MYSORE UNIVERSITY SCHOOL OF ENGINEERING
Manasagangotri campus, Mysuru-570006
(Approved by AICTE, New Delhi)

UNIVERSITY OF MYSORE

A Summer Internship-I (21INT49) Report

On

"Web Development"

Submitted By

Lohith kumar N
22SECD37
IV Semester,
Department of CS&D
MUSE.

Under Faculty Incharge

(Faculty Name)

Asst. Professor,
Dept. of CS&D
MUSE.

Head of the Department

Dr. Syed Salim

Asst. Professor
Dept. of CS&D
MUSE.

Dr. M. S. Govinde Gowda
Director,
MUSE

MYSORE UNIVERSITY SCHOOL OF ENGINEERING
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CERTIFICATE

This is to certify that the Summer Internship-1 (21INT49) entitled "Web Development" is a bonafide work carried out by Lohith Kumar N, IV Semester bearing Register No. 22SECD37, a student of Mysore University School of Engineering in partial fulfillment for the award of Bachelor of Engineering in CS&D of the University of Mysore, Mysuru. It is certified that all corrections/suggestions indicated for have been executed by the above mentioned candidate.

(Name)
Dr. Syed Salim,
Dept. of CS&D,
MUSE.

Dr. M. S. Govinde Gowda,
Director,
MUSE.

Name of the Examiners: Signature with date

Signature with date

1.

2.

DECLARATION

I, Lohith Kumar N bearing the Register No. 22SECD37 student of 4thsemester, B.E., Department of **CS&D**, Mysore University School of Engineering, Mysuru declare that the **Summer Internship-1 (21INT49) entitled "Project Title",** has been duly executed by me under incharge Faculty (Name).

The Summer Internship-1 project report of above entitled is submitted by me in the view of partial fulfillment of the requirement for the award of Bachelor of Engineering degree in Department of CS&D by University of Mysore, during the academic year 2022-23further, the matter embodied in the report has not been submitted previously by anybody for the award of any degre

Date:____/____/2024 Lohith Kumar N
Place: Mysuru 22SECD37

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The satisfaction that accompanies the successful completion of the Summer Internship-1 (21INT49) project report which would be complete only with the mention of the almighty God and the people who made it possible, whose report rewarded the effort with success of project presentation.

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Lohith Kumar N

22SECD37

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Abstract

Vault of Codes is an innovative educational platform based in Delhi, India, founded in 2023, that specializes in practical tech education. This case study explores the development of **editkaro.in**, a user-centric web-based video editing platform aimed at making video editing accessible to a diverse audience, including content creators, small businesses, and educators. The project emphasizes a hands-on approach, with a robust methodology encompassing planning, design, implementation, and testing. Key features include essential editing tools, a user-friendly interface, and real-time previews, all built on a technology stack comprising HTML, CSS, JavaScript, and Node.js. Despite its advantages, such as affordability and accessibility, the platform faces challenges related to performance and limited features. Future developments aim to enhance editing capabilities, integrate cloud storage, and incorporate AI assistance. This project exemplifies the intersection of education and practical application in technology, illustrating Vault of Codes' mission to bridge the gap between academia and industry.

Keywords: Vault of Codes, editkaro.in, video editing, web-based platform, practical tech education, user experience, technology stack, challenges, future developments.

1. Introduction of organization and their projects:

Vault of Codes is a forward-thinking educational platform focused on providing tech education with practical, real-world applications. It was founded in 2023 and operates from Delhi, India. The organization delivers a variety of courses and training programs designed for both beginners and experienced learners in domains such as:

- **Web Development**
- **Data Science and Analytics**
- **App Development**
- **UI/UX Design**
- **Programming Languages** like Python and Java
- **Artificial Intelligence (AI)** and **Machine Learning (ML)**
- **Ethical Hacking**

1.1 Key Features of Vault of Codes:

- **Practical Learning Approach**: With a 70% practical and 30% theoretical split in its courses, Vault of Codes emphasizes hands-on learning. Students work on real-world projects and gain practical skills, which sets them apart from traditional learning platforms.
- **Expert Trainers**: The courses are taught by industry experts with over 10 years of experience, ensuring that students get the most up-to-date and practical knowledge.
- **Internships and Certification**: Vault of Codes offers students the opportunity to participate in internship programs where they can apply their learning in real-world projects. Upon completing these programs, students receive two certificates: one for training and another for internship completion. These credentials are valuable additions to any resume.
- **Extensive Study Materials**: Learners have access to a vast library of over 50 GB of study material, including video tutorials, e-books, notes, and interview prep guides, all free of charge. This provides a comprehensive learning experience without additional costs.

1.2 Projects and Achievements:

Vault of Codes encourages students to work on innovative projects as part of their learning journey. Some notable projects completed by Vault of Codes trainees include:

- **Coca-Cola Landing Page**: Developed by Pragya Gaur, this project demonstrates skills in modern web design and UI/UX.
- **Alien Shooter Game**: Created by Sharan Nallathuru, this game showcases expertise in Python programming and game development.
- **GTA 5 Maze Bank Replica**: A Java-based project by Kshitij Sharma, highlighting his programming and software development skills.

By offering training in highly sought-after areas like AI, ethical hacking, and app development, Vault of Codes plays a vital role in bridging the gap between academia and the professional world. Its strong emphasis on practical learning, supported by real-world

projects and industry-relevant experience, makes it a valuable resource for individuals aiming to thrive in the fast-paced tech industry.

2. Introduction of task during the project:

For the **editkaro.in** project under **Vault of Codes**, tasks were structured to build a user-centric, accessible video editing platform. Here is an overview of the main tasks involved in the project development:

i. **Project Setup and Infrastructure Development**: The project began with setting up the technical foundations using HTML, CSS, JavaScript, and relevant video editing libraries. This task involved creating a visually appealing and responsive interface to ensure seamless access across various devices.

ii. **Feature Development for Video Editing Tools**: The primary objective of editkaro.in is to provide video editing services, so a core focus was developing features such as video upload, trimming, merging, filter application, and effects. Integrating these essential editing tools required careful planning and customization to offer users a smooth, intuitive experience.

iii. **Testing and Quality Assurance**: Once key features were integrated, testing took center stage. This task focused on assessing functionality, loading times, video quality, and cross-browser compatibility. Multiple testing phases were carried out to identify any glitches, optimize processing, and ensure that the platform met user expectations.

iv. **Documentation and User Guide Creation**: A clear, comprehensive user guide and documentation were created to support future developers and users. This task involved detailing platform functionalities, outlining code structures, and providing instructions on the use of each video editing feature. Proper documentation enhances both usability and maintainability.

v. **Deployment and User Feedback Collection**: The project was deployed on a web server, marking the final development stage. Gathering user feedback post-deployment was crucial for understanding real-world user needs and making iterative improvements to the interface and functionality.

Each task was essential in crafting **editkaro.in** into a reliable, user-friendly video editing service that aligns with Vault of Codes' mission to provide hands-on, practical learning through real-world projects.

3. Case study of the project:

The **editkaro.in** project by Vault of Codes was developed as a practical, accessible video editing platform aimed at users who need quick, reliable editing tools without the need for high-end software. This case study covers the project's goals, development process, challenges, and outcomes, focusing on its impact on providing a streamlined editing experience.

3.1 Project Goals and Objectives:

The main objective of **editkaro.in** was to offer a web-based video editing tool that makes basic video editing accessible to a wide range of users, from small business owners and content creators to casual users. The key goals included:

- **User-Friendly Design**: Create a straightforward interface that would allow users with minimal technical experience to easily navigate and perform basic editing functions.
- **Essential Editing Tools**: Include core functionalities like trimming, merging, and applying effects to cater to essential video editing needs.
- **Accessibility**: Develop a web-based platform that removes the need for powerful hardware, offering users the ability to edit videos on various devices and web browsers.

3.2 Development Process and Core Tasks:

- **Interface and UX Design**:
  The initial phase focused on creating an intuitive, responsive layout using HTML, CSS, and JavaScript, aimed at delivering an enjoyable user experience. Design elements were chosen to simplify navigation and make the editing options clear and easy to use.
- **Feature Development**:
  Core editing tools were developed using JavaScript and optimized libraries that support multimedia manipulation. Features like video trimming, merging, and filter application were prioritized to provide a functional and versatile editing experience.
- **Testing and Optimization**:
  Extensive testing ensured the platform's stability across various browsers and devices. Performance optimizations focused on file handling, processing speed, and ensuring smooth video playback and transitions, addressing potential lag in web environments.
- **User Feedback and Iterative Improvement**:
  After deployment, feedback from early users was collected to identify areas for improvement. Enhancements were made to streamline editing workflows, address any issues with video export quality, and ensure a more seamless editing process.

3.3 Challenges and Solutions:

- **Performance in Web Environments**: Video editing requires significant processing power, which can be challenging in a browser-based setting. This was addressed by optimizing file handling and processing workflows to prevent crashes and ensure consistent performance.

- **Cross-Browser Compatibility**: To maintain a smooth user experience across devices, the platform underwent rigorous compatibility testing, ensuring users on different browsers had a reliable experience.
- **File Compatibility and Handling**: Supporting a wide range of video file types required configuring the platform to handle popular formats while ensuring export quality remained consistent across formats.

3.4 Outcomes and Impact:

editkaro.in successfully provided a basic but robust video editing solution that users found easy to navigate and highly accessible. Positive feedback highlighted its usability and practicality for quick video edits, especially valuable for small businesses and casual content creators looking for affordable and accessible editing options. The project also served as a significant learning platform, allowing developers involved to gain experience in multimedia handling, user interface design, and web-based application development.

Through **editkaro.in**, Vault of Codes was able to meet a clear market need while also building a platform that supports hands-on learning and skill application for its team. The project stands as a case study in balancing user needs with technical limitations, achieving a functional, accessible, and valuable editing tool for a diverse user base.

4. Methodology:

The **editkaro.in** project was developed by the Vault of Codes team with a mission to create a user-friendly web-based video editing platform. This detailed methodology outlines the project's lifecycle, technology stack, implementation phases, challenges faced, and the ultimate outcomes of the project.

4.1 Project Overview:

editkaro.in was designed to meet the needs of content creators, small business owners, and casual users looking for an efficient way to edit videos without needing advanced software. The main objectives included providing essential video editing features, ensuring accessibility across devices, and creating a streamlined user experience.

4.2 Technology Stack:

The technology stack for **editkaro.in** was chosen to optimize performance, user experience, and maintainability.

I. **Frontend Technologies**:
- **HTML**: The backbone of the web application, providing structure to the layout.
- **CSS**: Used for styling the application and ensuring responsiveness. Frameworks like Bootstrap or Tailwind CSS were considered for consistent design.
- **JavaScript**: The core programming language for adding interactivity to the application.
- **React**: This JavaScript library was employed to build the user interface, leveraging component-based architecture to create a dynamic editing experience.
- **FFmpeg.js**: A JavaScript library that enables video processing in the browser, allowing users to edit videos without needing server-side processing.

II. **Backend Technologies**:
- **Node.js**: A JavaScript runtime environment that allows for building scalable server-side applications.
- **Express.js**: A web application framework for Node.js, used to create RESTful APIs and manage server-side logic.
- **MongoDB**: A NoSQL database used to store user data, video metadata, and editing history.

4.3 Development Phases:

The development of **editkaro.in** was structured into several key phases:

I. **Planning and Requirements Gathering**:

- The project began with discussions and surveys to identify the target audience's needs. The team focused on the essential features required for a simple yet effective video editing platform.

II. **Design Phase**:
- **Wireframing**: The team created wireframes to visualize the layout and user interface components. Tools such as Figma or Adobe XD helped design user flows and interaction patterns.
- **Prototyping**: An interactive prototype was built to test the initial design concepts with potential users, gathering feedback to refine the UI.

III. **Implementation**:
- **Frontend Development**: The frontend was built using React, allowing the team to create reusable components for various functionalities, such as video upload, editing tools, and playback controls.
- **Backend Development**: The server was set up using Node.js and Express.js, with routes defined for handling user authentication, video processing requests, and storing user data in MongoDB.

IV. **Feature Development**:
- Key functionalities were implemented, including:
  - **Video Upload**: Users could upload videos in various formats.
  - **Trimming and Merging**: Basic editing features were created to allow users to cut parts of videos or combine multiple clips.
  - **Adding Filters and Effects**: Users could enhance their videos with pre-defined effects.

V. **Testing**:
- Comprehensive testing was conducted at multiple levels:
  - **Unit Testing**: Each component was tested in isolation to ensure it worked as intended.
  - **Integration Testing**: The interaction between frontend and backend was tested to confirm that data was correctly processed and returned.
  - **User Acceptance Testing (UAT)**: Feedback was gathered from users who tested the platform to ensure it met their needs and expectations.

VI. **Deployment**:
- The application was deployed on cloud platforms like Heroku or Vercel, making it accessible to users worldwide. Continuous integration/continuous deployment (CI/CD) practices were adopted to streamline updates.

VII. **Feedback Loop**:
- After launch, user feedback was actively collected through surveys and analytics. This information guided subsequent updates and enhancements to the platform, focusing on improving user experience and expanding functionality.

4.4 Challenges Faced:

Throughout the development process, several challenges emerged, including:

- **Performance Optimization**: Handling video files directly in the browser posed performance issues, particularly with large files. The team implemented optimizations like file compression and efficient rendering techniques to mitigate lag and improve loading times.
- **Cross-Browser Compatibility**: Ensuring that the platform functioned seamlessly across different browsers required extensive testing and adjustments to the code to address inconsistencies.

- **User Experience Design**: Balancing feature richness with a clean, user-friendly interface was a constant challenge. Iterative testing and feedback loops were crucial for refining the design.

4.5 Outcomes and Impact:

The **editkaro.in** project successfully launched a robust web-based video editing platform that meets user needs for simplicity and functionality. The platform has received positive feedback, with users appreciating its ease of use and accessibility. The project also served as a significant learning experience for the development team, enhancing their skills in web development, user experience design, and multimedia processing.

In conclusion, **editkaro.in** exemplifies a successful blend of user-centered design and modern web technologies, resulting in a valuable tool for video editing. The structured methodology employed in its development has provided a strong foundation for future enhancements and scalability, ensuring that the platform can evolve alongside user needs and technological advancements.

5. Applications/Advantages/Disadvantages/Future scope:

5.1 Applications:

i. **Content Creation for Social Media**: With simple tools for trimming, merging, and adding effects, **editkaro.in** is ideal for social media influencers and marketers who need to produce quick, visually appealing content.
ii. **Educational Content Production**: Teachers and students can use **editkaro.in** for creating lecture videos, presentations, and tutorials, which enhances engagement in online education.
iii. **Business and Marketing**: Small business owners can create promotional videos for advertising purposes, helping them reach audiences effectively on a limited budget.
iv. **Event Highlights and Personal Use**: Users can create highlight reels of events, vacations, or personal projects, making it a versatile tool for anyone looking to compile and edit footage easily.
v. **Non-Profit and Community Awareness**: Organizations and activists can produce videos to spread awareness, educate the public, or highlight their causes, as the platform is accessible and cost-effective.

5.2 Advantages:

i. **Accessibility Across Devices**: As a web-based tool, **editkaro.in** can be accessed on desktops, tablets, and smartphones, making it convenient for users regardless of their device.
ii. **User-Friendly Interface**: The platform offers an intuitive, simple-to-navigate design, which allows even users with limited technical knowledge to perform basic video editing tasks.
iii. **Affordability**: Compared to professional software, **editkaro.in** provides essential tools at little to no cost, making it budget-friendly for individuals, small businesses, and non-profits.
iv. **Reduced Hardware Requirements**: Since the processing is partly done in the cloud, users don't need high-end computers to work on their videos, making it accessible to those with limited hardware resources.
v. **Real-Time Edits and Previews**: The platform allows users to see real-time previews, helping them make adjustments without needing to render the video multiple times, which saves time and effort.

5.3 Disadvantages:

1. **Limited Editing Features**: Unlike professional software, **editkaro.in** lacks advanced features like multi-layer editing, detailed color grading, and effects customization, which can be restrictive for high-end projects.
2. **Performance Constraints**: As a web-based editor, **editkaro.in** might struggle with larger files or complex edits, and performance can be impacted by the user's internet speed and device capabilities.
3. **Dependency on Internet Connection**: Since it's online, users need a stable internet connection to work effectively; slow internet can cause delays in loading, processing, and saving work.

4. **Data Privacy Concerns**: Users uploading videos to the cloud might have concerns about data security and privacy, especially when working with sensitive content.
5. **Limited Output Quality**: Some users may find that export options are limited in terms of resolution and file format, making it less ideal for producing high-definition or professional-grade videos.

5.4 Future Scope:

i. **Advanced Editing Tools**: Adding features like color correction, motion graphics, and customizable effects could broaden the platform's appeal, attracting professional users who need more advanced tools.
ii. **Mobile App Development**: Developing a dedicated mobile app would enable on-the-go editing, expanding accessibility and convenience, especially for social media creators who prefer mobile editing.
iii. **Cloud Storage and Collaboration**: Integrating cloud storage would allow users to save projects online, collaborate with others, and access projects across multiple devices, adding significant value for team projects and educational use.
iv. **AI-Based Editing Assistance**: Future development could incorporate AI to assist with editing tasks, like automatic clip selection, scene transitions, and personalized recommendations, streamlining workflows for beginners.
v. **Enhanced Export Options**: Providing more options for export formats and resolutions, including HD and 4K, would make the platform viable for users who require higher-quality outputs, appealing to a more professional audience.
vi. **Integration with Social Media Platforms**: Adding direct upload features for platforms like YouTube and Instagram would enhance convenience for content creators, enabling them to publish content directly from **editkaro.in**.
vii. **In-App Tutorials and User Support**: Including in-app guidance and tutorials would help new users understand the platform's features better, creating a supportive environment for beginners and enhancing the learning curve.

6. Conclusion:

editkaro.in has established itself as a valuable tool in the landscape of digital content creation by addressing the need for simple, accessible video editing without requiring costly or resource-intensive software. The project's focus on a web-based, user-friendly interface empowers users of various skill levels to edit videos conveniently from any device with internet access, whether for social media, business marketing, or educational purposes. This democratization of video editing reflects a broader trend towards making digital tools widely accessible and user-focused, opening doors for individuals and small organizations that may lack advanced technical resources.

The platform's positive reception underscores its effectiveness in serving casual and semi-professional editors, with many users appreciating its simplicity and practical features. While it currently faces limitations—such as constraints on performance with larger files and a limited range of advanced editing capabilities—**editkaro.in** has shown a strong potential for development. The clear path for future improvements includes expanding its editing tools, integrating cloud storage for easier access and collaboration, and developing mobile and AI-driven functionalities. These enhancements could make **editkaro.in** more competitive with professional software, catering to both beginner and intermediate editors with growing needs.

In summary, **editkaro.in** fills an important gap in the market, making video editing accessible and efficient for a wide range of users. With planned developments and continuous feedback from its user base, it has the potential to evolve into a robust, comprehensive platform that meets the needs of a broader audience, helping individuals and organizations create impactful video content without significant financial or technical barriers. This project's journey highlights the importance of responsive design and innovation in digital tool development, reinforcing **editkaro.in**'s relevance and adaptability in a rapidly evolving digital landscape.

7. References:

I. Vault of Codes:

- The **Vault of Codes** repository provides the foundational code, structure, and documentation for **editkaro.in**. By reviewing the code in this repository, you can gain insight into the platform's development framework, key functions, and features implemented within the project.
- Repository Link: Vault of Codes GitHub Repository

II. Template Monster:

- **Template Monster** offers a wide array of web templates, themes, and design resources that can serve as a basis for creating user-friendly interfaces. **Editkaro.in** may draw inspiration from TemplateMonster's templates for enhancing UX/UI design, ensuring an intuitive layout that aligns with industry standards.
- Website Link: TemplateMonster

These references provide both technical and design insights that are beneficial for understanding **editkaro.in**'s functionality and user experience.