



Daffodil
International
University

Project Report

on

**“WEBSITE DEVELOPMENT PROJECT:
Building a Centralized JMC Departmental Website”**

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Batch: 36th

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Submitted to: Dr. Md. Abdul Kabil Khan

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Date of Submission: 08 July 2023

Abstract

This project report presents the development journey of the Journalism, Media, and Communication (JMC) department website, focusing on its impact, the 12-week work process, current standings, future scope, and concluding with an outcome and recommendations.

The report begins by introducing the project's purpose, creating a centralized website for the JMC department. This platform enhances communication and accessibility and showcases departmental activities and services. The section on website impact highlights the significance of a well-organized online presence. It builds credibility, attracts potential students, and increases the department's visibility.

The report then outlines the 12-week work process, explaining the steps taken to plan, analyze requirements, select design patterns, and build the user-friendly and informative website. Moving on to the project's current standing and future scope, the report evaluates the progress made and identifies areas for further improvement. It considers the website's impact on the department and explores future possibilities and challenges.

In conclusion, the report provides outcome recommendations based on analysis. It suggests ways to enhance the website, focusing on communication and accessibility. It also discusses the scope for future development and adapting to evolving needs and technological advancements and to take a secure storage for website data. Additionally, developing a mobile app is suggested as the next step to expand accessibility to the growing mobile user base.

Preface

I am delighted to present this project report, which documents my journey in developing the Journalism, Media, and Communication (JMC) department website.

I have been passionate about programming and web development for the last couple of years outside of my university coursework. When it came time for the final semester, which involves an internship or project in the related fields of journalism, media, and communication, I intended to do my internship in the IT sector to further explore my interests. However, internships in the IT industry were not permitted due to departmental policy limitations. Then, I took an alternative approach to my department by suggesting the development of the JMC department website as a project. I am grateful that the head of the Department of Journalism, Media, and Communication approved my proposal and encouraged me to pursue it to the end.

This project report serves as documentation of the journey I took, from the project's initial approval to the requirement analysis, design pattern selection, and implementation that followed. It showcases the effort and dedication put into creating a centralized, user-friendly, and informative website for the JMC department.

I would like to express my gratitude to the head of JMC, Mr. Aftab Hossain, and my supervisor, Dr. Md. Abdul Kabil Khan, who supported and guided me throughout this project. I hope that this report provides a comprehensive understanding of the project, its objectives, and the processes involved. It is my sincere hope that the JMC department website will contribute to enhancing the communication and visibility of the department, thereby benefiting students, faculty members, and other stakeholders.

Letter of Transmittal

08 July 2023

Dr. Md. Abdul Kabil Khan
Associate Professor
Department of Journalism, Media and Communication
Daffodil International University

Subject: Submission of Project Report.

Dear Sir,

I am pleased to submit the project report as a partial fulfillment of my BSS (Hons.) in Journalism, Media, and Communication. I did my best to present this report on my project. It was a great opportunity for me to develop the Journalism, Media, and Communication (JMC) department's website. I believe that the knowledge and experience I have gathered during this project will immensely help me in my professional life. I have given my best efforts to achieve the objectives and hope that my endeavor will serve the purpose. However, I will always be happy to provide any additional clarification you may require.

I would like to thank you for your kind help, advice, encouragement, and being the supervisor who helped me complete my project successfully.

Azizur Rahman

ID: 191-24-679
Department of Journalism, Media and Communication
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Certificate of Approval



I am pleased to certify that the project report on "Website Development Project: Building a Centralized JMC Departmental Website" prepared by Azizur Rahman Faisal bearing ID: 191-24-679 of the Department of Journalism, Media, and Communication, has been approved for presentation and defense. Under my supervision, Azizur Rahman Faisal works on this project as an intern. He completed the work during the spring 2023 session.

Throughout the project, Azizur Rahman Faisal demonstrated exceptional technical skills, project management abilities, and problem-solving capabilities. His dedication and attention to detail have resulted in the successful completion of the project. I am pleased to certify that the information and findings presented in the report are the automatic work of Azizur Rahman Faisal.

Azizur Rahman Faisal has a good moral character and a very pleasing personality. It is indeed a great pleasure working with him, and I wish him success in life.

Supervisor

A handwritten signature in black ink, appearing to be "Dr. Md. Abdul Kabil Khan". The signature is fluid and cursive, with a prominent initial "D" and "K".

08 July 2023

Dr. Md. Abdul Kabil Khan

Associate Professor

Department of Journalism, Media and Communication

Daffodil International University

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Chapter One

Introduction

Daffodil International University's Journalism, Media, and Communication (JMC) department provides an in-depth education and course curriculum in journalism, media studies, and communication. They are committed to educating students with the skills and knowledge required to succeed in the rapidly changing media industry. JMC has been at the forefront of organizing various impactful and interactive events in recent years. These initiatives have not only provided students with hands-on experiences but also offered valuable knowledge and insights. As part of my internship project, I was tasked with developing a complete website for the JMC department to showcase its activities, centralize resources, and promote departmental advertisements.

The primary objective of this project is to create an engaging online platform that effectively communicates the initiatives and achievements of the JMC department. The website serves as a hub of information for students, faculty, and visitors, providing easy access to resources, event details, and updates. By highlighting the successful mega events organized by the department in the past 2-3 years, the website emphasizes the depth of student involvement, practical experiences gained, and knowledge acquired through active participation.

The JMC department hopes that by creating this website, it will be able to increase its visibility, reach, and engagement within and beyond the DIU community. The platform serves as both an educational and promotional tool, attracting potential students, industry professionals, and media enthusiasts. This report provides an overview of the website development process, including the stages of research, planning, design, development, and implementation. It also delves into the key features and functionalities integrated into the JMC website to achieve its objectives effectively. Additionally, the report addresses any challenges that arise during the project and provides recommendations for future enhancements and maintenance.

Chapter Two

Project Impacts

2.1 Enhanced Online Presence: The development of the website for the JMC department will significantly enhance its online presence. By providing a dedicated platform for showcasing departmental activities, resources, and events, the website will create a professional and engaging online identity for the JMC department. This increased visibility will attract a broader audience and help establish the department as a reputable institution within the field of journalism, media, and communication.

2.2 Improved Communication and Engagement: The website will serve as a communication hub, facilitating effective communication and engagement among various stakeholders. Students, faculty, and visitors will have easy access to up-to-date information, event details, and resources. This streamlined communication will foster a sense of community within the JMC department, encouraging collaboration, knowledge sharing, and active participation.

2.3 Centralized Resource Hub: The website will act as a centralized resource hub, providing a comprehensive collection of departmental resources. This centralized access will save time and effort for students and faculty, enabling them to access necessary resources. It will also contribute to a more organized and efficient learning environment for the department of JMC.

2.4 Promotion: The website will serve as a promotional platform, showcasing the department's achievements, events, and success stories. Prospective students, industry professionals, and media enthusiasts will have an opportunity to explore the JMC department's offerings and gain insights into its vibrant activities.

2.5 Long-Term Sustainability: By developing a user-friendly and easily maintainable website, the project ensures its long-term sustainability. Regular updates, additions, and modifications can be made to keep the website relevant and up to date. This sustained online presence will continue to benefit students, faculty, and the JMC department in the future.

Chapter Three

Activity

3.1 List of weekly activities

Week 1: Project Initiation and Planning

- Conduct meetings with my project supervisor to gather requirements and define project goals.
- Research and finalize the technologies to be used: React.js, Node.js, Express, and MongoDB.
- Set up the project in VSCode and initialize the Git repository.
- Develop a project plan, including timelines and milestones.
- Finalize the website initial design on Google Docs.
- Identify potential challenges and risks.
- Define the target audience and establish key objectives for the website.
- Setting up the development environment and installing the necessary dependencies.
- Plan the implementation of a responsive design in website for optimal user experience across devices.

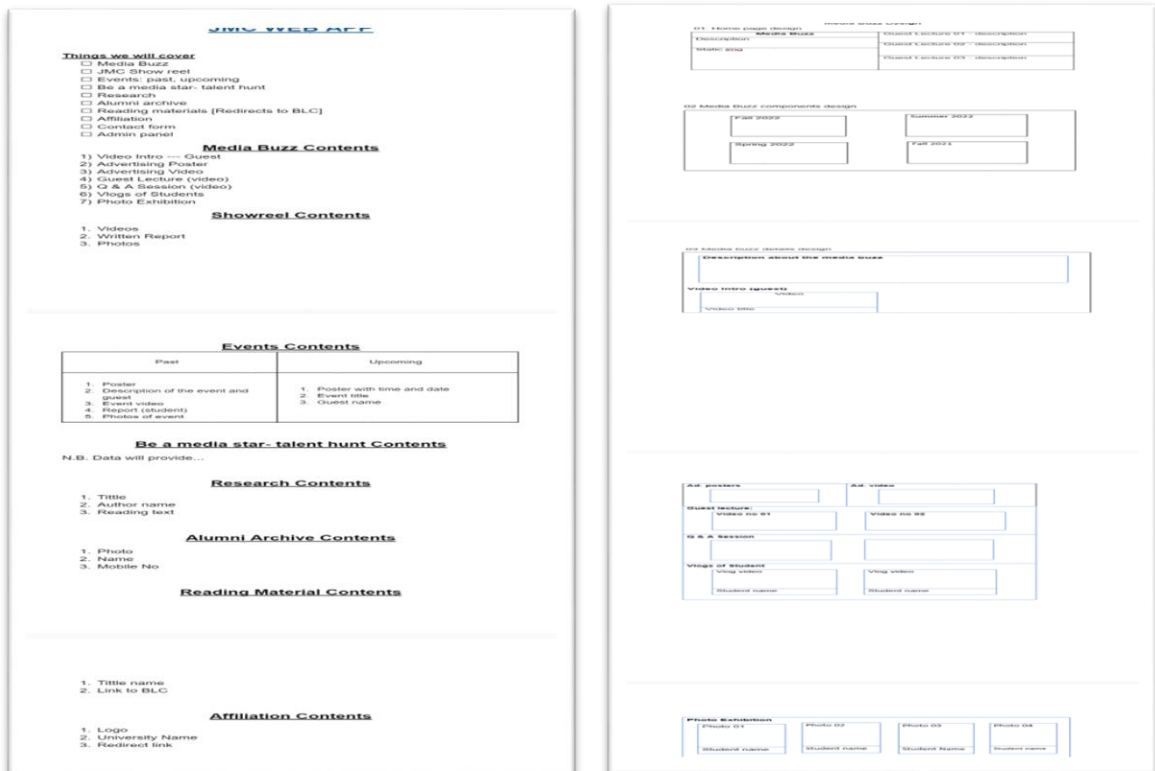


Figure 1 – Project primary design plan on Google Docs

Week 2: Frontend Development (Navbar and Footer)

- Set up React project and folder structure for front-end development.
- Create responsive navbar and footer components with appropriate links and branding.
- Implement navigation functionality for seamless transition between different sections of the website.
- Apply CSS styles to ensure consistent design elements and layout.
- Test the navbar and footer on various screen sizes to ensure responsiveness.
- Set up routing using React Router for smooth navigation.
- Create a 404 page for handling any invalid or missing routes.

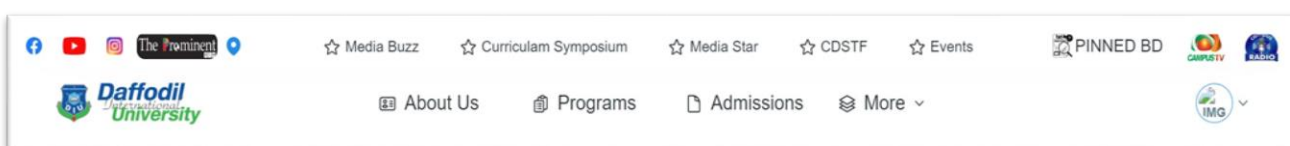


Figure 2 – Navbar Desktop View

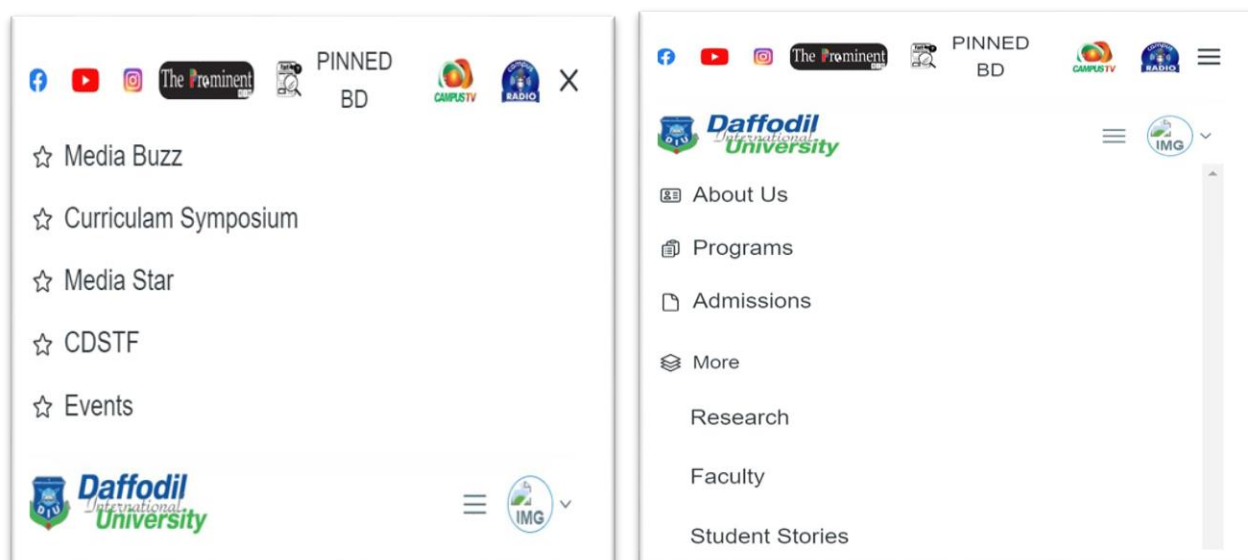
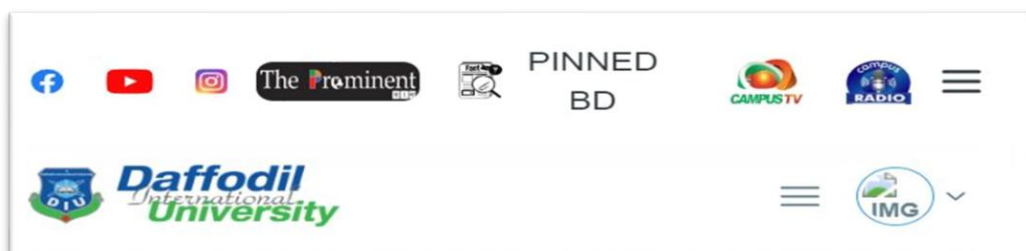


Figure 3 – Navbar Mobile View

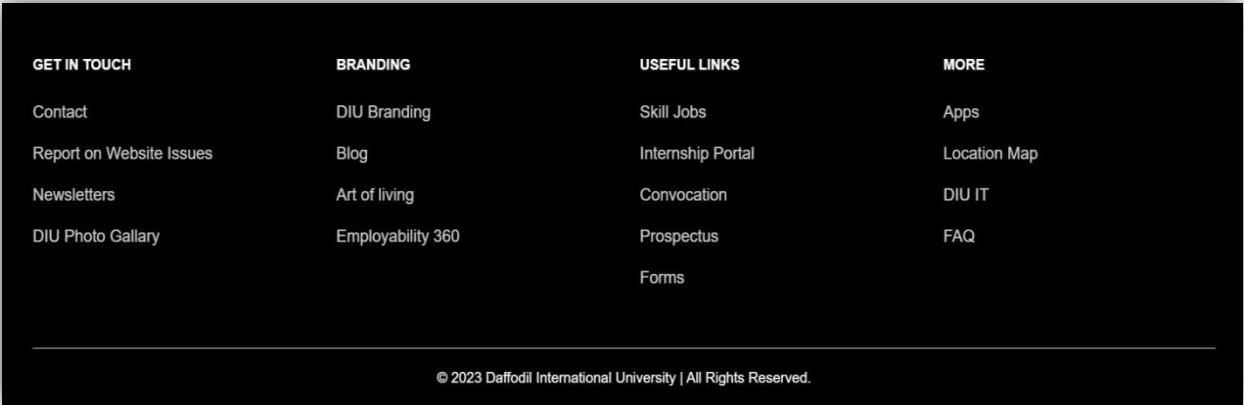


Figure 4 - Footer Desktop View

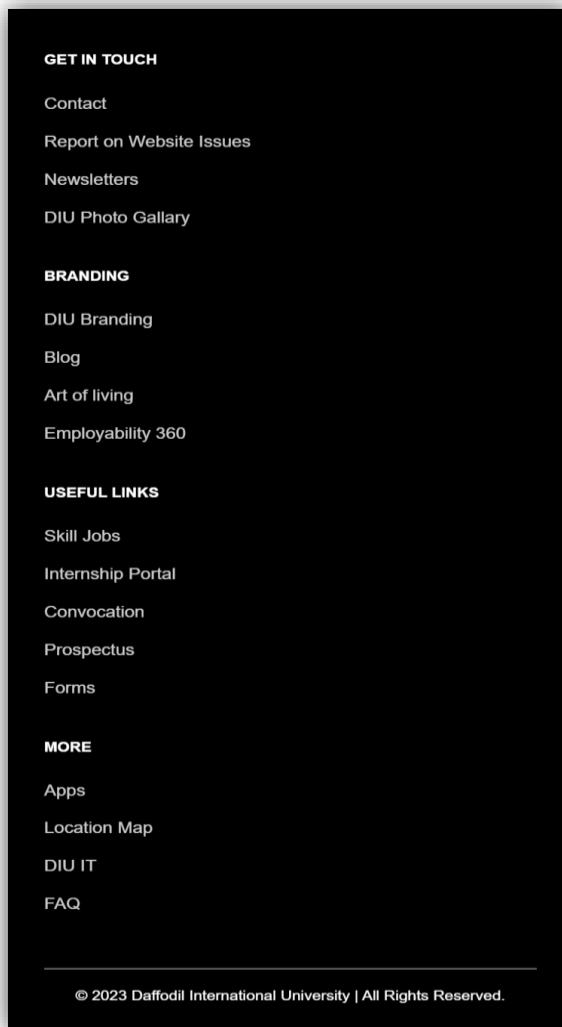


Figure 5 - Footer Mobile View

Week 3: Authentication System

- Set up Firebase for user authentication.
- Implement signup and signin functionality using Firebase Authentication with email and password.
- Integrate Google Sign-In for additional authentication options.
- Implement signout system, also a user interface for signup and signin forms.
- Implement the AuthProvider context to manage user authentication state across the website.
- Create a dashboard page for authenticated users.
- Develop a password reset feature to allow users to reset their account passwords.
- Implement proper error handling and validation for authentication forms.

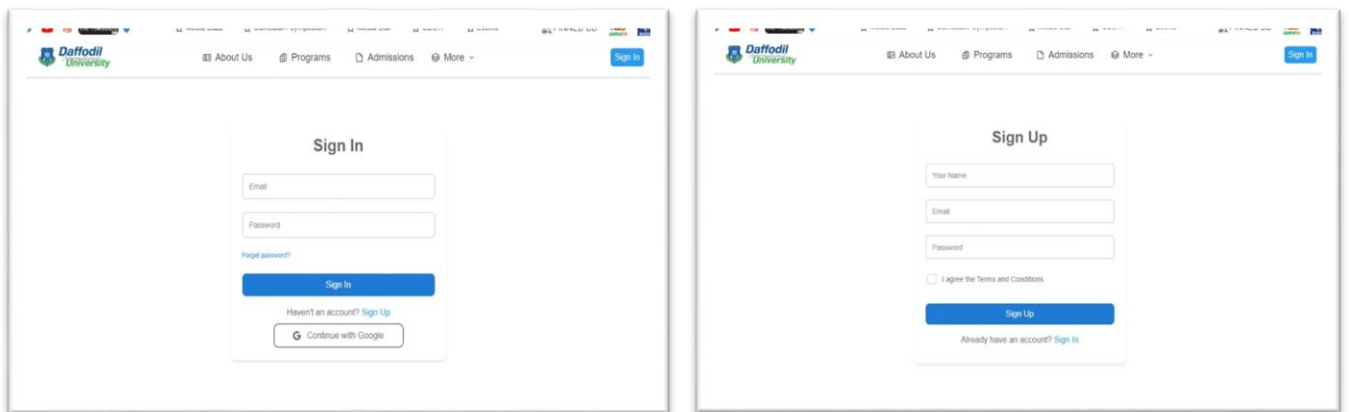


Figure 6 - SignIn and SignUp Form

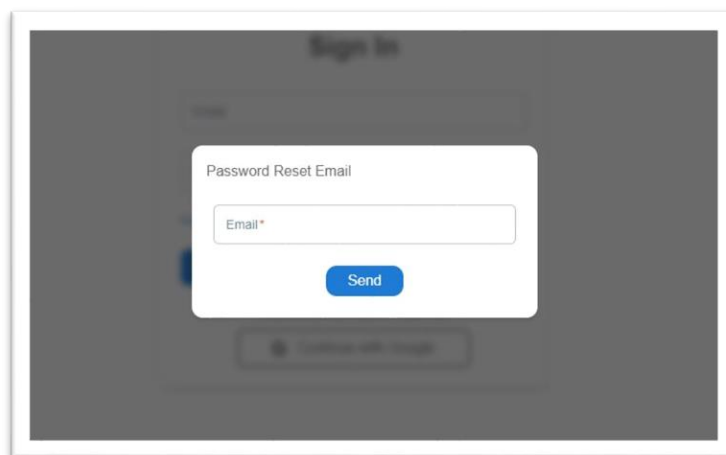
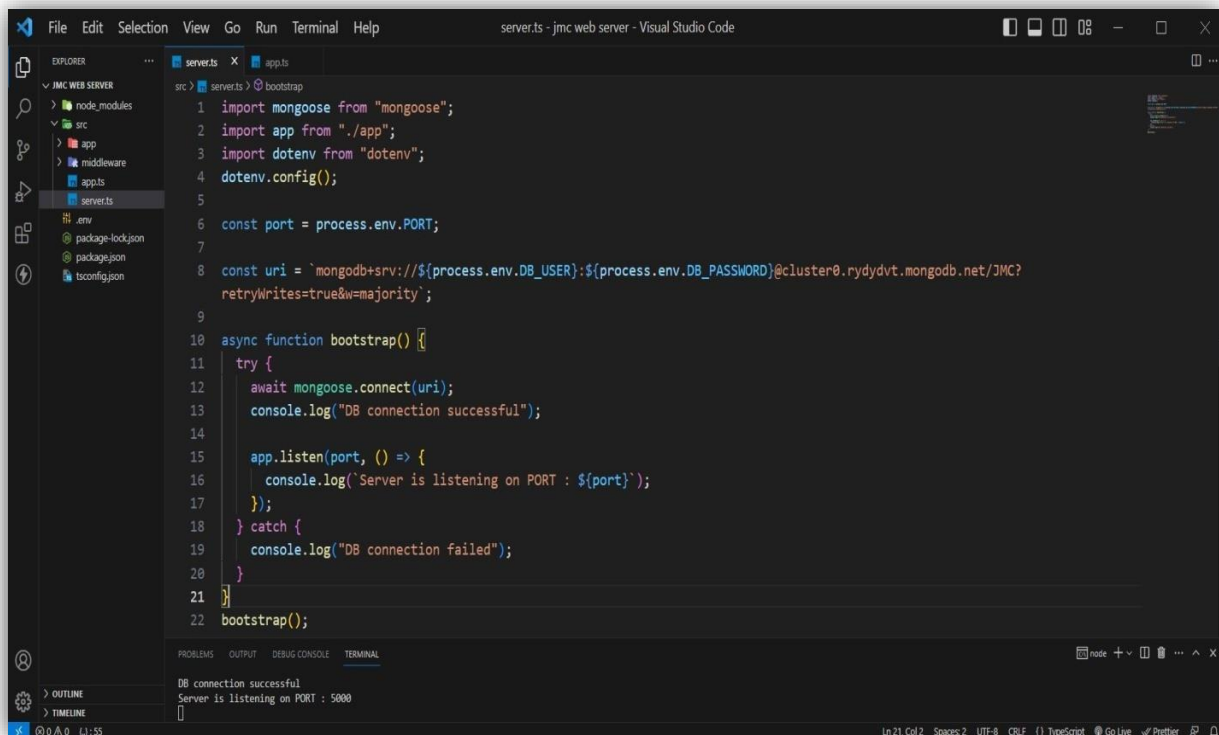


Figure 7 - Password Reset

Week 4: Backend Development (Server Setup and MongoDB Integration)

- Set up the Node.js server using Express framework to handle HTTP requests and responses.
- Connect the server to MongoDB for data storage, ensuring proper database integration.
- Implement the necessary API endpoints to retrieve data from the database and serve it to the frontend.
- Develop server-side validation and error handling for incoming requests.
- Test the server and database integration using tools like Postman to ensure proper functionality.
- Create data models and define schemas for different entities in Mongoose.
- Ensure proper security measures, such as sensitive data encryption are implemented.



```
File Edit Selection View Go Run Terminal Help
servers.ts - jmc web server - Visual Studio Code

EXPLORER
jmc WEB SERVER
├── node_modules
├── src
│   ├── app
│   ├── middleware
│   └── app.ts
└── servers
    ├── env
    ├── package-lock.json
    ├── package.json
    └── tsconfig.json

servers.ts x app.ts
src > servers > bootstrap
1 import mongoose from "mongoose";
2 import app from "./app";
3 import dotenv from "dotenv";
4 dotenv.config();
5
6 const port = process.env.PORT;
7
8 const uri = `mongodb+srv://${process.env.DB_USER}:${process.env.DB_PASSWORD}@cluster0.rydydvt.mongodb.net/JMC?
retryWrites=true&w=majority`;
9
10 async function bootstrap() {
11   try {
12     await mongoose.connect(uri);
13     console.log("DB connection successful");
14
15     app.listen(port, () => {
16       console.log(`Server is listening on PORT : ${port}`);
17     });
18   } catch {
19     console.log("DB connection failed");
20   }
21 }
22 bootstrap();

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
DB connection successful
Server is listening on PORT : 5000
Ln 21, Col 2 Spaces 2 UTF-8 CRLF () TypeScript Go Live Prettier
```

Figure 8 - Server Setup and DB Integration

Week 5: Frontend Development (Landing Page, Media Buzz, Previous & Upcoming events)

- Design and implement an engaging landing page that showcases the JMC department's key features and highlights.
- Develop the media buzz section to display resources, achievements, memories and testimonials to the department.
- Create UI components for displaying previous and upcoming events.
- Apply responsive design principles to ensure the landing page and event sections look visually appealing on different devices.
- Increase the visual appeal and engagement of the landing page by including images and videos.
- Implement smooth transitions to create an exciting user experience on the landing page.

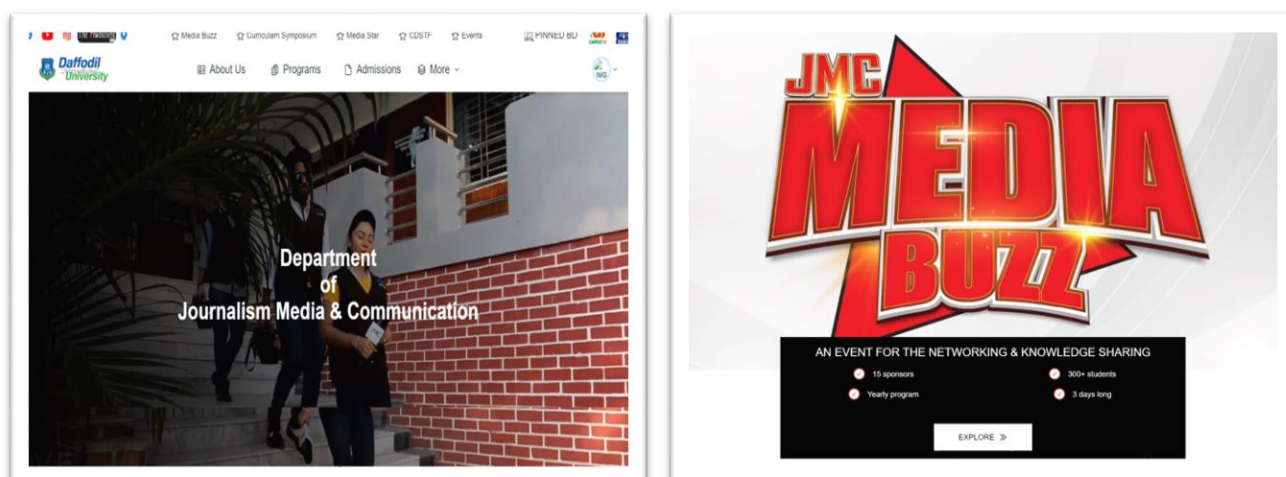


Figure 9- Landing Page Banner and Media Buzz Section

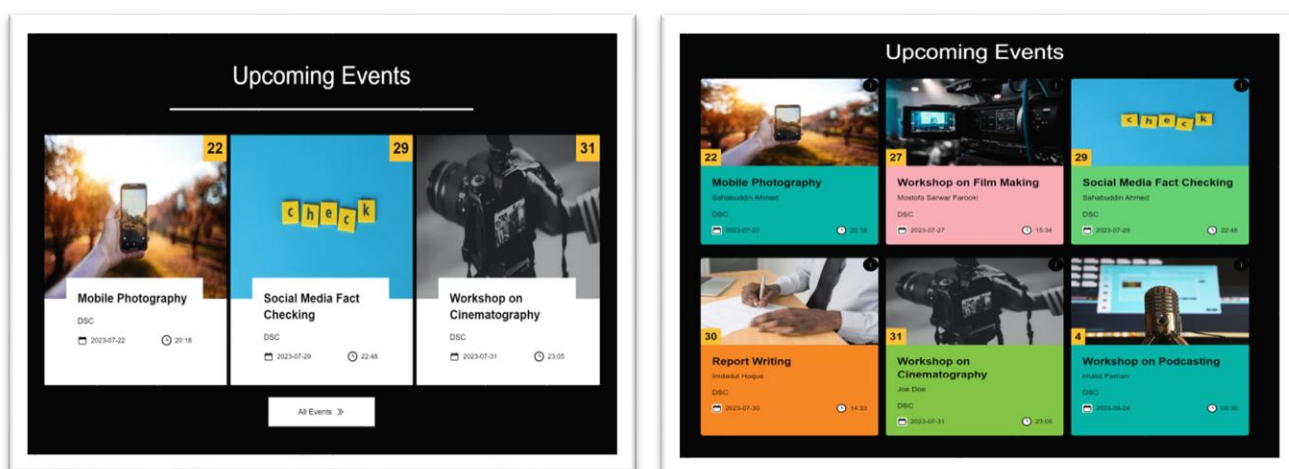


Figure 10 - Landing page event section and Event page section

Week 6: Admin Dashboard and Event Management

- Design and develop an admin dashboard with access controls and user roles.
- Create an interface for admin login, authentication, and authorization.
- Implement functionality to add, update, and delete events through the admin.
- Implement server-side logic to automatically remove upcoming events after the event date from the database.
- Test the admin dashboard using different admin accounts.
- Implement validation and error handling for event creation forms and update.
- Ensure proper error messages are displayed for admin actions to assist in troubleshooting.
- Enhance the admin dashboard's user interface for improved usability and aesthetic appeal.

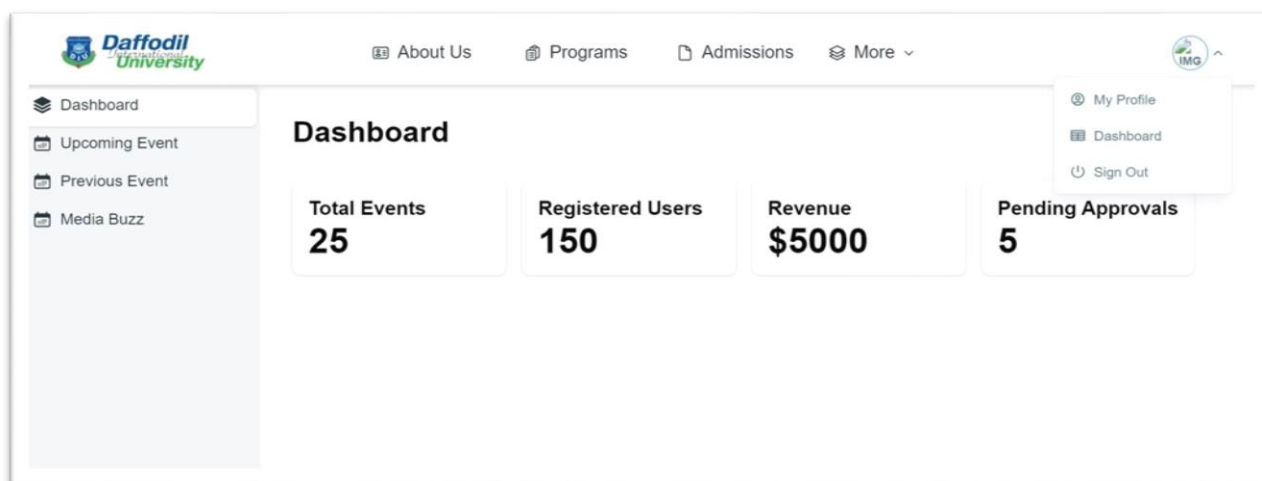


Figure 11 - Admin Dashboard

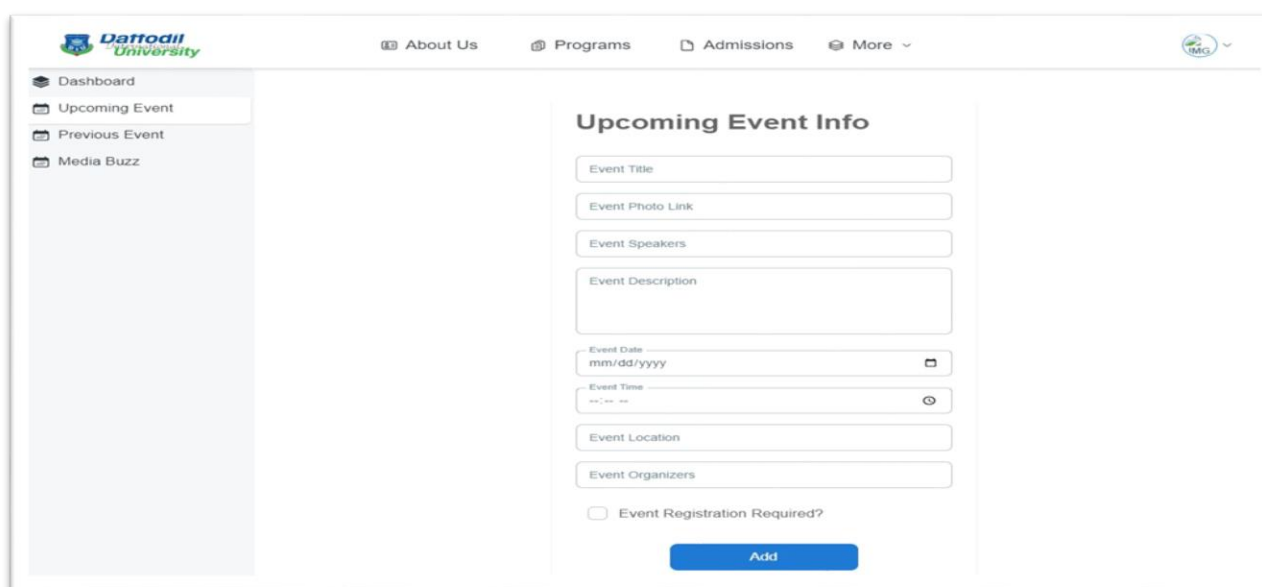


Figure 12 - Admin Dashboard Add Event Form

Week 7: Media Buzz Section Enhancement

- Refine the design and user interface of the media buzz section for better visual appeal.
- Implement features to add, update, and delete media buzz resources by the admin.
- Create a user-friendly interface for managing media buzz content.
- Implement server-side logic to display media buzz resources in a more efficient way.
- Optimize image and video loading and rendering for efficient performance, especially with large media files.
- Test the media buzz section's responsiveness.
- Implement caching mechanisms to improve the performance of content retrieval by using the React query package.
- Ensure responsive design for all sections.



Figure 13 - Media Buzz Section Landing and Details Page

Week 8: Frontend Refinement and UI Enhancement

- Conduct a thorough review of the front-end design and make necessary refinements.
- Refactor frontend code for improved readability, maintainability, and performance.
- Optimize the layout and styling of various sections based on feedback and design best practices.
- Implement UI enhancements, such as smooth transitions, hover effects, or micro interactions.
- Ensure consistency in design elements throughout the website.
- Test the responsiveness of different sections on various screen sizes and devices.

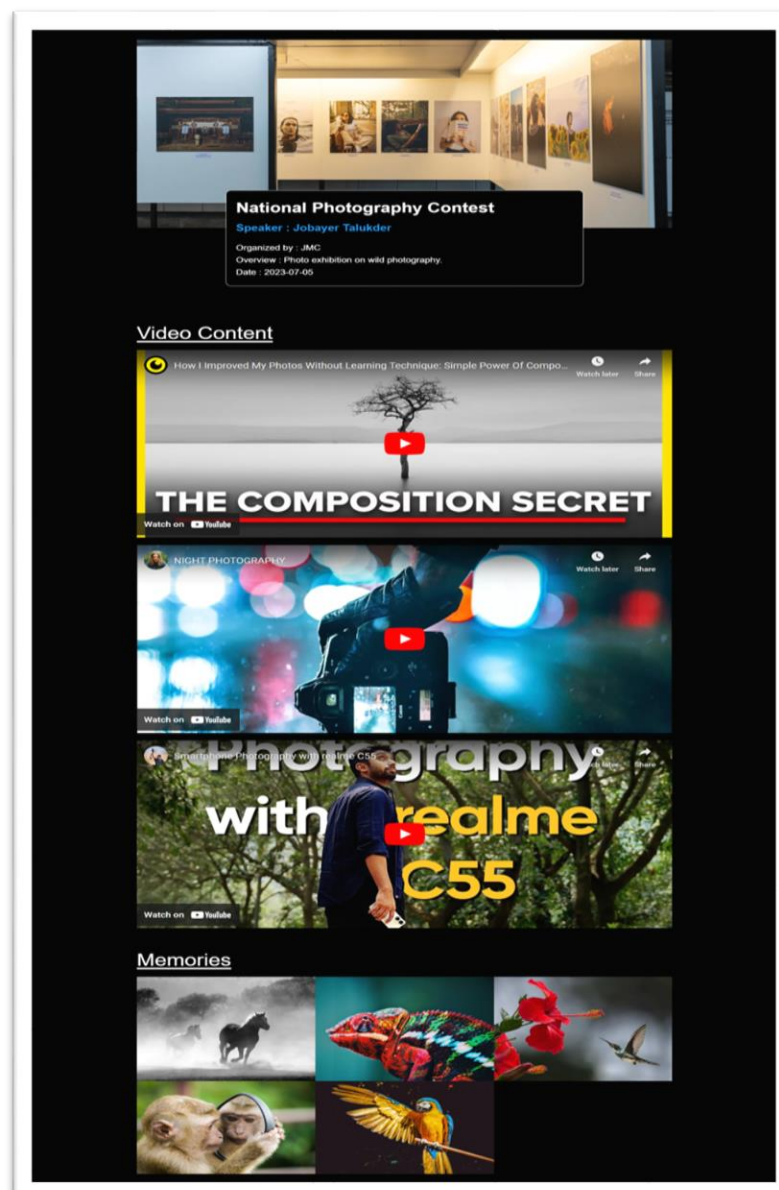


Figure 14 - Previous Event UI Template

Week 9: Other Events and JWT Authorization

- Design and implement UI components for displaying other events.
- Update the navbar section to include links and navigation related to other events.
- Implement JSON Web Token (JWT) authentication for admin authorization and protected routes.
- Create access controls to restrict certain admin functionalities to authorized users only.
- Test the JWT authentication and authorization system with admin roles.
- Implement error handling and appropriate error messages for unauthorized access attempts.
- Enhance the UI of the other events section for better user experience and aesthetics.
- Integrate upcoming event registration functionality, if applicable, and validate user input during registration.
- Optimize code and database queries for improved performance and security.

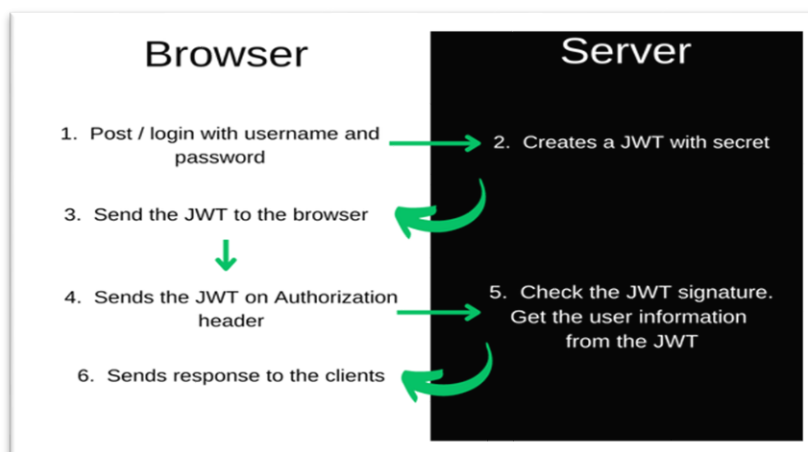


Figure 15 - Visual Representation of JWT

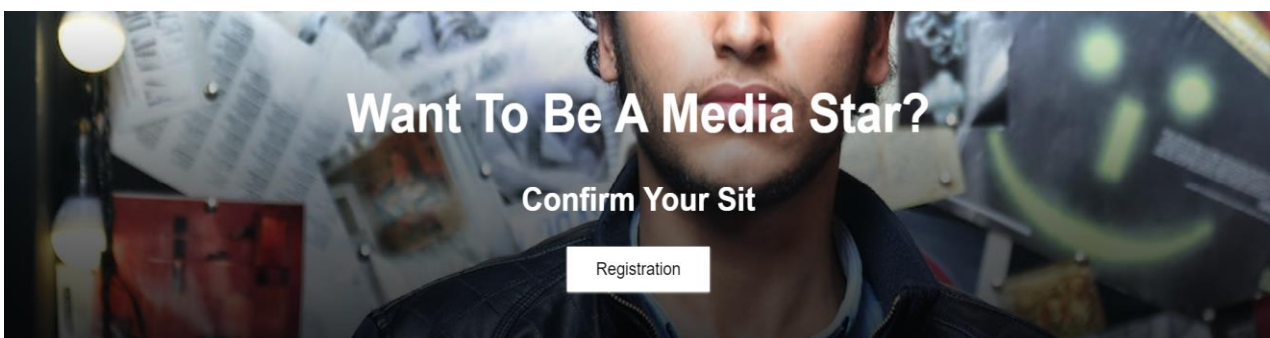


Figure 16 - Talent Hunt Section

Week 10: Additional UI Features and Code Refactoring

- Design and implement some other landing page UI components.
- Implement additional UI features, such as tooltips, modals, or collapsible sections.
- Refactor frontend code for improved code structure and readability.
- Conduct code reviews and address any identified issues or areas for improvement.
- Implement responsive design adjustments.
- Enhance error handling and display informative error messages by react-hot-toast to assist users in troubleshooting.

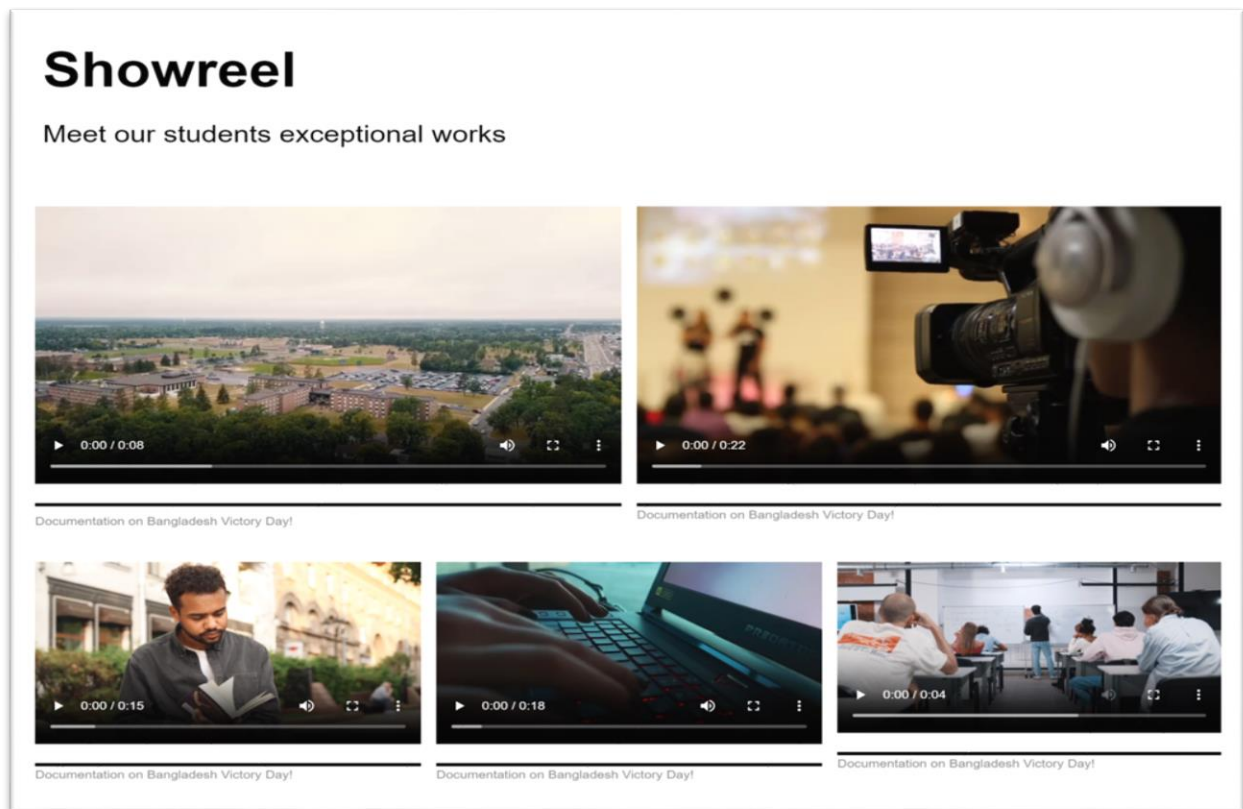


Figure 17- Showreel Section

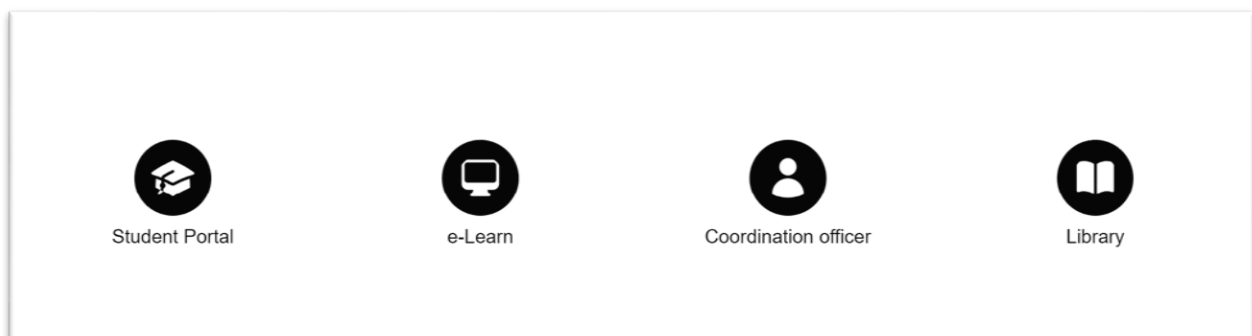


Figure 18 - Quick Links

Week 11: Feature Enhancements and Code Documentation

- Implement additional features, based on supervisor feedback and project requirements.
- Refine the front-end design and layout to align with the overall project vision.
- Document the project's codebase, including functions, classes, and important code segments.
- Ensure implemented features and functionalities are working accordingly.
- Implement performance optimizations, such as code minification.
- Update project documentation, including the README file, to provide clear instructions for running and deploying the website.



Figure 19 - CDSTF Event Section

Overview of the Program

The Department of Journalism, Media and Communication (JMC), DIU has organized this competition with the 'Be a Media Star' for the HSC passed students who are interested to study four-year bachelor program in Journalism, Media and Communication. It is regular signature event of the department to encourage the students to study in the department of Journalism, Media and Communication. The top performer of the competition will get special waiver to take admission in the department.

Assessment Process and Waiver

Assessment process will be in the grading system. Like, A+, A, and A-

- » A+ (plus) will get 100% tuition fees waiver and results have to be maintained at least SGPA 3.50
- » A (plain) will get 50 % tuition fees waiver and results have to be maintained at least SGPA 3.25
- » A- (minus) will get 25% tuition fees waiver and results have to be maintained at least SGPA 3.00

How to Participate

- » Complete your registration
- » Attend the briefing session
- » In the briefing session a topic will be given for writing a report
- » Write a Report
- » Submit your report
- » Attend the final interaction session
- » Win scholarship and take admission in the department of Journalism, Media and Communication

[Apply Now](#)

Figure 20 - Talent Hunt Details and Apply Form

Week 12: Project Analysis and Deployment

- Analyze the current state of the project, identifying strengths, weaknesses, and areas for improvement.
- Review the front-end design, UI/UX, functionality, and overall user experience.
- Implement final refinements and bug fixes.
- Identify and document possible improvements or features for the JMC website.
- Host the server on a free online hosting platform.
- Deploy the website on a hosting platform, such as Firebase.
- Take feedback on the website's performance, usability, and user satisfaction.

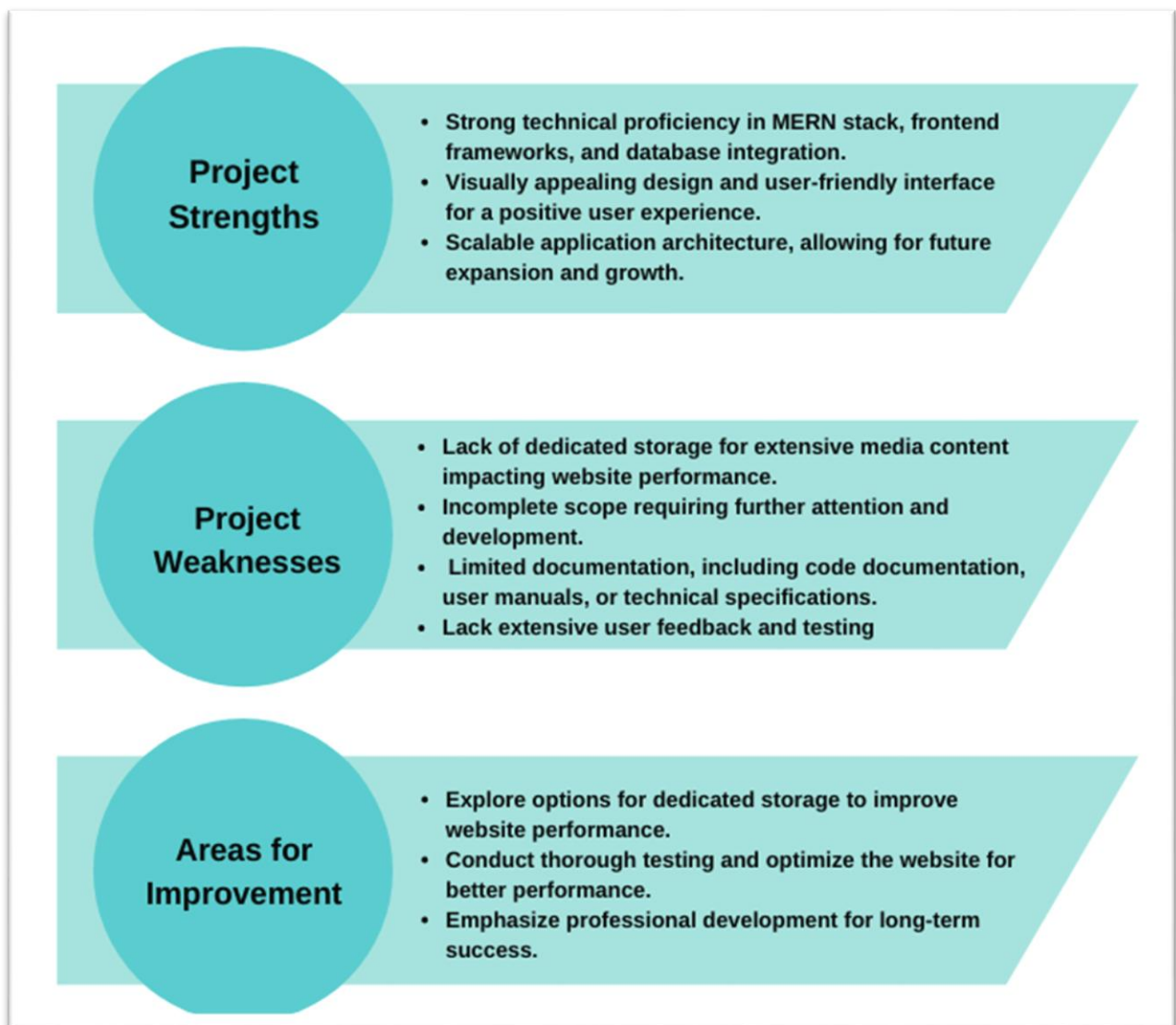


Figure 21 - Project Current State Analysis

3.2 Tools and Technologies Used

Frontend:

- React.js
- Tailwind CSS
- Material Tailwind
- React Router
- React Hot Toast
- React Hook Form
- TanStack Query

Backend:

- Node.js
- Express.js
- MongoDB
- Mongoose
- TypeScript

Authentication and Authorization:

- Firebase Authentication
- JSON Web Tokens (JWT)

Development Tools:

- Visual Studio Code (VSCode)
- Git
- Postman

Deployment and Hosting:

- Firebase
- Vercel

Chapter Four

Projects Current Standings and Future Scope

4.1 Current Standings of the Project

The website development project has made significant progress. Approximately 60% to 70% of the planned tasks were successfully completed. The website development process has been executed using the MERN (MongoDB, Express.js, React.js, and Node.js) stack, providing a strong foundation for the project. The front-end development has been mostly completed, with the initial design and layout implemented using React.js. Key sections, such as the landing page, media buzz page, previous and upcoming events, and other relevant pages, have been designed and integrated. The backend development has focused on setting up the Node.js server with Express.js and establishing a connection with the MongoDB database. The server has been modularly structured, facilitating scalability and maintainability. Database integration has enabled the storage and retrieval of data related to events and other relevant information. The website's authentication system has been implemented using Firebase Authentication, providing secure sign-up and sign-in and other essential functionality. User authentication has been integrated, allowing access to specific features and functionalities based on user roles. Department resources need to be added to the website to enrich the user experience. Event specifics, resources, and other relevant content must be uploaded to the website in order to provide users with complete information. Furthermore, more features, such as search functionality, pagination, and social sharing options, need to be implemented. With approximately 20 to 30 days of work remaining, there is an opportunity to refine the front-end design, smooth scrolling animation, optimize code, and improve overall performance.

4.2 Future Scope of the Project

This project has a lot of scope for future improvements and additions. One significant feature that can be implemented is an event registration and payment system. Allow users to register for upcoming events through the website and make secure payments. By introducing user-based roles, JMC students and faculty teachers can have distinct profiles. Students can manage and upload their works, showcase their achievements, and interact with fellow students. Faculty teachers can have additional privileges and access to manage student profiles and activities. Another useful addition would be to include a course or skill development section. This section offers tutorials and educational content on various topics related to journalism, media, and communication. The content is accessible through paid or free options. These additions will significantly enhance the website's value, attract more users, and foster a thriving online community within the JMC department.

Chapter Five

Conclusion

Several significant achievements have been made throughout the development of the JMC department's website. However, certain areas require attention and improvement for better performance and enhanced user experience.

5.1 Outcome

The outcome of the JMC department's website project has been highly positive. The website has successfully showcased the department's activities and initiatives, providing valuable information to its users. Visitors can easily navigate through the website and access the relevant information they seek. The utilization of the MERN stack has resulted in a robust and efficient website architecture. This stack allows for seamless integration of the front-end and back-end components, ensuring smooth user interactions and dynamic content delivery. The database connectivity ensures that the website can handle a large volume of data and deliver it to users in a timely manner.

The project also has a solid foundation for future developments and enhancements. The completion of the initial design and functionality has set the stage for further improvements. Overall, the project's outcomes demonstrate progress toward achieving its primary objectives of showcasing the JMC department's activities, centralizing resources, and promoting departmental advertisements.

5.2 Recommendations

5.2.1 Dedicated Storage for Media Content

The JMC website has a substantial amount of pictures and videos, but it doesn't have storage space specifically for media content. To manage such a large amount of media files, it is highly recommended to either invest in dedicated storage or explore more effective strategies to manage the thing. An efficient storage solution will greatly improve the website's performance.

5.2.2 Domain and Hosting

Another important factor to take into consideration is getting a dedicated domain and hosting for the website. The JMC department's website will have a distinct and easy-to-remember web address after purchasing a domain, strengthening its brand identity. Choosing reliable hosting services ensures users' 24/7 accessibility. A reputable hosting company also ensures that the website's data will be protected from potential cyber threats and will have the necessary technical support and security features.

5.2.3 Mobile Application Development

The JMC department's mobile app might significantly improve usability and increase exposure. It would be quick and simple for users to access the department's content. Through developing a mobile app, the department could expand its audience and possibly get more attention and engagement.

5.2.4 Support from DIU

It is advised to seek out additional support from Daffodil International University (DIU) to further improve the website's stability. Collaborating with DIU allows us to ensure the website meets the highest standards by offering helpful resources, technical know-how, and guidance. DIU's support may include regular technical audits, performance optimization, and maintenance.