A Mini Project II Report On

BITBook

Submitted to



BHILAI INSTITUTE OF TECHNOLOGY, DURG

An Autonomous Institute
Affiliated to

Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.)

In partial fulfillment of the requirements for the award of

Bachelor of Technology
In
Computer Science and Engineering , 4th Semester

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Under the Guidance of

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Assistant Professor (Computer Science & Engineering)

Session:2024 -2025

DECLARATION BY THE CANDIDATE

We, the undersigned solemnly declare that the report of the project work entitled BITBook, is based

on my own work carried out during the course of my study under the guidance of *Prof. Amit Singh*

Thakur, Prof.Saurabh Kumar Pandya, Prof. Anmol Chaure

We assert that the statements made and conclusions drawn are an outcome of the project work. I

further declare that to the best of my knowledge and belief that the report does not contain any part

of any work which has been submitted for the award of any other degree/diploma/certificate in this

University/deemed University of India or any other country. All help received and citations used

for the preparation of the thesis have been duly acknowledged.

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CERTIFICATE OF THE SUPERVISOR

This is to certify that the report of the project entitled *BITBook* is a record of project work carried out by *Pranshu Sahu*, *Prashun Mishra*, *Ayush Lakra*, bearing University Roll No 3001022222008,3001022222011, 3001022222001, & Enrollment No.: CC1546, CC1517, CC1558... under my guidance and supervision for the award of Degree of Bachelor of Technology in Computer Science and Engineering, Bhilai Institute of Technology, Durg, an autonomous institute affiliated to Chhattisgarh Swami Vivekanand Technical University, Bhilai (CG).

To the best of my/our knowledge and belief the project

- Embodies the work of the candidate him/herself,
- Has duly been completed,
- Fulfills the requirement of the Ordinance relating to the B.Tech. degree of the University and
- Is up to the desired standard both in respect of contents and language for being referred to examiners.

| (Signature of the Guide) |
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CERTIFICATE BY THE EXAMINERS

| The Project entitled BIIBook submitted by Pranshu Sahu, Prashun Mishra, Ayush Lakra, |
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| Chhattisgarh Swami Vivekanand Technical University, Bhilai (CG). |
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We would also like to express my/ our gratitude towards our Head of Department Dr.(Mrs) *Sunita Soni* for giving us this great opportunity to do a project on *BITBook*. Without their support and suggestions, this project would not have been completed.

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PRANSHU SAHU

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CHAPTER -1 INTRODUCTION

Chapter -1 Introduction

Abstract

The BITBook Mini project aims to develop a specialized social networking platform for college communities, facilitating seamless communication, information sharing, and collaboration among students and professors. By implementing core features such as user authentication, discussion forums, user profiles, and post sharing, BITBook Mini provides a centralized hub for academic and social interactions. This report details the project's objectives, functionalities, and implementation plan, highlighting its significance in enhancing community engagement within a college environment. Additionally, the project explores the potential extension of features, such as subject-wise notes, to further support the academic needs of the users.

Introduction

In today's digital age, effective communication and collaboration within educational institutions are crucial. Traditional methods often fail to meet the dynamic needs of college communities. The BITBook Mini project addresses this gap by creating a dedicated platform that fosters an interconnected college environment.

BITBook Mini, a simplified version of the BITBook project, serves as a hub for students and professors to engage in discussions, share announcements, and collaborate on academic and extracurricular activities. With features like discussion forums, communities, user profiles, and post sharing, BITBook Mini aims to enhance the overall college experience.

The platform supports real-time interactions and aims to build a robust alumni network. Its flexibility to extend with features like subject-wise notes sharing etc. ensures it can evolve to meet the changing needs of the college community.

Keywords

College Community, Social Networking Platform, Discussion Forum, User Profiles, Post Sharing, Academic Collaboration, Alumni Network, Information Sharing, Educational Technology

CHAPTER -2 LITERATURE SURVEY

CHAPTER 2 LITERATURE SURVEY

Overview of Social Networking Platforms in Educational Contexts

Social networking platforms have become essential in modern education, providing tools for

communication, collaboration, and information sharing among students and teachers. This survey

explores various studies highlighting the use of social networking services (SNS) in educational

environments, their advantages, limitations, and how they can be integrated into the teaching-learning

process.

Key Studies:

1. Building an Online Community: Student Teachers' Perceptions on the Advantages of

Using Social Networking Services in a Teacher Education Program

Authors: Habibi, A., Mukminin, A., Riyanto, Y., et al.

Journal: Turkish Online Journal of Distance Education (2018)

DOI: 10.17718/tojde.382663

Summary: This study examined student teachers' perceptions of using SNS in an English

teacher education program at a public university in Indonesia. The platforms included

WhatsApp, Telegram, Email, and Google Form. Through qualitative focus group discussions

with 42 student teachers, the study identified two main themes: social interaction (peer

discussion and interaction with supervisors) and learning motivation and experience support

(self-directed learning, critical thinking, content engagement). Pedagogical and social

implications were discussed.

2. Social Networking Websites as an Innovative Framework for Connectivism

Author: Tinmaz, H.

Journal: Contemporary Educational Technology (2020)

DOI: 10.30935/cedtech/6080

Summary: This article discusses Connectivism as an instructional framework for social

networking websites. Connectivism emphasizes learning through interactions within a

network. The study highlights how platforms like Facebook and Twitter can create learning

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networks and online communities, enhancing educational activities. The article provides suggestions for integrating social networking websites into educational practices.

3. Google Classroom as a Learning Platform in Teaching Writing

Author: Syafi'i, A.

Journal: British (Jurnal Bahasa dan Sastra Inggris) (2020)

DOI: 10.31314/british.9.1.48-64.2020

Summary: This study focuses on using Google Classroom in teaching English writing in an EFL context. Google Classroom facilitates interaction, collaboration, and evaluation between teachers and students. The study highlights the platform's benefits in blended learning environments, such as personalized learning experiences and improved classroom management. Challenges and future directions for using Google Classroom in English Language Teaching (ELT) are also discussed.

4. WhatsApp: Creating a Virtual Teacher Community for Supporting and Monitoring After a Professional Development Programme

Author: Moodley, M.

Journal: South African Journal of Education (2019)

DOI: 10.15700/saje.v39n2a1323

Summary: This study explores how teachers and officials in a rural South African district used WhatsApp as a virtual community of practice after a professional development program. WhatsApp facilitated monitoring and support, promoting social learning and networking. The study found that effective use of WhatsApp depended on participants' awareness of the community context and willingness to accept diverse views.

Comparative Analysis

| Study | Platform | Advantages | Limitations |
|----------------------|--|--|---|
| Habibi et al. (2018) | WhatsApp, Telegram, Email, Google Form | Enhanced social interaction, supports self-directed learning and critical thinking | Limited to specific tools, may lack comprehensive features for academic management |
| Tinmaz (2020) | Facebook, Twitter | Promotes Connectivism, facilitates learning networks | May include non-academic content, requires careful moderation |

| Syafi'i (2020) | Google Classroom | Facilitates blended learning, improves classroom management | Limited customization, requires internet access |
|-------------------|------------------|---|--|
| Moodley (2019) | WhatsApp | Creates virtual communities of practice, supports real-time interaction | Not designed for professional use, storage and organization issues |

Pros and Cons of Existing Platforms

WhatsApp, Telegram, Email, Google Form

- Pros: Easy to use, widely accessible, supports various forms of communication.
- Cons: Not specifically designed for education, lack of organization, storage issues, personal-professional overlap.

Facebook, Twitter

- Pros: Wide reach, promotes networking and community building, supports multimedia content.
- Cons: Potential for non-academic content, requires moderation, privacy concerns.

Google Classroom

- **Pros**: Integrated with Google Suite, supports collaboration and assignment management, user-friendly interface.
- Cons: Limited to Google's ecosystem, less customization, dependent on internet access.

CHAPTER -3 PROBLEM STATEMENT, HARDWARE & SOFTWARE REQUIREMENT

CHAPTER 3

PROBLEM STATEMENT, HARDWARE AND SOFTWARE REQUIREMENT

3.1 Problem Statement

Effective communication and collaboration within college communities are often constrained by the limitations of general-purpose social networking platforms. Existing solutions like WhatsApp, Facebook, and Google Classroom may not fully cater to the specific needs of educational environments, resulting in disorganized information sharing, insufficient privacy and security measures, and a lack of tailored features for academic and co-curricular interactions. Moreover, these platforms often fall short in establishing and maintaining a strong alumni network, which is crucial for ongoing engagement and support within the college community.

BITBook addresses these issues by offering a specialized platform designed to meet the unique needs of college communities. The platform aims to enhance communication, collaboration, and management of academic and co-curricular content while fostering a robust alumni network.

Key Objectives

- **1. Develop a Secure Authentication System:** Implement a robust user authentication mechanism to ensure secure access and protect user data within the platform.
- **2.** Create an Organized Discussion Forum: Build a centralized forum for structured discussions, announcements, and academic collaboration, facilitating effective communication among students and professors.
- **3.** Enhance User Interaction through Profiles and Post Sharing: Provide detailed user profiles and a streamlined system for sharing posts about co-curricular activities and achievements, allowing users to connect and learn more about each other.
- **4. Establish and Maintain a Strong Alumni Network:** Incorporate features that support the creation and maintenance of an alumni network, enabling former students to stay connected with their alma mater and each other.

HARDWARE REQUIREMENT

- 1. Network: High-speed internet connection with sufficient bandwidth
- 2. **Processor**: Multi-core processor
- 3. RAM: Minimum 8 GB
- 4. Storage: SSD storage with a minimum capacity of 500 GB, recommended 1 TB
- 5. **User Devices**:Personal computers, laptops, tablets, or smartphones with internet connectivity and modern web browsers

SOFTWARE REQUIREMENT

- 1. Development Environment: Modern IDE (e.g., Visual Studio Code), Git for version control
- 2. Backend: Python or Node.js, PostgreSQL or MySQL
- **3. Frontend**: React.js or similar framework
- 4. Hosting: AWS or similar cloud service

CHAPTER -4 METHODOLOGY

CHAPTER 4: METHODOLOGY

Methods

- **1. Framework:** Use NodeJS for the backend, MongoDB for the database, HTML/CSS for the front end.
- 2. Authentication: Make separate sign-up/login for users.
- 3. Database: Mongodb contains profile details and posts.
- 4. **Routes:** Home page with sign-up/ login interface, Sign-in and signup, create post, profile page.
- 5. Public: All static files like Profile, homepage, create-post page, signin/signup pages.

Implementation

- 1. **Setup:** Initialize the project, create apps, and configure settings and URLS.
- 2. Authentication: Implement sign-up/login.
- 3. **Models:** Define post and user schema models.
- 4. **Routing:** Post search, authentication and profile urls.
- 5. **Public:** Adding static files related to profile data and posts.
- 6. **Testing:** Test functionality, and debug issues.

Folder Structure:



Fig 4.1

Database (MongoDB):

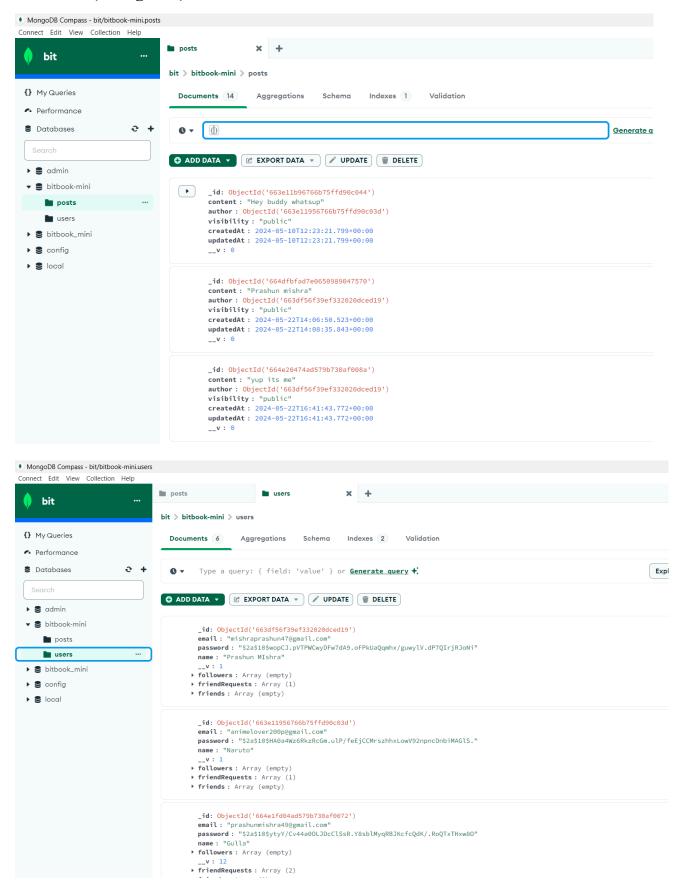


Fig 4.2, Fig 4.3

Models:

Post.js

```
const mongoose = require('mongoose');
const { Schema } = mongoose;

const postSchema = new Schema({
    author: { type: Schema.Types.ObjectId, ref: 'User', required: true },
    content: { type: String, required: true },
    visibility: { type: String, enum: ['public', 'private'], default:
    'public' },
    likes: [{ type: Schema.Types.ObjectId, ref: 'User' }]
},
{
    timestamps:true
}
);
const Post = mongoose.model('Post', postSchema);
module.exports = Post;
```

Fig 4.4

User.js

```
const mongoose = require('mongoose');
const { Schema } = mongoose;

const userSchema = new Schema({
    name: { type: String, required: true },
    email: { type: String, required: true, unique: true },
    password: { type: String, required: true },
    bio: { type: String }, // Add bio field
    profession: { type: String }, // Add profession field
    gender: { type: String, enum: ['male', 'female', 'other'] }, // Add
gender field
});

const User = mongoose.model('User', userSchema);

module.exports = User;
```

Fig 4.5

CHAPTER -5 RESULT AND DISCUSSION

CHAPTER-5 RESULT AND DISCUSSION

Results

- 1. **User Authentication:** Implemented successfully, allowing secure account creation and login for students and professors.
- 2. **Discussion Forum**: Fully functional, enabling users to start and participate in discussions on academic and general topics.
- 3. User Profiles: Enabled users to create and manage profiles with personal details and bios.
- 4. **Post Sharing**: Users can share text-based posts, including announcements and event details.
- 5. **Alumni Network**: Facilitates connections between current students and alumni, enhancing long-term engagement with the college community.

Discussion

1. Strengths:

- a. Improved Communication: Centralized features enhance the efficiency of information sharing and discussions.
- b. Increased Engagement: User profiles and discussion forums foster active participation and connections.
- c. Alumni Connectivity: Supports ongoing relationships with alumni.

2. Limitations:

- a. Scalability: Future improvements needed to manage increased user traffic and data volume.
- b. Feature Limitations: Some desired features, like subject-wise notes, were not included due to time constraints.
- c. User Feedback: Positive initial feedback, with suggestions for usability improvements and additional features.

Home Page

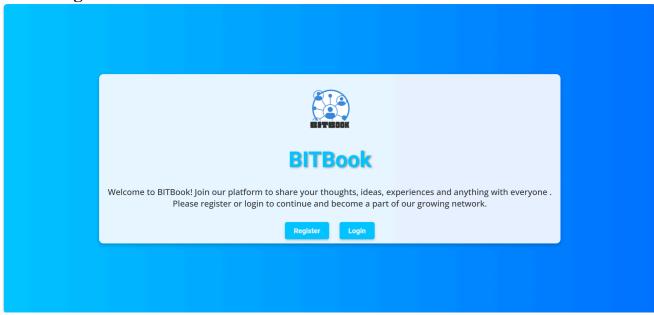


Fig 5.1

Authentication pages

Sign-up Page

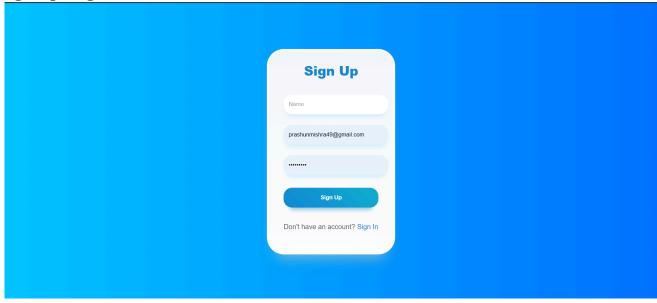


Fig 5.2

Sign-In Page

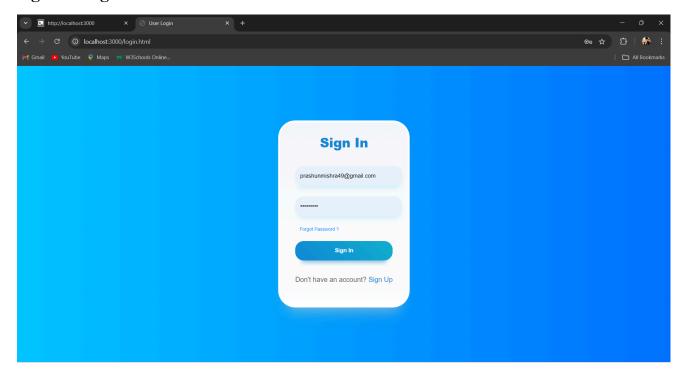


Fig 5.3

Create Post



Fig 5.4

Profile Page

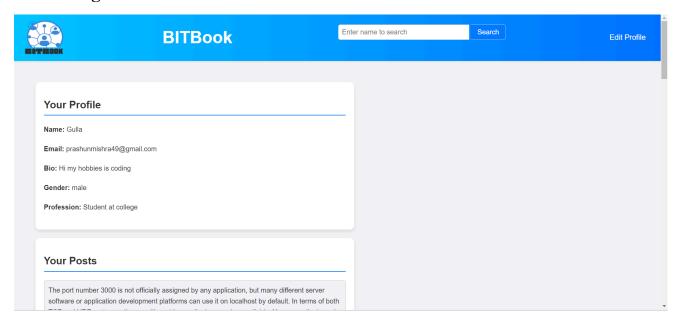


Fig 5.5

Search Users

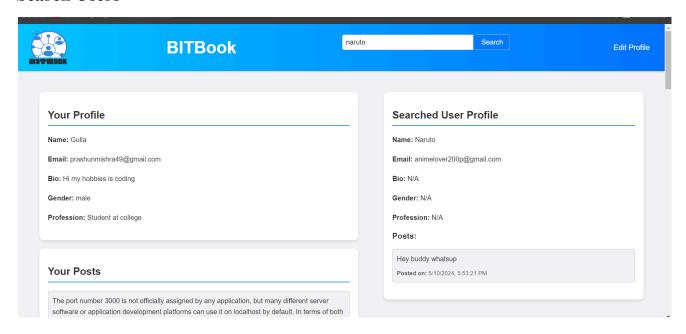


Fig 5.6

Edit Profile

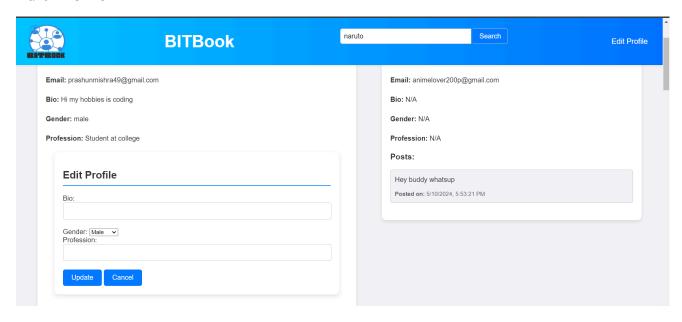


Fig 5.7

Data Flow Diagram

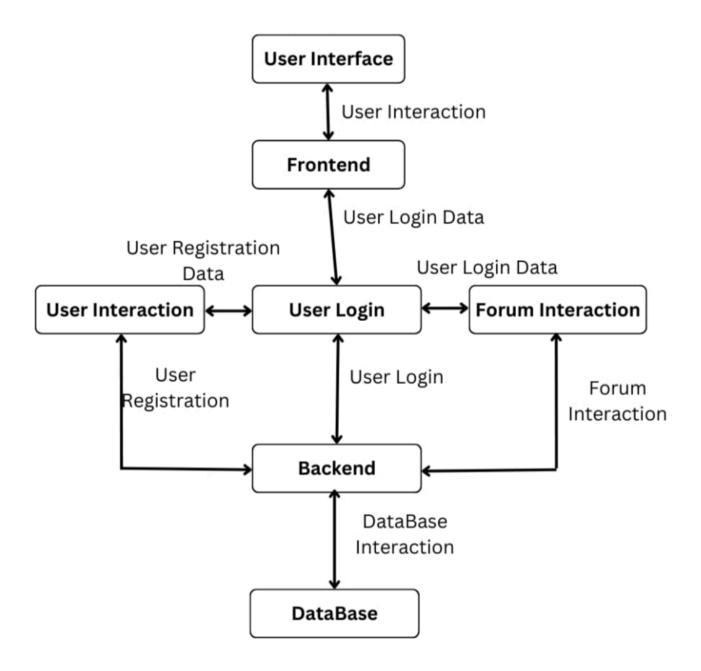


Fig 5.8

CHAPTER -6 CONCLUSION AND FUTURE SCOPE

CHAPTER -6 CONCLUSION AND FUTURE SCOPE

6.1 CONCLUSION

The BITBook project successfully addresses key communication and collaboration needs within a college environment. By implementing user authentication, discussion forums, user profiles, and post-sharing features, the platform fosters enhanced interaction and engagement among students and professors. The addition of alumni network capabilities further strengthens the connection between current students and former graduates, contributing to a more cohesive college community.

The project's core functionalities have been developed and tested effectively, demonstrating the potential for BITBook to improve information dissemination and community engagement within the college. Despite some limitations, such as scalability concerns and the omission of additional features like subject-wise notes, the project provides a solid foundation for further development and refinement.

6.2 Future Scope

- 1. **Scalability Enhancements**: Future work will focus on optimizing the platform to handle increased user traffic and data volume, ensuring a seamless experience as the user base grows.
- 2. **Feature Expansion**: Additional features, such as subject-wise notes and advanced search capabilities, will be explored to provide more value to users and address emerging needs.
- 3. **User Experience Improvements**: Ongoing user feedback will be collected to refine the platform's design and usability, incorporating suggestions to enhance the overall user experience.
- 4. **Integration with Other Tools**: Future iterations may consider integrating BITBook with other educational tools and platforms to broaden its functionality and support diverse academic activities.

REFERENCES

- **1. Habibi, A., Mukminin, A., Riyanto, Y., et al.** (2018). Building an online community: Student teachers' perceptions on the advantages of using social networking services in a teacher education program. Turkish Online Journal of Distance Education, 19(1), 46-61. [DOI: 10.17718/tojde.382663](https://www.mendeley.com/catalogue/4481e3ba-a330-3874-9432-4868fe890 590/)
- **2. Tinmaz, H.** (2020). *Social Networking Websites as an Innovative Framework for Connectivism*. Contemporary Educational Technology, 3(3). [DOI: 10.30935/cedtech/6080](https://www.mendeley.com/catalogue/04fedf90-3008-3d6e-9a36-7a67264e2 e58/)
- **3. Syafi'i, A.** (2020). *Google Classroom as Learning Platform in Teaching Writing*. British (Jurnal Bahasa dan Sastra Inggris), 9(1), 48-64. [DOI: 10.31314/british.9.1.48-64.2020](https://www.mendeley.com/catalogue/62818b75-1eec-349d-a538-cf c53d059904/)
- **4. Moodley, M.** (2019). Whatsapp: Creating a virtual teacher community for supporting and monitoring after a professional development programme. South African Journal of Education, 39(2). [DOI:
- 10.15700/saje.v39n2a1323](https://www.mendeley.com/catalogue/2d5ce3ea-3b22-3da6-8220-904d72 9e378c/)



Source Code index.html

```
!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>BITBook</title>
   <link rel="stylesheet" href="styles.css">
@import
   url('https://fonts.googleapis.com/css2?family=Edu+AU+VIC+WA+NT+Hand:wght@400..700
   &family=Open+Sans:ital,wght@0,300..800;1,300..800&family=Rubik:ital,wght@0,300..9
   00;1,300..900&display=swap');
        body {
            font-family: 'Roboto', sans-serif;
            margin: 0;
            padding: 0;
            display: flex;
            flex-direction: column;
            align-items: center;
            justify-content: center;
            height: 100vh;
            background: linear-gradient(to right, #00c6ff, #0072ff);
            color: #333;
        header {
            text-align: center;
            margin-bottom: 15px;
        h1 {
            font-size: 3em;
            color:#00c6ff;
            text-shadow: 2px 2px 4px rgba(0, 0, 0, 0.4);
            animation: pulse 2s infinite;
        img {
            width: 100px;
            height: auto;
            margin-top: 10px;
            animation: fadeIn 1.5s ease-out;
        #app {
            background: rgba(255, 255, 255, 0.9);
            padding: 20px;
            border-radius: 10px;
            box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);
            text-align: center;
            animation: fadeIn 1.5s ease-out;
        #welcome-message p {
```

```
font-size: 1.2em;
           margin-bottom: 20px;
       #auth-links a {
           text-decoration: none;
           color: #f9f5f4;
           font-weight: bold;
           margin: 0 10px;
           padding: 10px 20px;
           border-radius: 5px;
           transition: color 0.3s ease, transform 0.3s ease, background-color 0.3s
  ease;
           animation: bounce 2s infinite;
           box-shadow: 0 2px 4px rgba(0, 0, 0, 0.2);
       #auth-links a:hover {
           color: #fff;
           background-color: #ff7e5f;
           transform: scale(1.1);
       @keyframes fadeIn {
           from { opacity: 0; transform: translateY(-20px); }
           to { opacity: 1; transform: translateY(0); }
       @keyframes pulse {
           0% { transform: scale(1); }
           50% { transform: scale(1.1); }
           100% { transform: scale(1); }
       @keyframes bounce {
           0%, 20%, 50%, 80%, 100% { transform: translateY(0); }
           40% { transform: translateY(-10px); }
           60% { transform: translateY(-5px); }
       .bit{
           background-color: #00c6ff;
           padding-bottom: 20px;
       p{
 font-family: "Open Sans", sans-serif;
 font-optical-sizing: auto;
 font-weight: 500;
 font-style: normal;
 font-variation-settings:
   "wdth" 100;
   </style>
</head>
<body>
```

```
<div id="app">
       <header>
           <img src="./BITBook transparent.png" alt="BITBook Logo">
           <h1>BITBook</h1>
       </header>
       <div id="welcome-message">
           Welcome to BITBook! Join our platform to share your thoughts, ideas,
   experiences and anything with everyone . .pr> Please register or login to continue
   and become a part of our growing network.
       </div><br>
       <div id="auth-links">
           <a class="bit" href="register.html">Register</a>
            <a class="bit" href="login.html">Login</a>
       </div>
   </div>
   <script src="scripts.js"></script>
</body>
</html>
```

Profile.html

```
!DOCTYPE html:
<html lang="en">
           margin-left: 0;
           padding-left: 0;
                                                                                              35
```

```
position: sticky;
#search-results {
   list-style-type: none;
```

```
border-bottom: none;
font-size: 1.5em;
padding-bottom: 10px;
margin-bottom: 20px;
list-style-type: none;
margin-bottom: 20px;
```

```
font-size: 0.9em;
```

```
<h1>BITBook</h1>
        <h2>Your Profile</h2>
            <button onclick="updateProfile()">Update</button>
            <button onclick="hideEditProfileForm()">Cancel</button>
       <h2>Searched User Profile</h2>
```

Script.js