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Proposal Report for: Interactive OS Learning(i-OS Learn)

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1.0 PROJECT PLAN

1.1 Introduction

In today's educational environment, students increasingly prefer online platforms over traditional textbooks due to the latter's lack of engagement and static nature. Modern learners are captivated by interactive and visually appealing content that includes elements such as gamified quizzes, vibrant notes, and concise, engaging materials.

To meet these needs, we introduce the Interactive OS Learning (i-OS Learn) platform. This project is designed to enhance the learning experience for Operating System (OS) courses by providing a dynamic and self-directed approach to education. Rather than relying solely on lectures, students can explore course content independently through this interactive platform.

Developed using HTML, CSS, and PHP, and utilizing Sublime Text for development, the i-OS Learn platform ensures a user-friendly and responsive experience across various devices, including both mobile and desktop. The platform integrates engaging quizzes that turn learning into a fun and interactive activity, and features colorful, simplified notes that break down complex topics into easily digestible segments.

The design is responsive, ensuring that the platform is accessible and functional on a range of devices, making it convenient for students to learn anytime, anywhere. It also supports self-paced learning, accommodating different learning speeds and styles, and incorporates multimedia elements like videos and animations to enhance the educational experience.

By combining these features, the i-OS Learn platform aims to transform the learning process for OS students, making it more engaging and effective, and encouraging a more proactive approach to their education.

1.2 Problem Statement

i. Students often find their self-learning process for OS courses monotonous and unengaging, primarily due to the reliance on lengthy, text-heavy notes that lack interactive elements. This boredom can lead to decreased motivation and reduced exploration of the subject matter.

ii. Additionally, the lack of interactive and practical elements in the learning materials can further disengage students, making it difficult for them to connect theoretical concepts with real-world applications. This results in a passive learning experience that fails to stimulate curiosity and deeper understanding. For example, virtual labs and real-world simulations are highly effective in teaching complex topics like operating systems, as they offer students the opportunity to apply theoretical concepts in a controlled environment(Rapid eLearning Blogs – CommLab India).

iii. Student also doesn't like on the paper quiz. They more like that quiz that has some of game on it.

1.3 Objectives

An objective of this project are:

i. To provide a comprehensive and interactive platform that covers key concepts in OS courses.
ii. To ensure accessibility and usability across different devices and platforms to accommodate diverse learning needs.
iii. To ease student to learn about OS courses at everywhere.

1.4 Scope of the project

The table below outlines the project's scope, this project involves the design, development and implementation of Interactive OS Learning(i-OS Learn) website . This website will allow student to exploring about OS course, which is they can read the notes, or answering a quiz in the website.

User Scope	System Scope
Students – will make PBU student exploring about OS courses by themselves.	Provide an interactive user interface for student for them learning the courses.
Developers – build an interactive web design system that has an attractive element to attract student attention such as : (i) Colourful and simplified notes (ii) Gamified quiz (iii) Accessibility feature (iv) Adaptable website – can be adapt access by mobile or desktop	Do an improvement to the system based on student feedback.

1.5 Project Significance

The project Interactive OS Learning(i-OS Learn) has plenty of significance in improving a learning platform of Operating System courses and ease the learning process of a polytechnic student in Malaysia.

1.5.1 Enchance of User Experince

The Personalized Learning Dashboard will provide users with a centralized hub for all their educational activities, including course materials, assignments, grades, and feedback.

1.5.2 Improved User Experience

The website will have an interactive user experience and improvise user experience, so the learning platform will become more attractive and gain a likes for a student that learning a same course.

1.5.3 Integration of Interactive Learning Tools

The Interactive OS Learning(i-OS Learn) website will integrate various interactive learning tools such as notes, interactive game quiz, and virtual labs tailored to Operating System courses. These tools will offer a hands-on learning experience, allowing students to apply theoretical knowledge in practical scenarios.

1.5.4 Enhanced Accessibility and Support

The project will focus on improving accessibility features, ensuring that the platform is usable by students with diverse needs. This includes implementing screen reader, keyboard navigation, and customizable text sizes.

1.6 Literature Review

The development of online learning platforms has seen rapid advancements due to technological innovations and changing educational needs. This literature review delves into the evolution of online learning systems, their impact on educational outcomes, and the technological frameworks that underpin these platforms.

There are three existing interactive website for comparison, such as :

i. BBC Bitesize(https://www.bbc.co.uk/bitesize)
ii. Study Jams(https://studyjams.scholastic.com/)
iii. Science Bob(https://sciencebob.com/)

1.6.1 Personalized Learning and Adaptive System

Personalized learning systems have become a critical component of modern educational technology. Adaptive learning platforms use algorithms to tailor educational content to individual student needs, improving engagement and learning outcomes. Technologies such as machine learning and data analytics are employed to analyze student performance and adjust learning paths accordingly. This personalized approach has been shown to increase student achievement and satisfaction, making it a key area of focus in online learning research (Walker et al., 2019).

1.6.2 Interactive Learning Tools

Interactive tools have revolutionized online education by making learning more engaging and effective. Simulations, virtual labs, and interactive quizzes play a significant role in providing hands-on learning experiences. These tools help students grasp complex concepts by allowing them to apply knowledge in practical scenarios. Research shows that interactive learning not only enhances understanding but also boosts student motivation and retention (Brown & Green, 2018).

1.6.3 Gamification in Education

Gamification techniques have been increasingly integrated into online learning platforms to enhance student motivation and engagement. Game design elements, such as rewards, leaderboards, and challenges, can be used to create a more engaging learning environment. By incorporating these elements, online learning platforms can make educational content more appealing and encourage students to stay motivated and invested in their learning journey (Deterding et al., 2011).

1.6.4 Accessibility and Inclusivity

Ensuring that online learning platforms are accessible to all students is essential for creating an equitable educational environment. Accessibility features such as screen readers, keyboard navigation, and customizable text sizes are crucial for accommodating students with diverse needs, including those with disabilities. These features help ensure that the platform provides equal learning opportunities for everyone (Burgstahler, 2015).

1.6.5 Summary

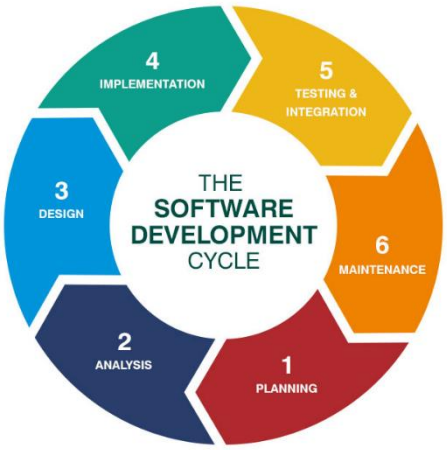
Table below show differences between 3 website :

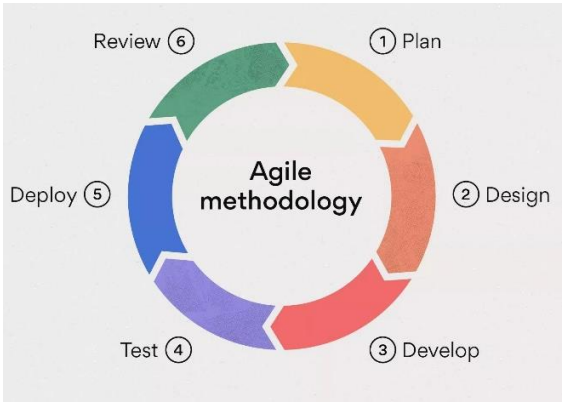
Website	Characteristics
BBC Bitesize(https://www.bbc.co.uk/bitesize)	• One of the free educational websites for students that offers young learners video lessons, interactive media, and quizzes in a wide range of subjects. • It does not only offer a school-based United Kingdom curriculum but also core, functional, and essential skills for adult learners. • Users can easily pick and choose the topics, view related media, and customize their Bitesize experience.
Study Jams(https://studyjams.scholastic.com/)	• Offers interactive math and science activities with lessons that range from physics and human biology to probability and data analysis. • Activities in various topics are organized and delivered via grade levels. There are lesson materials for grades 3-5 and 6-8. • It is also connected to its Scholastic Kids page with games based on popular book series
Science Bob(https://sciencebob.com/)	• Science Bob is the brainchild of Bob PflugFelder, a science teacher, who is a regular guest on Nickolodeon, The Dr. Oz Show, and Jimmy Kimmel Live!. • His website offers a ton of video tutorials for science experiments and science fair ideas for students. The site is completely free. • However, there is a Science Bob Store offering experiment equipment, kits, and gadgets.
Interactive OS Learning(i-OS Learn)	• Offers an interactive learning website for exploring about Operating System courses. • Offer a gamified quiz in the website. • Offers an accessibility feature(such as text sizing). • Adapt on mobile or desktop.

1.7 Methodology

1.7.0 Introduction

The Software Development Life Cycle(SDLC) methodology was chosen for the Interactive OS Learning(i-OS Learn) website because of it's flexibility and adaptability. They outline the stages and methodologies used to ensure a systematic and efficient development process. There are some SDLC models, such as Waterfall Model, V-Model, Spiral Model, Agile Model and more. But for this website, the suitable model to use is **Agile Model**. It is because, it recently used in modern software development and expands its influence beyond coding into many aspects of product development.





1.7.1 Plan

Description : In the planning stage, we will planning on how to design the system architecture that has an suitable element for developing a website for educational use. Besides of that, we will develop a prototypes to visualize the user interface and user experince.

1.7.2 Design

Description : In this design stage, we will start on designing the website based on the plan that we has sketched before this. It will have a combination of HTML, CSS and PHP element so it will become an interactive website for developer for develop it.

1.7.3 Develop

Description : In this develop stage, we will start on developing the website after we done designing the website. This means, a developer for this website will start developing the project by using a Sublime Text Software and using HTML, CSS, and PHP language.

1.7.4 Test

Description : In this test stage, we will test the project that he has done develop to make sure it's working perfectly based on the plan that we has decided. If it's not working perfectly, it needs to be developed by the developer back until it's running perfectly.

1.7.5 Deploy

Description : In this deploy stage, we will start on launching the website on public after the testing stage completed successfully. We will make it to available to access by the user. While they are using the website, we will be monitoring the performance to identify any issues that has been faced by the user.

1.7.6 Review

Description : In this review stage, we will getting an user feedback after they using our website. We will give a feedback form to the user to collect some issues or bug that has been faced by them while using our website. This will help us to do an improvement in the future.

1.8 References

Brown, C., & Green, T. (2018). *Interactive Learning Tools: Enhancing Engagement and Understanding*. Educational Technology Review, 25(3), 78-91.

Walker, M., Lewis, D., & Wang, L. (2019). *Personalized Learning: Adaptive Systems and Algorithms*. International Journal of Learning Analytics, 8(1), 34-50.

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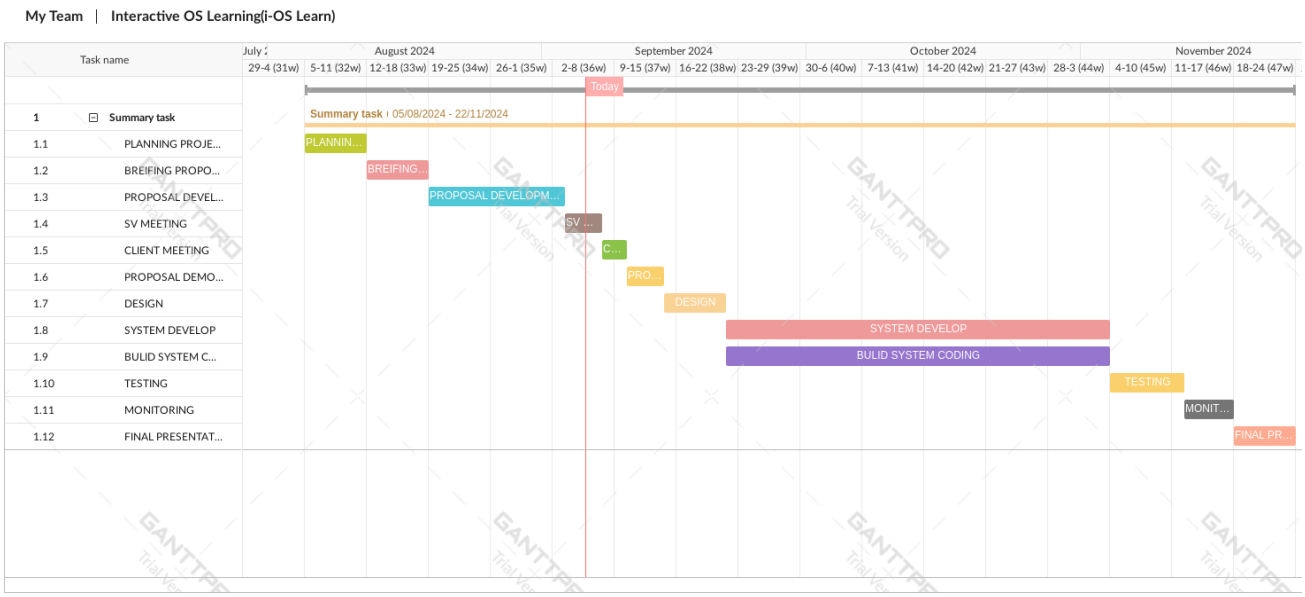
1.9 Gantt Chart



2.0 Cost Planning

Cost Category	Item	Unit	RM/Unit	Total (RM)
Sublime Text Free	1	1	RM 0.00	RM 0.00
Canva Free	1	1	RM 0.00	RM 0.00
CSS	1	1	RM 0.00	RM 0.00
			Total Budget (RM)	**RM 0.00**

2.1 Conclusion

As a conclusion, the implementation of Interactive OS Learning(i-OS Learn) is to ensure that student has an interactive learning platform to explore about OS courses in polytechnic. This can help them gain their understanding about OS and can help them to memorise what are they learning for their final exam too. By developing this website, it will release the burden of lecturer to because it's already having a platform for learning this courses.

At the last, this project also provides an user interface, so they can make a feedback of it if something wrong happen will using this website for their learning purpose. This can help developer to improve their website for becoming better in the future.