POLITEKNIK

POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN

PROPOSAL FOR

STAFF ACTIVITY MANAGEMENT SYSTEM

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2022

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1.0   Introduction

Nowadays, it is difficult for us to migrate from an older system to a new one, for example, manually generate reports. System Activity Management System is the name of the system we're developing for the JTMK department at POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN.

Additionally, we want to create a system that is user-friendly and makes it simple to locate various pieces of information about a department's activities. Furthermore, our system's distinguishing feature is its web design, which is appropriate for all segments of society and is not overly simplistic, as most existing local websites are. Additionally, this system simplifies the process of verifying and signing the report produced by the staff. If the report produced by the staff does not meet the head of department's standards, the head of department can push back to the staff to improve the report's precision and information. The head of the department has access to additional features, after registering, he can sign with a single button. The system register that we develop must contain enough required features, such as signatures.

The Staff Activity Management System is a system that will improve and simplify the use of the system for all staff and department heads, eliminating the need to waste time manually generating reports. Now that this system is in place, it will improve the work in a variety of ways. Our mission is to improve the daily lives of our numerous users.

2.0   Problem statement

The department uses an offline activity management system based on Microsoft Word. Because it utilizes a desktop database, the process of creating reports takes place in a designated location. A desktop database system is a database management system that is designed to run on a single computer or personal computer. Apart from that, when a report is generated using Microsoft Word, the data entered is saved on a single PC, ensuring that the report is self-contained and can be used by a single user. As a result, generating some reports takes a long time.

Apart from that, the current system is unattractive, this is because if staff create reports manually, it will be difficult for employees to locate and obtain the report they require. Exploring this system can be challenging, especially for new staff joining the department.

Finally, when the system for verifying a report is written, the issue that frequently arises is that a great deal of paper is used, and it takes a long time to verify a report. Additionally, if the head of department is preoccupied with other matters, the process of verifying a report will be slowed.

3.0   Objective

The objectives of Department Activity Management System are:

i)   To identify requirements for System Activity Management System

ii)   To design and develop a system that enables the user to generate and verify reports.

iii)   To conduct testing whether it can help the user to generate and verify the reports activities.

4.0   Scope

There are three types of scopes related to this system which is system scope and user scope.

4.1   User Scope

The user scope involve are:

4.1.1   Admin

Administrator has the authority to manage staffs and head of department. Admin need to be able to manage website and view information. Admin must maintain the integrity of data in the server.

4.1.2   Head of Department

Head Of Department has the authority to confirm or deny the findings of the reports conducted by the staff. Head Of Department has access to and control over the data.

4.1.3   Staff

Staff have the permission to access the information. Staff can make a variety of reports and activities available to the public. Staff have the authority to submit reports to the Head of Departments.

4.2   System Scope

The system can be use by the system Administrator, Head of Department and the Staff of the Staff Activity Management System. Each user has their own interface, which they can access by logging in. This system is mainly involved with generating a report on the activities of the department that users wish to monitor, as well as viewing information about the activities of the department which users aspire.

4.2.1 Admin Scope

The administrator will be in charge of this system. All of the system's features, including the staff page, are available to the admin. The following are the steps that the administrator will take:

a) Manage staff (view staff, delete staff, update staff).
b) Manage report
c) View activities
d) Add staff
e) Manage system
f) View information

4.2.2 Head of Department

The Head of Department will perform some important processes:

a) Verify reports
b) View Information
c) View staff
d) Verify activities

4.2.3 Staff

The Staff will be in charge of the system:

a) Generate report
b) Send the report to Head of Department
c) Create activities information

5.0   Project Significant

The system that has been proposed will provide the department with additional benefits. This system has several advantages, including the following:

i)   Increase the speed with which results of a report prepared by staff are delivered to the Head of Department, reduce the number of human errors that occur, and send reports to the Head of Department through the system.

ii)   This system will encourage Staff how else to write good reports for Head of Department to verify.

iii)   Accelerate the verification of reports submitted by staff for verification through this system.

iv)   This system has the potential to enhance Staff abilities to produce a report and track development progress.

6.0   Literature Review

6.1   Resume.io

Figure 4: Resume.io

This website can create an instant resume for user. User just need to insert their detail, then this website will generate a resume. On figure above is the main page for resume.io. The reason why we choose this website is because our future system is more like this system, but we will develop our own system for JTMK.

We use resume.io as reference for create activity report where staff can insert title, date, photos and generate a report. So below is the advantage and disadvantage of the resume.io.

6.1.2   Advantages

Resume.io have a well-organized user interface. This system also so simple where user can create resume less than one minute. Thus, this system also saves all the user resume and can download it anytime.

6.1.3 Disadvantages

This system cannot create more than one page. Besides, this system has complex user interface. For newcomers it may be hard to use this system for the first time.
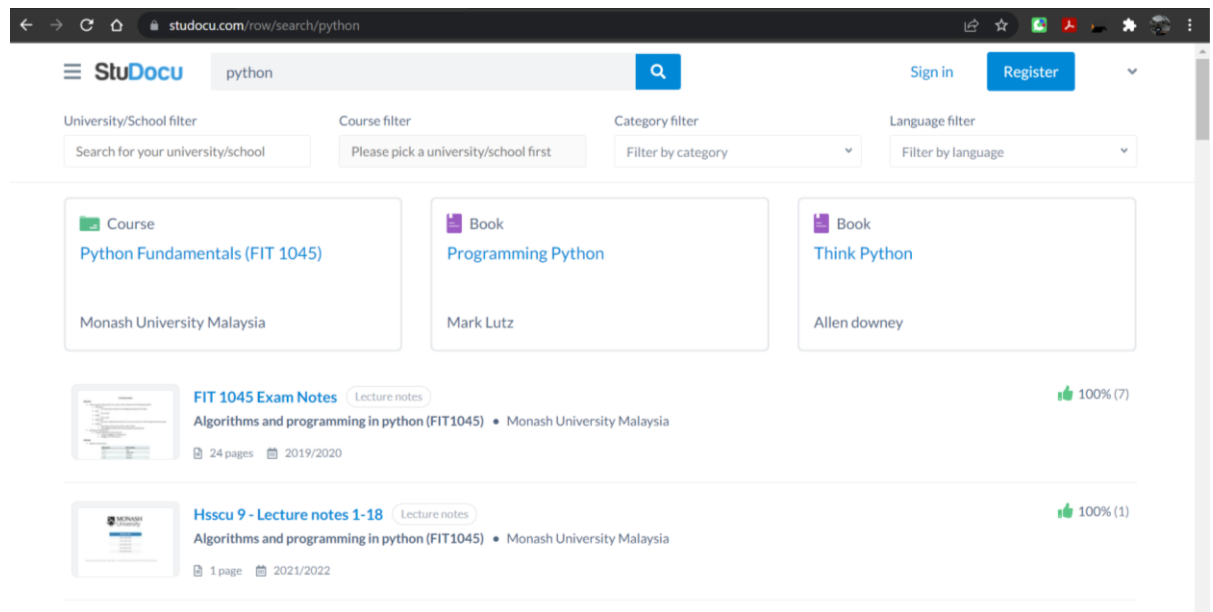
6.2 Studocu.com

Figure 2: Studocu.com

This system display about e book publishing and notes that student can view and download. On the figure above is the search page for Studocu page. This website has search functionality where user can search by document name. Besides, this system also can filter document by category.
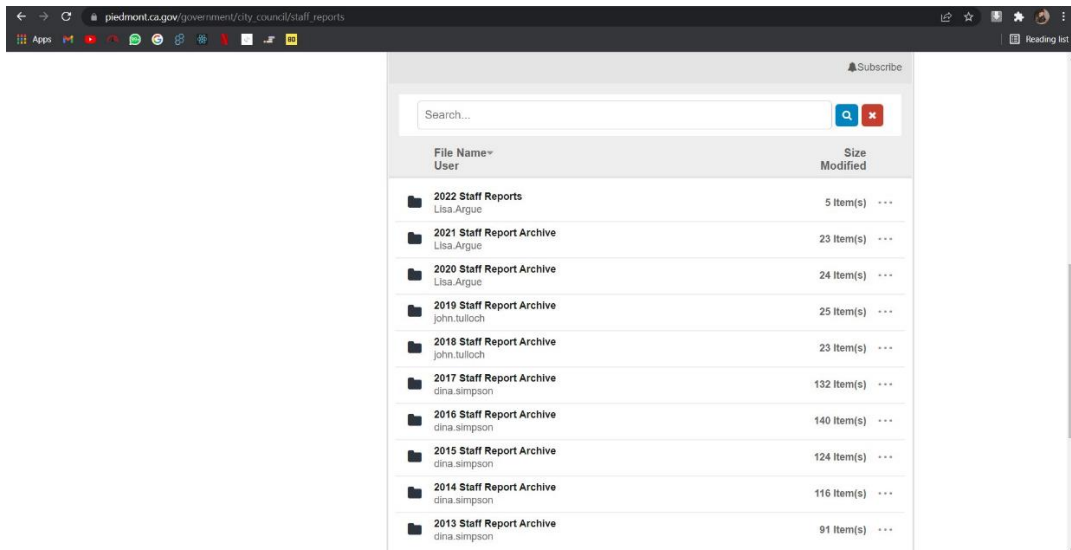
6.2.1 Advantages

Studocu have a ton of free document that student can download with a single click. This system also has well organized layout that can attract user. So, it's an advantage for elders to use this system.

6.2.2 Disadvantages

This app contains too many items that causes the interface looks crowded. Furthermore, this system does not have an interesting interface because the background of the page looks empty.

6.3   piedmont.ca.gov

Figure 3: piedmont.ca.gov

Piedmont was created and designed especially for manage records and report for city of Piedmont. Figure above show the report table where staff can upload report and city council can view the report. The table in figure above also provides Staff Reports by year as download PDF documents. So below is the advantage and disadvantage of the Piedmont.

6.3.1   Advantages

This system can view all the records and report also Staff Reports related to a particular topic may be sorted using the table's search bar. Besides, this system has friendly user interface like easy menu bar to access or making a choice for new user.

6.3.2   Disadvantages

This system does not have an interesting interface because the background of the page looks empty. Maybe user will not be interested with this website for their first time. The arrangement design interface in this system is unorganized.

6.4   Comparison of each website

System ⟋ Feature	Resume.io	Studocu.com	piedmont.ca.gov
Online Website	Yes	Yes	Yes
Can sign in	Yes	Yes	No
User Friendly	Yes	Yes	No
Can generate report	Yes	No	No
Can handle report	Yes	Yes	Yes

7.0   Methodology

7.1   Introduction

Agile software development life cycle model is a combination of iterative and incremental process models with focus on process adaptability and stakeholder satisfaction by rapid delivery of working software product. Agile Methods break the product into small incremental builds. These builds are provided in iterations.
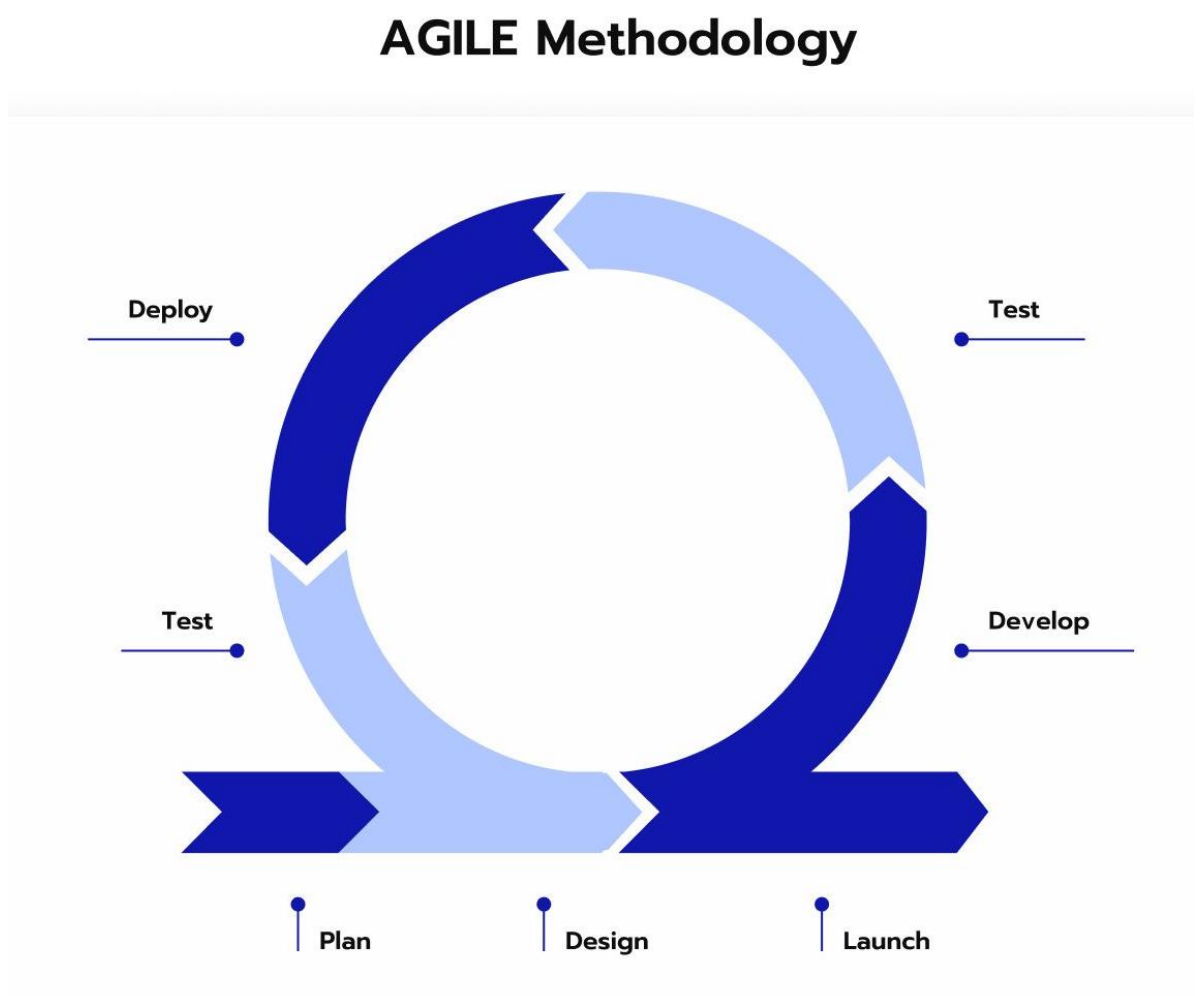
Figure 4: Agile Methodology

Reason why we choose Agile model as our Methodology because:

I.   Is a very realistic approach to software development.

II. Functionality can be developed rapidly and demonstrated.

III. Suitable for fixed or changing requirements.

7.2   Project Methodology

7.2.1 Planning and analysis

In this phase, various items of the planning process have been made such as planning system title and the type of system to be developed. This phase will also identify the scope, problem statement and strategic plan of the System Activity Management System development. All the relevant information is collected from the stakeholder to develop a system as per their expectation.

Next, we do an analysis to check the feasibility of the development. We also perform fact-finding using observation technique to find existing system that like our system. We studied in detail and gather idea from Resume.io, studocu.com & piedmont.ca.gov and try to implement on our system. We make sure there is no problem occurring when developing Staff Activity Management System.

7.2.2 Design

The main objective of this phase is to design user interface and database for Staff Activity Management System. After the all the requirements specification have been determined, we will make a design concept for Staff Activity Management System. Firstly, we determined how many page that have in this system based on requirement. Then, we design layout and choose colour pallet, font, and illustration for:

I. Login page
II. Sign up page
III. Home page
IV. Create report page
V. Activities page
VI. User profile page
VII. Admin page
VIII. Head of Department page

After that, we design database for user, report & activities. We choose MySQL as database.

7.2.3 Implementation

After requirement and design is completed, we use Typescript and React for client-side development. We translate all the design into code and ensure the user interface and design is accurate. On the server-side we use Javascript and Node Js MVC architecture. We make sure all the business logic that user fill will store into database. Our goal is to implement all the functionality as requirement expectation write clean and readable code.

7.2.4 Testing

During the testing phase, we aim to find defects within the system as well as verifying whether the application behaves as expected and according in the requirements analysis phase.

I. Unit testing. During this stage we evaluate individual components of the system to see if these components are functioning properly on their own.

II. Integration Testing. During this stage, we test individual components of the system and then test them as a collective group. For Example, in this testing phase, different software modules are combined and tested as a group to make sure that integrated system is ready for system testing.

III. System Testing. In this stage, we see whether the collective group of integrated components is performing optimally. For example, it allows checking system's compliance as per the requirements. It tests the overall interaction of components. It involves load, performance, reliability, and security testing.

IV. Acceptance Testing. This process is a test conducted to find if the requirements of a specification or contract are met as per its delivery. Acceptance testing is basically done by the user or customer. However, other stockholders can be involved in this process.

Once a defect is found, we will fix and repeat until all requirements have been tested and all the defects have been fixed.

7.2.5 Deployment

Once the software has been fully tested and all the functionality is working as expected output, we deploy our project on the Digital Ocean cloud hosting. Then, this system can be use by our stakeholder, Head of Department and JTMK's staff.

7.2.6 Maintenance

During this phase, we provide ongoing support to keep the Staff Activity Management System running smoothly and fix any new bugs. Over time, we will update Staff Activity Management System and add other functionality based on user feedback. We will move to next iteration and agile software development phases will start over again.

8.0 References

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Hannah Whitfield (2022, February 17). *How Much Does It Cost to Host a website?*

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Totally Tech (2018, October 11). *How to define the scope of a project*

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9.0   Gantt Chart

Task ID	Task Name	W01	W02	W03	W04	W05	W06	W07	W08	W09	W10	W11	W12	W13	W14
1.0	PROJECT PROPOSAL	■	■												
	• Define the problems, objectives & scope of the system.	■	■												
	• Prepare project proposal.	■	■												
2.0	DESIGN			■											
	• Design user interface			■											
	• Design user flow & database			■											
3.0	PROJECT DEVELOPMENT				■	■	■								
	Develop problem specification and design				■	■	■								
	• Develop login, register home interface				■	■	■								
	• Develop login & register functionality				■	■	■								
	• Create user database				■	■	■								
3.0	PROJECT DEVELOPMENT							■	■	■					
	Develop problem specification and design							■	■	■					
	• Develop activities and report interface							■	■	■					
	• Develop activites and report functionality							■	■	■					
	• Create activities and report database							■	■	■					
3.0	PROJECT DEVELOPMENT										■	■	■		
	Develop problem specification and design										■	■	■		
	• Develop admin and Head of Department interface										■	■	■		
	• Develop admin and Head of Department functionality										■	■	■		
	• Create admin and Head of Department database										■	■	■		
4.0	TESTING AND DEPLOYMENT													■	
	• Perform 4 stage of testing													■	
	• Deploy on digital ocean cloud hosting													■	
5.0	MAINTAINANCE														■
	• Fix bugs & update new features move to next iteration.														■

10.0 Cost Planning

After making some research on internet, the expense of developing Staff Activity Management System we will require RM 410.00 to complete the entire system.

Requirements	Cost (RM)
Cloud Hosting for a year	RM 260.00
Domain registration	RM 150.00
Total Cost	**RM 410.00**

11.0   Conclusion

As general the development of Staff Activity Management System will give more benefit and advantages to JTMK's staff. Using and understanding this system is a super easy prestige to its user-friendly design. Staff can use computers or mobile devices to access the system, making it easier for them to generate activity reports, invent new ideas and publish their work. As a result of this project, the amount of time and effort required to produce documentation is reduced.