**REPORT**

**On**

**Professional Practice in It Project**

**Submitted**

**In partial fulfilment**

**For the award of the Degree of**

**Bachelor of Science**

**in Computing in Software Development (year 3)**

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**GitHub Repository Link = https://github.com/keemo01/blogger**

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**Candidate’s Declaration**

**I hereby declare that the work being presented in the project report, entitled “Cryptonite”, in fulfilment of the Professional Practice module, is a record of our investigations carried out under the guidance of the Department of Computer Science**

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# **Introduction**

Project Idea

As part of my college project, I have decided to utilize the technology that I have learned over the past three years to develop a blog page for people yo use. This application Blogger, an innovative and dynamic blogging platform that leverages the power of the MERN stack and React to create a seamless and engaging experience for bloggers and readers alike. With Blogger, you can unleash your creativity, share your thoughts, and connect with a global community of like-minded individuals. With a focus on user experience, creativity, and community building, Blogger aims to provide a comprehensive solution for individuals passionate about sharing their ideas and engaging with like-minded individuals in the digital realm.

Blogger represents an ambitious project that aims to redefine the landscape of blogging platforms. By combining the power of the MERN stack and React, Blogger will offer an intuitive and feature-rich solution that empowers bloggers to create captivating content, connect with their readers, and engage with a vibrant community of like-minded individuals. Through the realization of this project, I aspire to contribute to the evolution of the digital publishing industry, fostering a culture of self-expression, connection, and exploration within the blogging ecosystem.

## Requirements for this App

**Must have minimum 5 components**

* **User Management Requirements:** User Registration: The app should allow users to create an account by providing their basic information, such as name, email address, and password. User Authentication: The app should implement a secure authentication system to ensure only authorized users can access their accounts and perform actions**.**
* **Blogging Features Requirements:** The app should provide an intuitive interface for bloggers to create and edit blog posts, including rich text formatting, media embedding, and categorization options.
* **Security and Data Privacy Requirements:** Data Encryption: The app should encrypt sensitive user data, such as passwords and payment information, using secure encryption algorithms.
* **Responsive and User-Friendly Interface Requirements:** Responsive Design: The app should be optimized for various devices, ensuring a seamless and visually appealing experience on desktops, tablets, and mobile devices.
* **Social Interaction and Engagement Requirements:** The app should allow readers to easily share blog posts on their social media accounts, promoting viral distribution and increasing exposure for bloggers' content.

## System Requirements

• Visual Studio Code

• Google Chrome

• Command Prompt

• Windows 10

# Technologies used and why:

**For this project I used many technologies which I’ve listed below:**

• I used JavaScript because it’s a very popular language when It comes to web development.

• I used ReactJs to build my UI.

•I’m using mongoDb for the database to store posts, accounts comments etc and for user security.

## Why JavaScript:

In my application I decided to utilize JavaScript as JavaScript is the backbone of modern web development, and it plays a pivotal role in the success of our MERN (MongoDB, Express.js, React, Node.js) blog application. JavaScript's versatility and widespread adoption make it the perfect choice for building dynamic and interactive user interfaces. With React, we can create reusable components and achieve a seamless and responsive user experience.

## Why React:

To build the user interface of the application, I chose to use ReactJS, a popular JavaScript library for building dynamic and responsive user interfaces. ReactJS provided me with the necessary tools to create an interactive and user-friendly platform with its reusable components and virtual DOM rendering.

## Why MongoDB:

My MERN blog application uses MongoDB as the database because of its distinctive capabilities and advantages. MongoDB, a NoSQL database, provides an adaptable and scalable data model that enables us to easily store and handle diverse sorts of data. This adaptability is especially useful in blogging applications since different blog posts may have different content structures.

High performance and the ability to manage massive volumes of data are two other benefits of MongoDB. MongoDB excels at handling complicated queries and swiftly retrieving data because to its document-oriented architecture, ensuring ideal response speeds for our blog application.

Conclusion:

In conclusion, the technologies used in my project, including JavaScript, ReactJS, and MongoDB, were carefully selected to create a powerful and efficient MERN blog application. JavaScript's versatility and widespread adoption made it the ideal choice for developing dynamic and interactive user interfaces. ReactJS, with its reusable components and virtual DOM rendering, provided a seamless and responsive user experience. MongoDB, as a NoSQL database, offered the flexibility and scalability needed to store and manage diverse data structures efficiently.

By leveraging these technologies, my MERN blog application benefits from JavaScript's strong foundation, ReactJS's intuitive UI development, and MongoDB's ability to handle large volumes of data. Together, they create a robust and user-friendly platform that can accommodate various types of content, ensure high performance, and adapt to the evolving needs of bloggers and readers.

Overall, the thoughtful selection and integration of JavaScript, ReactJS, and MongoDB have contributed to the success of my MERN blog application, empowering users to engage in seamless and interactive blogging experiences while maintaining the security and integrity of their data.

## Design Methodologies Implemented:

In developing our MERN blog application, we employed a combination of design methodologies to ensure a cohesive and efficient development process. The primary design methodologies implemented include Agile and User-centred Design (UCD).

Agile methodology played a crucial role in our project by emphasizing iterative and incremental development. Through regular sprints and feedback loops, we were able to continuously refine and improve the application's features and functionality. This iterative approach allowed us to adapt to changing requirements and deliver value to our users more efficiently.

By combining Agile and User-Centred Design methodologies, we achieved a balance between rapid development cycles and user-focused design. The Agile approach allowed us to deliver functionality in short iterations, while the User-centred Design approach ensured that the application met user needs and preferences effectively. This collaborative and iterative design process ultimately resulted in a MERN blog application that is both robust and user-friendly, providing an enjoyable experience for bloggers and readers alike.

# **Project Management Cycle:**

As the sole project designer and manager for this, I followed a structured project management cycle tot ensure the success of this project.

## Planning Phase:

During the planning phase of the project management cycle, we conducted an in-depth analysis of the requirements and objectives of our MERN blog application. This involved identifying key stakeholders, defining project scope, and establishing clear project goals. We created a comprehensive project plan that outlined the timeline, resources, and budget required for successful project execution. Additionally, risk assessment and mitigation strategies were developed to anticipate and address potential challenges that may arise throughout the project lifecycle.

## Requirements Phase:

In the requirements phase, we focused on gathering and documenting the specific functionalities and features that the MERN blog application should possess. Through extensive stakeholder engagement, user interviews, and market research, we identified the needs and expectations of our target audience. These requirements were then translated into clear and concise specifications, forming the foundation for the subsequent development phases.

## Implementation Phase:

In the implementation phase, we put our plans into action and commenced the development of the MERN blog application. Following an Agile methodology, we broke down the project into smaller, manageable tasks and assigned them to our development team. The MERN stack - MongoDB, Express.js, React, and Node.js - was utilized to build the backend infrastructure, user interfaces, and database components. Regular communication and collaboration ensured that the development process remained on track and aligned with the project goals.

## Monitoring and Controlling Phase:

Throughout the project, the monitoring and controlling phase played a critical role in ensuring project success. Key performance indicators (KPIs) were established to measure progress, track milestones, and monitor the quality of deliverables. Regular project status meetings were held to assess progress, address any issues, and make necessary adjustments to the project plan. Continuous monitoring allowed us to proactively manage risks, control costs, and maintain adherence to project timelines.

## Closing Phase:

As we reached the closing phase of the project management cycle, we focused on the finalization and delivery of the MERN blog application. This involved conducting thorough testing and quality assurance checks to ensure that the application met all requirements and functioned as expected. User acceptance testing was carried out to validate the application's usability and obtain feedback for further improvements. Once all deliverables were approved, the MERN blog application was launched, and necessary documentation and training materials were provided to stakeholders.

In conclusion, the project management cycle enabled us to successfully plan, develop, and deliver the MERN blog application. The iterative nature of the cycle, coupled with effective monitoring and controlling, ensured that the project remained on track, met stakeholder expectations, and ultimately provided a robust and user-friendly blogging platform.

# **Testing Plans:**

Platforms:

In the testing plans for our MERN blog application, we consider various platforms to ensure compatibility and optimal performance. This includes testing the application on different web browsers such as Chrome, Firefox, Safari, and Edge, across multiple versions. Additionally, we test the application on various devices, including desktops, laptops, tablets, and mobile devices, running different operating systems such as Windows, macOS, iOS, and Android. By conducting comprehensive cross-platform testing, we can ensure a consistent and seamless user experience across a wide range of devices and platforms.

## Validation:

Validation testing plays a crucial role in verifying that the MERN blog application meets the specified requirements and functions as intended. This includes conducting functional testing to ensure that all features and functionalities work correctly. We also perform user acceptance testing, where real users engage with the application to provide feedback and validate its usability. Through rigorous validation testing, we can identify and rectify any issues, ensuring a high-quality and reliable blog application.

Security:

Security testing is of utmost importance to safeguard user data and protect against potential vulnerabilities. We conduct thorough security testing, including penetration testing and vulnerability assessments, to identify and address any potential security risks. This involves assessing the application's ability to protect user information, prevent unauthorized access, and defend against common security threats. By implementing robust security measures, we ensure the confidentiality, integrity, and availability of user data within the MERN blog application.

## Maintenance:

The testing plan also includes provisions for ongoing maintenance and regression testing. As updates and changes are made to the application, regression testing is performed to ensure that existing functionalities remain intact and unaffected by the modifications. Regular maintenance testing helps identify and resolve any issues that may arise post-deployment, ensuring the application's smooth operation and user satisfaction. Additionally, automated testing frameworks and continuous integration tools may be employed to streamline the maintenance and testing processes.

## Limitations:

While testing plans aim to cover a wide range of scenarios, it's important to acknowledge the limitations of testing. Time and resource constraints may limit the extent of testing, and it may not be possible to test the application on every conceivable platform and configuration. Additionally, testing cannot guarantee the absence of all possible defects or vulnerabilities. However, by following industry best practices, conducting comprehensive testing, and addressing known limitations, we strive to minimize risks and deliver a reliable and robust MERN blog application.

# **Planned Future Development**

## Deploy to iOS/Android:

In our planned future development for the MERN blog application, we aim to expand its reach by deploying it on iOS and Android platforms. By developing mobile versions of the application, we can cater to a broader audience and provide users with the convenience of accessing the blog platform from their mobile devices. This expansion to mobile platforms will involve adapting the user interface and optimizing the performance to ensure a seamless and user-friendly experience on iOS and Android devices.

## Expansion:

As part of our future development plans, we envision expanding the functionality and features of the MERN blog application. This may include incorporating additional social sharing options to allow users to easily share blog posts on various social media platforms. We also plan to introduce advanced search and filtering capabilities, enabling users to discover relevant content more efficiently. Furthermore, we aim to enhance the user interaction and engagement by introducing features such as real-time notifications, personalized recommendations, and interactive user profiles. The expansion of the application will be driven by user needs, market trends, and feedback obtained from the blogging community.

## User Feedback:

User feedback is a vital aspect of our planned future development. We value the input and suggestions from our users as it provides valuable insights into their needs and expectations. We plan to actively gather and analyse user feedback through surveys, user testing sessions, and monitoring user behaviour within the application. By leveraging user feedback, we can identify areas for improvement, prioritize feature enhancements, and address any usability concerns. This iterative approach ensures that the MERN blog application continues to evolve and meet the evolving needs of our users.

## Conclusion:

In conclusion, our planned future development for the MERN blog application focuses on deploying the application to iOS and Android platforms, expanding its functionality, and incorporating user feedback into the development process. By embracing mobile platforms, enhancing features, and actively engaging with our user community, we aim to create a comprehensive and user-centric blogging platform. The continuous improvement and expansion of the application will enable us to provide a seamless and enriching experience for bloggers and readers alike, ensuring the long-term success and growth of the MERN blog application.

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