

## Mobile Application for Language Translator and Melanau Culture (Let's learn Melanau)

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**Abstract:** *Nowadays, more and more people are forgotten about their native language. Same things happen to the culture where it is should be passed down for generations. It is true that language and culture are inseparable like the songs and rhythms. This is because language reflects culture. Therefore, a Mobile Application for Melanau Culture and Language Translator will be discussed in this documentation. With this system people, especially Melanau community that has been forgot about their language and culture can learn and improved their mother tongue. Besides, this application also can help people who interested to learn a new language that is Melanau language. In addition, the system provides information about Melanau culture to its user. This application was created according to four phase which are inception, elaboration, construction and transition. The system design was also being included in this project where the designs were being represented in Unified Modeling Language (UML).*

**Keywords:** Melanau, Mobile Application, Language Translator

### 1.0 Introduction

Malaysia known as peaceful country as the country are rich with culture and races. Besides the country known to has people living with different kind of races and religion. One of the limitations faced by Malaysian is there are many kind of language especially minor races which mostly live in east of Malaysia which are Sabah and Sarawak. Sarawak itself has various kind of languages and dialects. Melanau is one of the major ethics group in Sarawak. In 2010, there are estimated to be 123,410 who consider themselves as Melanau, making it the fifth largest ethnic group in Sarawak.

Melanau is a small community and mainly live in riverside. Some people might want to learn the uniqueness of the language. There is dictionary provided by the community but in the form of books and some people can learn it from website. Unfortunately, mostly Melanau people do not know how to use Melanau language. This is due to migration and mostly they have been influenced with their daily use language. They also forget about on how is their own culture like. However, this can be solved with this application where it can help people to learn Melanau language regardless who want to learn this language or to certain of Melanau community who forgot about their language and for those who want to learn more about Melanau culture.

To learn a new language is not that easy. The object of this project is to study Melanau language and Melanau's culture For Mobile Application for Melanau Culture and Language Translator and to design a mobile application name as Let's learn Melanau. Next objective is to develop to develop Let's learn Melanau application. The last objective is to evaluate and test the application.

The paper consists of five section. Section 1 is the introduction of the paper. Section 2 described the methodology used for this project. Next, section 3 presents the result of this project while section 4 discusses the achievement of the objectives. Last but not the least section 5 is a conclusion of this paper.

## 2.0 Problem Background

Melanau is a small community can be found in Malaysia and mainly live in Sarawak. Melanau people have their own dialect or language known as Melanau language. Some people might want to learn the uniqueness of the language. There is dictionary provided by the community but in the form of books and some people can learn it from website. To learn a new language is not that easy. Therefore, this project proposes a Mobile Application for Melanau Culture and Language Translator. With this application, using a smartphone could ease everybody to learn new language as a smartphone is portable for anyone to bring it along anywhere and anytime. User can access the application during their leisure time for example when they are waiting for a bus, waiting for a friend at the café and so on. Besides, this application also provides information about Melanau culture. The culture consists of Melanau's tradition, foods, traditional attire and many more.

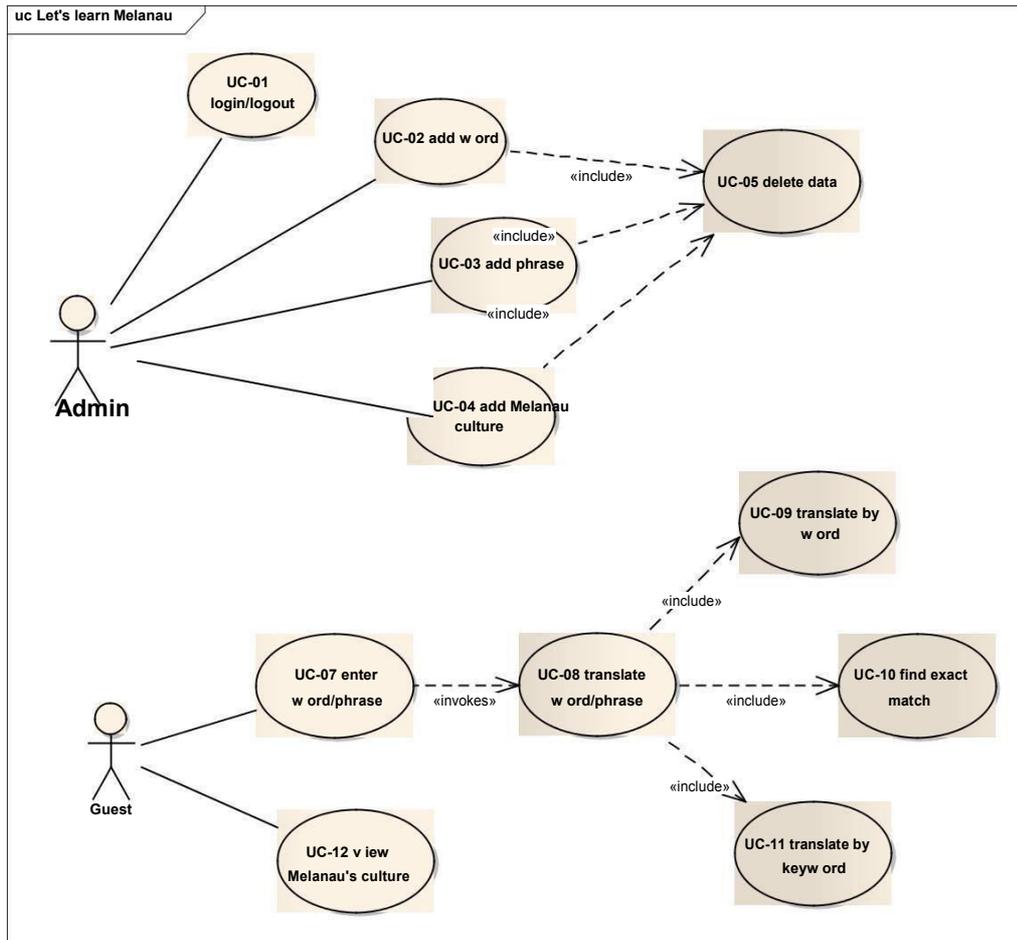
Unfortunately, mostly Melanau people do not know how to use Melanau language. This is due to migration and mostly they have been influenced with their daily use language. This is the main reason why Melanau language is no longer their first language in their daily life, they tend to forget slowly and lost confidents to speak in Melanau. This application will help user to translate a word or text where user need to select the origin language and target language as they want to.

In addition, they also forget about on how is their own culture like. However, this can be solved with this application where it can help people to learn Melanau language regardless who want to learn this language or to certain of Melanau community who forgot about their language and for those who want to learn more about Melanau culture.

## 3.0 Methodology

This system used Rational Unified Process(RUP) as its methodology. The Rational Unified Process (RUP) is a software engineering process that provides discipline approach that need to follow the guidelines for the assigned tasks and responsibilities within the organization (Ashraf Anwar, 2014). RUP can be effectively applied throughout the system development process. It is to ensure the production quality of software that meet the requirement follow the schedule and budget. RUP is one of the methodology is the most popular software development process. The process shown is dynamic perspective which is constantly changing. In addition, it is easier to develop a system when there is already step by step methodology like RUP. Begin from collecting requirements to delivering the product to end-user, RUP provides four phases that can be used as a guideline in developing a system which are inception phase, elaboration phase, construction phase and the transition phase

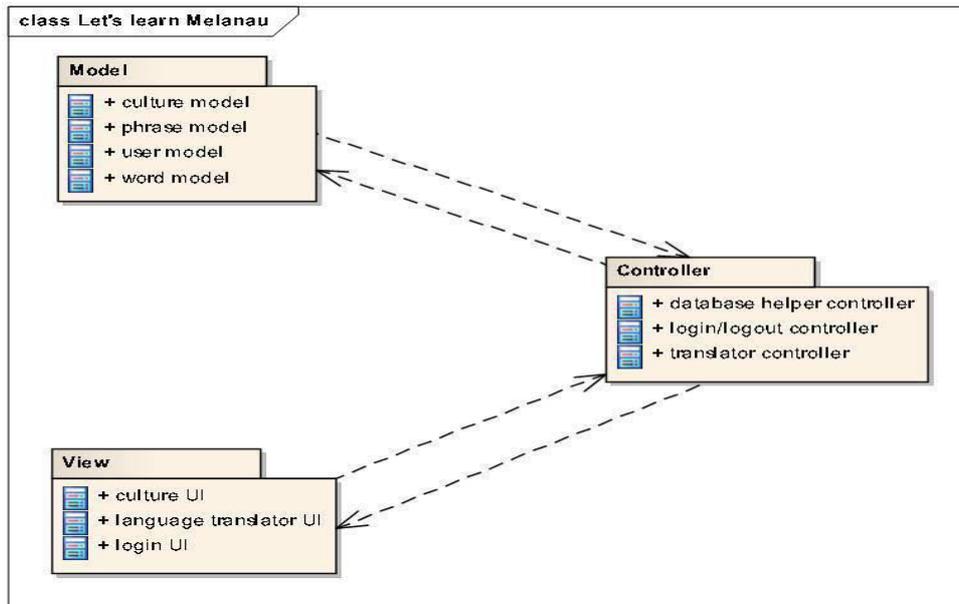
In elaboration phase, the project's requirement in detail and architecture is analyzed. A more complete use cases model was developed and the architecture and methodology suitable to implement the mobile apps were identified. In the construction phase, the remaining component and application features were developed and integrated into the product. Figure 1 below show the use case of the system.



**Figure 1** Use case of the system

#### 4.0 Result

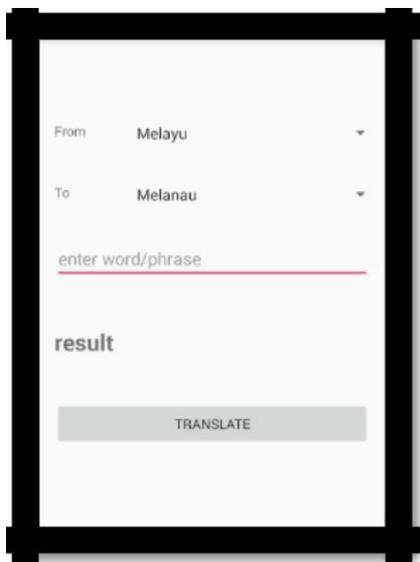
The system architecture design which is suitable for this application is Model- View –Controller (MVC). MVC architecture consists of three major parts which are model, view and controller (Shi, Liu, Li, & Hou, 2015). A model is responsible to handle and maintain the data. View is used to display the data while Controller is responsible to handle user input, it acts as an interaction controller between model and view. Figure 2 below shows the architecture design of the application.



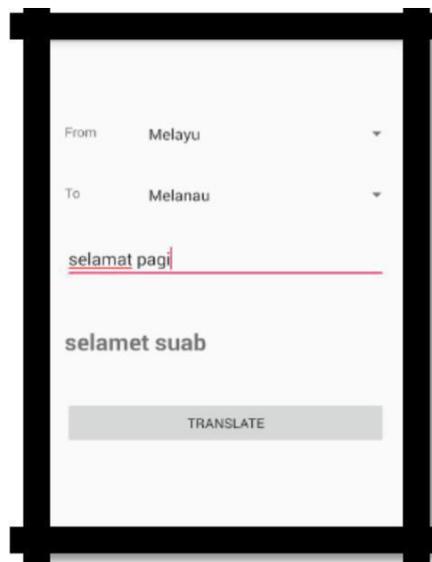
**Figure 2** Architecture Design of Let's learn Melanau application

Let's learn Melanau Mobile Apps is implemented using Android Studio. Android Studio is a platform to develop Android application. It supports Java programming language. The project build in Android Studio is built in grade. Android Studio also allows user to run the project using its own emulator or connecting the devices into it where Android mobile device with version 2.3 has been used for testing the application.

Figure 3 show the interface for language translator where user need to choose the origin and target language while Figure 4 shows the interface showing the result of the translation. Table 1 below shows the result of the testing done to the application, the testing done is using black box (equivalence partition). On the other hand, the expected result was displayed in Table 2 below.



**Figure 3** interface for language translator(a)



**Figure 4** interface for language translator(b)

**Table 1** Black box testing for the system

| Variable               | Equivalence Class  | Status  | Representative | T1  | T2  | T3  | T4  |
|------------------------|--------------------|---------|----------------|-----|-----|-----|-----|
| Word / Phrase          | X = varchar        | valid   | Selamat pagi   | •   |     |     |     |
|                        | X= varchar         | invalid | mira           |     | •   |     |     |
|                        | X = decimal places | invalid | 2.2            |     |     | •   |     |
|                        | X = null           | invalid |                |     |     |     | •   |
| <b>Expected Output</b> |                    |         |                |     |     |     |     |
| Message Dialog         |                    |         |                | ER1 |     |     |     |
| Error Message          |                    |         |                |     | ER2 | ER3 | ER4 |

**Table 2** Expected output for language translator

|     |   |
|-----|---|
| ER1 | Display result based on origin and target language                |
| ER2 | Display message, <input>This word is not in <origin language> yet |
| ER3 | Display message, <input>This word is not in <origin language> yet |
| ER4 | Display message, <input>This word is not in <origin language> yet |

Figure 5 below show the workflow of language translator. At the very first step, user need to click on option language translator to activate the function. Next, user is required to choose the origin along and target language along with the input word or phrase to be translated. Finally, the application will display the result of the language translation process.

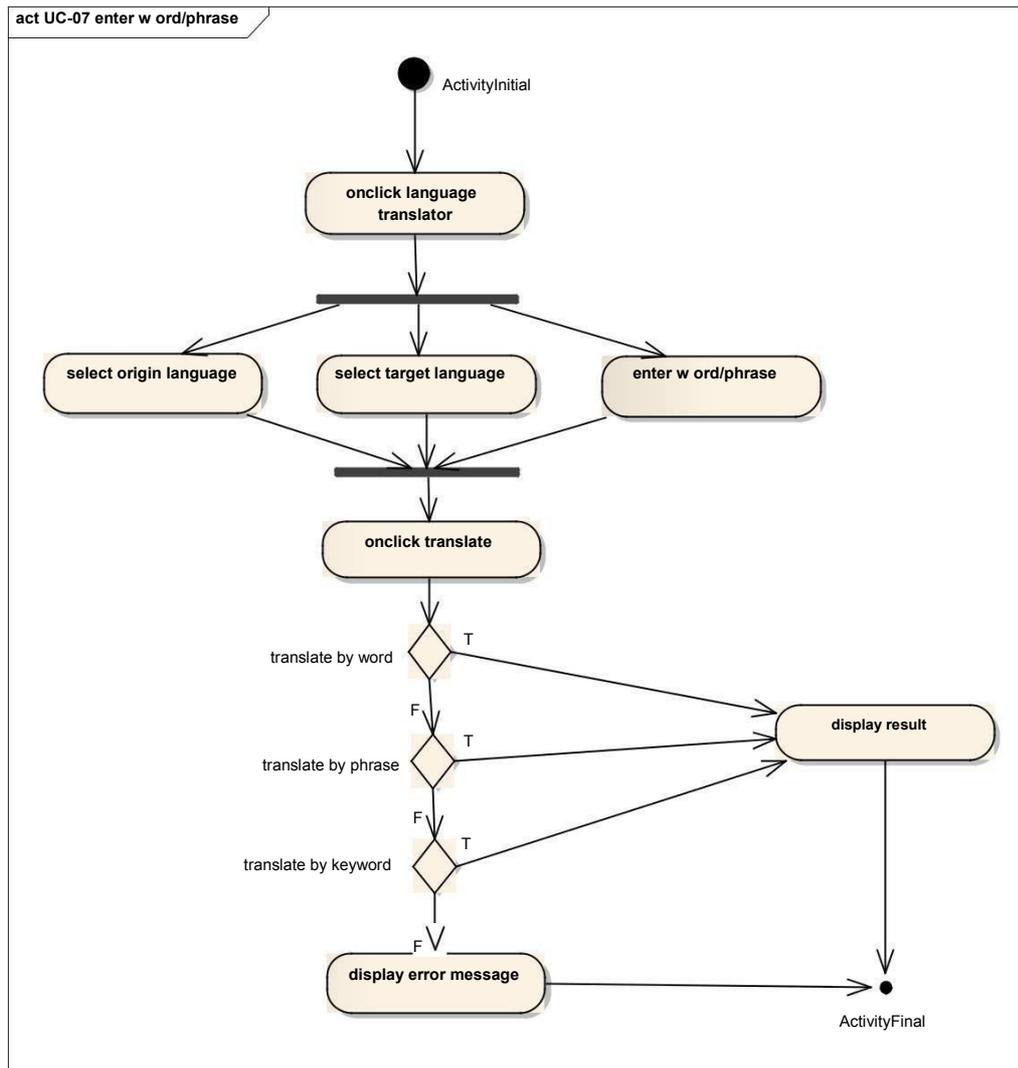


Figure 5 Workflow of language translator

## 5.0 Discussion

The objectives that has been stated earlier which are to study Melanau Language and its culture, to design an application, to develop the application and finally, to evaluate and test the application. All the objectives are achieved as the application has been developed where black has been used to evaluate the application.

## 6.0 Conclusion

As a conclusion, the objectives of Let's learn Melanau application have been achieved in the end of the project. The function to translate language are successfully developed with some of the logic based method used in Example Based Machine Translation(EBMT). With this application, anyone now can learn Melanau language and its culture.

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