A

Project Report

On

"Bartalap"(A web-based Social Networking Site)

Submitted in partial fulfilment of requirement

for the degree of

Master Of Computer Application (MCA)

Of

Assam Science And Technology University (ASTU)

Session 2021-23

Submitted By

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JORHAT ENGINEERING COLLEGE

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CERTIFICATE FROM THE H.O.D.

This is to certify that the project work entitled "**Bartalap**" (an online web-based social networking site) is carried out by **Madhurya Dutta (Roll No. 210720043019),** 4th Semester Post Graduate student of Master of Computer Application, is a record of bona fide work carried out under the supervision of **Dr. Dhrubajyoti Baruah**, Associate Professor, Department of Computer Application, Jorhat Engineering College.

This approval does not necessarily endorse or accept every statement made, opinion expressed or conclusion as recorded in the dissertation. It only signifies the acceptance of this dissertation for the purpose for which it is submitted.

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CERTIFICATE

This is to certify that **Madhurya Dutta**, a 4th Semester student of MCA (ROLL NO - 210720043019, REG NO - 000507221) from Jorhat Engineering College, Jorhat, Assam has completed his project work entitled **"Bartalap"** an online web-based social networking site project for PIS IT Solutions, Assam, under our supervision from February, 2023 to June, 2023.

His work has been prepared as partial fulfilment of the requirement for the degree of MCA to be awarded by Assam Science & Technology University. The project work submitted here is the bona-fide work of the student. His performance during work was found to be satisfactory. I wish him success in all future endeavors.

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This is certify that **Mr. Madhurya Dutta**, 4th Semester Student of MCA Roll No **210720043019** and Registration No 000507221 of Department of Master of Computer Application, Jorhat Engineering College has successfully completed his project work on project entitled "**Bartalap**" (An online web-based social networking site) under supervision and guidance of **Dr. Dhrubajyoti Baruah**.

His work has been prepared as partial fulfilment of the requirement for the degree of Master of Computer Application, to be awarded by Assam Science and Technology University.

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Ref. No..... Date: 26/06/2023

CERTIFICATE

This is to certify that the project entitled "**Bartalap**" an online web-based social networking site project submitted by **Madhurya Dutta** (Roll no.- 210720043019 and Registration no. 000507221) is an approved work done by him in partial fulfillment of the requirements for the degree of **Master of Computer Application (MCA)** of **Jorhat Engineering College**, Jorhat under **Assam Science & Technology University**, Guwahati, Assam. The project was done under the supervision of **Mr. Raja Gogoi**, ***Prism Infosys***, Guwahati, Assam and **Dr. Dhrubajyoti Baruah**, Associate Professor, Department of Master of Computer Application, Jorhat Engineering College, Jorhat.

I wish him success in all future endeavors.

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CERTIFICATE FROM THE EXAMINER

This is to certify that the project work entitled "**Bartalap**" (an online web-based social networking site) is submitted by **Madhurya Dutta (Roll No. 210720043019),** 4th Semester Post Graduate student of Master of Computer Application of Jorhat Engineering College for partial fulfilment of the requirements for the degree of Master of Computer Applications has been examined by me and found eligible for the award of the Degree.

Date: (EXTERNAL EXAMINER)

Place:

CANDIDATE DECLARATION

I hereby declare that this project report titled “Bartalap” (an online web-based social networking site), is an authentic record of my own work for the award of the Degree of Master of Computer Application, carried out during the academic year 2023, under the supervision of Dr. Dhrubajyoti Baruah, Associate Professor of the Department of Computer Application, Jorhat Engineering College and Mr. Raja Gogoi, Senior Developer, **PIS IT Solutions Private Limited**, Guwahati, Assam.

I have followed the guidelines and norms provided by the Institute in preparing the report. The materials (theoretical analysis, data, text, and figures) that I have used here from any alternate sources, have been given due approbation by citing them in the text of the report and giving their details in the references.

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ACKNOWLEDGEMENT

I am highly honoured that I got the privilege to pursue my Master of Computer Application under Assam Science And Technology University and explore the domain of web- portal design efficiently within a concise stint of time.

The ability to help and patience to exercise diligence and provide support is a quality admonished by very few. Any job in this world, however trivial or tough cannot be accomplished without the assistance of the others. I would hereby take the opportunity to express my indebtedness to people who have helped me to accomplish this task. The present line of accomplishment is not a formality but an honest word of appreciation that has exactly been felt by me during my Project.

I sincerely acknowledge the support and guidance received from **Dr. Dhrubajyoti Baruah** sir throughout the duration of this project. His expertise, valuable insights, and constant encouragement have immensely contributed to the successful completion of this project. I would also like to express my gratitude to **Chandrani Borah** mam, the co-guide, for her valuable contributions and assistance during the project.

I would also like to express my gratitude to the organization "**PIS IT Solutions Private Limited**" and **Mr. Raja Gogoi** sir for providing the necessary, guidance resources, infrastructure, and conducive environment that facilitated the smooth progress of the project.

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CONTENTS

Chapter 1

Introduction

- Introduction of the Project

1.1 Introduction of the Project

Project Title:

The project is entitled as " Bartalap - online web-based social networking site ".

Project Overview:

In today's digitally interconnected world, social media has become an integral part of our daily lives. A social networking site is an online platform that enables users to create profiles, connect with others, and share content and information. It provides a virtual space for individuals to interact, communicate, and build relationships in a digital environment. Social networking sites have gained immense popularity and have become an integral part of people's lives worldwide.

The social networking site will be developed using PHP as the server-side scripting language and a combination of HTML, CSS, and JavaScript for the user interface. The project will leverage a database management system, MySQL, for efficient data storage and retrieval. The site will be hosted on a web server, ensuring its availability and accessibility to users.

By developing this social networking site, the project aims to provide a platform that encourages social connections, facilitates content sharing, and creates an engaging and interactive online community for users to connect and interact with one another.

Proposed system

The proposed system is to develop a web-based social networking site by using Laravel8, Ajax, jQuery, JavaScript, HTML, CSS, and Bootstrap. This version of the system will help users to interact with one another. The main concern in this system is that it should be more secure and more responsive and Dynamic Content Fetching so we have used Laravel and Ajax. Laravel's MVC model will make the system more secure also we have tried to implement some features like email verification, Password threatening, Auto Logout to improve its security and Realtime messaging for improving user experience. Ajax will help in faster processing of all the tasks. And JavaScript will help the system to be more interactive.

Chapter 2

Description of the project

- Objectives of the project
- Functions of the system
- Features of the project
- Software Process Model used
- Software Requirement Specification

2.1 The objectives of the project

The primary objective of this project is to develop a comprehensive social networking site that offers a rich set of features and functionalities. The site will enable users to create profiles, connect with friends, share content, and engage in various activities within a secure and user-friendly environment. The specific objectives of the project include:

1) Simple Sign-Up process: Minimize signup/login form.

2) Personal profile with photo, contact details, places users visited etc. Here, profile management and editing features are crucial;

3) Allowing users to post text, photos, videos, and links, and providing features for commenting, liking, and sharing.

4) The contact list is a major feature: After filtering existing users, every profile owner should be able to send contact requests and accept the ones he or she gets;

5) News Feed: Developing a dynamic news feed that displays real-time updates from a user's network.

6) Chats: Incorporating a private messaging system to facilitate one-on-one communication between users

7) File exchange: this is the extension to a standard chat. Let users share audio, video files, photos, books etc;

8) Smart Notifications are needed so users were always aware of the recent updates, messages, news etc. Emails are the most common options here.

9)Security: Platform should be highly secure and provide the option for data to be owned and managed by the users.

10) Implementing a robust user registration and authentication system to ensure secure access to the platform.

11) Designing an intuitive and visually appealing user interface to enhance the user experience.

12) Ensuring scalability, performance, and data security in the architecture of the social networking site.

2.2 Functions of the system

The system consists of different functional modules and each module has different roles in the system. Following are the modules of the system:

2.2.1. User Registration and Authentication:

Users can create accounts by providing essential information and verifying their email addresses. Robust authentication mechanisms will be implemented to ensure secure access to the platform.

2.2.2. User Profiles:

Users can create detailed profiles that showcase their personal information, interests, and preferences. Profile customization options, such as profile pictures, cover photos, and bios, will be available.

2.2.3. Friend Connections:

Users can establish connections with other users by sending friend requests or accepting incoming requests. The platform will allow users to manage their friend lists and stay connected with their network.

2.2.4. News Feed and Content Sharing:

A dynamic news feed will display updates, posts, and media shared by users within a user's network. Users can share various types of content, such as text posts, photos, videos, and links, with their connections.

2.2.5. Interactions and Engagement:

Users will have the ability to engage with content through features like liking, commenting, and sharing. Notifications and activity feeds will keep users updated on interactions and engagement with their content.

2.2.6. Messaging and Communication:

The platform will offer private messaging capabilities, allowing users to communicate one-on-one. Users can send text messages, share media, and create group conversations.

2.2.7. Privacy Settings and Data Security:

Comprehensive privacy settings will be provided, allowing users to control the visibility of their profile and content. Robust data security measures, such as encryption and secure storage, will be implemented to protect user data.

2.2.8. Share:

This module allows users to share our web page in other social media Platform.

2.2.9. Explore and Discover:

The platform will feature tools to help users discover new connections, groups, and trending content. Suggestions for new friends, relevant communities, and popular topics will be provided**.**

2.2.10 Reporting:

This will help to analyse impact of individual pieces of content shared on social media platforms and remove the guidelines violated contents.

2.4 Software Process Model Used

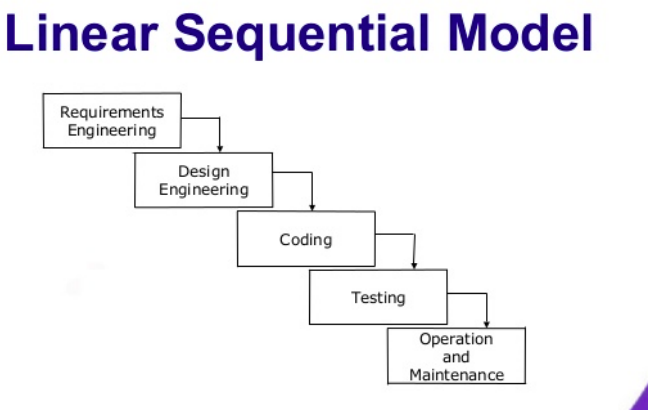
To solve actual problems in an industry setting, software engineer or a team of engineers must incorporate a development strategy that encompasses the processes, methods and tools layers and the generic phases of the software engineering. This strategy often referred to as a process model or a software-engineering paradigm. A process model for a software engineering is chosen based on the nature of the project and application, the methods, and tools to be used, and the controls and deliverables that are required.

The nature of the given problem and the simplicity of the Linear Sequential Model forced the use of this model in the development of this project.

A brief discussion about this model is given below:

2.4.1 Linear Sequential Model

The linear sequential model is described through the diagram depicted below. Sometimes called the Classic Life Cycle or the Waterfall Model, the linear sequential model suggests a systematic, sequential approach to software development that begins at the system level and progress through analysis, design, coding, testing, and maintenance. After the conventional engineering cycle, the linear sequential model encompasses the following activities:



Flow chart of the steps in linear sequential model

2.5 Software Requirements Analysis

The requirements' gathering process is intensified and focused specifically on software. The information domain of the problem is identified and specified.

Design

Software design is actually a multi-step process that focuses on four distinct attributes of a program: data structure, software architecture, interface representations and procedural (algorithmic details).

Code Generation

The design must be translated into a machine-readable form. The code generation step performs this task. If design is performed in detailed manner code generation can be performed mechanistically.

Testing

Once code has been generated, program testing begins. The testing process focuses on all the internal logic and the external behaviour of the system.

Software Requirement Specification

Requirement specification is the activity during which requirements are recorded in one or more forms, usually in a Software Requirement Specification (SRS) Document. System Requirement Specification is the starting point of the software development activity. The requirements may be in natural language, a formal language or in a graphical form.

The purpose of the software requirement specification is to bridge the communication gap between developer and client. SRS is the medium through which the client and user needs are accurately specified. A good SRS should satisfy all the parties' persuasions. something very hard to achieve and involving trade off and involving the trade off and persuasion.

Chapter 3

Development Environment

- Software Environment
- Hardware Used for Development
- Technology Details

3.1 Software Environment

The project is comprised of the following software tools. These tools were chosen in such a manner considering the need for future enhancements, system longevity and maintainability.

Operating System: Windows 11

Languages: HTML5, JavaScript (ES6), Cascading Style Sheets (CSS3).

Frameworks: Laravel8, Ajax, jQuery, Bootstrap4.

Application server: Apache

Browsers: Microsoft Edge, Google Chrome.

Database: MySQL

3.2 Hardware Used for Development

Processor: Intel core-i5

Memory: 8GB RAM

Solid-state drive (SSD): 500GB

3.3 Technology Details

3.3.1 What is Laravel?

Laravel is an open-source PHP framework, which is robust and easy to understand. It follows a model-view-controller design pattern. Laravel reuses the existing components of different frameworks which helps in creating a web application. Laravel has a very rich set of features which will boost the speed of web development. Moreover, a website built in Laravel is secure and prevents several web attacks.

Laravel has a tool called Composer which includes all the dependencies and libraries. It allows a user to install Third party libraries easily to create a project. All the dependencies are noted in composer. Json file which is placed in the source folder.

Command line interface used in Laravel is called Artisan. It includes a set of commands which assists in building a web application. These commands are incorporated from Symphony framework, resulting in add-on features in Laravel 5.1.

3.3.2 Advantages of Laravel

Laravel offers the following advantages−

- The web application becomes more scalable, owing to the Laravel framework.
- Considerable time is saved in designing the web application, since Laravel reuses the components from other framework in developing web application.
- It includes namespaces and interfaces, thus helps to organize and manage resources.

3.3.3 Features of Laravel:

Laravel offers the following key features which makes it an ideal choice for designing web applications −

- **Modularity:**
  Laravel provides 20 built in libraries and modules which helps in enhancement of the application. Every module is integrated with Composer dependency manager which eases updates.

- **Testability:**
  Laravel includes features and helpers which helps in testing through various test cases. This feature helps in maintaining the code as per the requirements.

- **Routing:**
  Laravel provides a flexible approach to the user to define routes in the web application. Routing helps to scale the application in a better way and increases its performance.

- **Configuration Management:**
  A web application designed in Laravel will be running on different environments, which means that there will be a constant change in its configuration. Laravel provides a consistent approach to handle the configuration in an efficient way.

- **Query Builder and ORM:**
  Laravel incorporates a query builder which helps in querying databases using various simple chain methods. It provides ORM (Object Relational Mapper) and Active Record implementation called Eloquent.

- **Schema Builder:**
  Schema Builder maintains the database definitions and schema in PHP code. It also maintains a track of changes with respect to database migrations.

- **Template Engine:**
  Laravel uses the Blade Template engine, a lightweight template language used to design hierarchical blocks and layouts with predefined blocks that include dynamic content.

- **E-mail:**
  Laravel includes a mail class which helps in sending mail with rich content and attachments from the web application.

- **Authentication:**
  User authentication is a common feature in web applications. Laravel eases designing authentication as it includes features such as register, forgot password and send password reminders.

- **Redis:**
  Laravel uses Redis to connect to an existing session and general-purpose cache. Redis interacts with session directly.

- **Queues:**
  Laravel includes queue services like emailing large number of users or a specified Cron job. These queues help in completing tasks in an easier manner without waiting for the previous task to be completed.

3.3.4 What is Ajax?

AJAX stands for Asynchronous JavaScript and XML. AJAX is a new technique for creating better, faster, and more interactive web applications with the help of XML, HTML, CSS, and Java Script. Ajax uses XHTML for content, CSS for presentation, along with Document Object Model and JavaScript for dynamic content display.

Conventional web applications transmit information to and from the sever using synchronous requests. It means you fill out a form, hit submit, and get directed to a new page with new information from the server. With AJAX, when we hit submit, JavaScript will make a request to the server, interpret the results, and update the current screen. In the purest sense, the user would never know that anything was even transmitted to the server.

3.3.5 What is JavaScript?

JavaScript is what is called a client-side Scripting Language. That means that it is a computer programming language that runs inside an Internet browser (a browser is also known as a Web client because it connects to a Web server to download pages). The way JavaScript works is interesting. Inside a normal Web page, you place some JavaScript code. When the browser loads the page, the browser has a built-in interpreter that reads the JavaScript code it finds in the page and runs it.

Web page designers use JavaScript in many different ways. One of the most common is to do field validation in a form. Many Web sites gather information from users in online forms, and JavaScript can help validate entries.

3.3.6 What is jQuery?

jQuery is a small, light-weight and fast JavaScript library. It is cross-platform and supports different types of browsers. It is also referred as "write less do more" because it takes a lot of common tasks that requires many lines of JavaScript code to accomplish, and binds them into methods that can be called with a single line of code whenever needed. It is also very useful to simplify a lot

of the complicated things from JavaScript, like AJAX calls and DOM manipulation.

3.3.7 What is Database?

A database is a separate application that stores a collection of data. Each database has one or more distinct APIs for creating, accessing, managing, searching, and replicating the data it holds.

Other kinds of data stores can be used, such as files on the file system or large hash tables in memory but data fetching and writing would not be so fast and easy with those types of systems.

So now a day, we use relational database management systems (RDBMS) to store and manage huge volume of data. This is called relational database because all the data is stored into different tables and relations are established using primary keys or other keys known as foreign keys.

A Relational Database Management System (RDBMS) is software that:

Enables you to implement a database with tables, columns, and indexes. Guarantees the Referential Integrity between rows of various tables. Updates the indexes automatically. Interprets an SQL query and combines information from various Tables.

RDBMS Terminology

Before we proceed to explain MySQL database system, let's revise few definitions related to database.

Database: A database is a collection of tables, with related data.

Table: A table is a matrix with data. A table in a database looks like a simple spreadsheet.

Column: One column (data element) contains data of one and the same kind, for example the column postcode.

Row: A row (= tuple, entry or record) is a group of related data, for example the data of one subscription.

Redundancy: Storing data twice, redundantly to make the system faster.

Primary Key: A primary key is unique. A key value cannot occur twice in one table. With a key, you can find at most one row.

Foreign Key: A foreign key is the linking pin between two tables.

Compound Key: A compound key (composite key) is a key that consists of multiple columns, because one column is not sufficiently unique.

Index: An index in a database resembles an index at the back of a book.

Referential Integrity: Referential Integrity makes sure that a foreign key value always points to an existing row.

3.3.8 MySQL Database

MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed, and supported by MySQL AB, which is a Swedish company. MySQL is becoming so popular because of many good reasons:

- MySQL is released under an open-source license. So, you have nothing to pay to use it.
- MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.
- MySQL uses a standard form of the well-known SQL data language.
- MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.
- MySQL works very quickly and works well even with large data sets.
- MySQL is very friendly to PHP, the most appreciated language for web development.
- MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB).
- MySQL is customizable. The open-source GPL license allows programmers to modify the MySQL. software to fit their own specific environments.

3.3.9 Apache

Apache is the most widely used web server software often referred to as simply Apache. Developed and maintained by Apache Software Foundation, Apache is an open-source software available for free. The first version of Apache, based on the NCSA httpd Web server, was developed in 1995. It runs on 67% of all web servers in the world. It is fast, reliable, and secure. It can be highly customized to meet the needs of many different environments by using extensions and modules.

These applications can be run in the interface of an Internet browser such as Firefox, Chrome or Microsoft edge.

In web development, Apache HTTP server is used in order to provide the backbone of multiple websites by processing the requests of the clients. While the HTTP server delivers the webpages to the end user, Tomcat is the tool that provides servlet support in order to add dynamic content to the server.

3.3.10 Hyper Text Markup Language

Basically, an HTML document is a plain text file that contains text and nothing else. When a browser opens an HTML file, the browser will look for HTML codes in the text and use them to change the layout, insert images, or create links to other pages. Since HTML documents are just text files, they can be written in even the simplest text editor.

A more popular choice is to use a special HTML editor - maybe even one that puts focus on the visual result rather than the codes - a so-called WYSIWYG editor ("What You See Is What You Get").

Some of the most popular HTML editors, such as FrontPage or Dreamweaver will let you create pages more or less as you write documents in Word or whatever text editor you're using. However, there are some very good reasons to create your own pages or parts of them - by hand.

It is possible to create web pages without knowing anything about the HTML source behind the page. There are excellent editors on the market that will take care of the HTML. parts. All you need to do is layout the page. However, if you

want to make it above average in web design, it is strongly recommended that you understand these tags.

The most important benefits are:

- You can use tags the editor does not support.
- You can read the code of other people's pages, and "borrow" the cool effects. You can do the work yourself, when the editor simply refuses to create the affects you want.

You can write your HTML by hand with almost any available text editor, including notepad that comes as a standard program with Windows. All you need to do is type in the code, then save the document, making sure to put an .html extension or an html extension to the file (for instance "mypage.html").

3.3.11 Cascading Style Sheets

HTML was originally designed as a simple way of presenting information, with the aesthetics of a web page being far less important than the content (and largely being left up to the web browser). Of course, now that the web has become as popular as it has, the presentation of your content has become almost critical to a site's success. CSS is the key presentational technology that is used to design websites.

In the late '90s, HTML coders noticed that they were retyping the same old tags again and again on the same page, leading to bigger HTML files and above all, time consumption and frustration. You may have found yourself in the same situation, adding in mountains of <font> tags, despite wanting them all the same; or using tricks like invisible gifs for spacing. Then, someone had a great idea: have one file that defines all the values that those piles of tags would have done, and then have all your pages checking this file and formatting your pages accordingly. You can therefore leave out most of the formatting tags in HTML. and use only nice structural elements (like headings, paragraphs and links)- separating structure and presentation.

3.3.12 what is Bootstrap?

Bootstrap is the most popular CSS Framework for developing responsive and mobile-first websites. Bootstrap 5 is the newest version of Bootstrap. By using bootstrap, we can write CSS and html in a same page it helps developers in writing code.

Chapter 4

Feasibility Analysis

- Feasibility Study

4.1 Feasibility Study

Feasibility is the determination of whether or not a project is worth doing. The process followed in making this determination is called feasibility study. This type of study determines if a project can and should be taken. Once it has been determined that a project is feasible, the analyst can go ahead and prepare the project specifications which finalizes project requirements. The contents and recommendations of such a study will be used as a sound basis for deciding whether to proceed, postpone, or cancel the project.

There are mainly three considerations involved in the feasibility study. They are-

4.1.1 Operational Feasibility

Operationally the system is very much feasible. The user interface is designed so simple that the user can easily understand the working of the system. All the necessary information are already there in the system itself. The name of the site is also easy to remember. The system is built in such a way that, user with minimum knowledge of Mobile/Computer can use the system.

4.1.2 Technical Feasibility

The system is technically feasible. Since it can be easily installed on any modern computer compatible of laravel8 and having a server software and a browser with minimum system requirements with 2GB RAM, Intel dual core processor. All the software's resources required by the system to run are Open source and available almost free of cost. The system has been hosted with the domain name 'bartalap.databytedigital.com' and is available over internet. All the hardware and software resources required are available abundantly, since modern computers consist almost all the resources required to run the system.

4.1.3 Economic Feasibility

The system is economically feasible. The running cost of the project was slightly on the lower side, since the system relies heavily on open-source software's. This is major benefit of this project. The hosting cost of the system was affordable, since it cost only for the space and domain name. The factors mentioned above enhances the economic feasibility of the system.

Chapter 5

System Analysis

- Introduction
- Data Flow Diagram or DFD

5.1 Introduction

System analysis is the detail study of the various operations performed by the system and their relations within and outside the system. It is a systematic technique that refines goals and objectives. The goal of the system development is the heart of this process. One of the best approaches to system analysis is the structure analysis.

Structure analysis is a set of techniques and graphical tools that allow the analyst to develop a new kind of system specification that are easily understandable to the user. It is the detailed step-by-step investigation of related procedures to see what must be done and to determine the best way of doing it. The objective is to build a system specification that provides the basis for design and implementation. DFD (Data Flow Diagrams) are used for this purpose. UML diagrams are also used for the purpose of making system analysis with object-oriented approach.

5.2 Data Flow Diagram or DFD

A data flow diagram is a graphical tool, which has the purpose of clarifying system requirements and identifying major transformations that will become programs in the system design. A DFD consists of a series of bubbles joined by the lines. The bubbles represent data transformations and lines represent data flows in the system. It depicts the information flow and transformation that occurs as data moves from input to output. The DFD provides a mechanism for functional modelling as well as information flow modelling.

Data Flow Diagram (DFD) Elements

The following four elements are used in the Data Flow Diagram :

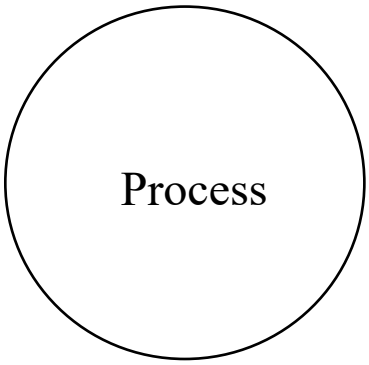
- An External Entity
- A Data Flow
- A Process
- A Data Store

❖ An External Entity:

An External Entity could either is a source or a destination of data in the system design being constructed. It lines outside the context of the system. It represents by a solid square.

❖ A Process:

A Process indicates the work that is performed on data. It transforms data from one from to another. A circle represents a process.



❖ A Data Flow:

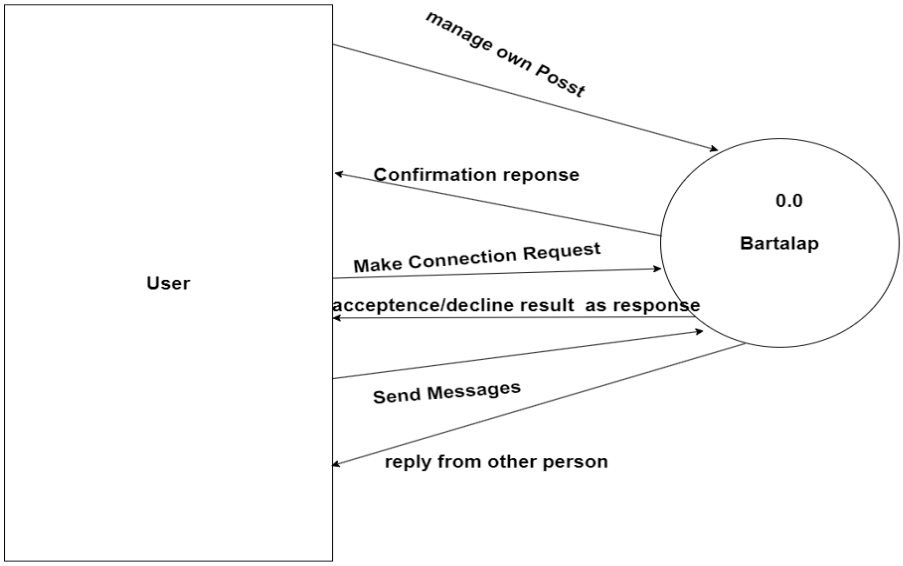
A Data Flow takes place between the various components of the system. In Data Flow Diagram, the data Flow is represented by as the thin line pointing in the direction in which the data is flowing.

❖ A Data Store:

A Data Store is repository for the data. While making a logical design if it requires storing the data, data store is used. A data store is represented by open rectangle. It also has a number and name.

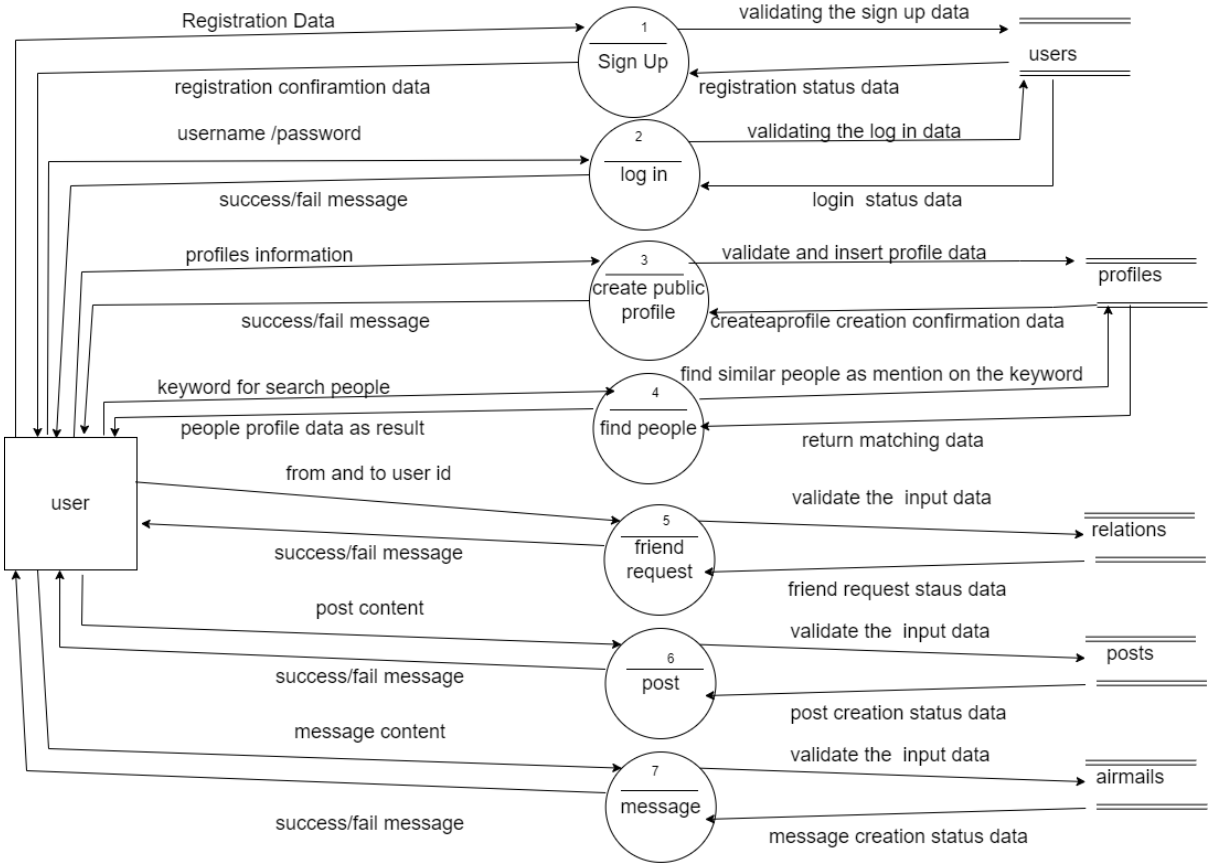
DFD of the Proposed System:

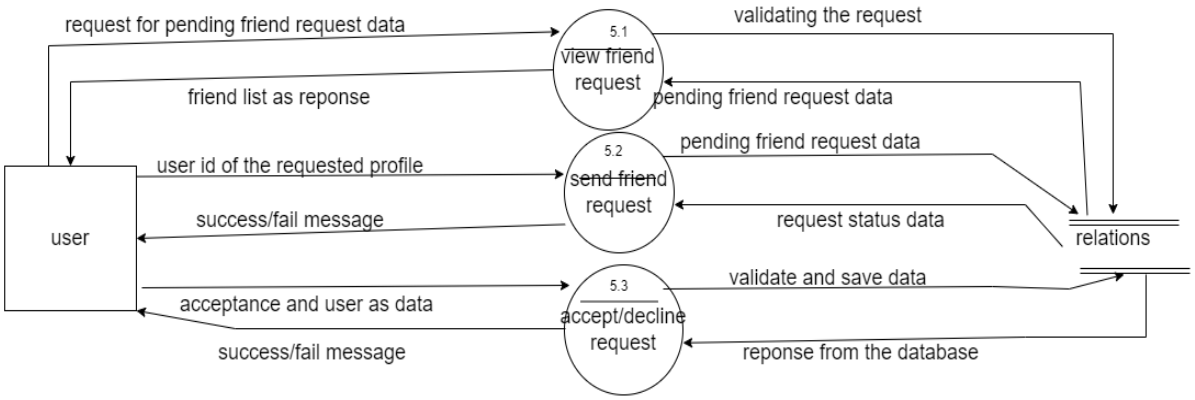
Context Level DFD or Zero Level DFD:

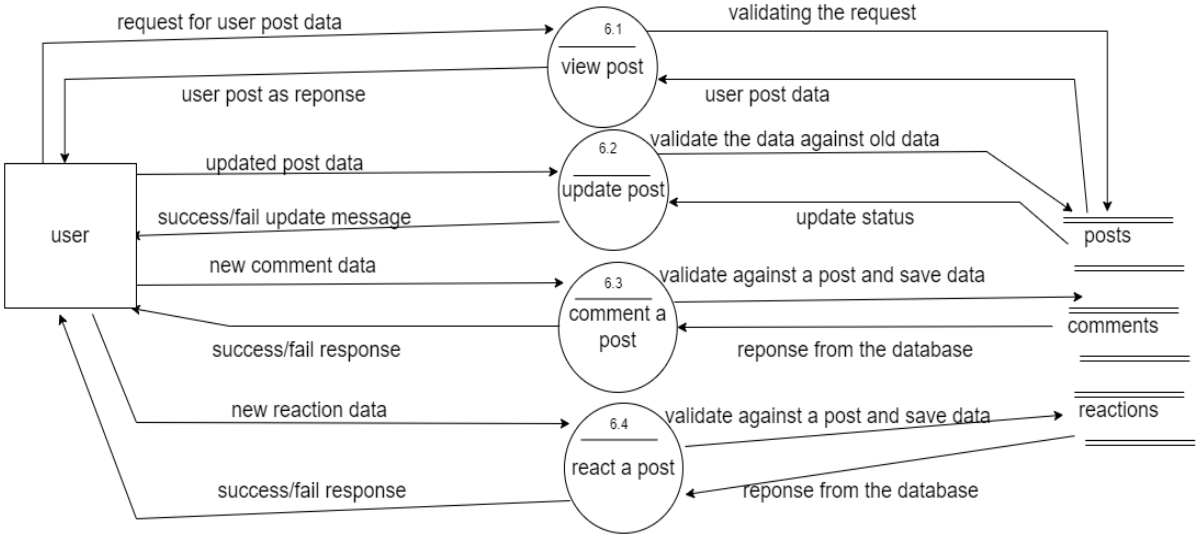


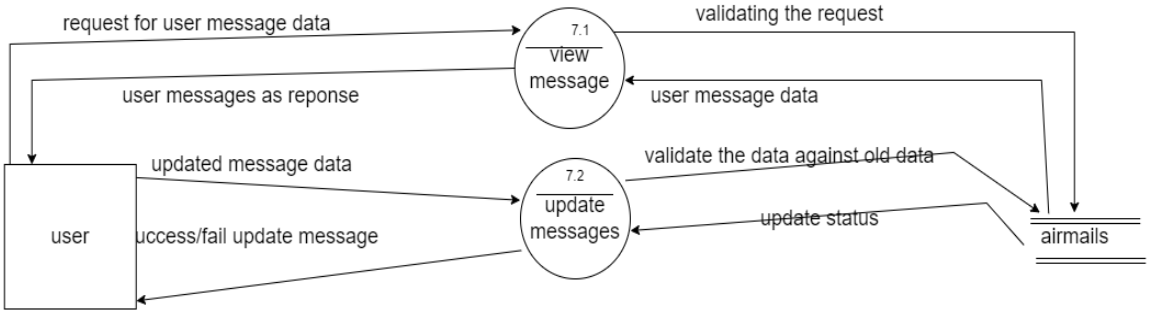
Level-1 DFD

❖ User Module




request for pending friend request data
5.1
view friend request
validating the request
friend list as reponse
pending friend request data
pending friend request data
user id of the requested profile
5.2
send friend request
success/fail message
request status data
user
relations
validate and save data
5.3
acceptance and user as data
accept/decline request
success/fail message
reponse from the database


request for user post data
6.1
view post
validating the request
user post as reponse
user post data
validate the data against old data
updated post data
6.2
update post
user
success/fail update message
update status
posts
new comment data
validate against a post and save data
6.3
comment a post
comments
success/fail response
reponse from the database
new reaction data
validate against a post and save data
reactions
6.4
react a post
success/fail response
reponse from the database


request for user message data
7.1
view message
validating the request
user messages as reponse
user message data
updated message data
validate the data against old data
7.2
update messages
user
uccess/fail update message
update status
airmails

Chapter 6

System Design

- Introduction
- Database Design
- Data Dictionary
- Entity Relationship Diagram or ER diagram

6.1 System Design

Design is critical component of software development life cycle. It is a meaningful representation of the system to be built and can be traced to the customer requirements. Absence of proper design is bound to lead to confusion and errors. A complete design must accommodate all of the implicit requirements desired by the customer. It must be a readable, understandable guide for programmers. It should provide a complete picture of the system addressing the data, functional, and behavioural domains from an implementation perspective. The following insights and understandings gained during the analysis phase were used as guidelines for designing the system:

The structured system development methodology should be followed while designing the system i.e., the system should be designed in such a way that it has the following properties:

- **Modularity:** The system should have a separate module for each function.
- **Logic/Hierarchy:** The components/modules of the system should be logically hierarchically related to each other.
- **Cohesiveness:** There should be maximum interaction within each component module.
- **Low degree of coupling:** There should be minimum interaction between components /modules.
- **Visibility:** It should be easy to perceive how and why actions occur i.e., the actions being taken must be traceable. Simplicity: There should be no complexity or ambiguity in the system.
- **Uniformity:** The structure of the components / modules should be uniform. This design of the system is a multi-step process that focuses on five distinct attributes of a program: Data Structure, System Architecture, Interface Representation, System Controlling and Procedural Detail.

6.2 Database Design

Database design is the process of producing a detailed data model of a database. This logical data model contains all the needed logical and physical design choices and physical storage parameters needed to generate a design in a Data Definition Language, which can then be used to create a database. A fully attributed data model contains detailed attributes for each entity.

The term database design can be used to describe many different parts of the design of an overall database system. Principally, and most correctly, it can be thought of as the logical design of the base data structures used to store the data. In the relational model these are the tables and views.

6.3 Data Dictionary

A Data Dictionary, or meta data repository, is a centralized repository of information about data such as meaning, relationships to other data, origin, usage, and format.

1. users

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	name	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More
3	email	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
4	email_verified_at	timestamp			Yes	NULL			Change Drop More
5	password	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
6	remember_token	varchar(100)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
7	created_at	timestamp			Yes	NULL			Change Drop More
8	updated_at	timestamp			Yes	NULL			Change Drop More

This table stores all the login related information

2. relations

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	from_user	bigint(20)		UNSIGNED	No	None			Change Drop More
3	to_user	bigint(20)		UNSIGNED	No	None			Change Drop More
4	status	varchar(5)	utf8mb4_unicode_ci		No	None			Change Drop More
5	last_updated_by	bigint(20)		UNSIGNED	No	None			Change Drop More
6	created_at	timestamp			Yes	NULL			Change Drop More
7	updated_at	timestamp			Yes	NULL			Change Drop More

This table store the current relatuionship status between users.

3. profiles

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	username	varchar(255)	utf8mb4_general_ci		Yes	NULL			Change Drop More
3	gender	enum('M', 'F', 'O')	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
4	occupation	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
5	dob	date			Yes	NULL			Change Drop More
6	current_city	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
7	hometown	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
8	phone_no	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
9	relationship_status	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
10	about_me	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
11	profile_pic	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
12	cover_pic	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
13	bluetick	tinyint(1)			No	0			Change Drop More
14	lock_status	tinyint(1)			No	0			Change Drop More
15	account_status	tinyint(1)			No	0			Change Drop More
16	account_type	tinyint(1)			No	0			Change Drop More
17	soft_del	tinyint(1)			No	0			Change Drop More
18	user_id	bigint(20)		UNSIGNED	No	None			Change Drop More
19	created_at	timestamp			Yes	NULL			Change Drop More
20	updated_at	timestamp			Yes	NULL			Change Drop More

This table store all user's profile related header informations

4. credibility

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	total_upvotes	varchar(10)	utf8mb4_unicode_ci		No	None			Change Drop More
3	total_downvotes	varchar(10)	utf8mb4_unicode_ci		No	None			Change Drop More
4	credibility_point	varchar(3)	utf8mb4_unicode_ci		No	None			Change Drop More
5	badge	varchar(2)	utf8mb4_unicode_ci		No	None			Change Drop More
6	user_id	bigint(20)		UNSIGNED	No	None			Change Drop More
7	created_at	timestamp			Yes	NULL			Change Drop More
8	updated_at	timestamp			Yes	NULL			Change Drop More

This table store the credibility score of a user which will be later use to determine user's membership level and genuineness

5. posts

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	post_text	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
3	post_media	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
4	post_location	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
5	visibility	tinyint(1)			No	0			Change Drop More
6	post_status	tinyint(1)			No	0			Change Drop More
7	soft_del	tinyint(1)			No	0			Change Drop More
8	promotional_status	tinyint(1)			No	0			Change Drop More
9	user_id	bigint(20)		UNSIGNED	No	None			Change Drop More
10	created_at	timestamp			Yes	NULL			Change Drop More
11	updated_at	timestamp			Yes	NULL			Change Drop More

This table store all posts (header data)uploaded by users

6.postdetails

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	posts_header_id	bigint(20)		UNSIGNED	No	None			Change Drop More
3	attachmentType	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
4	attachmentvalue	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
5	soft_del	tinyint(1)			No	0			Change Drop More
6	created_at	timestamp			Yes	NULL			Change Drop More
7	updated_at	timestamp			Yes	NULL			Change Drop More

This table store all child records of a post (uploaded by users)

7. comments

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	comment	varchar(127)	utf8mb4_unicode_ci		No	None			Change Drop More
3	cmnt_ref	bigint(20)		UNSIGNED	No	None			Change Drop More
4	cmnt_type	varchar(3)	utf8mb4_unicode_ci		No	None			Change Drop More
5	soft_del	tinyint(1)			No	0			Change Drop More
6	sender_user_id	bigint(20)		UNSIGNED	No	None			Change Drop More
7	receiver_user_id	bigint(20)		UNSIGNED	No	None			Change Drop More
8	post_id	bigint(20)		UNSIGNED	No	None			Change Drop More
9	created_at	timestamp			Yes	NULL			Change Drop More
10	updated_at	timestamp			Yes	NULL			Change Drop More

This table store all comments against the user posts.

8.reaction

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	comment	varchar(127)	utf8mb4_unicode_ci		No	None			Change Drop More
3	cmnt_ref	bigint(20)		UNSIGNED	No	None			Change Drop More
4	cmnt_type	varchar(3)	utf8mb4_unicode_ci		No	None			Change Drop More
5	soft_del	tinyint(1)			No	0			Change Drop More
6	sender_user_id	bigint(20)		UNSIGNED	No	None			Change Drop More
7	receiver_user_id	bigint(20)		UNSIGNED	No	None			Change Drop More
8	post_id	bigint(20)		UNSIGNED	No	None			Change Drop More
9	created_at	timestamp			Yes	NULL			Change Drop More
10	updated_at	timestamp			Yes	NULL			Change Drop More

This table store all reactions against the user posts.

9.airmails

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	msg_text	varchar(127)	utf8mb4_unicode_ci		No	None			Change Drop More
3	msg_ref	bigint(20)		UNSIGNED	No	None			Change Drop More
4	msg_type	varchar(3)	utf8mb4_unicode_ci		No	None			Change Drop More
5	soft_del	tinyint(1)			No	0			Change Drop More
6	sender_user_id	bigint(20)		UNSIGNED	No	None			Change Drop More
7	receiver_user_id	bigint(20)		UNSIGNED	No	None			Change Drop More
8	created_at	timestamp			Yes	NULL			Change Drop More
9	updated_at	timestamp			Yes	NULL			Change Drop More
10	read_status	tinyint(1)			No	0			Change Drop More

This table store all messages between the users.

10.airmaildetails

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	message_header_id	bigint(20)		UNSIGNED	No	None			Change Drop More
3	attachmentType	varchar(25)	utf8mb4_unicode_ci		No	None			Change Drop More
4	attachmentvalue	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
5	soft_del	tinyint(1)			No	0			Change Drop More
6	created_at	timestamp			Yes	NULL			Change Drop More
7	updated_at	timestamp			Yes	NULL			Change Drop More

This table store child record of messages.(if any)

11. saveitems

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	save_by_user_id	bigint(20)		UNSIGNED	No	None			Change Drop More
3	content_type	varchar(15)	utf8mb4_unicode_ci		No	None			Change Drop More
4	content_id	bigint(20)		UNSIGNED	No	None			Change Drop More
5	soft_del	tinyint(1)			No	0			Change Drop More
6	created_at	timestamp			Yes	NULL			Change Drop More
7	updated_at	timestamp			Yes	NULL			Change Drop More

This table store contents save by user to view later

12.reports

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	report_type	varchar(15)	utf8mb4_unicode_ci		No	None			Change Drop More
3	report_by_user_id	bigint(20)		UNSIGNED	No	None			Change Drop More
4	content_type	varchar(15)	utf8mb4_unicode_ci		No	None			Change Drop More
5	content_id	bigint(20)		UNSIGNED	No	None			Change Drop More
6	soft_del	tinyint(1)			No	0			Change Drop More
7	created_at	timestamp			Yes	NULL			Change Drop More
8	updated_at	timestamp			Yes	NULL			Change Drop More

This table store reported contents (by users)

13. servicerequets

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	requestedBy	bigint(20)		UNSIGNED	No	None			Change Drop More
3	service_reference	bigint(20)		UNSIGNED	No	None			Change Drop More
4	service_type	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
5	service_category	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
6	service_subcategory	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
7	service_desc	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
8	service_related_submitted_attachment	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
9	service_status	tinyint(1)			No	0			Change Drop More
10	service_request_response_remark	tinyint(1)			No	0			Change Drop More
11	soft_del	tinyint(1)			No	0			Change Drop More
12	created_at	timestamp			Yes	NULL			Change Drop More
13	updated_at	timestamp			Yes	NULL			Change Drop More

This table store different service requests raised by users

6.4 Entity Relationship Diagram or ER diagram

Entity Relationship (ER) model is a popular high-level conceptual data model. The conceptual schema is a concise description of data requirement of the user and includes detailed description of the entity type, relationships, and constraints. These concepts do not include implementations details; they are easier to understand and can be used to communicate with non-technical users. This approach enables the database designers to concentrate on specifying the properties of data, without being concerned with storage details. Database design is the process of producing a detailed data model of a database. This logical data model contains all the needed logical and physical design choices and physical storage parameters needed to generate a design in a Data Definition Language, which can then be used to create a database. A fully attributed data model contains detailed attributes for each entity.

The term database design can be used to describe many different parts of the design of an overall database system. Principally, and most correctly, it can be thought of as the logical design of the base data structures used to store the data. In the relational model these are the tables and views.

The Building Blocks: Entities, Relationships, and Attributes.

- **Entity:**

An entity may be defined as a thing which is recognized as being capable of an independent existence and which can be uniquely identified. An entity is an abstraction from the complexities of some domain. Entities can be thought of as nouns- a computer, an employee, a song, a mathematical theorem, etc.

- **Relationships:**

A relationship captures how two or more entities are related to one another. Relationships can be thought of as verbs, linking two or more nouns. Examples: an own relationship between a company and a computer.

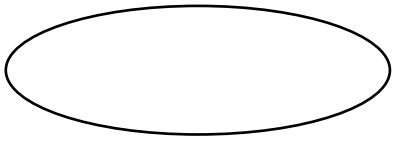
- **Attributes:**

An Attribute is a specification that defines a property of an object, element, or file. It may also refer to or set the specific value for a given instance of such.

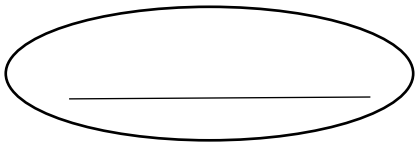
Entities and relationships can both have attributes. Examples: an employee entity might have a Social Security Number (SSN) attribute; the proved relationship may have a date attribute. Every entity (unless it is a weak entity) must have a minimal set of uniquely identifying attributes, which is called the entity's primary key, and a set of attributes that are used to refer other entities, which are called the entity's foreign keys.

The followings are the symbols used for Entity-Relationship Diagram:

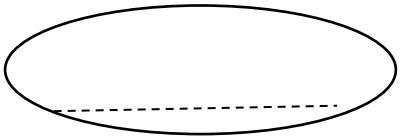
ENTITY



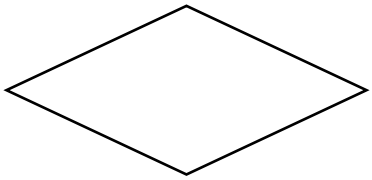
ATTRIBUTE



PRIMARY KEY

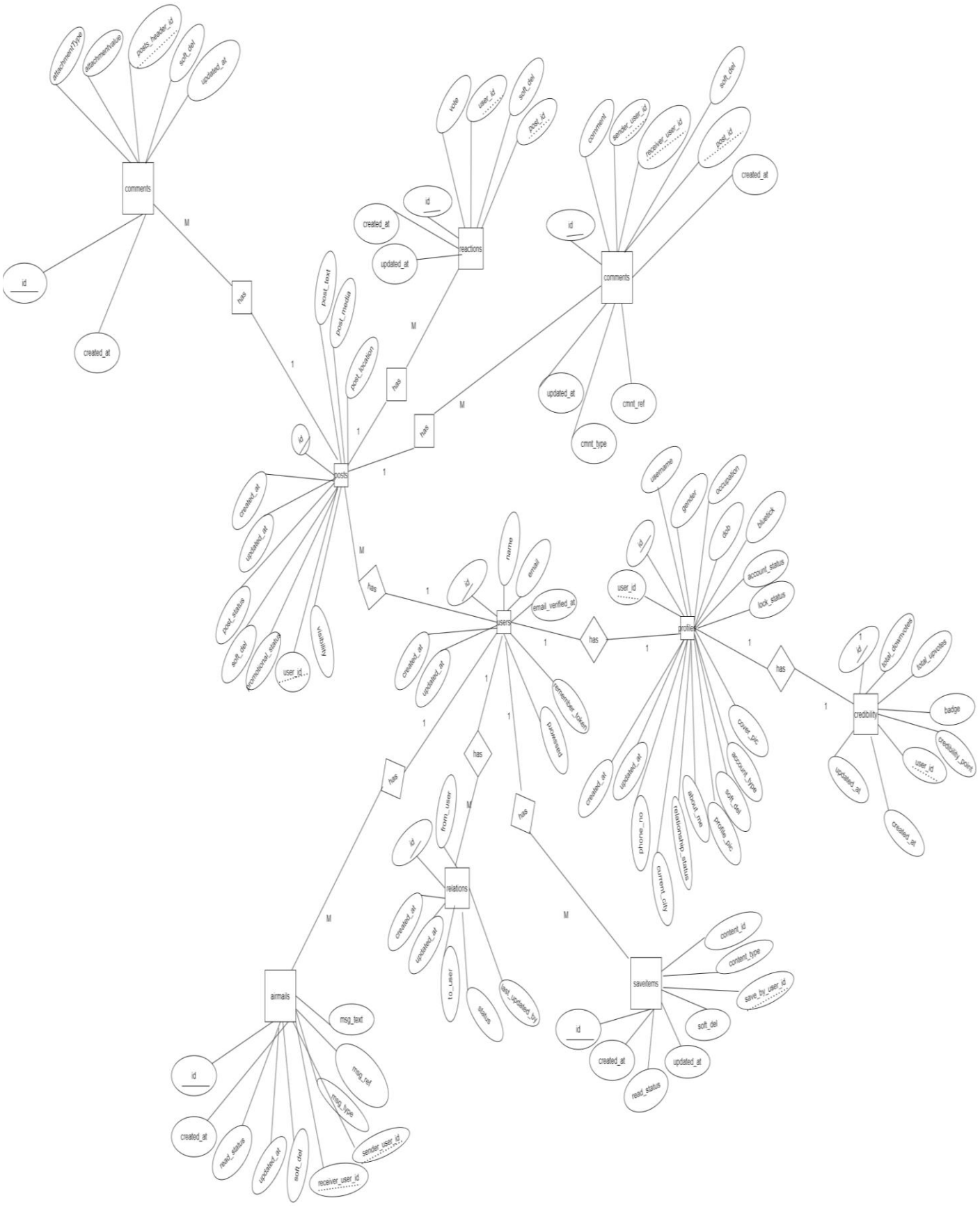


FOREIGN KEY



RELATION

ER-Diagram of the proposed system


comments
attachment1type
attachmentvalue
post_header_id
soft_del
updated_at
created_at
id
has
M
1
posts
post_text
post_media
post_location
created_at
updated_at
soft_del
promotional_status
visibility
user_id
reactions
role
user_id
soft_del
post_id
id
created_at
updated_at
has
M
1
comments
comment
sender_user_id
receiver_user_id
soft_del
post_id
created_at
id
updated_at
cmnt_ref
cmnt_type
has
M
1
users
name
email
email_verified_at
password
remember_token
created_at
updated_at
has
1
M
profiles
username
gender
occupation
dob
bluetick
account_status
lock_status
user_id
id
created_at
updated_at
phone_no
relationship_status
current_city
about_me
profile_pic
account_type
soft_del
cover_pic
has
1
credibility
id
total_downvotes
total_upvotes
badge
credibility_point
user_id
updated_at
created_at
has
1
has
M
relations
from_user
to_user
status
last_updated_by
id
created_at
updated_at
has
M
airmails
msg_text
msg_ref
msg_type
sender_user_id
receiver_user_id
id
created_at
read_status
updated_at
soft_del
has
M
saveitems
content_id
content_type
save_by_user_id
soft_del
updated_at
id
created_at
read_status

Chapter 7

Coding

- Introduction
- Code Efficiency
- Optimization of Code
- Evaluation

7.1 Introduction:

Once the design is completed, most of the major decisions about the system have been made. Now the design must be translated into a machine- readable form. The Code generation step performs this task. If the design performed in a detailed manner, code generation can be accomplished mechanistically.

The goal of coding or programming phase is to translate the design of the system produced in design phase into code in a given programming language, which can be executed by a computer and that performs computations specified by the design. The Code generation should be designed in a manner to reduce input, control errors and accelerate the entire process.

Normally, good software development organizations adhere to some well-defined and standard style of Coding called Standards. Most software development organizations formulate their own coding standards that suit them most, the reasons for adhering to a standard coding style are as follows-

- It gives a uniform appearance to the codes written by different programmers.
- It enhances code understandability.
- It encourages good programming practices.

7.2 Code Efficiency:

Code efficiency is one of the major tasks of the System Development Life Cycle (SDLC). It checks as to whether the access time is minimized or not, whether the errors are eliminated or not, whether the data integrity is maintained or not etc. To enhance the efficiency of the system, drop-down list are provided. Besides, drop down list box for item name entries are also provided. It is done so that the user would have the options to select the item name else they may enter incorrectly.

7.3 Optimization of Code:

Code optimization is one of the main tasks of the SDLC. It supplements the efficiency of the coding and is the penultimate stage of removal of any data redundancy and unnecessary occupation of the space.

In the proposed system, different types of the codes have been optimized such as looping codes.

Example: (for an unoptimized code)

If (condition 1> condition 2)

{

If (condition 1> condition 3) {

Statement;}

}

Now Example of optimized code-

If (condition 1> condition 2 && condition 1> condition 3)

{

Statement;}

Besides, many checking features have been accommodated to stop the entry of un-optimized code. Necessary check constraints have been declared to stop unauthorized accessing retrieving of the data. If the user enters wrong data, the system has been designed to prompt the user, suggesting entering the correct data.

7.4 Evaluation:

Evaluation is to identify whether the system is serving the intended purpose of the organization and meeting the expected requirements of the user, its strength and weakness. For evaluation of the system, a list of satisfied users will be given to the organization concern, which is using the identical system for seeking their opinion.

Chapter 8

System Testing

- Introduction
- Strategies of testing
- Level of testing

8.1 Introduction:

Testing is vital to the success of the system. Testing a program consists of providing the program with a set of test inputs (test cases) and observing if the program behaves as expected. The purpose of system testing is to identify and correct errors in the candidate system. System testing makes a logical assumption that if all the parts or components of the system are correct, the goal will be successfully achieved.

An additional aspect of quality assurance is avoiding the need for enhancement on the one hand and developing system that is maintainable on the other. The need for maintenance is very high and enhancement developments. The greatest amount of maintenance is for user enhancement and improved documentation tasks that can be avoided or at least reduced in frequency through proper systems engineering. So, quality assurance is the review of software products and related documentation for completes correctness and maintainability. Besides these, it also includes assurance that the system meets the specifications and requirements for its intended use and performance.

8.2 Strategies of testing:

One of the most important level of quality assurance is system testing. Testing is the process of executing a program with the explicit intention of finding errors that is making the program fail. A successful testing is then finding the errors.

There are two strategies for testing software. These are:

- ❖ Code Testing
- ❖ Specification Testing

❖ Code Testing

The code testing strategy examines the logic of the program. To follow this testing method the analyst develops the test cases resulting executing every instruction in the program or modules that is every path through the program is tested. A path is specific combination of conditions that is handled by the program.

❖ Specification Testing

To perform specification testing, the analyst examines the specification stating what the program is going to do and how it should perform under various conditions. Then test cases are developing processing. By examining the results, the analyst can determine whether the program performs according to its specified requirements.

8.3 Level of testing:

Regardless of which strategy the analyst follows, there are preferred practices to ensure that the testing is useful. The levels of tests and types of data, combined with testing libraries are important aspects of the actual test process. Systems are not designed as entire systems nor are they tested as single systems. The analyst must perform.

8.3.1 Unit Testing:

Unit testing is testing changes made in an existing or a new program. In the unit testing the analyst test the program making up a system. The software units in a system are the modules and routines that are assembled and integrated to perform a specific function. Unit testing focuses first on the modules, independently of one another, to locate errors. This enables the tester to detect errors in coding and logic that are contained within that module alone. Those resulting from the interaction between modules are initially avoided.

In the proposed system the above-mentioned testing method are aimed to be performed.

8.3.2 System Testing:

After a test plan has been developed, system testing begins by testing program modules separately, followed by testing bundled modules as a unit. Program modules may function perfectly in isolation but fail when interfaced with other modules. The approach is to test each entity with successfully large ones, up to the system level test. System testing consists of the following tests-

- Program Testing
- String Testing
- User acceptance Testing

8.3.3 Program Testing:

A program testing represents the logical elements of a system. For a program to run satisfactorily, it must compile the test data correctly and lie in properly with other programs. Program testing checks two types of errors.

1. **Syntax Errors**

Syntax Errors is the program statements that include one or more rules of the language in which it is written.

2. **Logical Errors**
   Logical Errors deals with incorrect data fields, out of range terms and invalid combination. Since compiler does not detect logical errors, therefore the output must be carefully observed and matched with the expected one and hence validating the program testing.

8.3.4 String Testing:

Programs are invariably related to one another and interact in a total system. Each program is tested to see whether it confirms to related programs in the system. Each portion of the system is tested against the entire modules with both test and line data before the entire system is ready to be tested.

8.3.5 User Acceptance Testing:

An acceptance test has the objective of selling the user on the validity and reliability of the system. Performance of the acceptance test is actually the user's show. User's motivation and knowledge are critical for the successful performance of the system. The authorized person of the organization, who is responsible for the data entry, is familiarized with the various operation of the system. Then the actual data entry starts, thus validating the user acceptance testing.

8.3.6 Output Testing:

The process is testing simultaneously both program (internal processes) and its output. Output produced by the system is compared with the desired output. So, each and every program is tested separately with synthetic data. Actually, it is found to be identical. Corrections and modifications were required to be done in some programs.

8.3.7 Recovery and System Security Test:

Without the facilities of backup recovery and security, the system is handicapped. Even in some instances it may cause several problems like loss of data. Forced system failures were introduced to test the security of stored data.

8.3.8 Documentation Testing:

An adequate number of components or messages are provided in each program in order to assist the user in taking awkward situation and for ease of using the system. The user was asked about the understandability and utility of these messages; the response from the user was taken in to consideration to make the system for novice user like them.

Chapter 9

Implementation and Maintenance

- Implementation
- Post Implementation Review
- Maintenance

9.1 Implementation:

A crucial phase in the system development life cycle is the successful implementation of the system design. Implementation simply means converting a new or revised system design into operation one. The new system may be totally new; replacing the existing manual or automated system, or it may be a major modification to the existing system. In either case proper modification is essential to provide reliable system to meet the organization.

There are three main types of implementations-

- Implementation of a computer system to replace the manual system.
- Implementation of a new computer system to replace an existing one.
- Implementation of a modified application to replace an existing one.

Since the system is web-based system, there is not much procedure involved in implementing the system. Since this system is menu driven, so user/employee training is not required, any user can easily find out the resources available in this system and way to access it (provided they have authorization).

After completion of the development of this system and after a through testing of the different aspect of the system, this system will be ready for implementation. The system is to run in parallel with the existing system for a few days until the concerned authority becomes fully confident of the new system.

9.2 Post Implementation Review:

After the system is implemented and system conversion is completed, a review of the system is usually conducted by the user and the analyst to determine whether the system is meeting its desired expectations. It should be a formal process to determine how well the system is working, and how it has been expected.

9.3 Maintenance:

Maintenance is the last and most expensive phase of Software Development Life Cycle (SDLC). Maintenance is the enigma of the system development. Software maintenance denotes any changes made to the software product after it has been delivered to the customer. Maintenance is inevitable for almost any kind of product. Analysts and programmers spend much more time maintaining programs than they spend do developing it. Maintenance accounts 50-80 percent of total system development.

Maintenance covers a wide range of activities, including correcting and rectifying bugs observe while the system is in use (Corrective Maintenance), modifying it

to run in a new environment or Operating System (Adaptive Maintenance) and upgrading user requirement i.e. adding new feature to the system (Perfective Maintenance).

Maintaining the proposed web application would have a substantial cost to the organization. Hosting this web site on any Server and afterwards maintenance will have a regular cost effect to the organization. Some regular charges have to be paid to the Web Server for maintaining the Web Site and when traffic will increase then there is every possibility that Web Server charge will go soar high.

Chapter 10

System Security

Introduction

Security is the important consideration for any system where sensitive and important information are open to all. Security is critical in system development. The amount of protection depends on the sensitivity of the data, the reliability of the use and the complexity if the system. The motives behind security are to keep the organization running, project data as an asset and seek management support for more installations.

The system security problem can be divided into four related issues:

- Security
- Integrity
- Privacy
- Confidentiality

Security

It refers to the technical innovations and procedures applied to the hardware and the operating system to protect against deliberate and accidental damages from a defined threat. In contrast, data security is the protection of data from loss, disclose, modification and destruction.

Integrity

It refers to the proper functioning of the hardware and programs, appropriate security and satisfy against external threats such as eavesdropping and wiretapping. In comparison, data integrity makes sure that data do not differ from original form and have not been accidentally disclosed, altered, or destroyed.

Privacy

It defines the right of the users and the organizations to determine what information they are willing to share with or accept from others and how the organization can be protected against unwelcome, unfair or excessive dissemination of information about it.

- **Confidentiality**

The term confidentiality is the special status given to the sensitive information in a database to minimize the possible disclosure of information that characterizes its need for protection. System security is the technical means of providing such protection. In contrast, privacy is basically a procedure of how the information available are used. Data privacy and security are issues that go beyond the scope of system development. They are actually a social concern. An organization that depends heavily on the use of databases requires special control to maintain viable information.

These controls are classified into three general categories:

- Physical Security
- Database Security
- Application Security

- **Physical security**

It refers the security or protection from fire, flood or the other physical damages.

- **Database security**

It mainly refers to the database integrity through data validation techniques. The clients are asked to take regular backups of the database. Only the system administrator had the right to access the database with the correct user id and the user password.

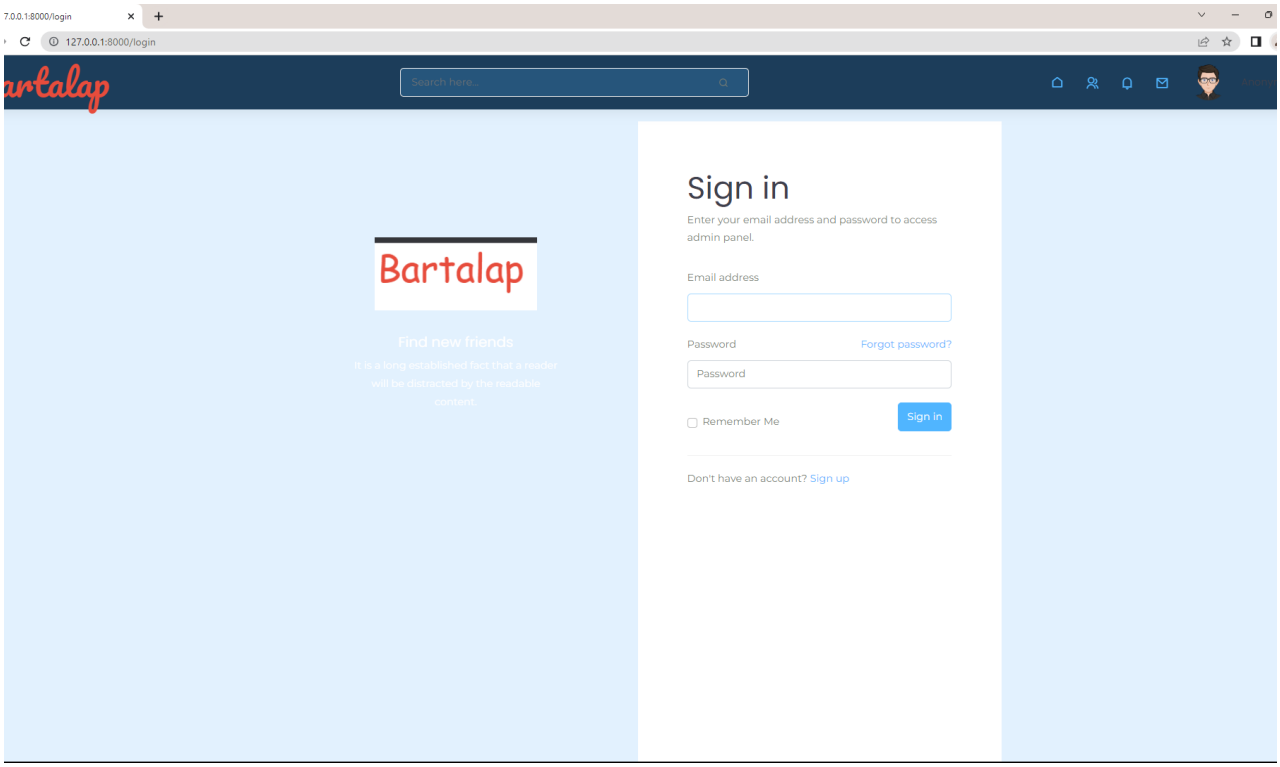
- **Application security**

It refers to the control measures of the application software through password, encryption, and monitoring users on a regular basis. The client was given the application software in floppies or compact disk, so that if some of the files get corrupted accidentally or intentionally, the whole system can again be loaded from backup disks and the database can be recovered back.

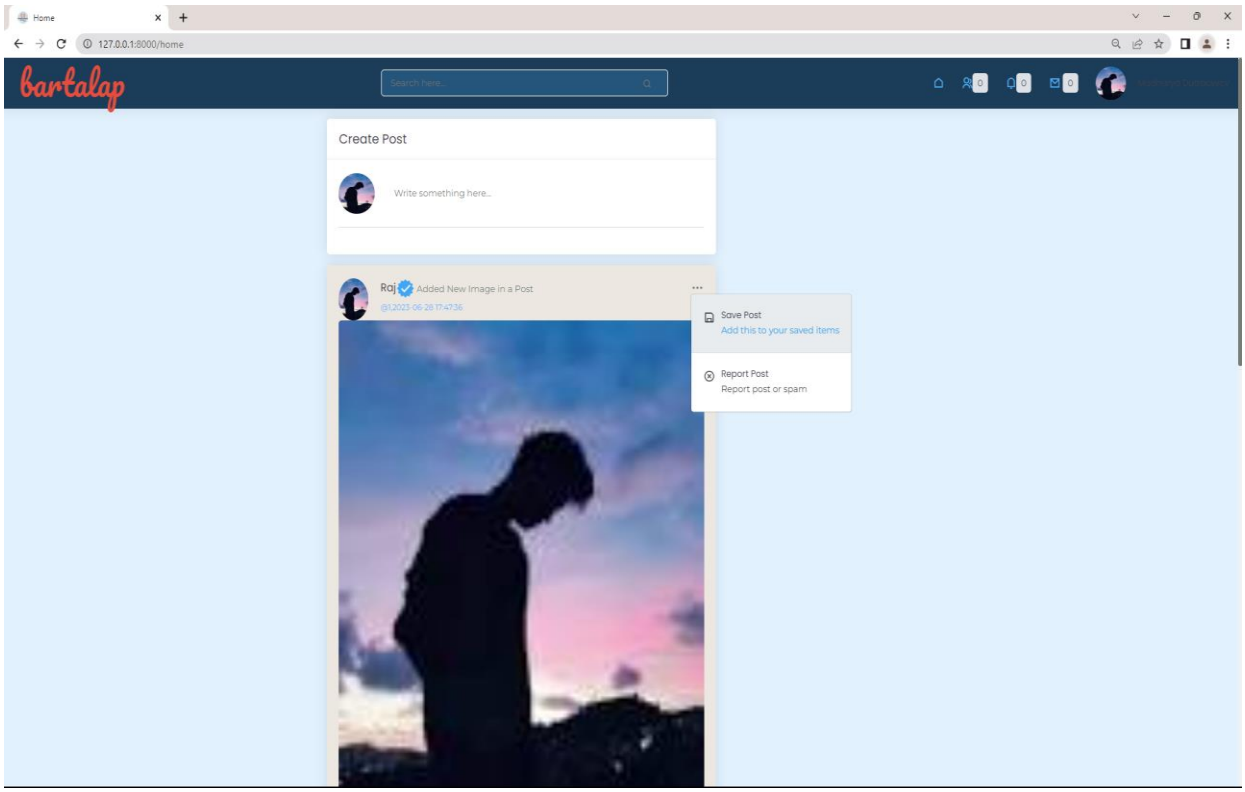
In this system we are trying our best to put all the effective security measures to prevent the SQL injection. SQL Injection has become very common technique by which one can gain access to database. SQL Injection involves entering SQL code into web forms, e.g., Login fields, or into the browser address field, to access and manipulate the database. In this system we have implemented password threatening, auto logout, email verification etc. as security measure.

Chapter 11

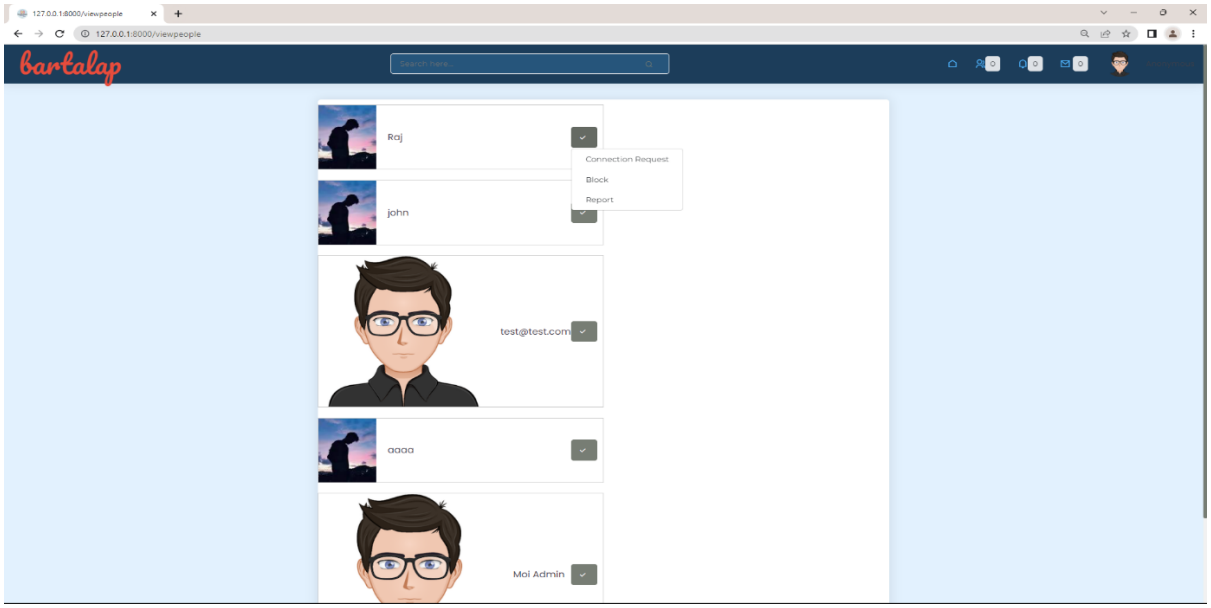
Screen Shots of Results



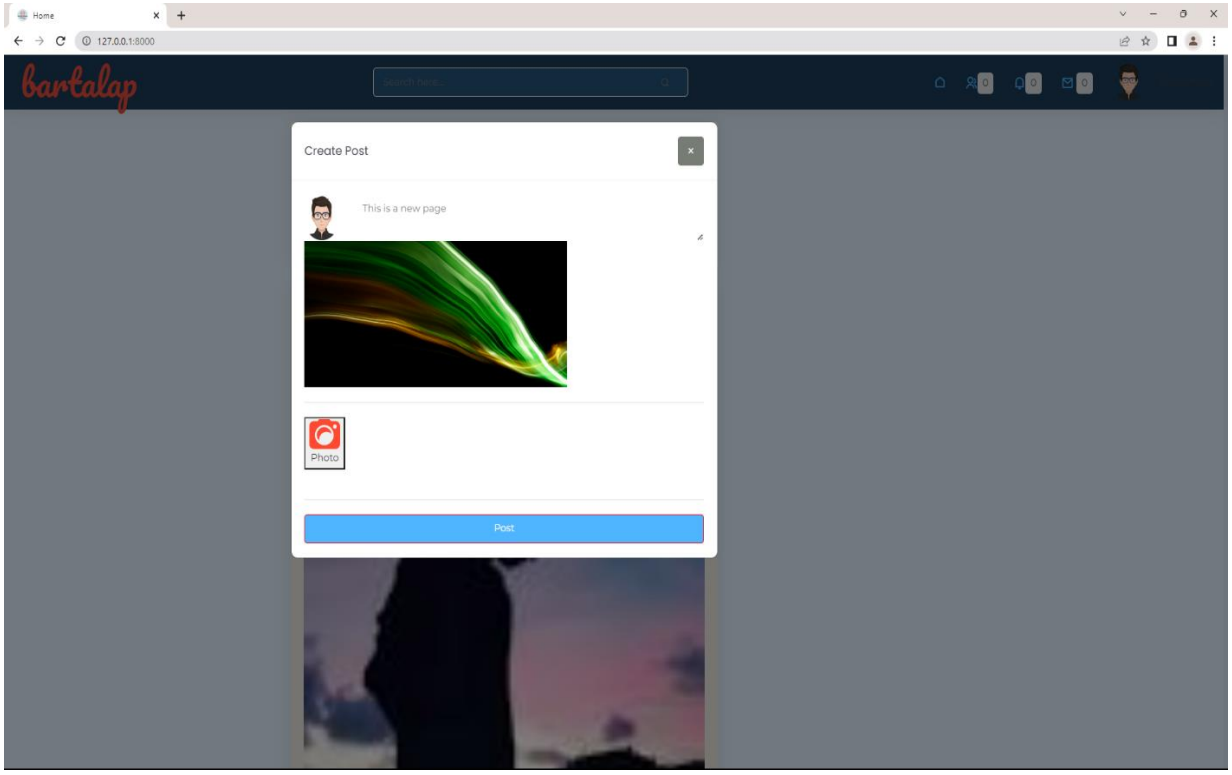
1. Sign in page of **Bartalap**



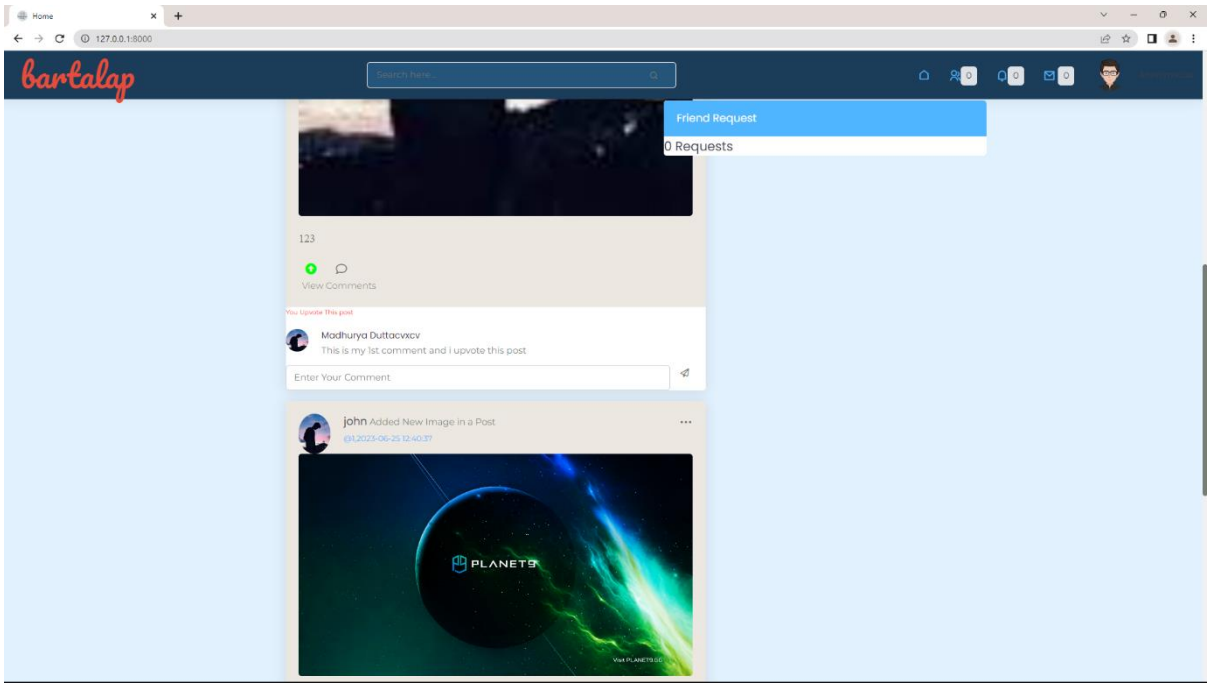
2. Home Page in **Bartalap** after Successful login.



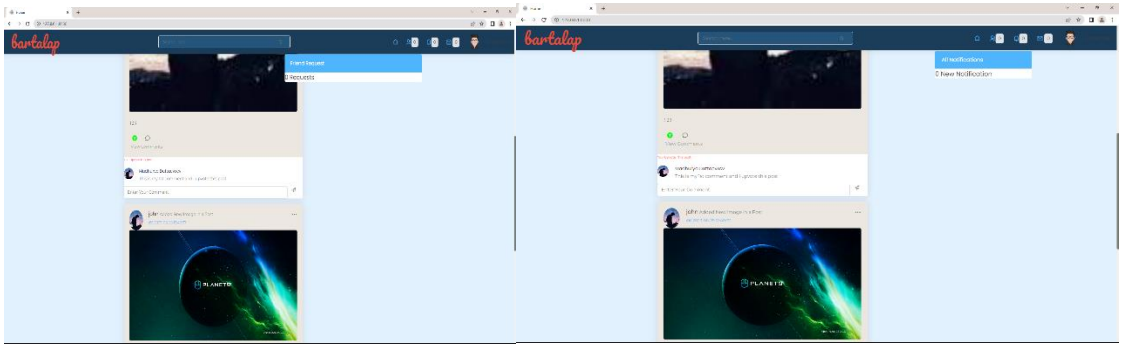
3. Search results in **Bartalap** .



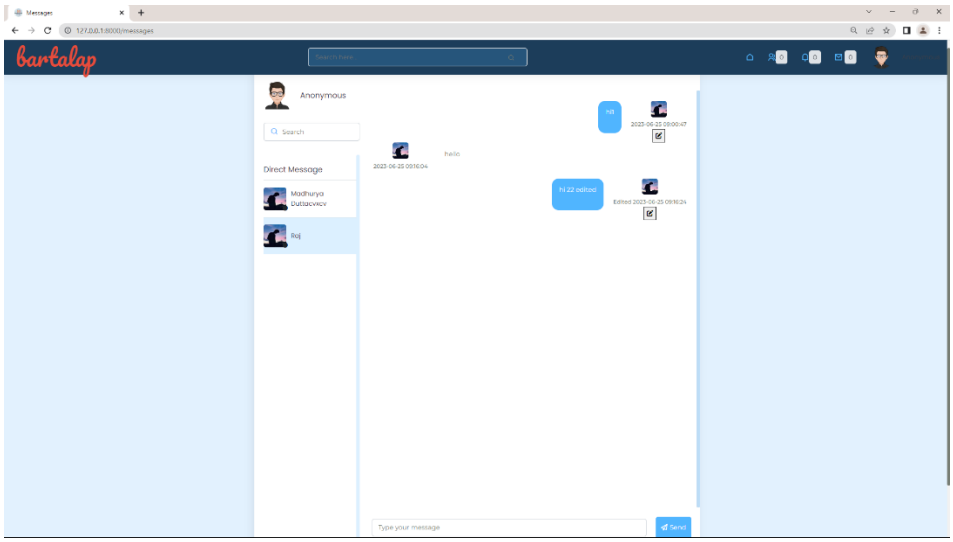
4. Create new public post in **Bartalap**



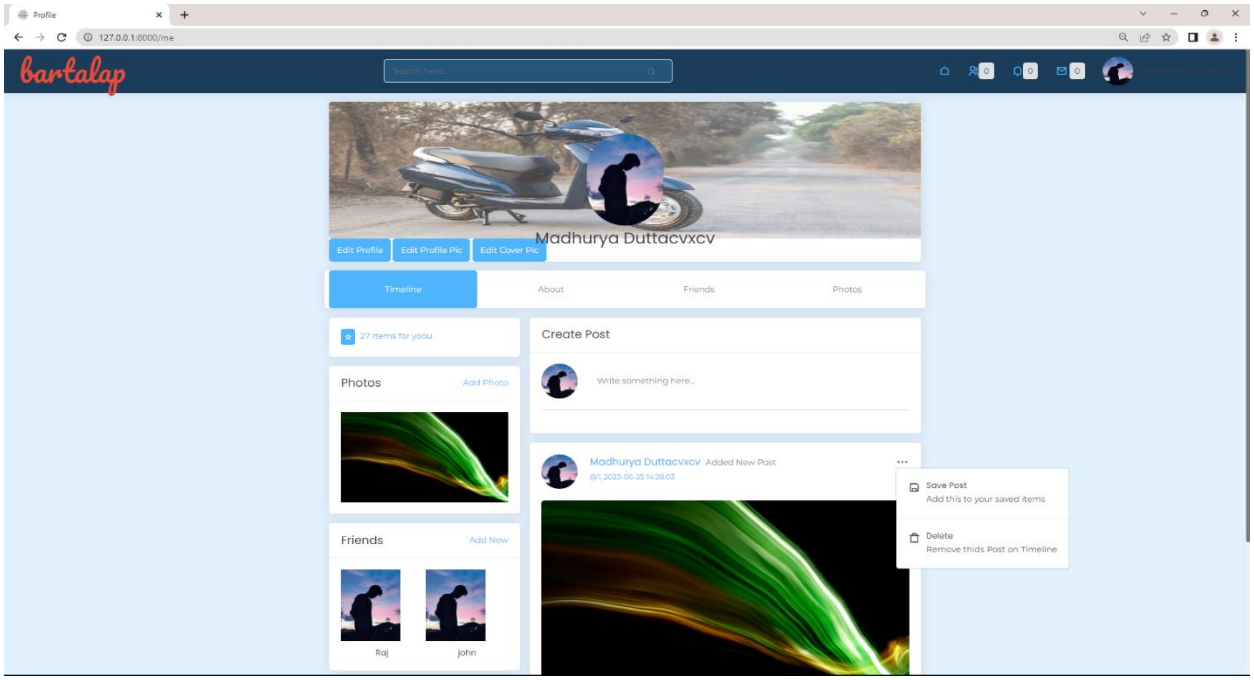
5.Comment and reaction on user's post (in **Bartalap)**



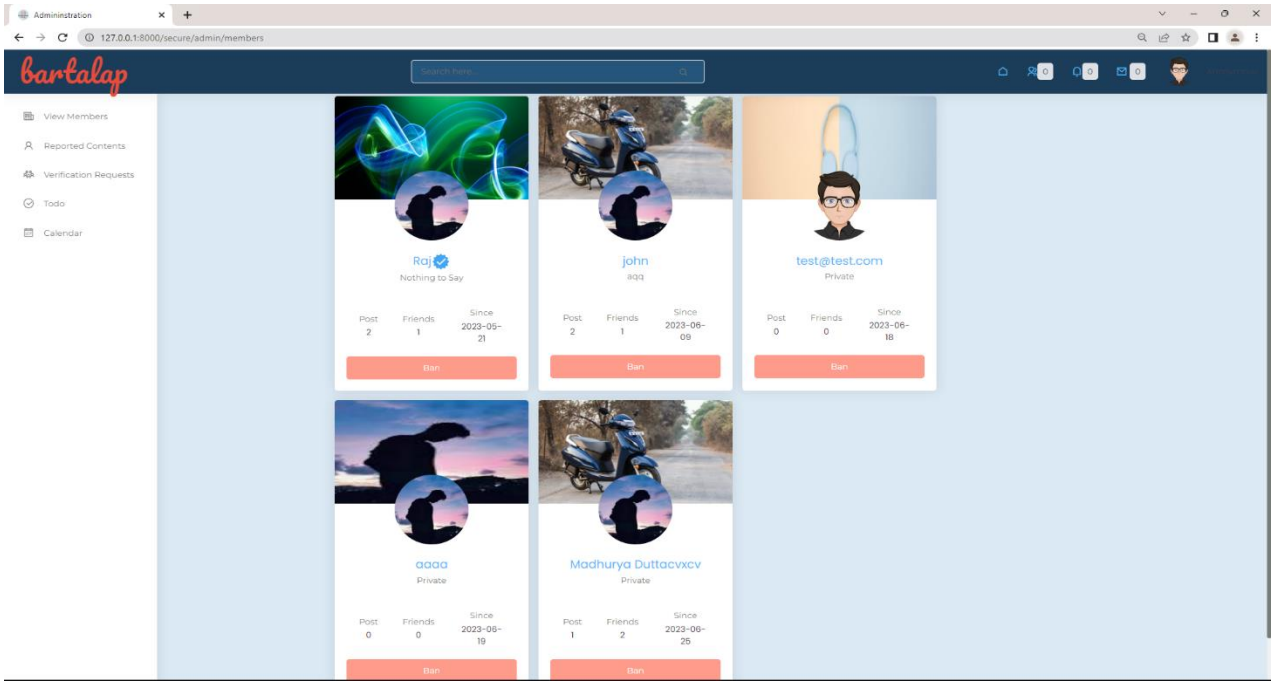
6.Notification and Connection/friend request in **Bartalap)**



6. Real time Messaging in **Bartalap**



7. Public Profile in **Bartalap**



8. Admin Dashboard (For management purpose) in **Bartalap**

Chapter 12

Conclusion and future scope

CONCLUSION

The social networking site project has been successfully completed, achieving its primary objectives and goals(develop an error free user friendly web based online Social networking site). Throughout the development process, we have designed and implemented a robust platform that provides a user-friendly and engaging experience for individuals to connect, communicate, and share content online. The site offers a seamless registration and login process, allowing users to create and manage their profiles efficiently.

The design of the web portal is done in such a way so that the users can use the system by using either the keyboard or the mouse in order to invoke operate commands and click buttons. Menus and Dropdown menus are attached to the site to serve this purpose.

This project gave us challenges and whenever we stuck with certain problems, with the help of the project guide, we have overcome all of them in an optimal way. As we conclude, we tried our level best to fulfil the entire objective given to us.

FUTURE SCOPE

While the social networking site project has been successfully completed, there are several potential areas for future expansion and improvement. These opportunities can help further enhance user experience, increase user engagement, and ensure the long-term sustainability and growth of the platform.

1.development of a sophisticated algorithm for friend suggestions and personalized content recommendations

2. Enhancing the privacy controls and options for users would empower them to have more control over their personal information and the visibility of their content.

3. Implementing robust community moderation tools and systems can help maintain a safe and inclusive environment on the platform

4. Exploring monetization strategies such as targeted advertising, sponsored content, premium memberships, or partnerships can help generate revenue to sustain the platform's operations and support further development.

Chapter 13

Bibliography

Bibliography

Books:

1) Designing Data – Insensitive applications by Martin Kleppman

2) A beginner's guide to HTML, CSS, JavaScript, and Web Graphics, by Jennifer Niederst Robbins

3) Learning PHP, MySQL & JavaScript: With jQuery, CSS & HTML5 by Robin Nixon

YouTube:

1) https://youtube.com/playlist?list=PLZk46idJS6s54hAX8K79_AY8brgBwPtHd

2) https://youtube.com/playlist?list=PLd5VPTWezLeu7tTzVj0AvU9PQE0YfmEjS

3) https://youtube.com/playlist?list=PLu0W_9lII9ahR1blWXxgSlL4y9iQBnLpR

4) https://youtube.com/playlist?list=PLjVLYmrlmjGfh2rwJjrmKNHzGxCZwBsqj

5) https://youtube.com/playlist?list=PLdXl97NMhlXmUmceEwZqq6G3_oUKMMcGd

Sites:

1) https://laravel.com/docs/8.x/installation

2) https://www.tutorialspoint.com/javascript/index.htm

3) https://www.w3schools.com/js/

4) https://www.javascripttutorial.net/

5) https://www.javatpoint.com/css-tutorial