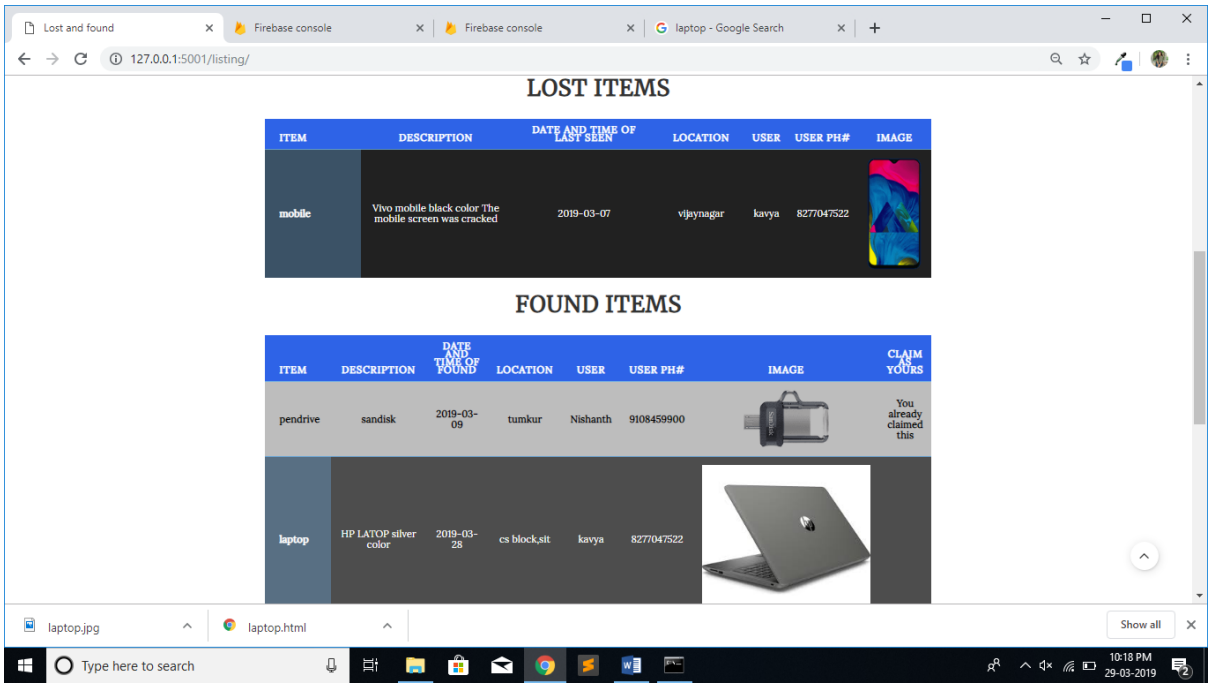

Figure 10: The lost and found list which displays for all users

This is a lost and found listing page which display all the lost and found objects details.

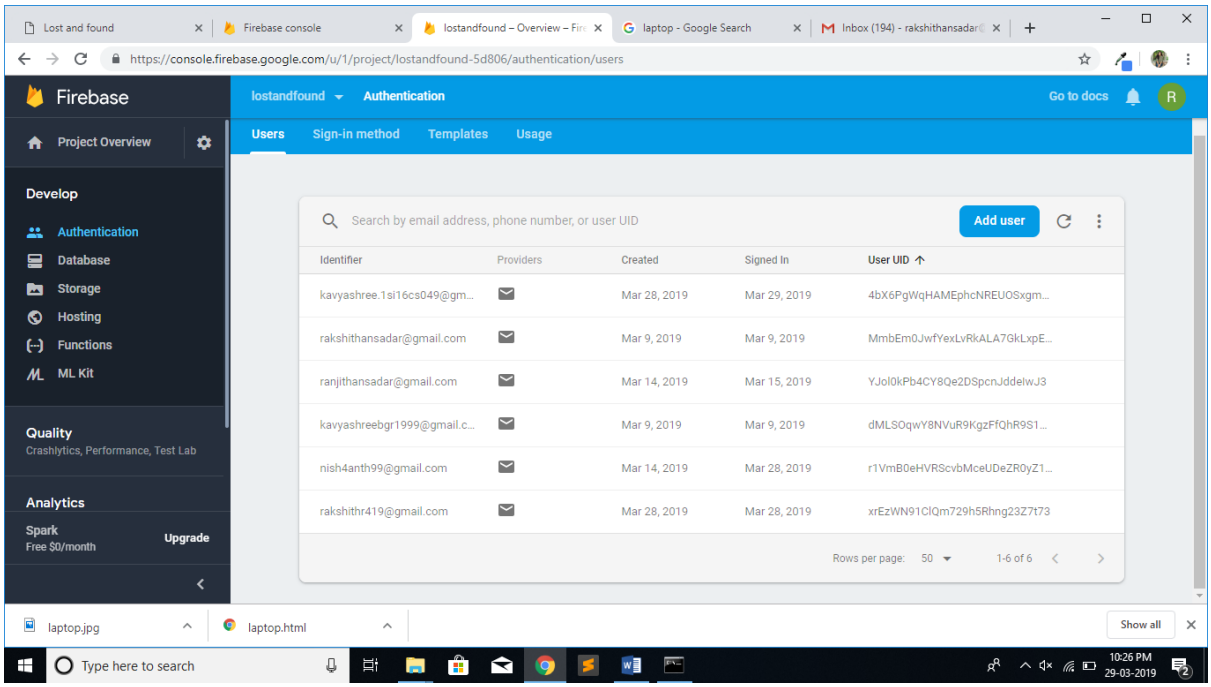

Figure 11: Firebase authentication storage

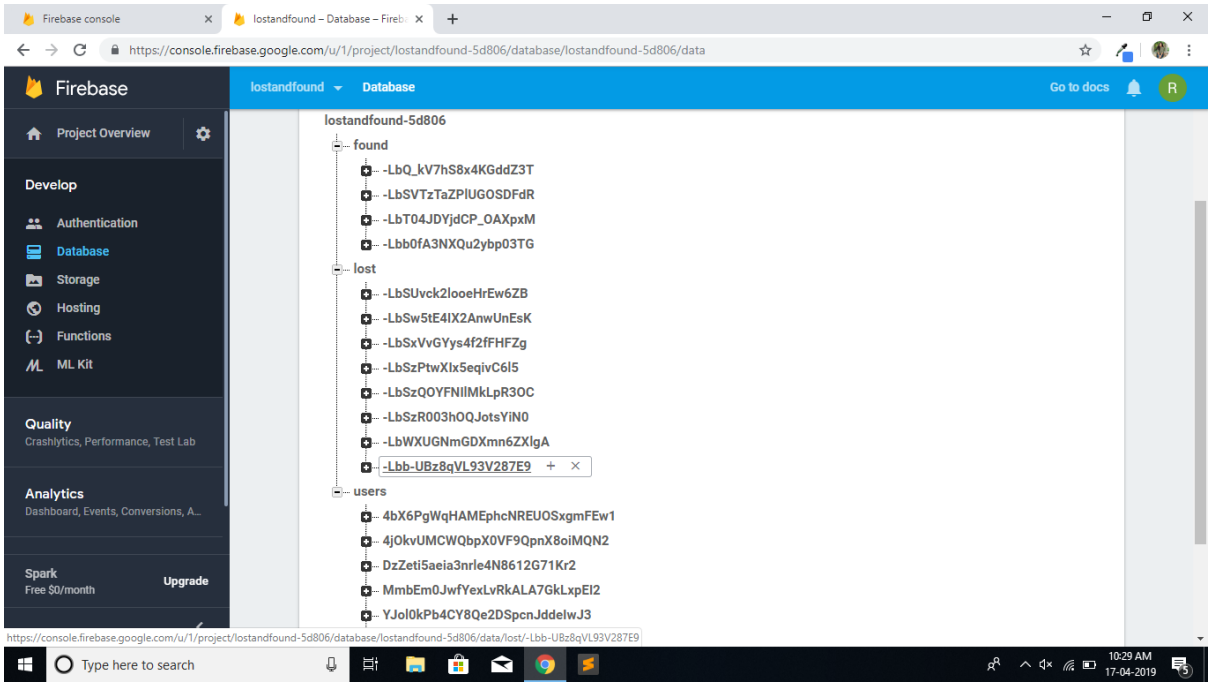

Figure 12: Firebase database to store the lost, found and user details

CHAPTER 6

EVALUATION OF RESULTS

Procedures and criteria play a very important role in the outcome of any project or application. Many different phases are involved in the overall design of the any application. Three major requirements involve functional testing, usability testing and compatibility testing.

Functionality Testing

The web application supports all different web browsers. The HTML/CSS code should be compatible to run in all different web browsers. The web application was tested on different web browsers such as Chrome, Firefox, etc. It works efficiently and is compatible with all the browsers. Login and authentication system were tested two times by registering two users and logging in. The update contact information function works well as required. There were some errors showing up on the listings page, which were fixed. All the features of the application were tested multiple times and they work completely fine.

Usability Testing

The web application is easy to use for all different users. Navigation to different controls are properly tested. All the links are working in a desired way. The application has features that can be easily understood to users. It offers a pretty interactive homepage. When a user logs in, the user can see the interactive user homepage with all the navigating tabs placed on the top of the page, the listings page is in middle of the page. The features were tested by my multiple users, they found the design and functions of the application interactive and easy to use. All the tabs and links are working as required. The homepage even contain queries section where the users can ask questions through mail.

Compatibility Testing

Testing is done to ensure that the web service is compatible with all different kinds of browsers, operating systems. The compatibility testing is performed using windows 10 operating system on a Lenovo laptop, a Linux operating system. The web application was efficiently working on all of them. Testing was done by sending a lot of traffic to the server and the server responded in a timely manner without any delays. We also tested the web application on different browsers such as Google chrome and Firefox. The application responded good on all the browsers.

CHAPTER 7

CONCLUSION

It can be concluded that the web application provides basic features and functions such as user registration, login and authentication, a lost and found listings page, an update contact information page.

The implementation of different phases is functioning as expected. Test cases were performed on different operating systems, browsers and platforms to ensure that the application is functioning correctly on all the above.

Thus, it can be concluded that the application is a web interface that can help the public to post the lost and found stuff and claim them as theirs if they found their item on the lost and found listings page.

CHAPTER 8

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