

# Equine Infographic Application Suits Malaysian Cultures

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**Abstract:** The involvement of Asian countries in equine activities is currently on a rise. Equestrian Association Malaysia (EAM) is working towards changing the current stigma that equestrian is solely for the high socioeconomic group of people. Since equine activities are increasingly being known in this country, there is a need to expand and spread essential equine-related knowledge and information. This study aimed to develop a mobile application that is useful and provides essential equine-related knowledge and information. This mobile application contains precise images, standard and simple terminologies in the form of infographic presentation which will provide easy and practical understanding. The application was built in four phases comprising inception, elaboration, construction and transition Phase. The fundamental development of the mobile application is based on the concept of visualization as it is an efficient method to human memory. The mobile application was specifically presented bilingually where both the Malay and English Language were used to cater to the Malaysian population. Additionally, the mobile application also can be launched for offline reading. Nevertheless, the capacity, size and advance information are still lack. Thus, further study is needed to improve the efficiency of this mobile application.

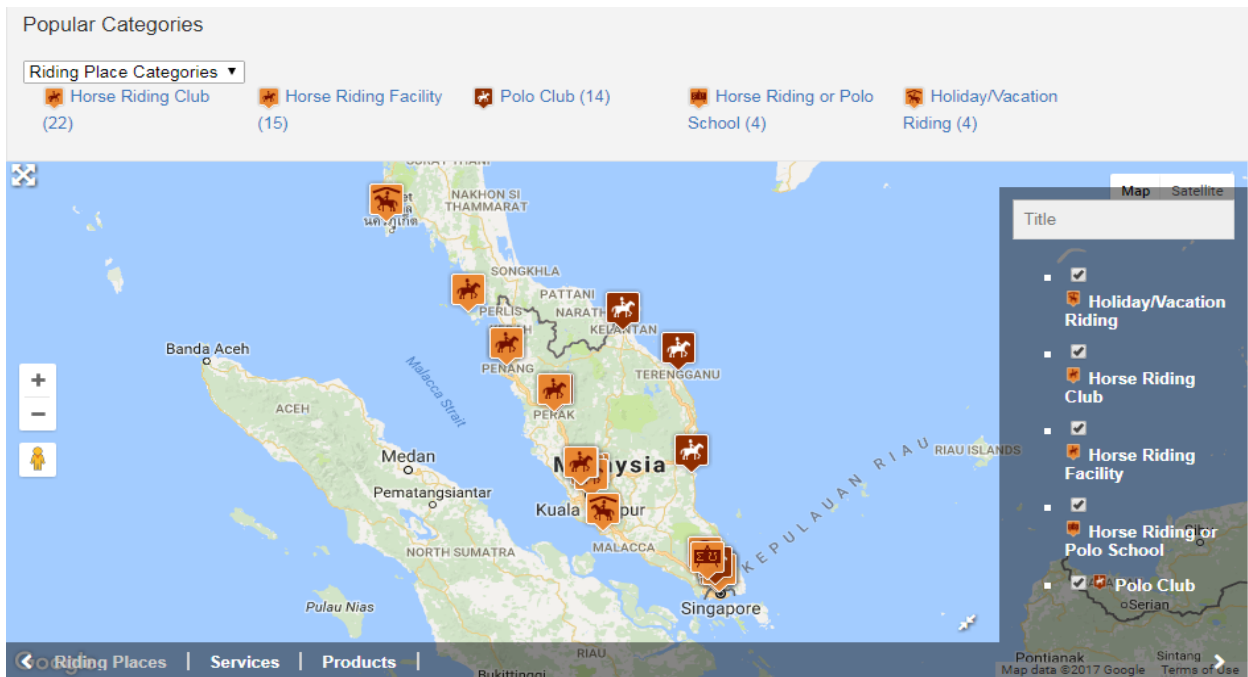
**Keywords:** general horse knowledge, visualization, infographic, mobile application

## 1. Introduction

People enjoy riding horses every year [10]. Besides riding, there are many other aspects of the horse to be explored. Many horsemen combine their vocation with avocation while other do it just for leisure (Figure 1). Yet the equine terminologies are not easy to remember and understand. To reveal things that horsemen do, the ideas have imitated which considering people to get clear information.

Since, the equine industry is a developing one, general horse knowledge should be established to help the industry grow positively. At the moment, there are many research attempted to focus more on theoretical input through education. However, lack in practical experience might be the cause of spreading the right information [2]. Therefore, there is a need to create a medium or device as an effort to minimize this issue is through the development of a mobile application which everyone will be able to install in their mobile device and get the information of their interest on hands [1].

Infographic is a method that has been used widely to deliver information quickly and efficiently. A lot of people on social platforms can assess the content as they scroll through their feed, so it's important not to overload them with information and sentences. To cater for this behaviour and to deliver the general horse knowledge efficiently a memorable graphic is required which should be short, specific, concrete and should have a balance between text and visual elements. At the very least, people or horse handler can grasp the information within a few seconds. Ideally, the infographic should inspire people to learn more and to share with others because the graphic is almost always a part of a larger conversation or story [5].



**Figure 1** Distribution of Horse Clubs in Peninsular Malaysia (Source from <http://equestrianasia.com/location/>)

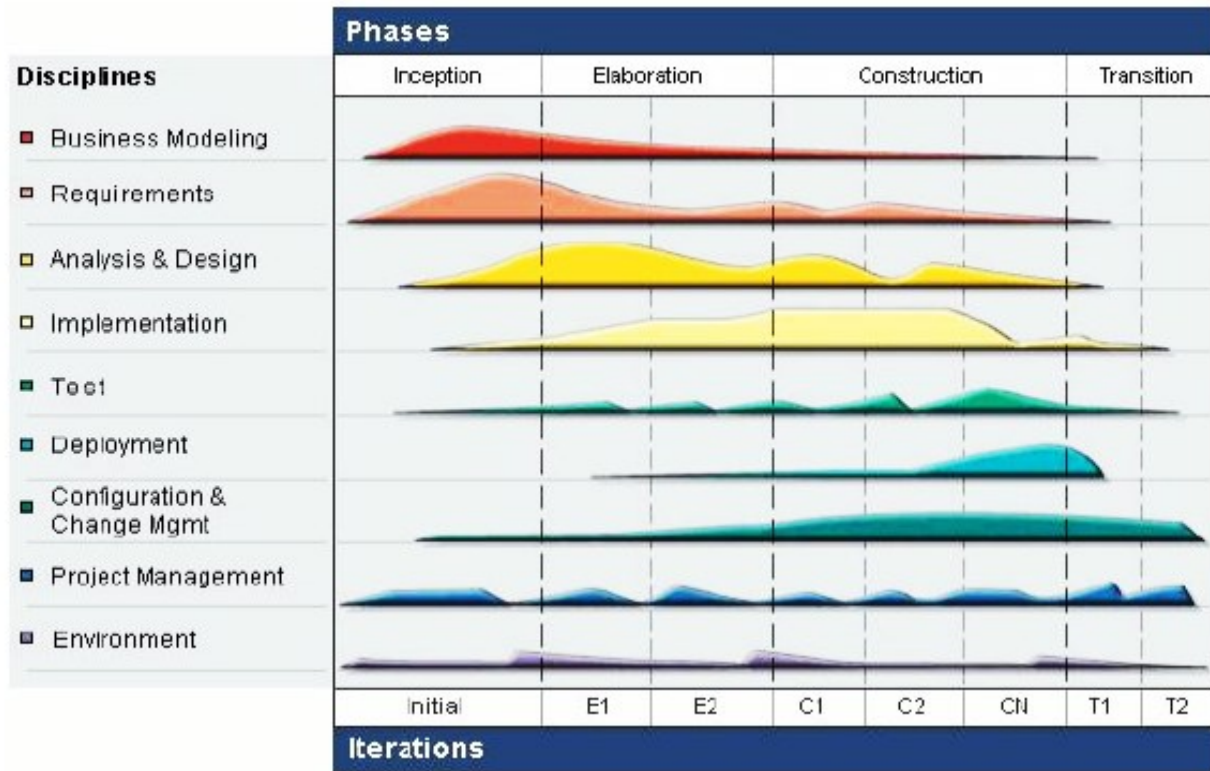
## 2. Methods

Smart devices are no longer only bound to entertainment purposes, they are also beneficial for educational, sports and even health purposes. Equine Infographic application was built and design to deliver basic equine information in graphical form to android users. Rational Unified Process (RUP) was the used in developing the Equine Infographic Application. RUP is a software development process from Rational, a division of International Business Machines, IBM. The four phases of RUP include the phase of inception, elaboration, construction and transition.

The common differences between cells devices were due to their bodily characteristics, such as size, display size, data enter mechanism, or expandability. As well as their technical specifications including technology power, memory space, battery services or the system operation. The particular need and characteristics of elected target units were considered during application development. The product must have high quality system to function desirably within thousands of variants about current and upcoming mobile phones.

### 2.1 Development of equine infographic application

There are four phases of Equine Infographic Application process. First, is the inception phase which is the process where the idea was stated. In this phase, some ideas improvement were determined to make sure the project is worth pursuing and other required sources were identified. The second phase involved elaboration of the project architecture engineering and further sources needed. Developers predict workable provisions of the programming and costs associated with the development. The third phase was the construction where the project was developed and finished completely. The software was designed, written (record) and tested. The last phase was the transition phase. In this phase the program or software was released to public. Last alterations were made after some system problems were corrected.



**Figure 2** Application Development Phase by Rational Unified Process  
 (Source:[https://en.wikipedia.org/wiki/Rational\\_Unified\\_Process#RUP\\_building\\_blocks](https://en.wikipedia.org/wiki/Rational_Unified_Process#RUP_building_blocks))

The minimum hardware shown in Table 1 are used to develop equine infographic application. The computer is the main control system where the project developed while mobile device used to synchronize the project with the computer. Other important part is system requirement. It divided by two parts which are project documentation shown in Table 2 and project development in Table 3. Project documentation is used to draft ideas, construct framework and templates, editing pictures, and creating diagrams. In project development, it used to develop the application by using software system as a main structure such as Microsoft Window 7 Home Premium Operating System, MIT Inventor 2, and AI Companion to review screen from computer to mobile device.

**Table 1** Minimum Hardware Used to Develop Equine Infographic Application

	Hardware	Specification
<b>Computer</b>	Processor	Intel Core i5
	Memory	Minimum 4GB RAM
	Hardisk memory	10 GB and above
	Graphic card	ATI Mobility Radeon HD 5650
	Monitor	-
	Mouse	-
	Keyboard	-
<b>Mobile device</b>	Processor	Quad Core Application
	Operating system	Android 6.0 (FEVER Marshmallow)
	Memory	Minimum 4GB RAM
	Resolution	480 x 320 pixels, 4.8 inches

**Table 2** Project Documentation used to Develop Equine Infographic Application

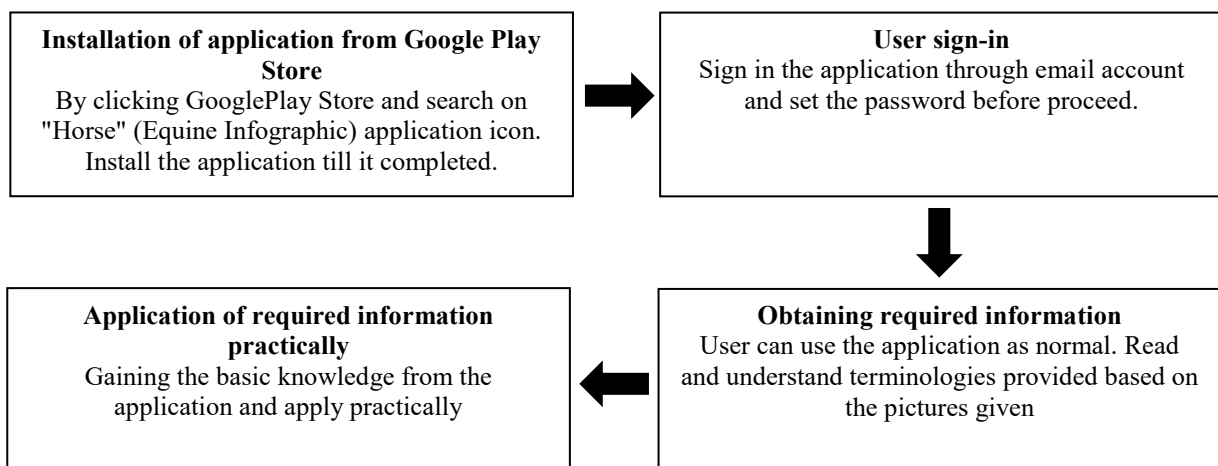
Software	Description
Microsoft Word 2010	Software used to draw the draft and designing the ideas before apply it into Canva application.
Canva Poster Application	Software used for constructing the coloring draft and framework of the application template cards.
Photopea	It used to design the brand and logo. Graphic icon and background used in the project development. Picture editing also using Photopea.
Enterprise Architect	EA is used for creating use-case diagrams, sequence diagrams, system models and etc.

**Table 3** Project Development used to Develop Equine Infographic Application

Software	Description
Microsoft Window 7 Home Premium Operating System	Android operating system that will be used to develop the system.
MIT Inventor 2	The main system for designing and programming Equine Infographic Application
AI Companion	It will provide the virtual smartphone device for developers to run and test the application by connecting computer with mobile device.

**2.2 Infographic Approach**

There are several steps to use Equine Infographic Application through mobile phone specialty for android users:



### 3. Outcome

Equine Infographic Application was developed in bilingual and can be utilized for offline reading. This application was found to be useful since it helped to provide precise and clear in making particular information about general horse knowledge especially for horse handlers. Its completion is to deliver basic knowledge of horses among Malaysian specifically using mobile infographic application. The information gathers with graphic which can give large impact to memory and easy to refer and revise anytime and anywhere. It could propose specific standard terms used for horse equipment in the form of infographic. Besides, it also has potential to be one of the workable knowledge medium for any ages who are seeking for instant horse information. The contents are developed in graphical form with the main purpose of it being applicable to users practically while providing them with the necessary understanding. Furthermore, this mobile application also acts as fastest accessing medium for general horse information without taking so much time in reading especially during time constraints.

### 4. Discussion

Equine Infographic Application is one of the educational tools that utilized medium of mobile device. This mobile application development involved some characteristics of usability deliberated which are physical, interface, presentation and media. Physical aspect referred to the size of mobile device which is lighter and easier to bring instead of books. However, the size of mobile screen will naturally be smaller while needing to fit the Infographic application information. The content of the Infographic will provide basic knowledge using a graphical user interface which enable the user to read, gain and apply practically. There are only few options to present the slide while developing this mobile application. Thus, the screen will be presented in basic orientation by clicking button and scrolling down screen. The use of media such as graphic in mobile gave positive impact in mobility, convenience and positive attitude to users [8]. Therefore, high resolution images were needed. This mobile application is expected to gain the reading interest among the users who are into infographic as well as equine enthusiasts. Equine Infographic application was supported by previous research in the usability of infographic, which is visible representations about information, statistics and expertise intended to exist complex information shortly and virtually [3]. It was found to enhance cognition through utilizing graphics to improve the human visual system's potential after conferring patterns or trends [6]. It is also great for telling stories as their visual and text can connect to guide the viewer through the graphics enabling successful telling of complex stories [7].

### 5. Conclusion

Today, the mobile technologies are getting increasingly advance [9]. The purpose of mobile device is no longer just to make call and send message but also as a medium of communication or to connect with huge group of people. Besides that, they are also used in the education field. Equine Infographic Application is an educational tool which aims to deliver information integrated with mobile technologies to facilitate, support, enhance and extend of teaching and learning [4].

### 6. References

- [1] Costill, A. (2013, October 24). 6 Benefits of Using Infographic. Retrieved from Search Engine Journal: <https://www.searchenginejournal.com/6-benefits-using-infographics/70917/>
- [2] Friedhelm, Christine. (2015). *Equine Wisdom: Lessons Learned from The Horses*. Johor: UTM PRESS.
- [3] Gao Ru, Zhang Ya Ming. (2014). Infographics applied in design education. *Advanced*
- [4] Hashemi, M., Azizinezhad, M., Najafi, V., & Nesari, A. J. (2011). What is mobile learning?
- [5] Howard S. Becker. (2008). It's (almost) all a matter of context, *Visual Sociology*. *Visual sociology, documentary photography, and photojournalism*, 10:1-2, 5-14.
- [6] Jeffrey Heer, M. B. (2010). A Tour through the Visualization Zoo (A survey of powerful visualization techniques, from the obvious to the obscure). *acmqueue*, 1-26.
- [7] Jess Bachman. (2015, January 06). Designing Infographics for Mobile. Retrieved from Visually: <http://visual.ly/blog/designing-infographics-mobile/>
- [8] Jong Woo Jun, S. L. (2007). Mobile Media Use and Its Impact on Consumer Attitude towards Mobile Advertising. *International Journal of Mobile Marketing*, 50-58.
- [9] Lee Boon Kiat, Noor Dayana, Halijah, Bilal Ali. (2015). *Characteristic of Mobile Device and Factor of Mobile Application in Education*. Johor: Universiti Teknologi Malaysia.
- [10] Robinson, L. (2017). 30 Interesting Facts about Horses. Retrieved from The Fact Site: <https://www.thefactsite.com/2016/06/horse-facts.html>