

# BlogHub User Manual Report

## Introduction

**Course Title:** Software Construction and Development

**Course Instructor:** Dr. Shuja-ur-Rehman Baig

**Student Name:** Zohaib Shahid

**Roll Number:** BSEF21M008

## Project Overview

BlogHub is a full-stack blogging application developed using ASP.NET Core MVC (.NET 8). Designed to provide a platform for users to create, share, and interact with blog posts.

**GitHub Url:** <https://github.com/pupucit/se21-scd-project-zohaibshahid26>

## Core Functionalities and Technologies

### 1. User Authentication:

- Utilizes ASP.NET Core Identity for secure user registration and login.
- Supports external authentication with Google.

### 2. Post Management:

- Users can create, edit, and delete their own blog posts.
- Posts can be categorized and tagged for better organization and discovery.

### 3. Categories and Tags:

- Supports categorizing posts into different categories and adding tags.

### 4. Search Functionality:

- Built-in search feature allows users to find posts using keywords.

### 5. Comments and Likes:

- Users can comment on posts and interact with other users.
- Like functionality to show appreciation for content.

### 6. User Profile:

- Personalized user profiles for managing posts and account settings.

## **7. Admin Panel:**

- Allows management of categories through a dedicated admin interface.

## **8. Resource-Based Authorization:**

- Ensures security and user control by allowing users to edit/delete only their own posts and comments.

## **Additional Enhancements**

### **SignalR:**

- Integrated for real-time communication, enhancing interactive capabilities.

### **AJAX:**

- Used for dynamic content loading, improving the user experience.

### **Clean Architecture:**

- Applied to maintain a clean and manageable codebase.

### **Caching:**

- Implemented to improve performance and speed up data retrieval.

### **Dockerizing:**

- Dockerized the application for easier deployment in various environments.

### **Pagination:**

- Enables users to navigate through posts efficiently, enhancing usability.

## **Web Security Measures**

### **Model Validation:**

- Implemented server-side model validation to ensure data integrity and prevent invalid data from being processed.

### **CSRF Prevention:**

- Enabled Cross-Site Request Forgery (CSRF) protection to prevent unauthorized actions on behalf of users.

### **XSS Prevention:**

- Applied Cross-Site Scripting (XSS) prevention techniques to secure the application from malicious script injections.

## Web API Implementation

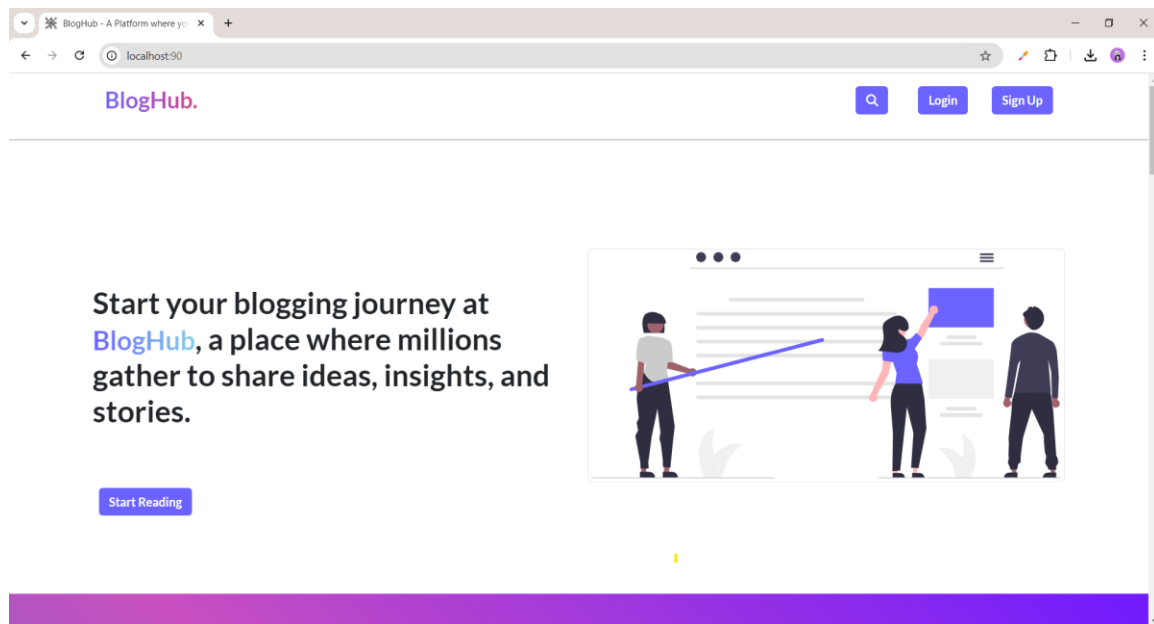
- Developed a comprehensive Web API for the BlogHub project.
- Implemented authentication using bearer tokens to secure API endpoints.

## Technologies Used

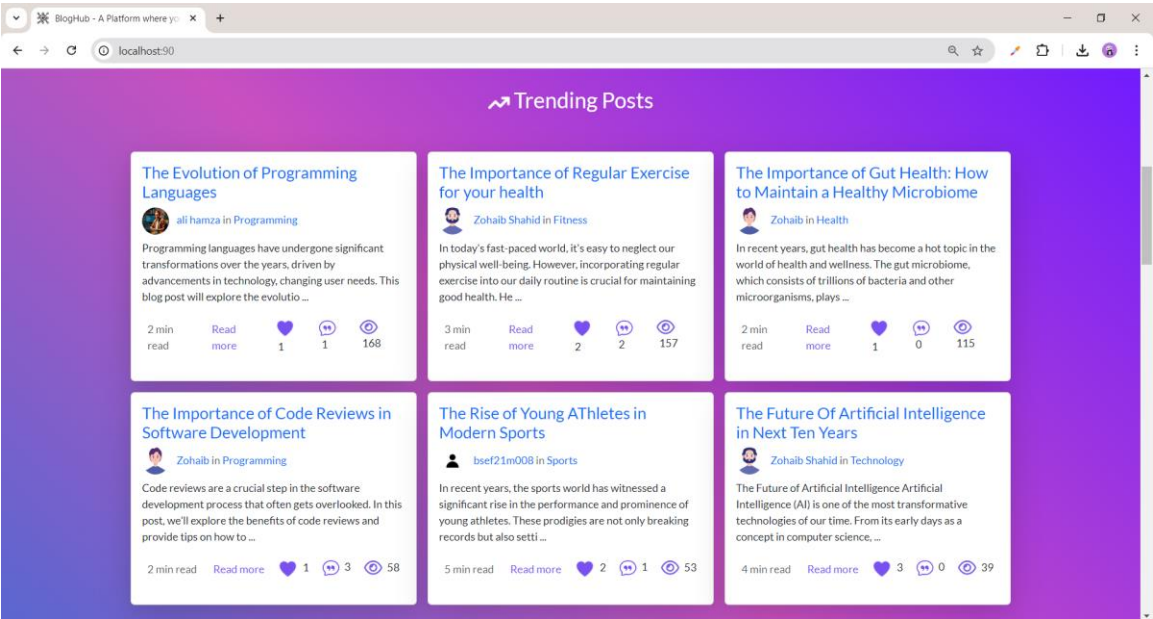
- **Frontend:** HTML, CSS, JavaScript, AJAX, Bootstrap for responsive design.
- **Backend:** ASP.NET Core MVC
- **Database:** Microsoft SQL Server with Entity Framework Core as the ORM.
- **Auth:** ASP.NET Core Identity, Google authentication.
- **Real-Time Communication:** SignalR for live updates and interactions.
- **Deployment:** Docker for containerization and IIS local server.

## Screenshots

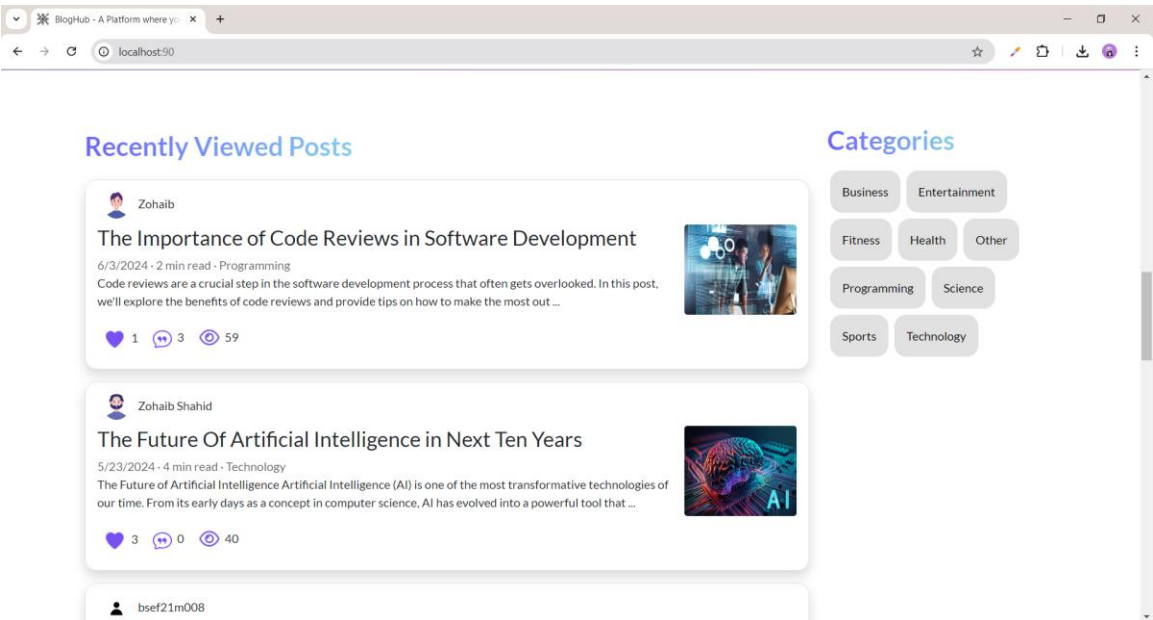
**Figure 1:** BlogHub landing page displaying a welcome message encouraging users to start their blogging journey, with options to log in or sign up.



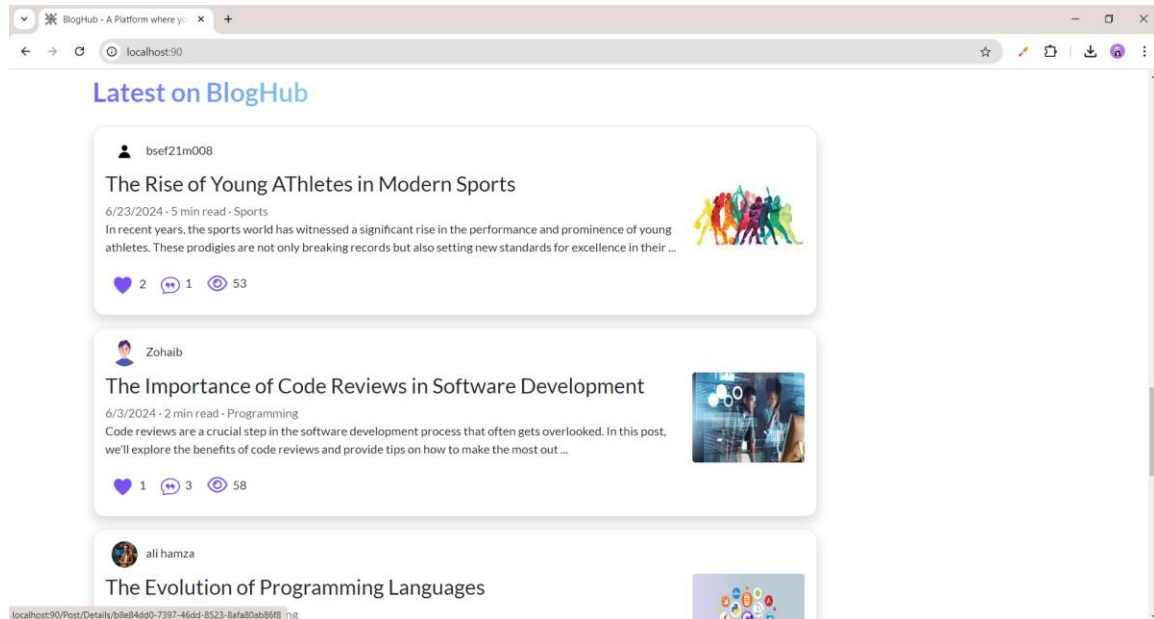
**Figure 2:** Trending Posts section on BlogHub showcasing various blog posts on topics like programming, fitness, and technology.



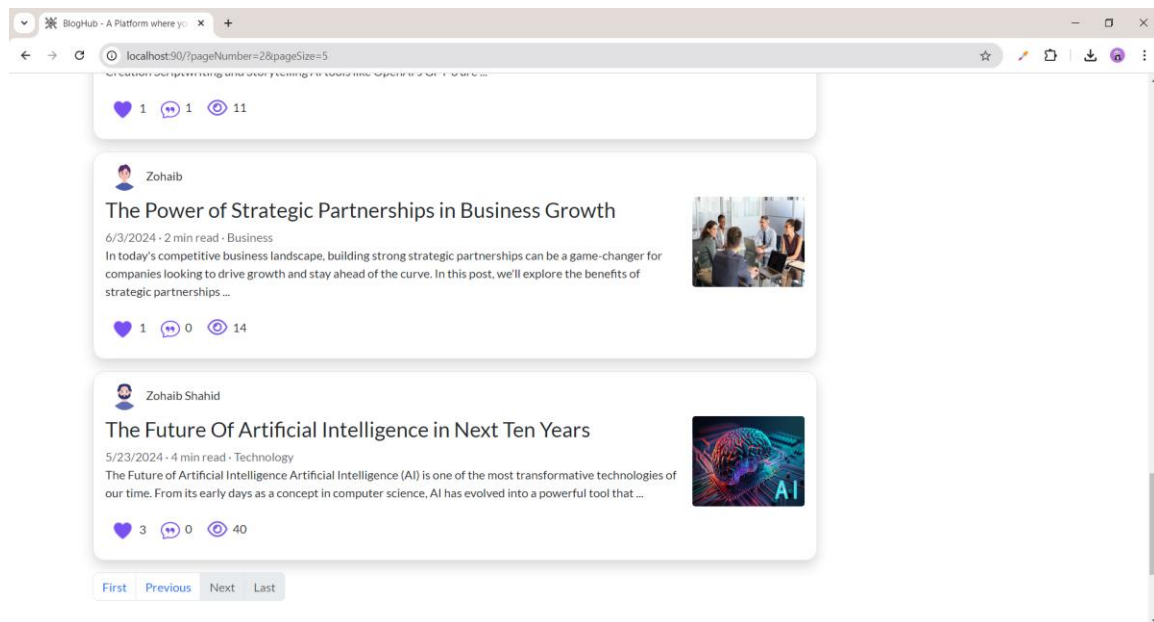
**Figure 3:** Recently Viewed Posts section on BlogHub, including categories like Business, Entertainment, Fitness, and more.

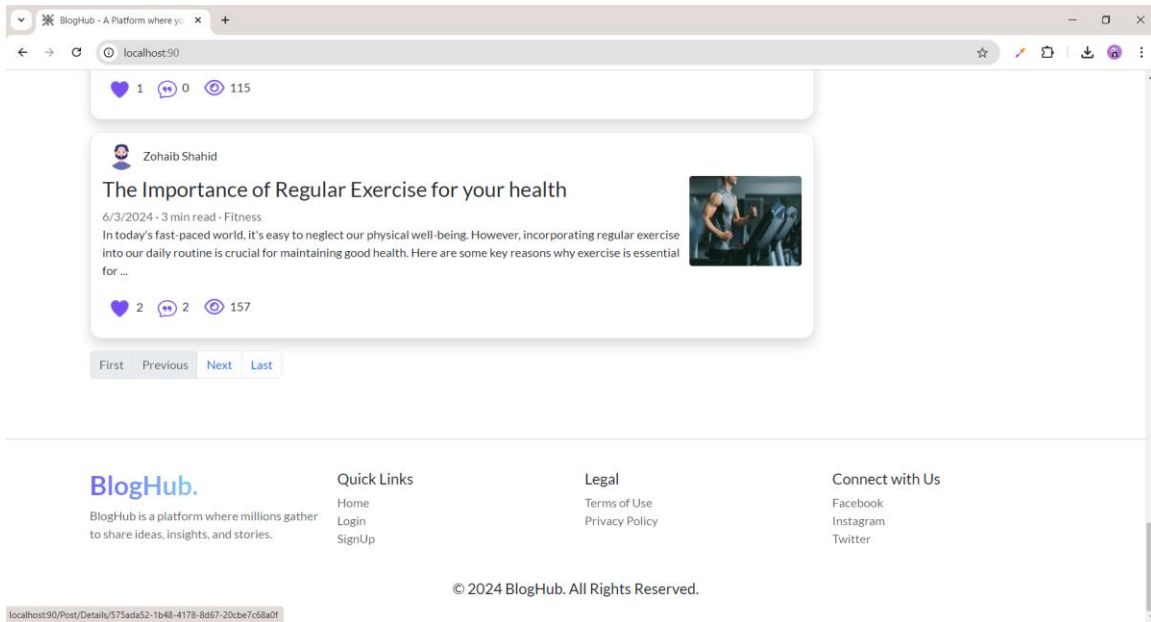


**Figure 4:** Latest on BlogHub section, featuring recent blog posts on various topics, along with navigation links.

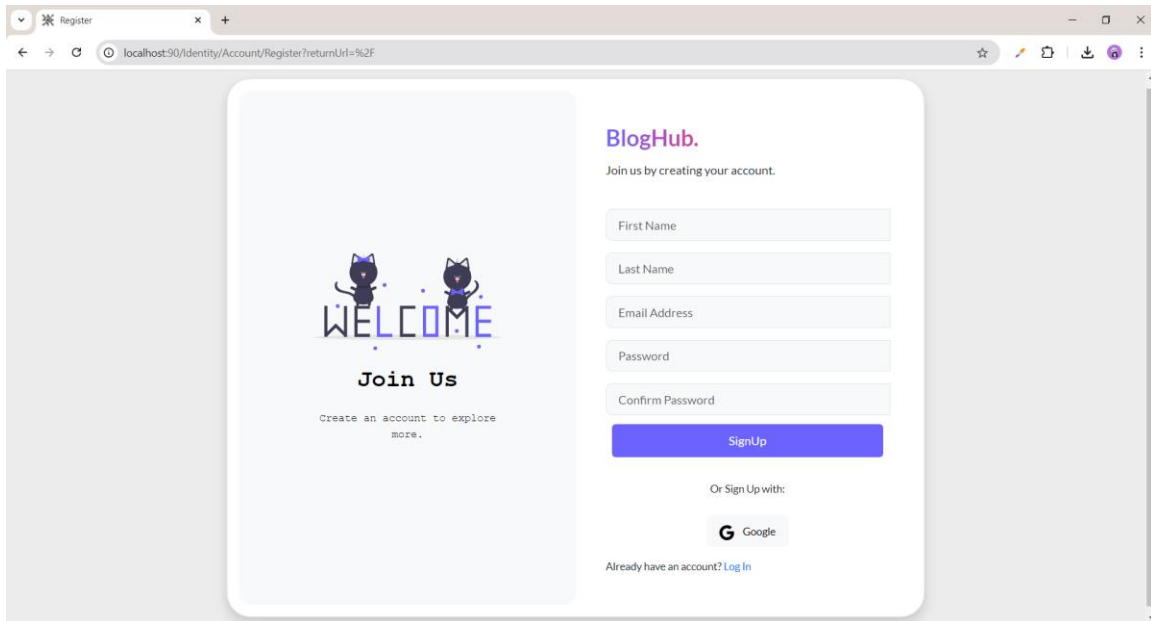


**Figure 5:** Pagination section on BlogHub, with links to navigate through different pages of blog posts.

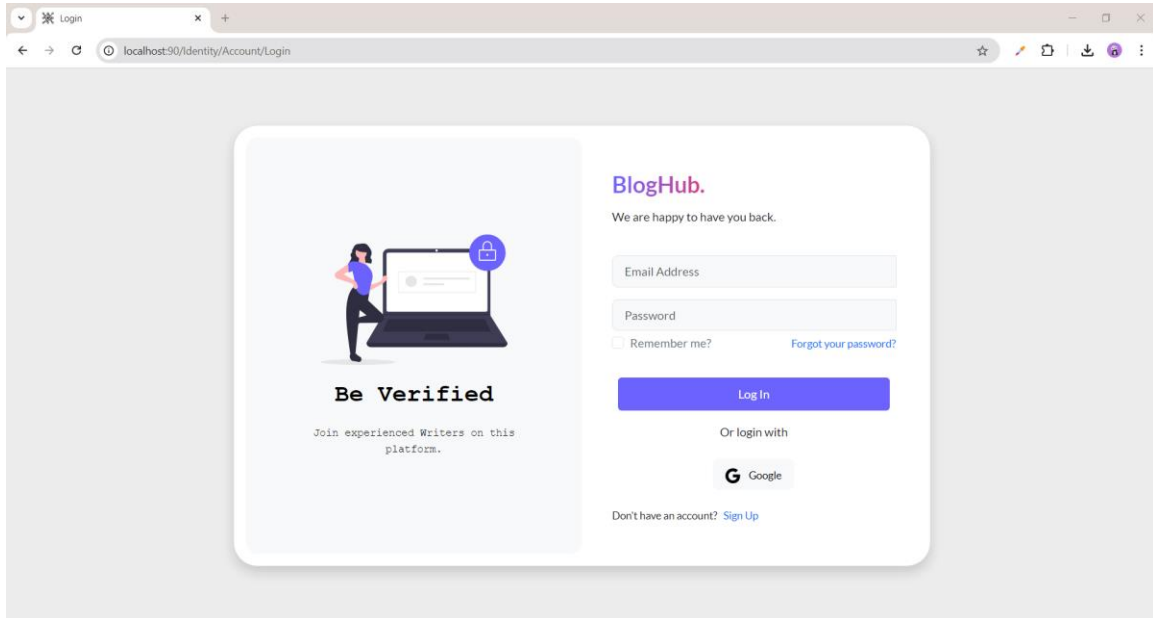




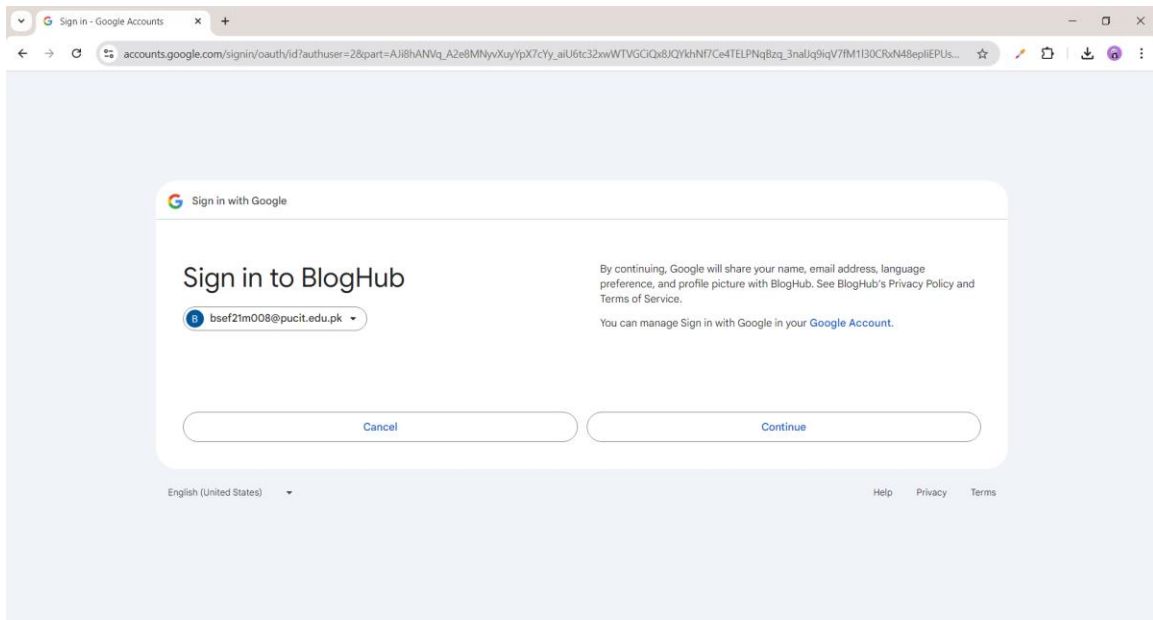
**Figure 6:** BlogHub's sign-up page, allowing users to create an account with fields for first name, last name, email address, and password.



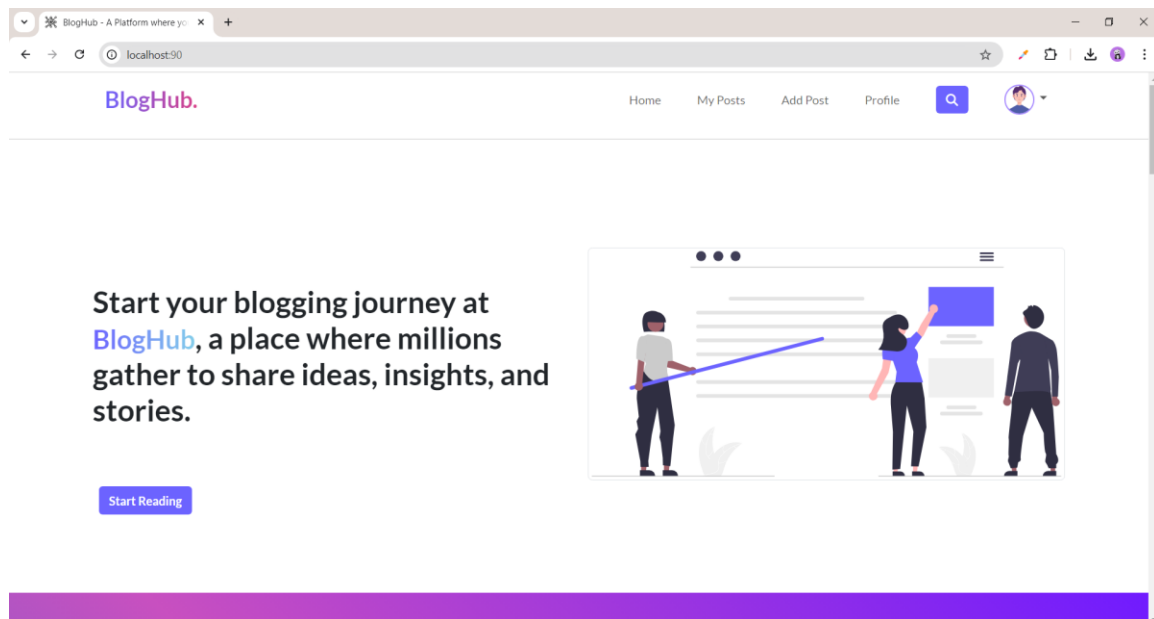
**Figure 7:** BlogHub's login page with an option to sign in with email and password or using Google authentication.



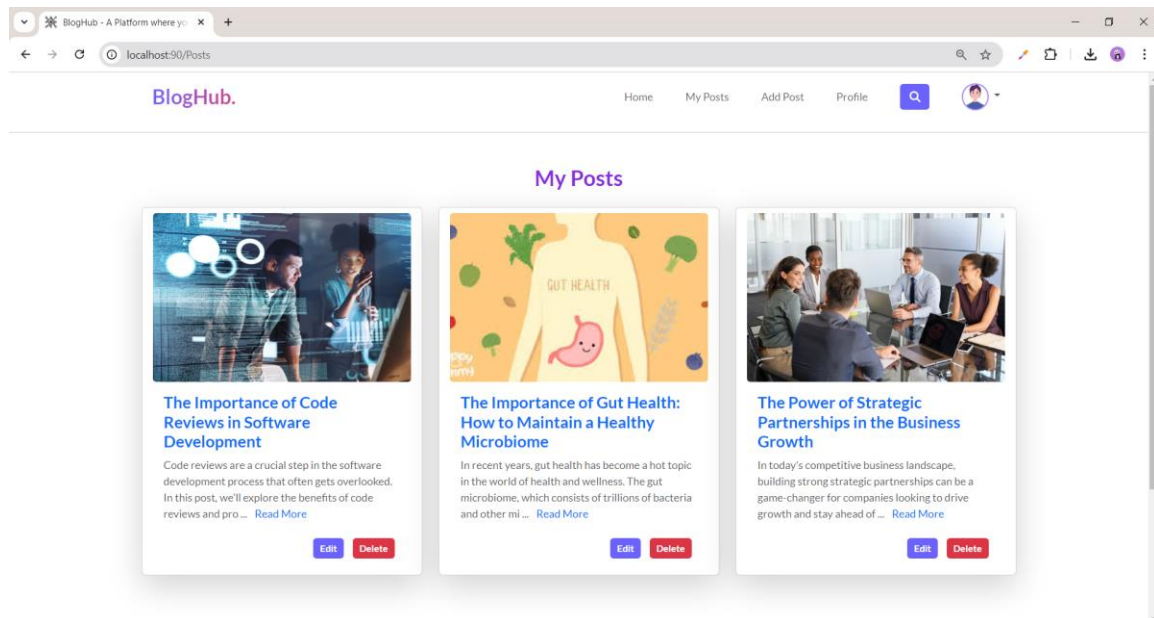
**Figure 8:** Google sign-in page for BlogHub, where users can authenticate using their Google account.



**Figure 9:** Logged-in view of the BlogHub landing page, displaying navigation options for home, my posts, add post, and profile.

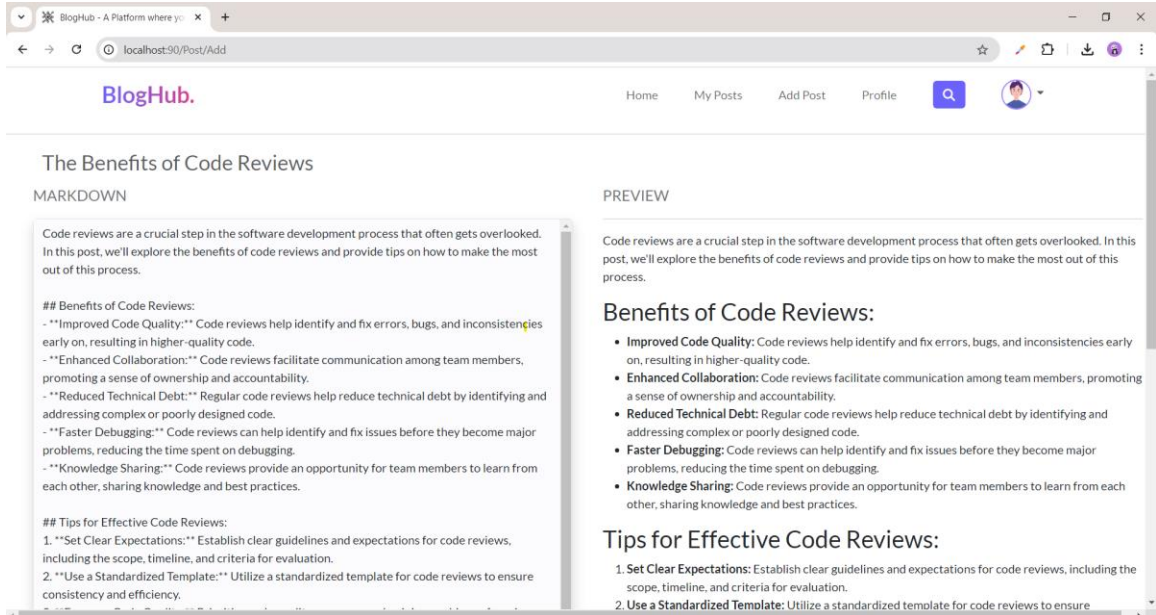


**Figure 10:** Displays the "My Posts" section showing all posts by the logged-in user.

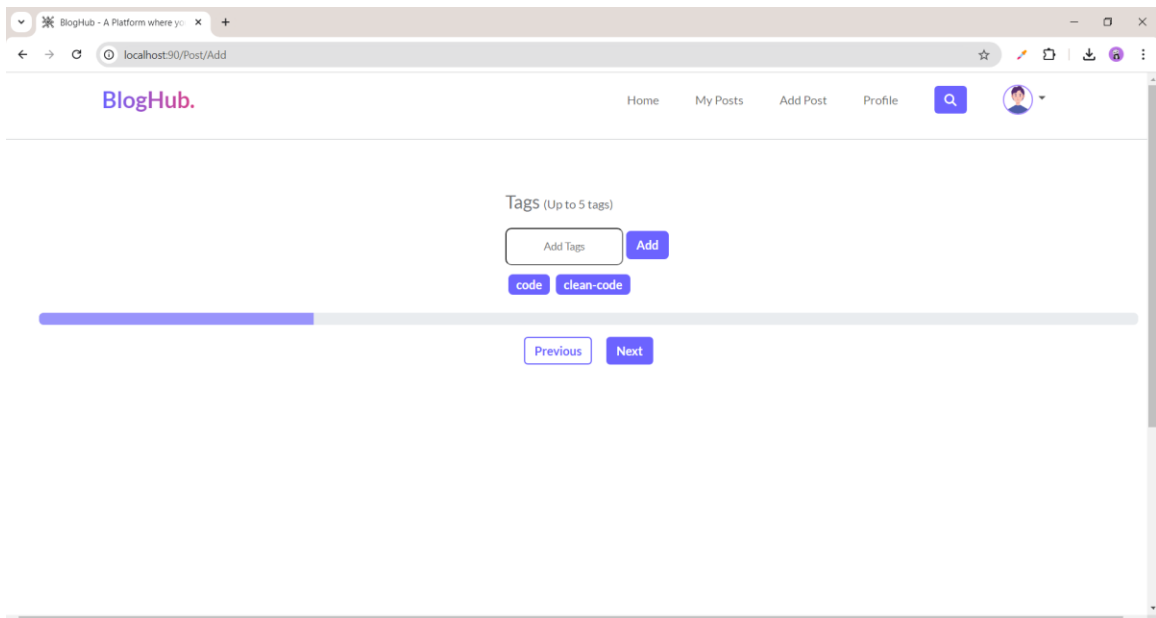




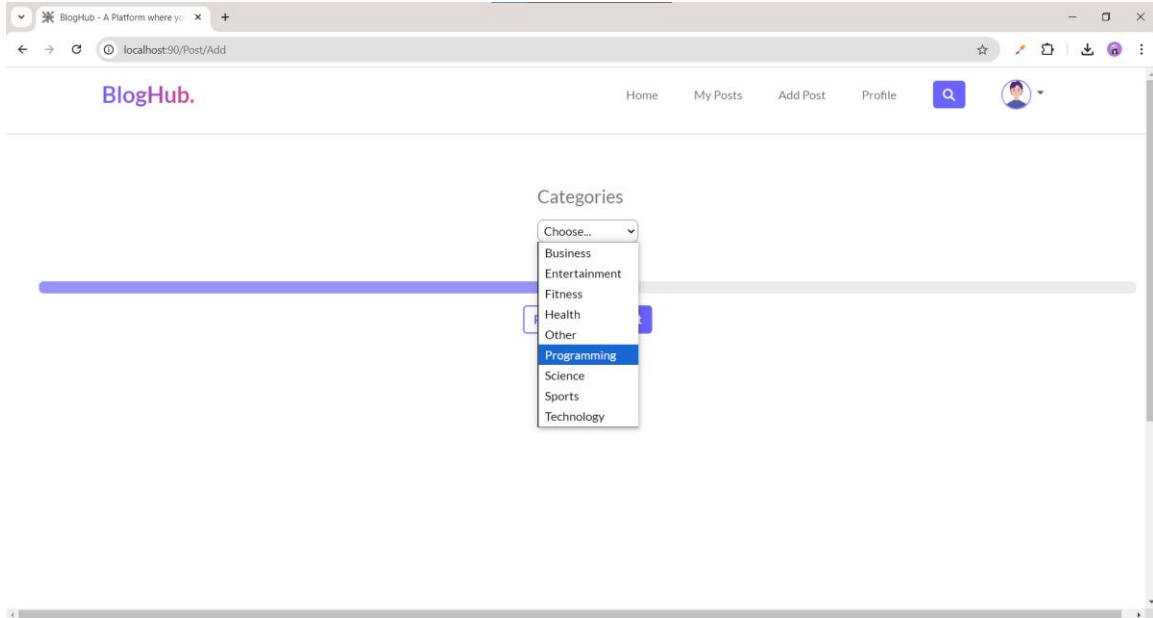
**Figure 11:** Shows the "Add Post" page with Markdown editor and live preview.



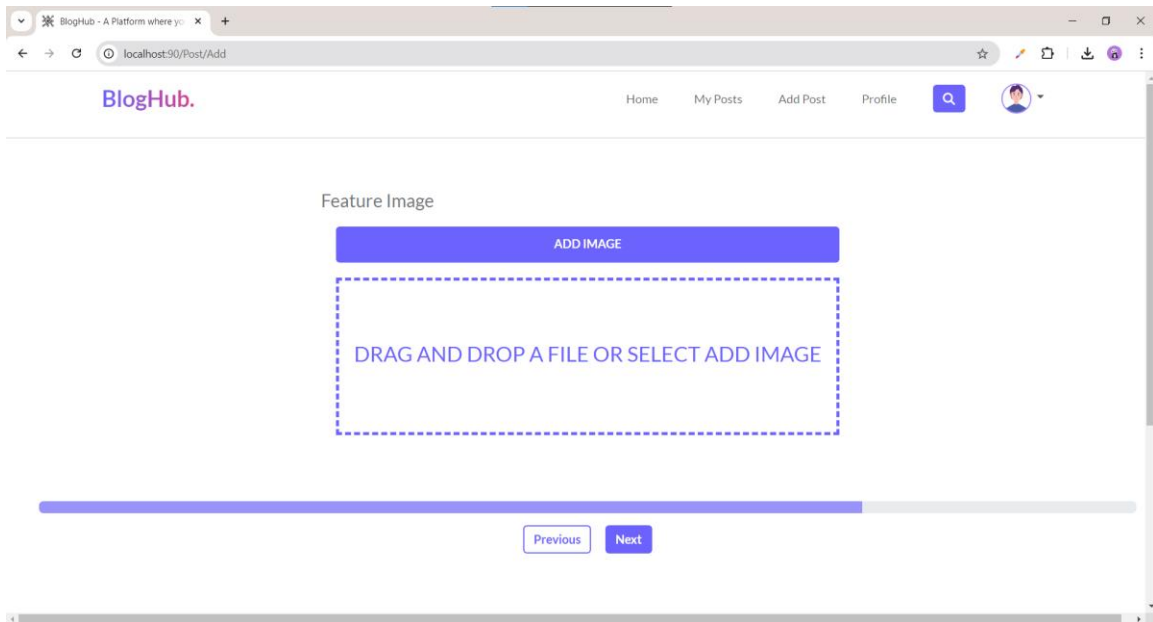
**Figure 12:** Allows adding tags to a post, with a limit of up to 5 tags.



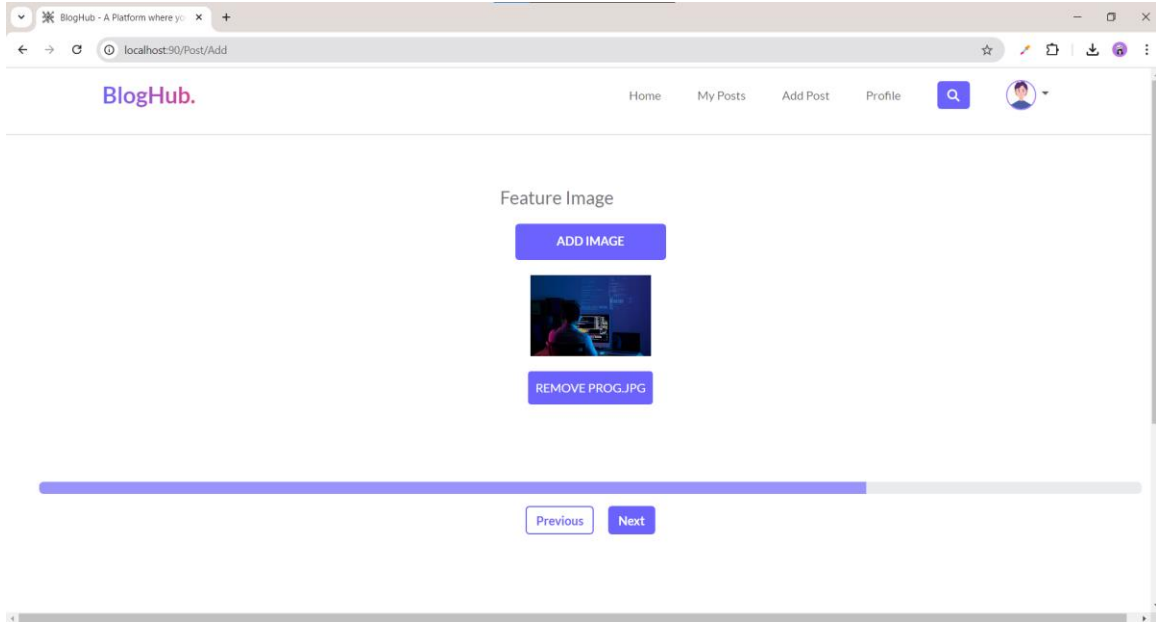
**Figure 13:** Provides a dropdown to select the category for the new post.



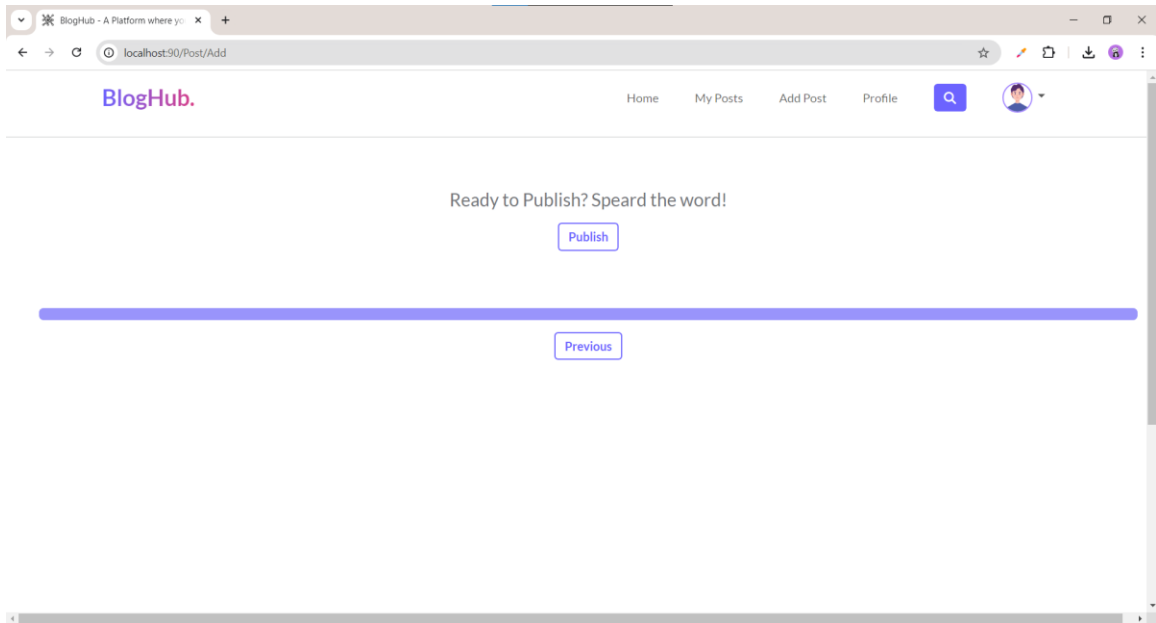
**Figure 14:** Offers an option to upload a feature image for the post.



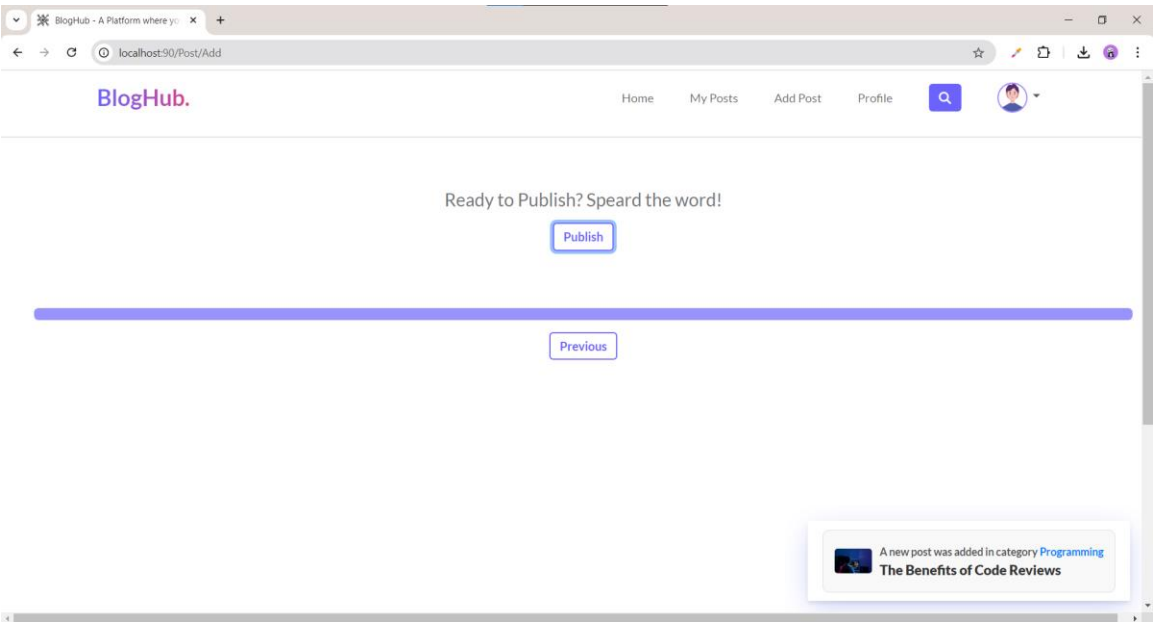
**Figure 15:** Displays the feature image successfully added to the post.



**Figure 16:** The final step, where the user is ready to publish the post.



**Figure 17:** Shows a notification indicating the post has been published in the selected category using **SignalR** and is broadcasted to all the clients.



**Figure 18:** Presents the post with the title and feature image.

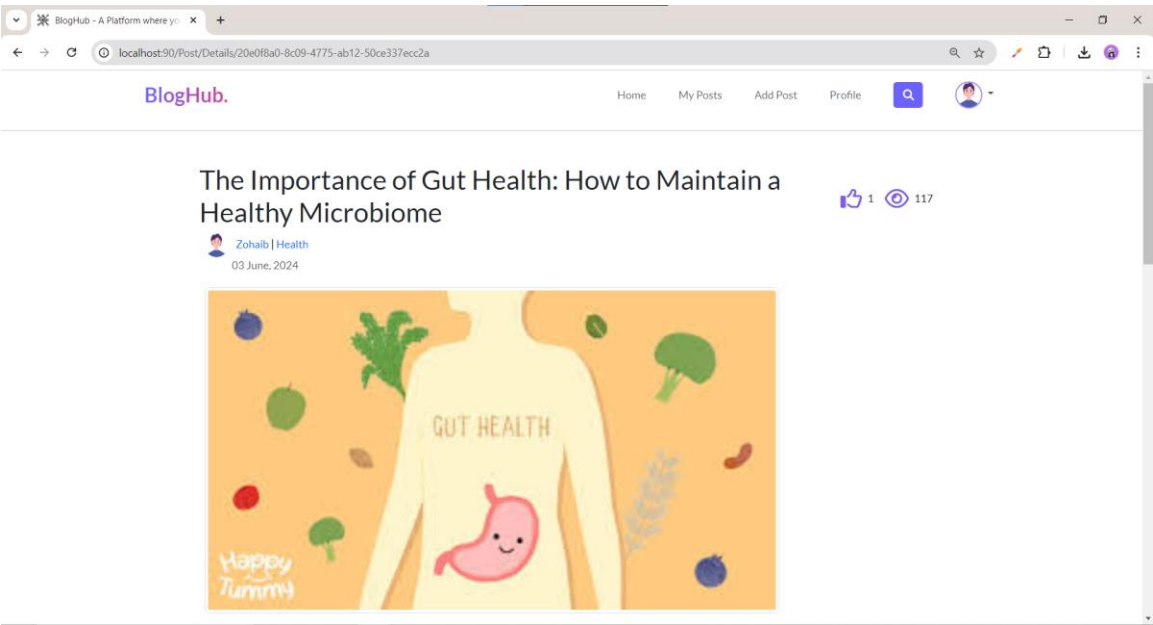


Figure 19: Details the full content of the published post, including tags and content.

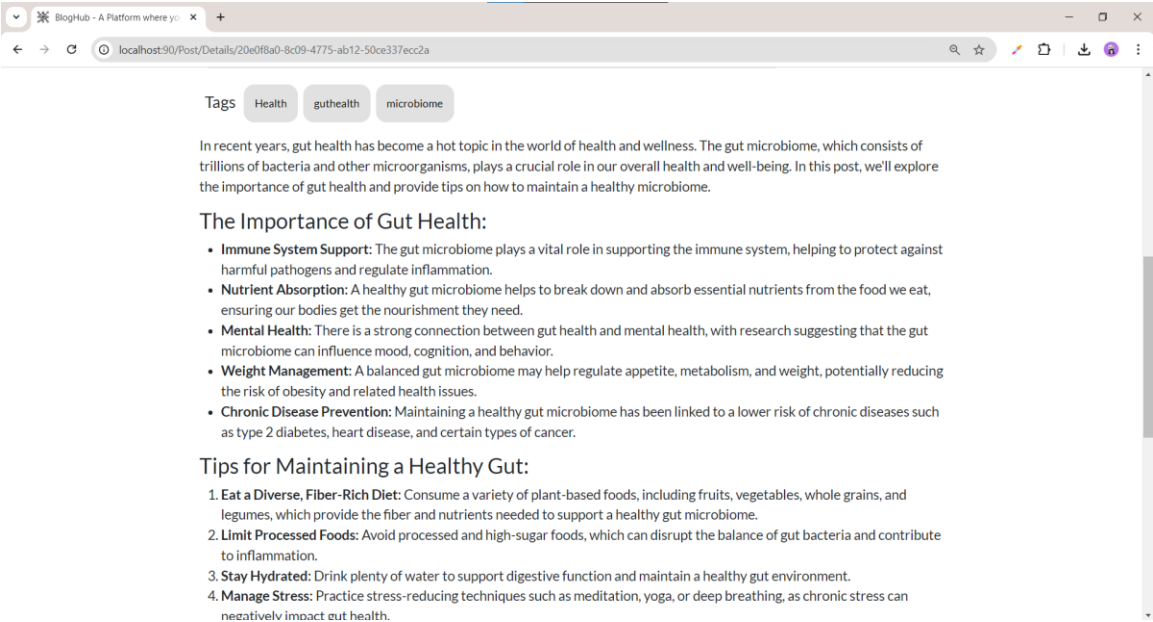
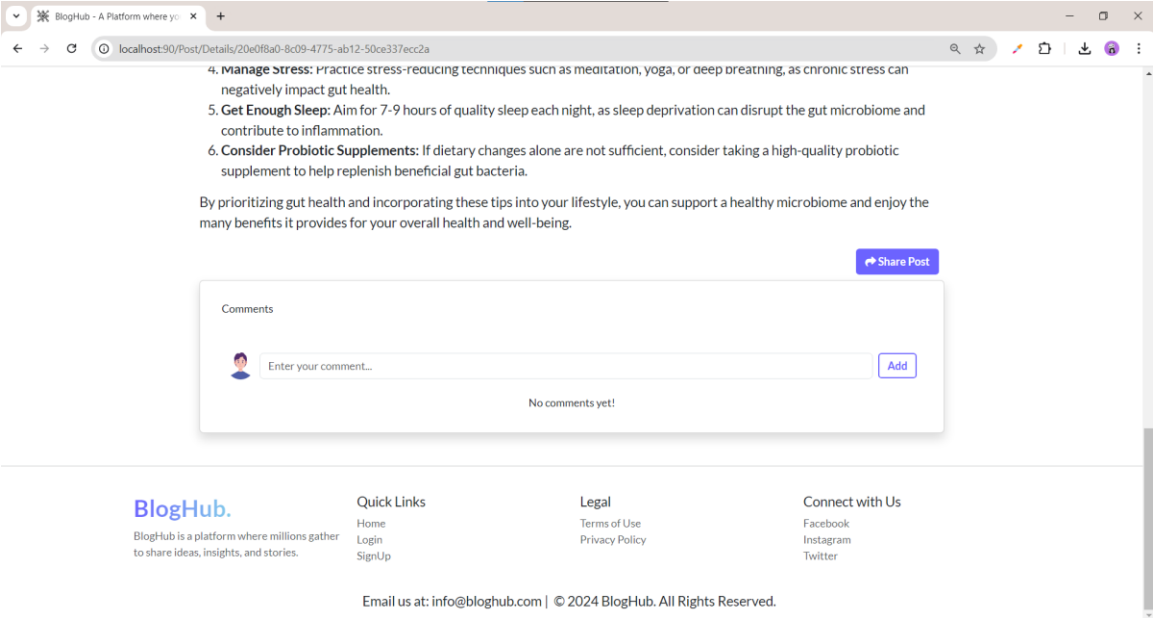
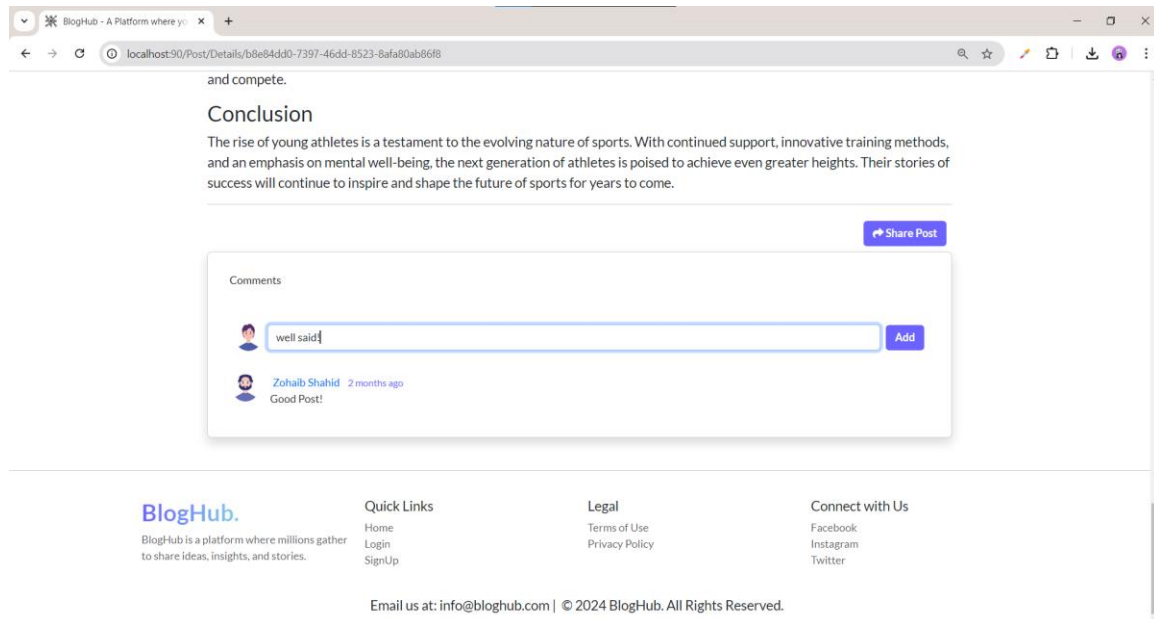


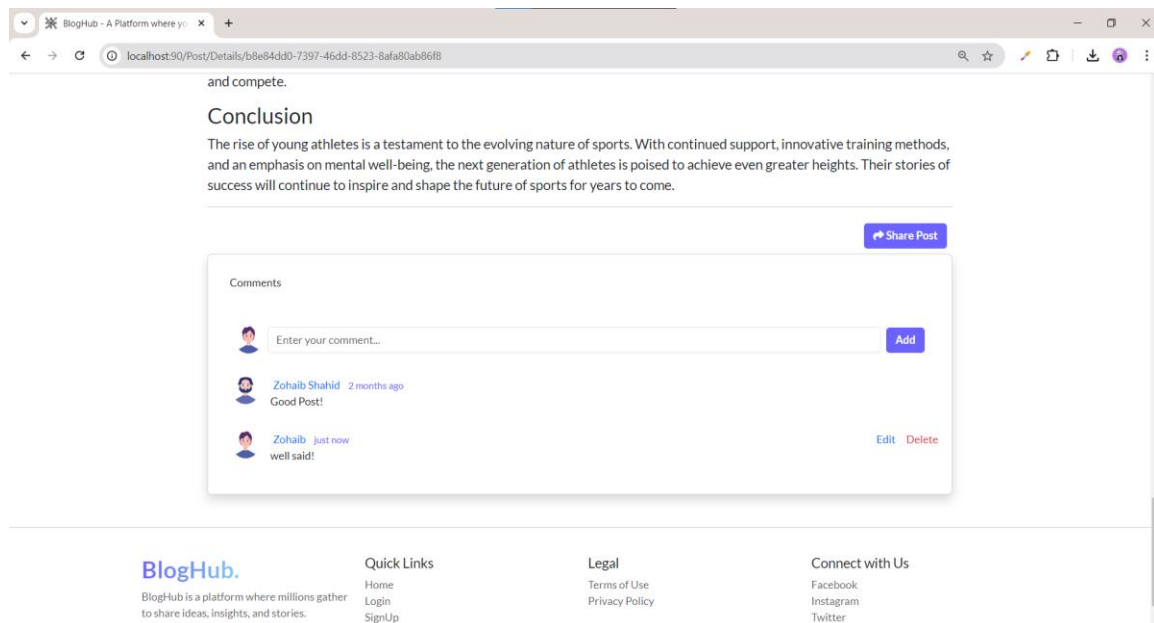
Figure 20: Comment section for user interaction and feedback on a blog post.



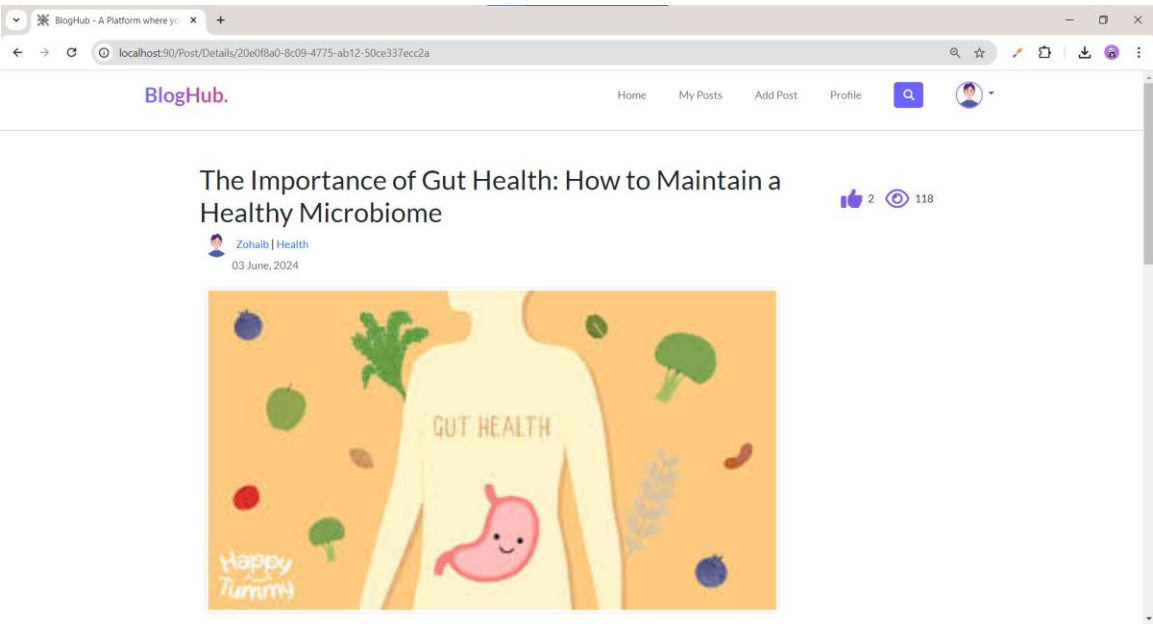
**Figure 21:** Adding a comment on a blog post with real-time user interaction.



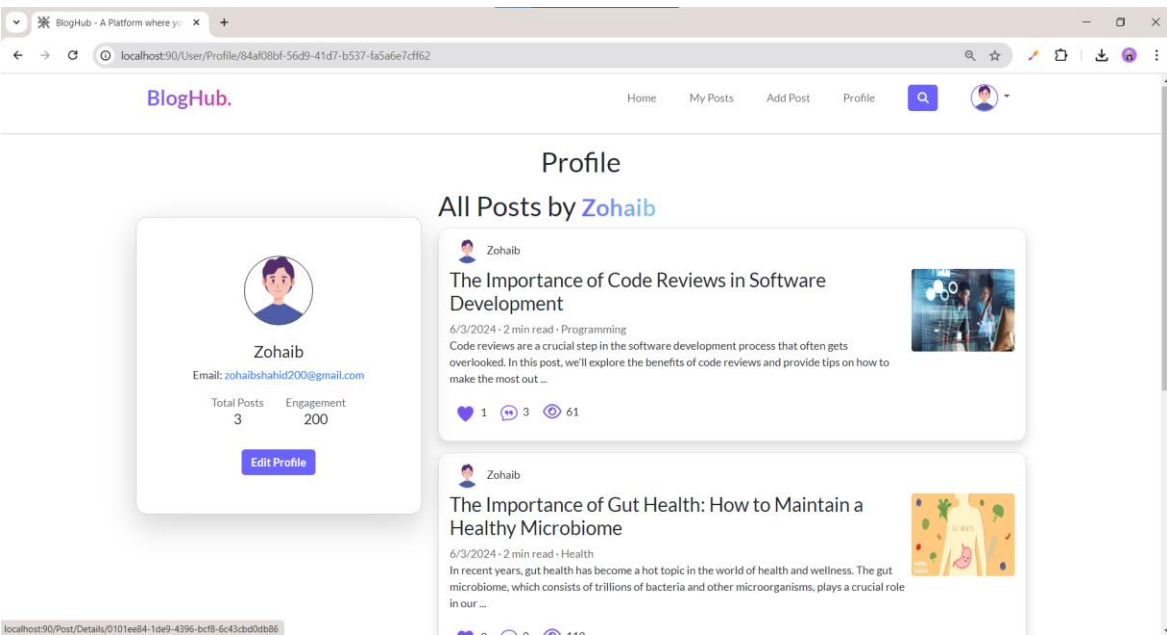
**Figure 22:** Viewing added comments on a blog post.



**Figure 23:** Blog post on gut health with a featured image and user engagement details and the post is liked with like count incremented.



**Figure 24:** User profile showing posts and engagement metrics.



**Figure 25:** Profile management page allowing users to update their personal information.

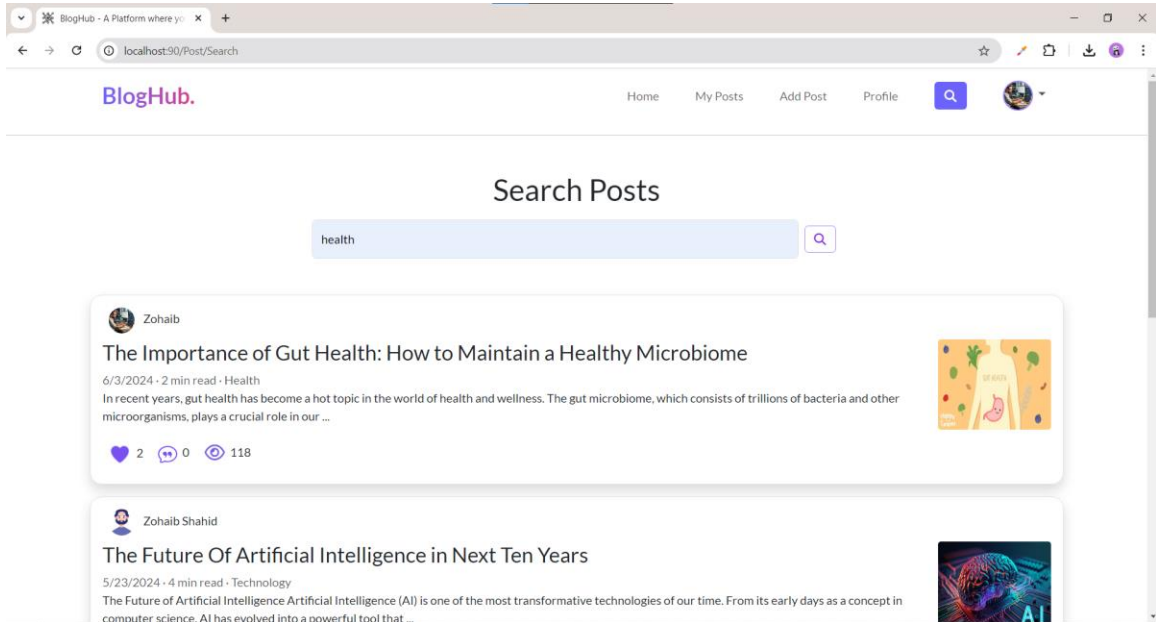
The screenshot shows a web browser window with the URL `localhost:90/identity/Account/Manage`. The page title is "BlogHub." and the navigation bar includes links for Home, My Posts, Add Post, and Profile. The main heading is "Manage your account" with a subheading "Change your account settings". On the left, there is a sidebar with links: Back to Home, Profile (highlighted), Email, Password, External logins, Two-factor authentication, and Personal data. The main content area is titled "Profile" and contains the following fields: Username (zohaibshahid200@gmail.com), First Name (Zohaib), Last Name, Phone number, and a section for "Change Profile Picture" with a "Choose File" button and "No file chosen" text. A "Save" button is at the bottom. To the right of the form is a placeholder for a profile picture labeled "Your profile picture".

**Figure 26:** Notification indicating successful profile update with a new profile picture.

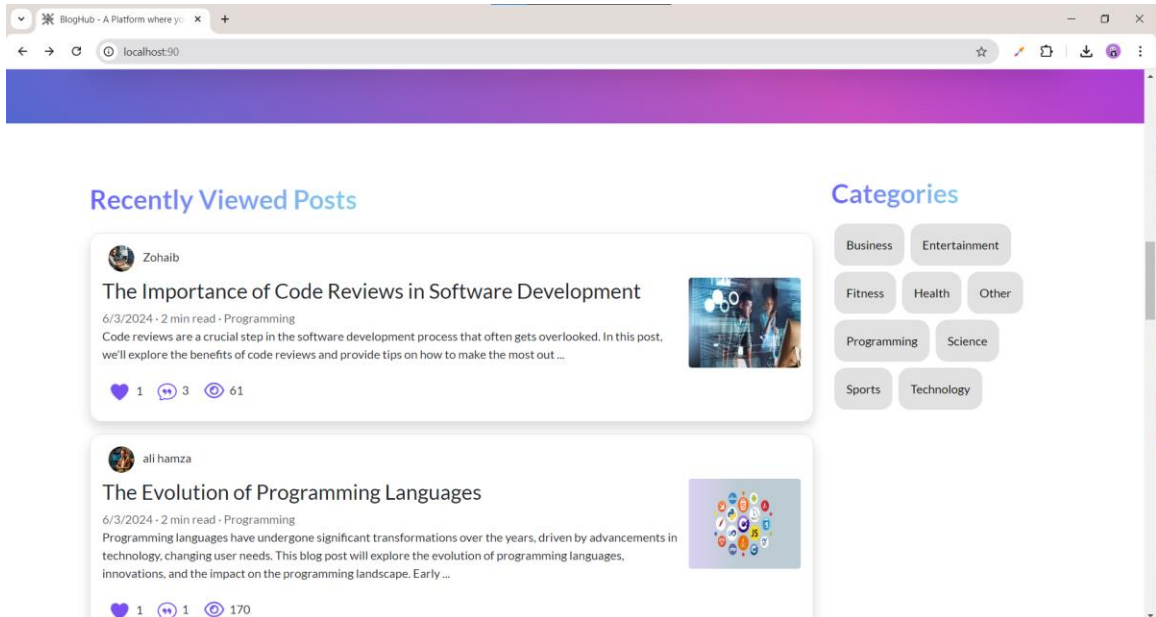
The screenshot shows the same profile management page as Figure 25, but with a green notification banner at the top stating "Your profile has been updated" with a close button. The profile information fields remain the same. The "Change Profile Picture" section now shows a new profile picture of a person working at a desk, labeled "Your profile picture".



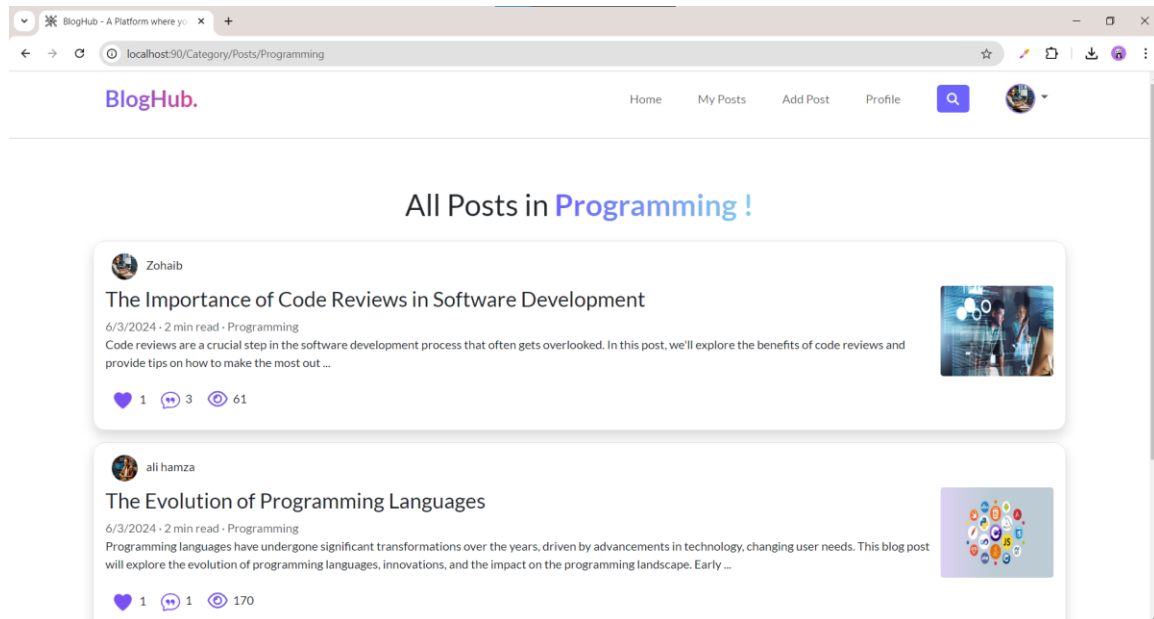
**Figure 27:** Search functionality showcasing filtered blog posts based on keywords through AJAX.



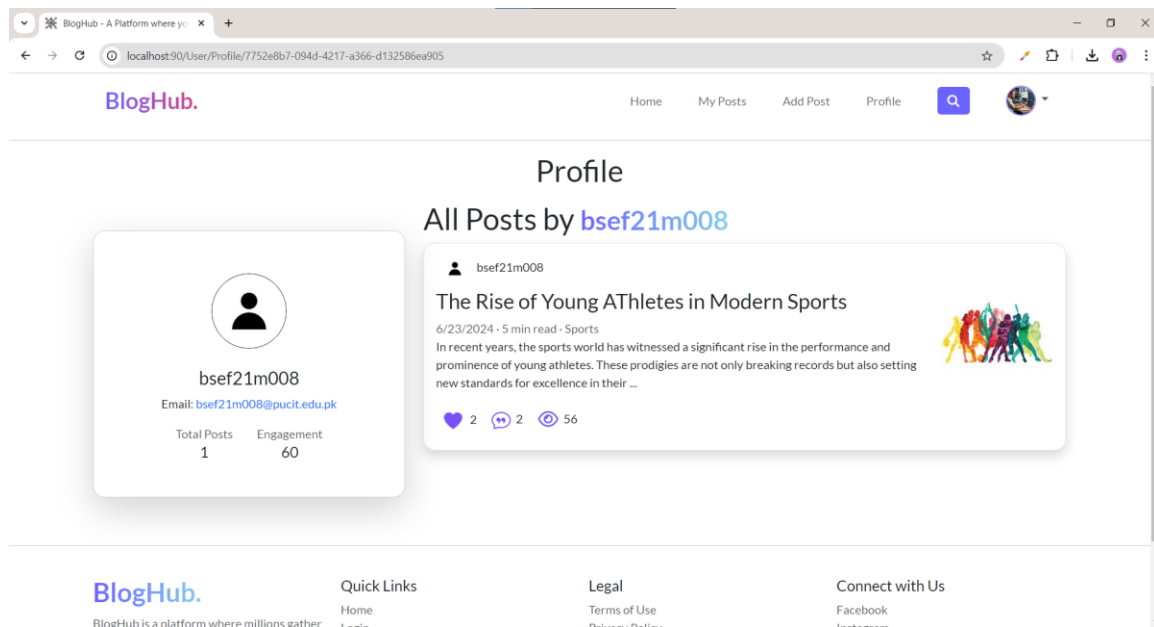
**Figure 28:** Homepage displaying recently viewed posts and categories for browsing.



**Figure 29:** Viewing all posts under the "Programming" category.



**Figure 30:** Profile view of user `bsef21m008` displaying their posts.



**Figure 31:** Managing category in the admin panel.

