**Semester Project ICT LAB**

Date of Submission: 9th December 2023

Submitted to: Prof. Kainat Nazir

Class: BSCSev 1-B

PHASE 2

Group Members:

1. Aeman Aasim (232384)
2. Bisma Maheen (232429)

**Project Name:**

***BLOGGING WEBSITE***

***“AirTime.pk”***

**AirTime.pk blogging website typically includes features designed to facilitate learning, engagement, and collaboration. Here are some key features:**

* **User-friendly Interface:** An intuitive and easy-to-navigate interface is essential for users to find and access educational content effortlessly.
* **Content Management System (CMS):** A robust CMS allows easy creation, editing, and organization of blog posts, ensuring that educational content is well-structured and accessible.
* **Search Functionality:** A powerful search feature helps users find relevant educational articles, resources, or topics quickly.
* **Categories and Tags:** Effective categorization and tagging help organize content, making it easier for users to explore specific subjects or topics of interest.
* **Multimedia Integration:** Support for various media types such as images, videos, and audio enhance the learning experience and caters to different learning styles.
* **Social Media Integration:** Allows users to share educational content on social platforms, increasing the reach and visibility of the blog.
* **User Profiles and Dashboards:** Personalized user profiles enable learners to track their progress, bookmark favorite articles, and customize their learning experience.
* **Comment Section:** A space for readers to leave comments and engage in discussions, facilitating a collaborative learning environment.
* **Subscription and Notifications:** Users can subscribe to receive updates, newsletters, or notifications about new educational content, keeping them informed and engaged.
* **Author Profiles:** Featuring author profiles with credentials and expertise enhances the credibility of the educational content.
* **Secure User Accounts:** Implementing secure login and account management features to protect user data and privacy.

***User authentication in AirTime blogging website:***

* **User Registration:** When a user wants to engage with the blogging website, they usually start by creating an account. During the registration process, they provide a unique username and a secure password. Some websites may also ask for additional information for profile creation.
* **Credentials Verification:** The credentials entered (username and password) are then verified against the stored data in the website's database. The password is usually hashed for security, meaning that even if the database is compromised, the actual passwords remain protected.
* **Session Management:** Upon successful verification, a session is established, allowing the user to navigate the website without re-entering their credentials for every action. Sessions are managed securely to prevent unauthorized access.
* **Two-Factor Authentication (2FA):** Many blogging websites offer an additional layer of security through two-factor authentication. This typically involves sending a verification code to the user's mobile device or email, which they must enter along with their password.
* **Password Reset Mechanism:** In case a user forgets their password, a secure password reset mechanism is provided. This often involves sending a password reset link to the user's registered email address.
* **Account Lockout:** To prevent brute force attacks, where an attacker tries to guess the password repeatedly, blogging websites may implement account lockout mechanisms. After a certain number of failed login attempts, the account may be temporarily locked.
* **Secure Transmission:** During the authentication process, the transmission of user credentials and sensitive information is encrypted using protocols like HTTPS to ensure that the data is secure during transit.
* **Role-Based Access Control (RBAC):** Once authenticated, users may have different levels of access based on their roles. For example, an admin may have additional privileges compared to a regular user.
* **Logout Functionality:** Users should have the ability to log out securely, terminating their session to prevent unauthorized access if they are using a shared or public computer.

***Content management in AirTime blogging website:***

* **Content Creation:** Authors and educators can create and write educational articles, blog posts, tutorials, or any other type of content relevant to the educational niche.
* **Text Formatting and Editing:** The content management system (CMS) provides tools for formatting text, adding images, embedding videos, and other multimedia elements. This ensures that the educational content is visually appealing and engaging.
* **Categorization and Tagging:** Content is organized into categories and tagged with relevant keywords. This helps users navigate the website and find specific topics or subjects of interest easily.
* **Version Control:** Some CMS platforms offer version control features, allowing authors to track changes made to content over time. This can be useful for collaborative content creation and ensuring accuracy.
* **Drafts and Revisions:** Authors can save content as drafts before publishing, allowing them to work on articles over time. The ability to review and revert to previous revisions is also essential for quality control.
* **Scheduled Publishing:** Authors can schedule the release of content at specific times, making it possible to plan and automate the publication of educational materials.
* **User Permissions:** Different user roles (such as administrators, authors, and contributors) may have varying levels of access and permissions. This helps in maintaining content quality and controlling who can publish or edit content.
* **Content Preview:** Authors can preview how their content will appear to users before publishing, ensuring that formatting and multimedia elements display correctly.
* **Media Library:** A centralized repository for images, videos, documents, and other media files simplifies the process of adding multimedia content to educational articles.
* **SEO Optimization:** Some CMS platforms offer tools to optimize content for search engines, including features for adding meta tags, descriptions, and ensuring proper URL structures.
* **Comments and Feedback:** Content management systems often include features for managing user comments and feedback on educational articles. This fosters interaction and community engagement.
* **Content Archiving and Deletion:** Over time, older content may need to be archived or deleted. The CMS should provide options for managing the lifecycle of content on the website.

***Platform compatibility in AirTime blogging website:***

* **Cross-Browser Compatibility:** The website should be compatible with popular web browsers such as Chrome, Firefox, Safari, and Edge. Testing and optimizing the website for different browsers helps prevent issues like layout distortions or functionality errors.
* **Operating System Compatibility:** Users may access the educational blogging website from different operating systems such as Windows, macOS, Linux, iOS, or Android. The website should be compatible with these diverse operating environments to provide a consistent experience.
* **Load Time Optimization:** Platform compatibility also involves optimizing the website's performance to ensure fast loading times on devices and network conditions. This is crucial for retaining user engagement and satisfaction.
* **Scalability:** As the website grows, it should be scalable to handle increased traffic and content without compromising performance on different platforms.

***Data security in AirTime blogging website:***

* **User Authentication and Authorization:** Use strong authentication mechanisms, such as password hashing and salting, to protect user accounts. Implement role-based access control (RBAC) to ensure that users have appropriate permissions based on their roles (e.g., administrators, authors, students).
* **Data Backups:** Regularly backup all data on the website to prevent data loss in case of server failures, accidental deletions, or security incidents. Ensure that backups are stored securely and can be quickly restored.
* **Content Security Policies (CSP):** Implement CSP headers to control which resources (e.g., scripts, stylesheets) can be loaded on the website. This helps prevent certain types of cyber-attacks, such as cross-site scripting (XSS).
* **Protection against SQL Injection and Cross-Site Scripting:** Apply input validation and parameterized queries to prevent SQL injection attacks. Implement measures to mitigate cross-site scripting vulnerabilities.
* **Data Encryption at Rest:** Encrypt stored data on the server to protect it from unauthorized access in case of a security breach. This is particularly important for storing sensitive user information.
* **Security Headers:** Utilize security headers in HTTP responses to enhance security. Headers like Content Security Policy (CSP), Strict-Transport-Security (HSTS), and X-Content-Type-Options help mitigate various security risks.
* **User Privacy:** Clearly communicate the website's privacy policy to users and obtain explicit consent for collecting and processing their personal information. Comply with relevant data protection regulations, such as CCPA.
* **Incident Response Plan:** Develop and maintain an incident response plan to address security incidents promptly. This plan should include procedures for investigating, containing, and recovering from security breaches.
* **Educational Content Security:** If the website hosts educational content, ensure that intellectual property rights are respected and that access to sensitive educational materials is appropriately restricted.

**USER STORIES**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr no** | **Type of user** | **Objective** | **Results** |
| **1** | **Undergraduate/ Graduate**  **Student** | **looking for information about their courses and fields, study advice, and academic resources** | **enhanced participation, a helpful online community, and the development of a personal brand as an informed and helpful student blogger.** |
| **2** | **Professor** | **exchanging lesson ideas, instructional strategies, and educational materials.** | **improved recognition within the academic community, more chances for collaboration, and the sharing of important information with a larger audience.** |
| **3** | **Final Year Student** | **collaborating with peers, recording research projects, creating a professional portfolio, exchanging scholarly insights, and encouraging lifelong learning.** | **heightened involvement, encouraging comments from fellow learners, and the development of a useful platform to help students through their senior year of school.** |
| **4** | **Career Seeker** | **investigating resources for skill development, career guidance, and educational options.** | **Enhanced networking prospects, refined personal branding, and a valuable asset for other individuals seeking career opportunities.** |
| **5** | **Outsider** | **seek to learn new things, gather information, or locate useful resources related to their hobbies or academic endeavors.** | **improved education, easier access to reliable information, and possible networking possibilities.** |
| **6** | **Content Creator** | **presenting insightful instructional content, interacting with the audience, becoming an authority in their field, and maybe making money off of their efforts.** | **enhanced awareness, audience participation, and beneficial effects on students.** |
| **7** | **Editor** | **ensuring content accuracy, upholding a standard editorial approach, and improving the general caliber and clarity of instructional assets.** | **a refined, carefully chosen platform that improves the reading experience.** |
| **8** | **Administrator** | **Administrators at schools or colleges looking for advice on management and policy in education.** | **enhanced community awareness, more effective stakeholder engagement, and more transparent communication channels.** |
| **9** | **Researcher** | **reading academic papers, looking up research results, and keeping up with changes in education.** | **enhanced recognition within the scientific community, possible partnerships, and a venue for exhibiting proficiency and contributions to the area.** |
| **10** | **Parents** | **seeking advice on comprehending curriculum and assisting with their child's education.** | **improved knowledge of the opportunities and challenges in education for their children, a network of supportive people, and well-informed parenting choices.** |
| **11** | **Education Enthusiasts** | **people who have a strong desire to learn and discover new educational resources.** | **increased depth of knowledge, enhanced viewpoints, and relationships with like-minded members of the education community.** |