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SELANGOR

DIPLOMA IN INFORMATION TECHNOLOGY (DIGITAL TECHNOLOGY)

DFT50114: INTEGRATED PROJECT

CLICK2BOOK PSIS

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1.0 INTRODUCTION

Managing and booking facilities efficiently is very important to keep things running smoothly, especially in educational institutions like Politeknik Sultan Idris Shah (PSIS). As the number of events, meetings and classroom needs increases, there is a growing need for a well-organized, easy-to-use and accessible system to handle these resources. Currently, many institutions still use manual methods or separate digital tools, which often cause problems like double bookings, delays and confusion.

This proposal suggests creating a centralized and integrated system for booking facilities at PSIS. The system will help make it easier to book classrooms, halls, labs and other spaces. It will also show real-time availability and approval status, so users can clearly see what is booked and what is free. This platform will be useful for students, staff and administrators to manage resources better and avoid scheduling conflicts.

By using modern web technologies and focusing on user-friendly design, this system will support PSIS in its move towards digital transformation and help make sure its facilities are used fairly and efficiently.

CLIENT:

Table 1.0 Client Background

	
DETAIL	DESCRIPTION
NAME	Politeknik Sultan Idris Shah
LOCATION	Politeknik Sultan Idris Shah, Sungai Lang, 45100, Sungai Ayer Tawar, Selangor
CORE SERVICE	Education
DIRECTOR	Puan Haslinda Binti Abd Hamid
ACADEMIC DEPUTY DIRECTOR	Encik Haji Zainuddin Bin Kasmuri
ACADEMIC SUPPORT DEPUTY DIRECTOR	Encik Mohamad Azrin Bin Ramli
EMPLOYEES	359
STUDENTS	2993
CLIENT DEPARTMENT	All Department Related in PSIS

Several fact-finding methods were used to support the investigation and gather requirements for the development of the facility booking system. These methods include direct observation, informal interviews, and reviewing existing documents related to facility usage. Based on the findings, it was observed that various facilities such as halls, meeting rooms, laboratories, and sports venues at the polytechnic are actively used by both students and staff for different activities and events.

Currently, the booking process is still carried out manually or through separate channels, such as physical booking forms. Each department is responsible for managing its own facility bookings, which often leads to a lack of coordination and overlapping schedules.

Although this approach has been in place for a long time, several challenges have become clear:

- i. Students and lecturers find it difficult to check real-time availability of facilities, which sometimes causes double bookings.
- ii. The manual approval process is slow and may lead to delays or miscommunication, especially when more than one department is involved.
- iii. There is no centralized system to record booking history, approval status, or facility condition, making it hard to track usage and generate accurate reports.

These issues show the need for a more organized and efficient digital system that can centralize and simplify the booking process for everyone involved.

2.0 PROBLEM STATEMENT

The problem statements for the project are as follows:

1. Manual or Inefficient Booking System.

In polytechnics mainly PSIS are still rely on paper-based or outdated digital systems for managing facility bookings. These traditional methods often lead to scheduling conflicts, double bookings, and delays, especially when students and staff struggle to check real-time availability or make reservations efficiently.

2. User Experience & Communication Gaps.

Students and staff may not receive timely notifications about changes, maintenance, activities, or upcoming events. The absence of a user-friendly and mobile-accessible platform also makes it difficult to make quick bookings or stay updated on facility usage.

3. Inefficient Communication Between Users & Management.

Many users are unsure who to contact when issues arise, and facility managers often do not receive immediate feedback or problem reports. This results in delayed responses and reactive rather than proactive maintenance, reducing overall user satisfaction and system efficiency.

3.0 OBJECTIVES

The objectives of the project are as follows:

- i. To develop an online booking system for PSIS that enables students and staff to easily check availability and book facilities in real-time.
- ii. To notify about changes, maintenance, or events, while also streamlining quick bookings and updates that enhances user experience.
- iii. To develop a dashboard that informs users of important updates such as maintenance schedules, booking confirmations, or event announcements.

4.0 SCOPE

4.1 USER SCOPE

Students or Lecturers :

- i. Users are able to register and login using their individual accounts to access the facility booking system.
- ii. Users are able to search for available facilities, fill in booking forms with details, and submit requests directly through the system.
- iii. Users are able to check the real-time status of their bookings and will receive system or email notifications accordingly.
- iv. Users are able to update their personal profiles, view their previous booking history and report facility issues.

Admins or Staff :

- i. Users are able to manage and oversee all bookings submitted by users.
- ii. Users are able to reviewing and processing booking requests, approving or rejecting them based on availability and suitability.
- iii. Users are able to manage user accounts, update facility details, monitor usage patterns, and generate reports for planning and review purposes.
- iv. Users are able to track user actions for transparency and security.

4.2 SYSTEM SCOPE

- i. The Click2Book PSIS System able to display real-time availability of facilities like halls, labs, and sports areas.
- ii. The Click2Book PSIS System able to approval by facility coordinator or admin.
- iii. The Click2Book PSIS System able to send notification of booking status in email or in-system.
- iv. The Click2Book PSIS System able to log user activity for security and tracking purposes.

5.0 PROJECT SIGNIFICANCE

The project significances are as follows:

- i. Click2Book PSIS system offers a more efficient and centralized platform to manage all facility reservations across the polytechnic.
- ii. Click2Book PSIS system simplifies the booking process for students and staff, helping to reduce, scheduling conflicts, and miscommunication.
- iii. Click2Book PSIS system supports the digital transformation of the institution by replacing manual methods with a modern, web-based system.
- iv. Click2Book PSIS system allow users make bookings anytime and anywhere without needing to visit departments in person.
- v. Click2Book PSIS system allow administrators monitor booking usage, manage approval workflows, and generate reports more effectively and accurately.

6.0 LITERATURE REVIEW

Table 2.0 Literature Review of Click2Book PSIS

System	e-Fasiliti JKR 	UMPOINT 	USM Facility Booking 
Link Resources	<u>https://efasiliti.secara.digitall/</u>	<u>https://umpoint.um.edu.my/</u>	<u>https://education.usm.my/index.php/others/booking-facilities/</u>
Platform Type	Web-based government facility booking system	Web-based	Web portal (internal)
Used By	Government departments under JKR	UM students, staff and public	USM staff and students
Features	Complaint logging, booking form, approval workflow, status tracking	Booking for auditoriums, labs, halls, sports centers with availability view	Facility booking by day or week via official login
Advantages	i. Centralized system and status tracking. ii. Suitable for various facility types.	i. Easy for both public and campus users. ii. Flexible booking options.	i. Integration with campus portal. ii. Secure access.
Disadvantages	i. Limited to government-linked facilities only.	i. Requires account. ii. May be restricted to specific user groups.	i. Internal only. ii. No public access.

Based on Table 2.0, each existing system has its own strengths and weaknesses. For instance, e-Fasiliti JKR is a centralized system with detailed tracking, mostly used by government agencies. UMPIPOINT works well in academic environments and connects with university systems, but users must log in, and it has limited access. USM Facility Booking is secure and integrated with campus systems, but only university staff and students can use it. In comparison, Click2Book PSIS is designed for polytechnic students and staff. It combines the best features of the other systems, offering a user-friendly platform with approval processes, real-time notifications, and a centralized booking system.

7.0 METHODOLOGY

The project's methodology is Agile. The methodology was chosen because it supports flexibility and fast-paced development. Agile is ideal for both small and large projects, especially when requirements are likely to change over time. It allows the development team to focus on building the system than on heavy documentation. Agile uses short development cycles with continuous feedback, leading to quicker improvements. Involving users throughout the process also increases customer satisfaction. This method is especially suitable for software projects where updates and changes often occur.



Figure 5.0: Agile Methodology

The following are some of the major benefits of Agile methodology :

- i. **Flexibility** : Agile is ideal for projects where requirements may change during development. The team can adjust easily without restarting the whole process.
- ii. **Faster Delivery** : Agile breaks the project into small parts, allowing quicker delivery of working features while still developing the rest.
- iii. **Better Quality** : Regular testing during each sprint helps identify and fix bugs early, which improves overall system reliability.
- iv. **Better Team Collaboration** : Agile encourages frequent meetings and communication among team members, leading to better teamwork and shared understanding.
- v. **Higher Customer Satisfaction** : Clients give feedback during each stage, ensuring the final product meets their needs.

Table 3.0 Phase Agile Methodology

No.	Phase	Activities
1	Requirements	i. The team breaks the project idea into smaller tasks, prioritizes them, and assigns them to development cycles.
2	Plan	i. Meetings are held to understand what users need, how they will use the system, and what features are required.
3	Design	i. The team plans how the system will work and look. A testing plan is also prepared.
4	Development	i. Features are built and tested in short cycles. The first cycle sets up the foundation.
5	Release	i. The system is tested to ensure it meets user needs and works correctly through different types of tests.
6	Track & Monitor	i. The system is released for users. The team continues to fix any issues that appear after launch.

8.0 REFERENCES

- i. <https://efasiliti.secara.digital/>
- ii. <https://education.usm.my/index.php/others/booking-facilities/>
- iii. <https://www.smartsheet.com/agile-vs-scrum-vs-waterfall-vs-kanban?srsltid=AfmBOoqpz2cFMJzE-D6vWke7o-tsJMr9pATwV9kD14P2DdoRJOQP9cu>
- iv. <https://sites.google.com/view/jtmkprojectpsis/home>
- v. <https://psis.mypolycc.edu.my/>
- vi. <https://efasiliti.mod.gov.my/Pemohon/index.php#>

9.0 GANTT CHART

PROJECT NAME	CLICK2BOOK PSIS	START DATE	END DATE	OVERALL PROGRESS	MEMBERS : NUR ALEEYA NAFEESA BINTI KAMARULZAMAN
PROJECT MANAGER	NUR AINA ADAWIYAH BINTI NORAFIS	10/7/2025	29/10/2025	In Progress	MEMBERS : ALYA QISTINA BINTI SALLEHFUDIN

WBS	TASK NAME	PLAN DURATION	ACTUAL START	ACTUAL FINISH
0	CLICK2BOOK PSIS	130 days	10/7/2025	29/10/2025
1	REQUIREMENTS	15 days	10/7/2025	20/7/2025
1.1	Create Application Requirements Specifications	3 days	10/7/2025	11/7/2025
1.2	Initiate Application Test Planning	3 days	12/7/2025	13/7/2025
1.3	Develop Project Schedule	3 days	14/7/2025	14/7/2025
1.4	Develop Project Management Plan	1 days	15/7/2025	15/7/2025
1.5	Develop Quality Plan	3 days	16/7/2025	17/7/2025
1.6	Requirements Proposal Report	2 days	18/7/2025	20/7/2025
2	PLAN	12 days	21/7/2025	2/8/2025
2.1	Brainstorming idea	3 days	21/7/2025	23/7/2025
2.2	Meet clients	1 days	24/7/2025	25/7/2025
2.3	Identify The Problem	3 days	26/7/2025	28/7/2025
2.4	Identify Planning Resources	3 days	29/7/2025	31/7/2025
2.5	Plan Report	2 days	1/8/2025	2/8/2025
3	Design	10 days	3/8/2025	12/8/2025
3.1	Design Work Breakdown Structure	1 days	3/8/2025	3/8/2025
3.2	Design Gantt Chart	1 days	4/8/2025	5/8/2025
3.3	Design Interface	4 days	6/8/2025	9/8/2025
3.4	Overall Approval	2 days	10/8/2025	11/8/2025
3.5	Design Report	2 days	12/8/2025	12/8/2025
4	DEVELOPMENT	38 days	13/8/2025	12/9/2025
4.1	Setting Up Development Environment	4 days	13/8/2025	16/8/2025
4.2	Program Coding	15 days	17/8/2025	27/8/2025
4.3	Develop Application	11 days	28/8/2025	5/9/2025
4.4	Database Implementation Process	8 days	6/9/2025	12/9/2025

5	RELEASE	30 days	12/9/2025	5/10/2025
5.1	Testing Application	13 days	12/9/2025	22/9/2025
5.2	Release Management	6 days	23/9/2025	26/9/2025
5.3	Release Product to Customer	6 days	27/9/2025	1/10/2025
5.4	Release Report	5 days	2/10/2025	5/10/2025
6	TRACK & MONITOR	25 days	6/10/2025	29/10/2025
6.1	Maintenance and Support	4 days	6/10/2025	10/10/2025
6.2	Reviewing Design	3 days	11/10/2025	13/10/2025
6.3	Getting Customer Feedback	3 days	14/10/2025	17/10/2025
6.4	Documentation	2 days	18/10/2025	22/10/2025
6.5	Track & Monitor Report	3 days	23/10/2025	29/10/2025

Figure 6.0 : Project Gantt Chart of based on the chosen methodology

10.0 COST PLANNING

Table 4.0 Shows the cost for hardware

NO	HARDWARE	SPECIFICATION	PRICE(RM)
1.	Laptop ASUS VivoBook 15	i. Intel® Core™ i5-1335U (up to 4.6 GHz, 10 cores, 12 threads, 12 MB cache) ii. 8 GB DDR4 RAM (upgradeable to 16 GB) iii. 15.6" Full HD (1920×1080), IPS, anti-glare, 84% screen-to-body ratio iv. 512 GB NVMe PCIe 3.0 SSD	3999.99
2.	HP Laptop 15s	i. Intel® Core™ (i3-1115G4/ i5-1235U) or AMD Ryzen™ ii. 8 GB DDR4 (usually 1×8 GB; some i5 variants support 2×4 GB modules) iii. 512 GB PCIe® NVMe™ M.2 SSD iv. 15.6" FHD (1920×1080) or HD 1366×768 depending on variant; anti-glare, micro-edge, ~250 nits	2900.00 x 2 unit

Table 5.0 Shows the cost for software

NO	SOFTWARE	SPECIFICATION	PRICE(RM)
1.	Visual Studio Code	i. Free and powerful code editor developed by Microsoft. ii. Supports programming languages like Python, JavaScript, C++, Java, HTML, CSS and more.	FREE
2.	phpMyAdmin	i. Open-source web tool used to manage MySQL or MariaDB databases through a web browser. ii. Allows to easily create, read, update, and delete data in databases without needing to use command-line tools.	FREE
3.	XAMPP	i. Free software that helps set up a local web server on computer. ii. Managing databases with phpMyAdmin.	FREE
TOTAL :			RM 9799.99

11.0 CONCLUSION

The implementation of the Integrated Facility Booking System at PSIS, titled CLICK2BOOK PSIS, is a smart step toward improving the way facilities are managed in a more digital and effective way. This system allows users such as students, staff and administrators to make bookings faster, easier and more transparent.

With CLICK2BOOK PSIS, common problems like double bookings, delays in approval and confusion about booking status can be solved. The system also helps users to see which facilities are available in real time and gives clear updates on their booking status. It includes helpful features like automatic notifications, history tracking and organized reports.

Overall, this system will improve how PSIS manages its facilities and support a more organized working culture. It also fits with the current need to move towards digital solutions in higher education. By making bookings more fair, efficient and structured, the system is expected to increase user satisfaction and ensure better use of available resources.

In conclusion, CLICK2BOOK PSIS will bring a positive impact to PSIS's daily operations, help reduce manual work and create a more modern and user-friendly environment for all.