

## Virtual Perlis

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**Abstract:** Perlis is the smallest state in Malaysia, located in the Northern part of Peninsular Malaysia. For tourists, it is only a complementary destination that they pass through in order to continue their journey to Langkawi, Kuala Lumpur, Singapore or Thailand. This makes Perlis the least visited destination by tourists. Virtual Perlis is proposed in this research to solve these issues which contains information on the history of the state, famous food, interesting places and affordable homestay. Virtual Perlis is a portal that links Google Map, Google Street and Waze into one system. It also includes panoramic videos on selected tourist attractions.

## INTRODUCTION

Virtual Perlis is a portal about Perlis state. This portal contains information about the history of this state, delicious food around Perlis, also highlight interesting places and there are a few home stays for tourist to review. There are also including panoramic video in selected famous place in the state.

Malay Mail Online, stated that, tourist only passes through Perlis in order to continue their journey to their destination to Langkawi, Kuala Lumpur, Singapore or Thailand. Next, Ching, etc., stated in there that is Perlis merely a complementary destination among the Western foreign tourists, particularly those who are visiting the country for the first time due to Perlis is not so attractive. Lastly, Tourism Malaysia Corporate Website state that Perlis is least visited by tourist. Perlis is listed as the least visited state in the year 2012 and 2013. Therefore, the objectives of this portal are:

- To develop a website that provides attractive information by using Google Street, Google Maps and Waze to the websites

- To interpret informative guidelines via virtual tour, for the state, so that, the user can attract to visit Perlis
- To test the user acceptance of the virtual Perlis website

### Literature review

**History of Perlis:** In this blog by Fairul stated that the Perlis state historical originally part of the old state of Kedah. At the same time, the colony is in the Southeastern border Perlis Satun, in the Southwest area of Kubang Pasu, contrary to the Strait of Malacca to the west, in the northeast of Songkhla. But there is a historical fact that the colony Perlis actually broader than that. Occupation Siam over Kedah and its colonies in 1821 led to the attacks and the responses of local residents on a large scale, eventually led to the resignation of Siam and the submission of administration to local officials to administer Kedah, Setul, Kubang Pasu and Perlis. Raja Long Krok appointed as Governor while Syed Husin Jamalullail as his deputy. The second is a historic moment for the state of Perlis which has gained the recognition of the status of the colony to the status of a protectorate.

In 1909, Siam submits Perlis to the British. Perlis was under Japanese occupation in 1941 during World War II. After the Japanese left Malaya, Sabah was placed under British Military Administration. In October 1945, the British set out plans for Malayan Union. Under this scheme, Penang, Malacca and another nine Malay states is to unite under the Malayan Union. Malay opposition to British plans to form a catalyst Malayan Union movement for independence. Malay Federation was established on February 1, 1948 and on August 31, 1957, Malaya achieved independence.

**Virtual reality:** In this journal by Guttentag<sup>[1]</sup>, stated that the term Virtual Reality (VR) is used by many different people with many meanings. There are some people to whom VR is a specific collection of technologies that is a Head Mounted Display, Glove Input Device and Audio. Some other people stretch the term to include conventional books, movies or pure fantasy and imagination. The NSF taxonomy mentioned in the introduction can cover these as well. The best definition of virtual reality is “Virtual Reality is a way for humans to visualize, manipulate and interact with computers and extremely complex data”.

The visualization part refers to the computer generating visual, auditory or other sensual outputs to the user of a world within the computer. This world may be a CAD Model, a scientific simulation or a view into a database. The user can interact with the world and directly manipulate objects within the world. Some worlds are animated by other processes, physical simulations, or simple animation scripts. Some people object to the term “Virtual Reality”, saying it is an oxymoron. The applications are developed for VR run a wide spectrum, from games to architectural and business planning. Many applications are worlds that are very similar to our own, like CAD or architectural modeling. Some applications provide ways of viewing from an advantageous perspective, not possible in the real world, like scientific simulators and telepresence systems, air traffic control systems. Other applications are much different from anything, we have ever directly experienced before. These latter applications may be the hardest and most interesting systems. Types of VR System are first is Window on World Systems (WoW). Secondly, is video mapping. Third is immersive systems. Fourth is telepresence. Next is mixed reality. Lastly is fish tank virtual reality.

**Waze:** In this journal by Ramachandran<sup>[2]</sup> stated that Waze is like other mapping services. Waze offers voice-guided GPS navigation with turn-by-turn directions. But what is really unique about this app is its social layer. Waze active community of users share real-time traffic and road information. For examples are road closures, accidents and police traps and can then redirect the user to the destination.

Waze also learns the routes that users prefer to take towards frequent destinations while also finding the cheapest gas station along the way. Users have to option to report information via hands-free voice control which is activated by waving your hand in front of your smart phone screen and initiating the phone’s proximity sensor. Saying prompts such as “report traffic” triggers the app to provide alerts on traffic flow.

## MATERIALS AND METHODS

Using agile methodologies into website development method can have a great impact on the overall achievement of goals as well as the intervening convenience of website development and investment. Responses, opinion and rectification can happen in a quick way for fixing minor problems before they will eventually turn into a big problem. It also helps in improving communication at every step of the website development process by implying agile approach to project management process.

### Portal design and development

**System development:** The method that was used for this project is agile model. Agile methods are one of several methods used in software development. Agile method is a type of short-term system expansions that require rapid adaptation and developers to change in any form. Agile method can also be interpreted as a group of software development methodologies that are based on the same principles and the development of short-term system that requires fast adoption of the development of changes in any form. Agile model consists of planning phase, requirement analysis phase, designing phase, building phase and testing phase. This is because of the activities of each phase included consisting of the step-by-step process and the plan. Figure 1 that consist the entire activities of each phase in the agile method of this project.

**Planning:** Planning is the first phase in the agile methodology. Planning is analyses and collects all the application requirements and performs rapid design system for early viewing. In this phase is to research does to identify the design of course, goals, objective and audience, identify content and instruct the strategies.

In this phase, the goal of this project is to develop a website that provides attractive information by using the system to the websites which are Waze, google street and google maps. Other than that is to provide informative guideline via virtual tour, for the state so that the user can attract to visit Perlis and to attract the user and tourist to come and visit Perlis by developing the Virtual Perlis. Figure 2 of planning based on this project.

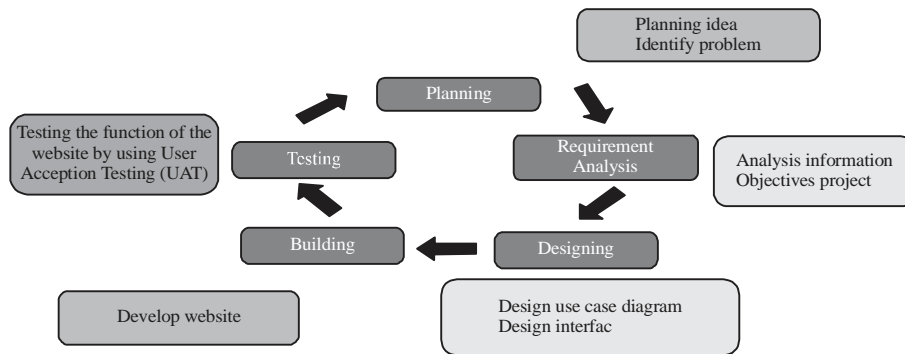


Fig. 1: Agile methodology

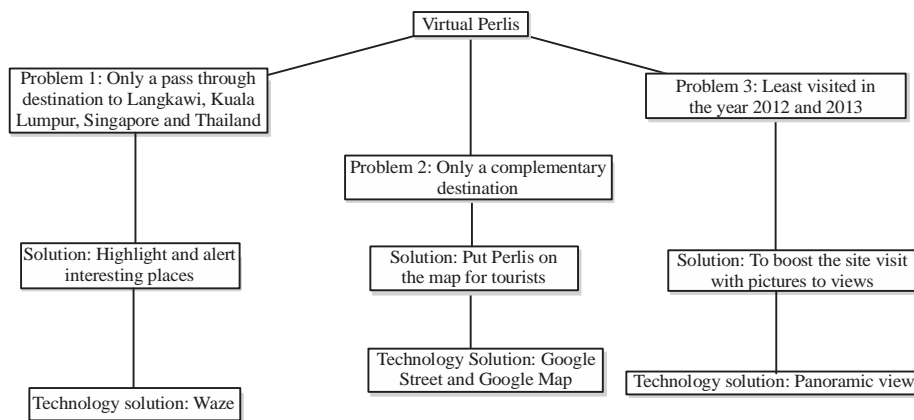


Fig. 2: Planning idea

**Requirement analysis:** In this phase which is the second phase of agile methodology, the analysis of the information has been done to be inserted into this website which the list of the features of the prototype are home, attractions, foods, homestays, panorama, Waze, Google Maps and Google Streets. The requirement of this project is needed to fulfill the needed information for this website<sup>[3, 4]</sup>.

**Design:** The third phase is the design phase. In this phase, the developer creates a storyboard for the website which contains multimedia element such as text, graphic and video that will be used. The design phase shall be systematic and specific. Systematic means a logical, orderly method of identifying, developing and evaluating a set of planned strategies targeted for attaining the project's goals. Specific means each element of the instructional design plan needs to be executed with attention to detail. In this phase, the developer had to design or sketch on how the project will be looking like and how it's functioning. This phase is developing the content that will use.

Rough estimates have been made for the development of Virtual Perlis websites with reference to the Gantt chart

to plan the project as a whole. Interface design sketches and drawings for each level are also made to help adjust the design in detail. The interface should be designed to attract tourist and user to visit Perlis and this website should be user friendly. User case also been designed in this phase. The use case is a set of scenarios that describes an interaction between a user and a system. Use case diagram displays the relationship between the actor and use case. There are two actors involve in using this portal which is user and admin. Functional requirements for Virtual Perlis are represented in the use case in Fig. 3.

Figure 3 shows the flow of the system was used by admin and staff of Virtual Perlis. There have different roles between both of them user can display about attractions, foods and homestays. User also can give feedback to admin and can view Panorama in the websites. Admin can access all the user can do and admin also can update, delete and edit the data:

- Display attractions
- Display foods
- Display homestays
- Gives feedback
- View panorama
- Update data (delete, edit)

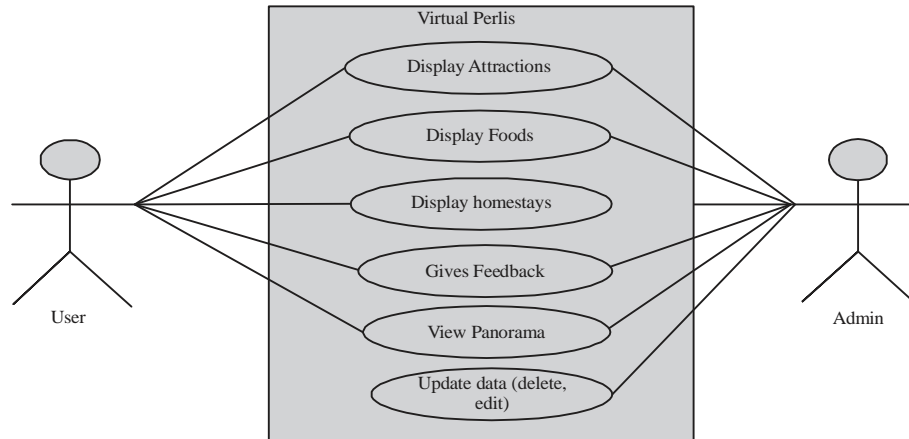


Fig. 3: Use case

**Building:** In the building phase, the developer will begin to develop the website. The development will include all the information, images and video that should be on the website. In this phase, the developer starts to build the website based on phase one phase two and phase three which is planning phase, requirement analysis phase and design phase. Here, developers start making interface in Adobe Dreamweaver CS6 Software and in Adobe Illustrator CS6. For editing image, developer using Adobe Photoshop CS6 and then the image will be edited in Panoweaver 9 software to form it into 360 panoramic photographs.

**Testing:** This is the last stage of Agile methodology which is testing phase. In this stage, the developers will continue into the deployment phase. Through this phase, the developer will begin to test whether the website function properly. The developer also should ensure that all elements are functioning. The objective of deployment phase was to build and test the functioning of the website. This was the phase where the project manager ensures that the website was functional. The website shall be tested when completed. This phase should cover the learning outcomes, objective, methodology, method delivery and testing. The developer should put into action, final project and develop based on the requirements needed. Consider and double checking the project in-terms of the planning, designing, topics and content. The developer must surely understand the product and start using the product.

## RESULTS AND DISCUSSION

**Evaluation:** For this evaluation the developer done User Acceptance Testing (UAT). User Acceptance Testing (UAT) is the last phase of the software testing process. During UAT, actual software users test the software to

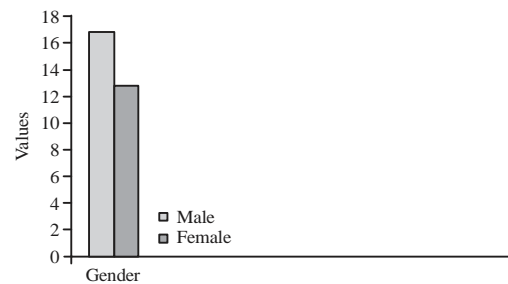


Fig. 4: Gender

make sure it can handle the required tasks in real-world scenarios, according to specifications. UAT is one of the final and critical software project procedures that must occur before newly developed software is rolled out to the market. UAT is also known as beta testing, application testing or end user testing<sup>[5, 6]</sup>.

To implement this user acceptance testing, there are no target respondents because the form is using a google form and spread it through online. The total amount of respondents is 30 persons.

Based on pie chart shown in Fig. 4, the results have been gathered based on the gender that already respond to the survey. There are 17 males from respondents and the rest is female which 13%. The data gather randomly and the gender information is only for the record.

Figure 5 shows the employment status of the respondent. There are 8 respondents who are self-employment, 9 persons is employed and the rest is 13 persons who are student and 0% who is retired.

Figure 6 shows total of feedback from the user based on UAT from the respondents. We can conclude that users are satisfied based on the result. However, there is still improvement that has to do to improve this website<sup>[7]</sup>.

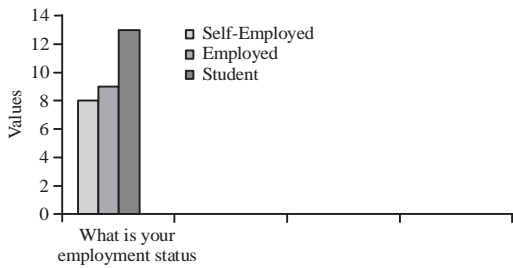


Fig. 5: What is your employment status?

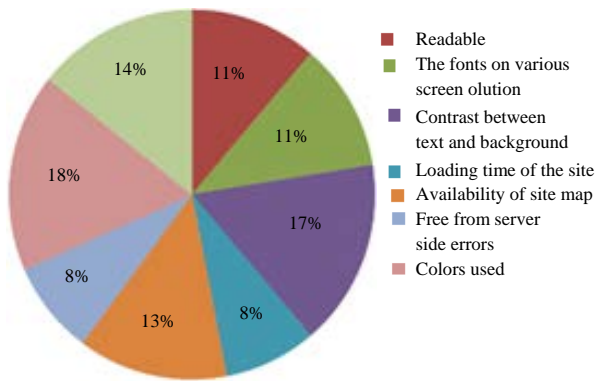


Fig. 6: Total of feedback user

**The interface of the system**

**Home page:** This is the main page of Virtual Perlis. The menu button consists of six menus namely home, attractions, foods, home stays and panorama and feedback buttons. This is the home menu for user and admin where users can start by reading about the history of Perlis before user proceed to the next page. In the main page also include a street view of the Perlis archway, calendar, news and events (Fig. 7).

**Attraction page:** On the attraction page user can view and read about all famous places in Perlis. Photo about each place also include. In this page, user can use google maps or street view and using Waze to go to desired interesting places (Fig. 8).

**Foods page:** This is foods page. This page reviews all delicious food in Perlis. Photo also included making users understand about the food (Fig. 9).

**Homestays page:** This is “homestays” pages which consist list of home stays around Perlis. The user can contact the owner if user wants to book homestays for vacation in Perlis. The contact information for each homestays was provided to easy user to contact the owner of the homestays to book the home stays is they interested (Fig. 10).



Fig. 7: Home page of Virtual Perlis

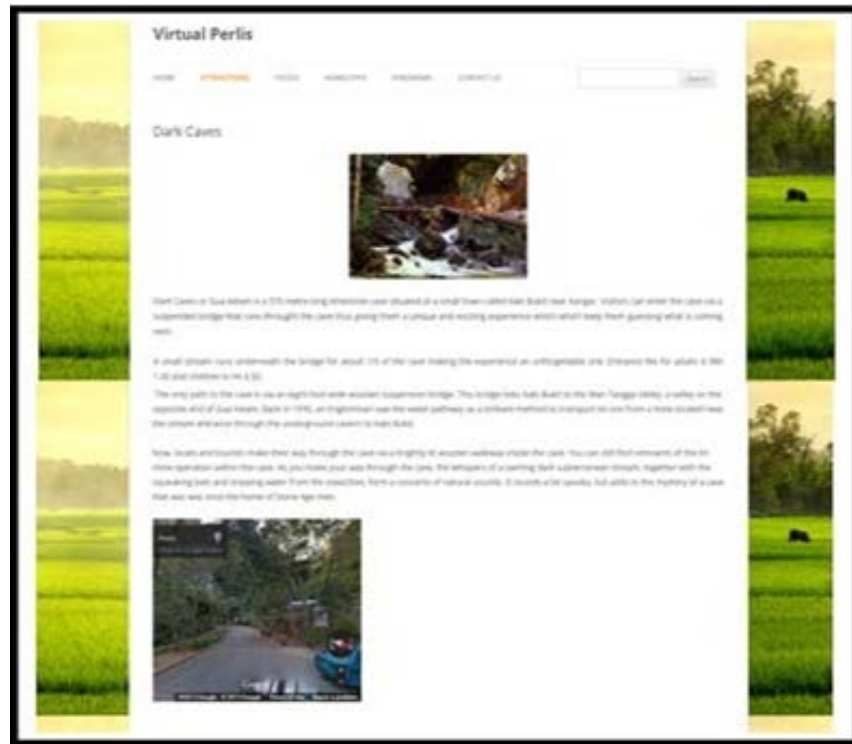


Fig. 8: Attraction page

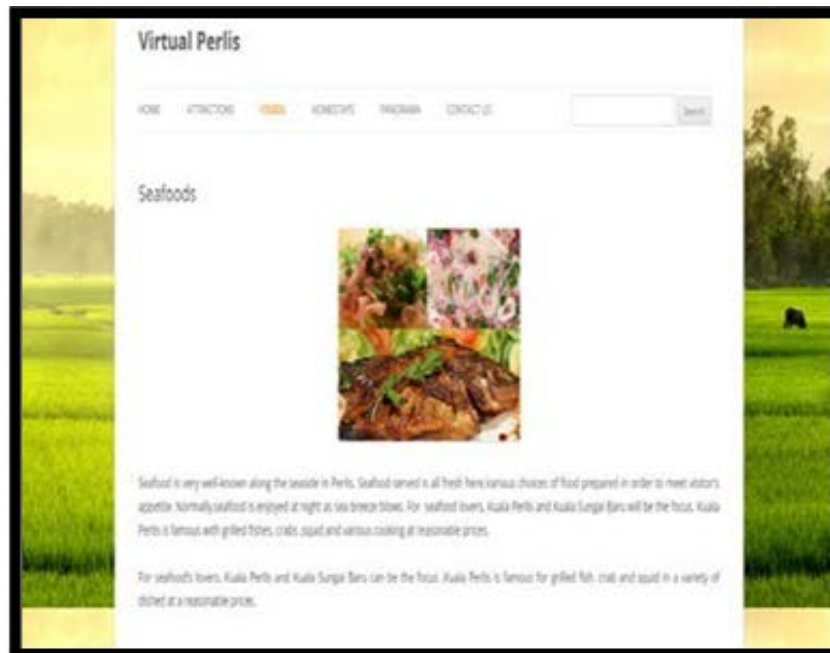


Fig. 9: Foods page

**Panorama page:** In the panorama page, there are a few 360 panoramic photographs of selected famous places in Perlis. User can view the panorama in the desktop

only because it using adobe flash software in the file format SWF which is only supported in windows OS (Fig. 11).

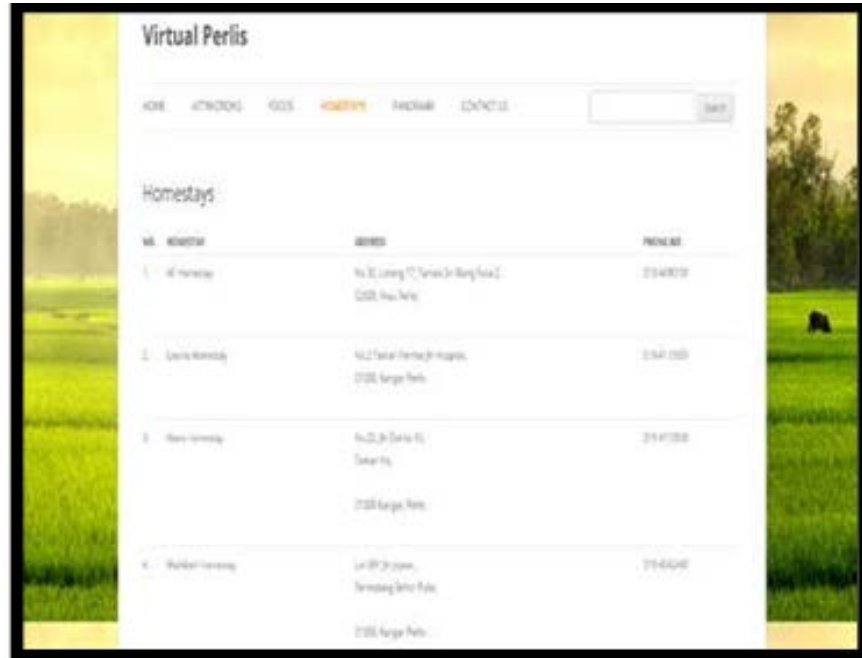


Fig. 10: Home stays page

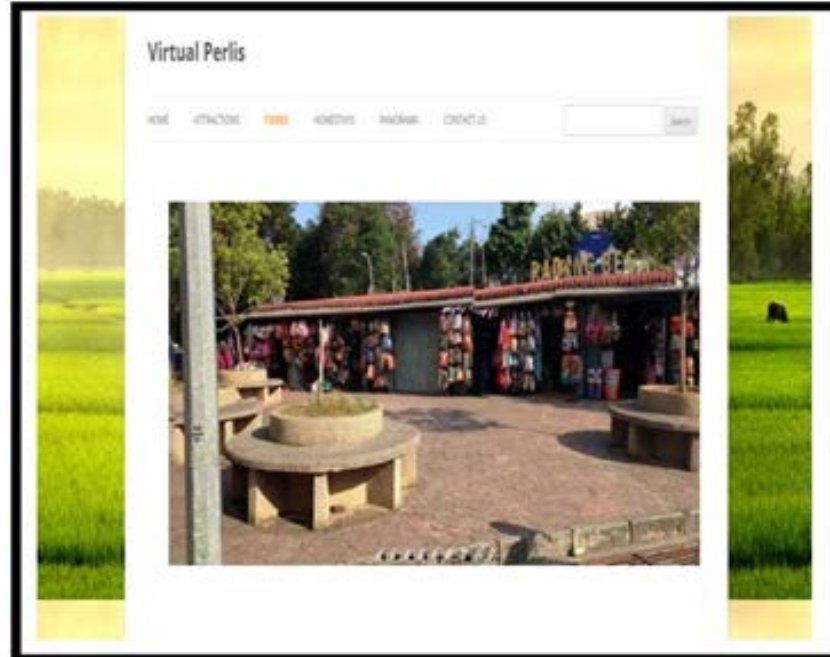


Fig. 11: Panorama page

**Contact us page:** This page is provided to user if users have comments or suggestion to admin, so that, the admin can improve the contents and information on the website. The

owner of the home stays also can add their home stays in the list by using the contact us form, so that, the admin can help them to promote their homestays (Fig. 12).



Fig. 12: Contact us page

## CONCLUSION

The conclusion that can be made by completing this Final Year Project is, basically, the project was conducted as a major individual study in an information system topic at a degree level that provides an opportunity to extend knowledge and experience in many specialized areas. This project needs a commitment, co-operation and idea to develop the prototype and design the application.

Besides that, skills and individual ability also have been developed and enhanced during undertake this project because it has need to apply and demonstrate skills in organization, time management, investigation and communication to produce with better outcomes at the end of the project. This project shall fulfill all objectives that required for this project.

**Project accomplishment:** During the development of Virtual Perlis, there are many experiences that have been gained, such as during the visiting to the interesting places, I have to wait for suitable weather in order to making the video and I have to search for a suitable spot before start recording the video, I also have to go to tourism Perlis to gather information about this state so that this website has a true story about this state.

Moreover, in the development process of Virtual Perlis, many knowledge that's been learned such as create use case diagram, doing the Gantt Chart, find and do research about the literature review and others also research the methodology approach.

**Strength of project:** The strength of this project user can view both on this website in smart phones or in desktop.

User can use the embedded system on the website if users view it in smart phones because the embedded system help user to reach to user desired destinations. Most importantly, this website provides all needed information for tourist if they come to this state for the first times.

**Weakness of this project:** The major weakness of this website is the panorama that was provided in the website cannot be viewed in the smart phone because it uses software adobe flash which is only supported in windows OS. In addition the list of homestay also has its weaknesses which is there are no link to directly contact with the owner of the homestays and there are no photos of the homestays in the website.

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