

First Aid Mobile App in Bahasa Melayu

By

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ABSTRACT

First aid can be defined as “simple emergency medical care procedures intended for lay rescuers to perform before emergency medical professionals are available. It also may refer to emergency medical providers, such as ambulance and other first responders.” First aid also can be known as emergency medical response and pre-hospital emergency medical care for the victim at bay.

Having a decent knowledge in first aid treatment is essential. This is because a single mistake in giving a medical aid to a person can cause a person’s life. More than 140,000 people in United Kingdom die each year in a situation where first aid could actually saved life. This proves that knowing first aid procedures do help save a person’s life.

The objectives of this project are to research on the common injuries that happens on young Malaysians and best method to teach first aid using mobile application, to develop a Bahasa Melayu medium platform mobile app for young Malaysians who are not well-versed in English with the help of visual aid and to conduct a user acceptance test on the first aid app developed once the mobile application is nearing completion. These objectives are to cater the problems of the lack of awareness towards first aid knowledge among Malaysians and also there is no existing mobile application available for Bahasa Melayu medium in first aid application.

First aid mobile application in Bahasa Melayu will be focusing on the treatments of common injuries among young Malaysians and the application will be developed under agile development methodology.

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First and foremost, I would like to express my deepest gratitude to the Almighty, for giving me the opportunity to be able to complete my final year project in two semesters with grace. He gave me strength and strong will when I needed the most, especially when I am having few bumpy roads along the way. Thank you, Allah.

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CHAPTER 1

INTRODUCTION

1.1 Background study

In today's world, accident can happen anywhere and anytime without anyone realizing it. Based on Utusan Melayu article written by Nurul Anuar Kari in 2009 entitled 'Pentingnya ilmu untuk kecemasan' (Importance of knowledge for emergency), Jafriani Hariani, a 10 year experienced nurse mentioned in the article stressed that first aid is an express medical aid before the paramedic or the doctor arrive to help the victim. She also mentioned that the awareness of the importance in first aid knowledge needs to be raised so that more initiatives will be taken in order to learn first aid. She said, "4 minutes (the time given for the brain to still be safe without oxygen) can determine the life and death of the victim, if they receive a first aid treatment". On the other hand, she also recommended that first aid knowledge should be given to the students at school especially. Having a decent knowledge of first aid can be beneficial at times like this. However, not many people possess decent knowledge of first aid to help save a life at bay. It is essential to know the essential basic of first aid so that in the situation of emergency, a person would be save instead of making the situation goes worse than it should be.

First aid mobile application in Bahasa Melayu will be focusing on the treatments of common injuries among young Malaysians which will be researched for this project. The mobile application will be developed under agile development methodology due to its ability to be flexible and it would easier for the author in order to develop the mobile application in near future. The mobile application aims to develop a Bahasa Melayu medium platform mobile application for Malaysians who are not well-versed in English with the aid of visual aid in order to help easier learning in first aid treatments to encourage especially young Malaysians to learn the correct ways to administering first aid treatments in case of emergency that young Malaysians may encounter in the future.

1.2 Problem Statement

Problem statement of this project is as below:

- Lack of awareness towards first aid knowledge among Malaysians

Due to lack of awareness, many Malaysians neglect the correct ways administering the right first aid procedures when emergency happens. As a result, this can results many complications such as risk of possible bacterial infection, paralysis and etc if the wrong procedures of first aid are being administered to the victim at bay. In schools, there are clubs such as Red Cross Association and St. John Association but most of the times, it is not focus on teaching students how to administer correct procedures instead these clubs are more focused in marching competition. Thus, young Malaysians may not be exposed to learn first aids in the correct ways it is suppose to be.

- No existing first add apps in Bahasa Melayu

As of now, there are a number of first aid mobile applications available in Google Play. However, there is still no Bahasa Melayu medium yet released for first aid application in Google Play. Instead, there are other language medium mobile application released in Google Play such as in Spanish and Korean

1.3 Objective and Scope of Study

The objective of this final year project as below:

- I. To research on the common injuries that happens on young Malaysians and best method to teach first aid using mobile application
- II. To develop a Bahasa Melayu medium platform mobile app for young Malaysians who are not well-versed in English with the help of visual aid.
- III. To conduct a user acceptance test on the first aid app developed

The scope of study of this final year project will be focused on young Malaysians, ranging from secondary students to young working adults. The study is specifically to investigate on the lack of awareness in knowing first aid treatments in this age group. It will focus on what kinds of treatments that should be featured in the mobile application.

1.4 Relevancy and feasibility of the project

In developing this project, this project would be a great help for all Malaysians, especially for the younger generations in terms of encouraging them to learning the correct first aid treatments in order to help save a life in the future. As there are still numbers of Malaysians who are not well-versed in English, this will certainly helps them to learn without having to worry about the language barrier. The project is feasible to be done in 2 semesters.

CHAPTER 2

LITERATURE REVIEW

2.1 Awareness towards first aid knowledge

According to Rod Brouhard (2012), first aid can be defined as “simple emergency medical care procedures intended for lay rescuers to perform before emergency medical professionals are available. It also may refer to emergency medical providers, such as ambulance and other first responders.” First aid also can be known as emergency medical response and prehospital emergency medical care for the victim at bay.

In the United Kingdom, a study revealed by St. John’s Ambulance is that people in Midlands view cancer as the bigger killer, when in reality; a lack of first aid knowledge is taking more lives than cancer. Lukes (2010) stated that more than 140,000 people in United Kingdom die each year in a situation where first aid could actually saved their life. According to St. John’s Ambulance UK website, from the number generated includes nearly 900 people who choke to death, 2500 who asphyxiate from a blocked airway and 29,000 who die from heart attacks. In addition, this figure shown is more than 4 times the people who died from lung cancer each year in the United Kingdom.

A study from St. John’s Ambulance in 2010 also revealed that 59% of the UK population wouldn’t feel confident enough to help save a life whereas the remaining 24% would do nothing and wait for the ambulance or someone who knows first aid. In addition, it is also revealed that mouth-to-mouth procedure in CPR puts off people but if only chest compression is present, only 56% will try to help resuscitate a stranger. However, it is surprisingly to know that 38% of the population will administer CPR if one of their family members is not breathing. This shows that in the presence of a family member needing first aid treatment in this case, requiring CPR; people are more prone in helping to resuscitate their family member.

Wigham(2003), in another study, he also stated that almost half of the workforce in the United Kingdom would have the ability to treat even the most minor injury in the workplace; whereas the remaining 52% do not know where the first aid kit is being kept in the workplace. This shows on the lack of awareness in first aid treatments in the workplace. It also been revealed that 43% of the employees have never had any training in regards of first aid treatment at all.

2.2 Visual aid

Based on freedictionary.com, visual aid is an instructional aide such as picture, poster, or video that presents information visually. Learning with visual aid, according to OSHA, it is said that clear pictures will help to increase the audience's level of understanding of the material presented, and it should be used to emphasize message that is being conveyed, to clarify points and also to create excitement in presenting to the audience. In addition, visual aid can help peak the audience's interest due to its ability to increase the audience's understanding and this automatically increase the knowledge retention level of the audience.

According to zaneeducation.com, the website stated that more than 40% of students are visual learners. These visual learners favored for them to be taught visually in the form of videos, flowcharts, demonstrations and etc. However, according to the website, a lot of schools still teaching by using written and spoken words to conduct a class.

2.3 Common injuries among young adults

Based on youthsafte.org, young people are on the high risk of injury due to the fact that they are at the stage where their curiosity levels are at their highest, peer pressure and tendencies to taking risk without thinking it through. These factors are one of the main contributors of injuries that occur to the young adults worldwide nowadays.

Sustaining an injury or two is no strange phenomenon for young adults, especially active teenagers of today. Injuries can be classified into several categories such self-inflicted, home-related and also sports-related injuries. Based on webmd.com, self injuries, also known as self-harm, self-mutilation and non-suicidal injuries are injuries that are being inflicted to one self with intention of committing suicide or for self-satisfaction to relief inner pain. Self-inflicted injury that is the most common among young adults is cutting or slicing themselves whether with a knife or other sharp objects that are available at sight.

Home-related injuries are injuries such as falls, airway obstruction and poisoning which is one of common causes of injuries or death. Based on an article in US News & World Report written by Luke Mullins, he stated that every year in United States of America, more than 18,000 Americans died due to home-related accidents. Home has become the second most common location for injuries, just behind car-related injuries just based on that fact alone. This shows how serious home-related injuries can be.

For active young adults, having a risk to sport-related injuries is no strange case to them as they are prepared to bear with the risk of it while doing sports. Example of sport-related injuries sprain, muscle pull and also shoulder injury are common injuries for young athletes all around the world. Futsal, for example, is one of the common sports that are popular among the young. It is not impossible for a young player to suffer any of the injuries related to futsal. Universiti Malaya Associate Professor, Razif Ali stated that once a body structure is fully torn, it does not heal and he also said that the most common injuries that a futsal players experienced are mostly involves the knee, the ankle, the back and also groin area.

2.4 Declining in English Proficiency in Malaysia

English is no doubt the lingua franca, the global language of the world today. In addition to this, English language is the official language of 54 countries all around the globe. In Asia, English language can be seen being used by most Asian countries as their second language which includes Singapore and Malaysia.

In Malaysia, Teh (2011) said declining in English proficiency in Malaysia is not unique. In his article, Decline or rise in English proficiency in Malaysia, he mentioned that the primary problem in our country lies on that English will always be a foreign and remote language, only to be used by elite minorities and for official purposes as it is not our first language to begin with due to Malaysia having a multiracial population. He even included a survey done in 2001 where it showed that only less than 2 percent of Malaysians which is around 380,000 people use English as their first language. This concluded that Malaysians are not using as much English in their daily life in order to have proficiency in it.

The other contribution of declining in English proficiency is that Malaysians still do not read as much as other countries do. Although there is an improvement where the recent study in 2010 revealed that Malaysians read between eight to twelve books a year in comparison to only two books a year in the year 1995, Malaysians is more prone on reading light materials such as newspapers (77%), magazines(3%) and comics (3%). Our Deputy Prime Minister and Education Minister, Tan Sri Muhyiddin Yasin, he stated in the article entitled *Malaysians still not read enough, says Muhyiddin* that if Malaysians were compared to the American citizen, 53% reads fiction while the remaining reads non-fiction. Malaysians also thought twice about buying books compared to buying food and they do forget that books are intellectual food, Datuk Ivan Hoe in the same article said who is a book fair organizer in Malaysia.

2.5 Existing similar first aid mobile apps in the market

In the mobile applications market today, there are many first aid applications that are being given for free and also being sold in Google Play. Examples of these applications are First Aid, First Aid by British Red Cross and many more. Most of the first aid applications that existed in the android market are mostly in English Language. There are also first aid applications that are offering its services in other languages such as Korean and Spanish named First Aid for Korean and Primeros Auxilios respectively. However, to date, there is no Bahasa Melayu medium platform in first aid application.

For the English medium first aid mobile application, First Aid, it is build to help users to follow procedures with the help of illustrations, videos and texts to guide users in step by step instruction in performing first aid procedures. Based on the review in Google Play, the users who have downloaded the mobile application reviewed the application as simple and easy to use, very useful application, easy to navigate and entertaining. The flaws that being stated by the user are the mobile application tends to crash a lot, intrusive advertisements and not attractive user interface. There is also suggestion for the application to have voice control in its application.

For the Spanish medium first aid mobile application, Primeros Auxilios, it is also similar to the English medium first aid mentioned earlier as it provides clear text and image to guide users to do first aid treatments. In addition, it has good review from its users stated that it is very good app. However, there are some users uninstalling due to Spanish not being their language and thought that the mobile application is a dual-language application.

Lastly, for the Korean medium first aid mobile application, First Aid for Korean, this application is reviewed by Korean National Emergency Management Agency. The mobile application includes First Aid, AED (Automatic External Defibrillator) Usage, CPR song and Security Guide. One of the reviews received by the users of the mobile application is related to CPR song which the users like. It helps users to be able to do CPR in an easy way. There is also a suggestion that the application can be moved to SD card as it will not much space in smart phone/ tablet because the application has web video embedded in the application.

Although there are abundance of first aid apps in the Google Play, people are still ignorance in this matter as they thought that accident might not occur to them. Most of smart phone users (64%) downloaded mobile gaming apps the most in comparison to other apps into their smart phone, according to mashable.com in its study in 2011. Only 13% of users downloaded health apps into their smart phone. Most of the first aid apps available are in English, with few apps in other languages such as Korean and Spanish. Yet, there is still no Bahasa Melayu medium platform in first aid apps available in the android market.

Below are the screenshots of the existing similar first aid mobile apps:

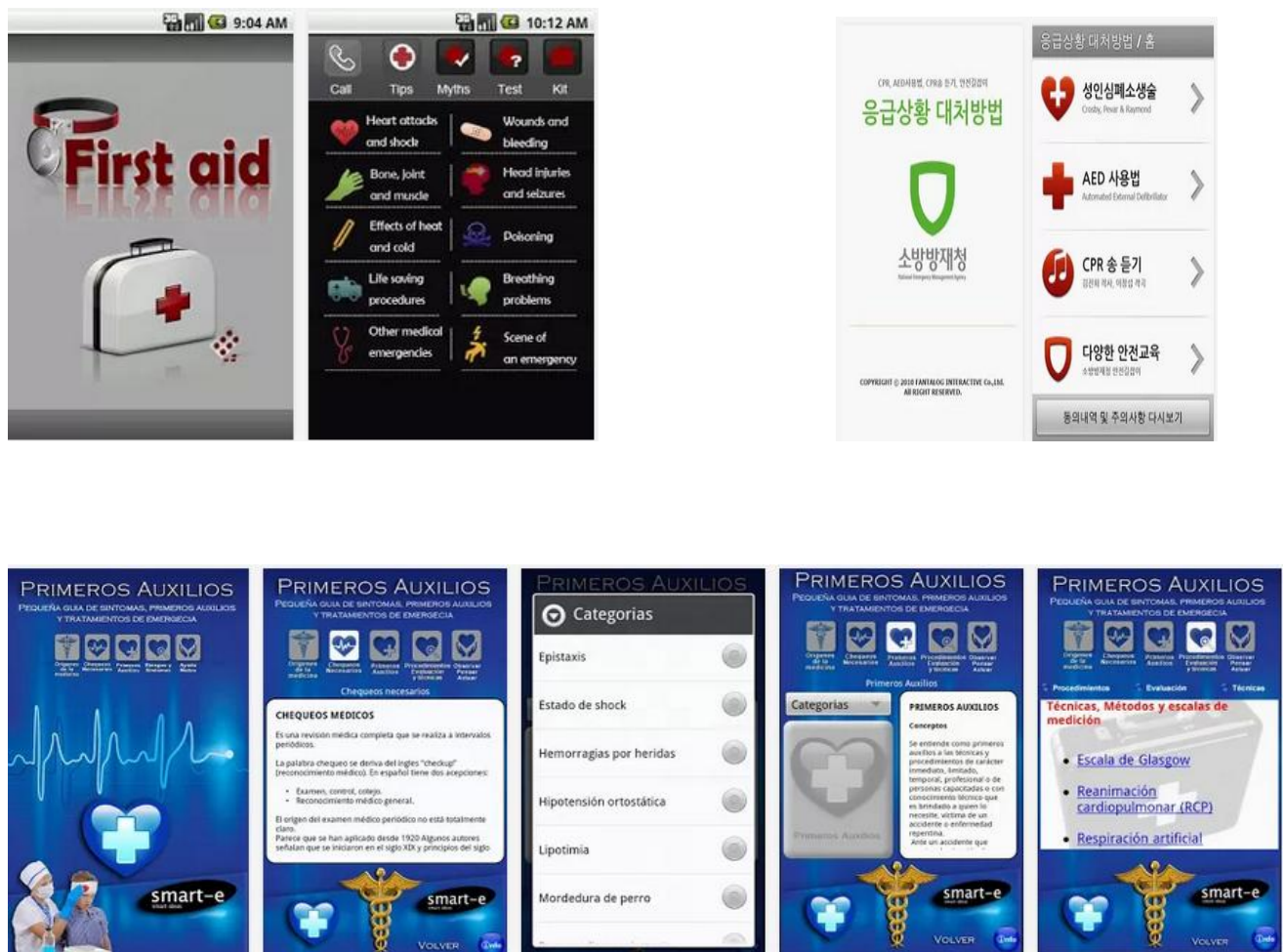


Figure 1.1 Screenshot of existing first aid apps

CHAPTER 3

METHODOLOGY

3.1 Agile Development Methodology

To develop this project, the author decided to use agile development methodology as the methodology. After considering options due to the fact that different types of projects may require different types of requirements in developing a project, this methodology is chosen and will be applied in the making of the project. Below is figure showing the Agile Development Methodology that is going to be implemented in this project:

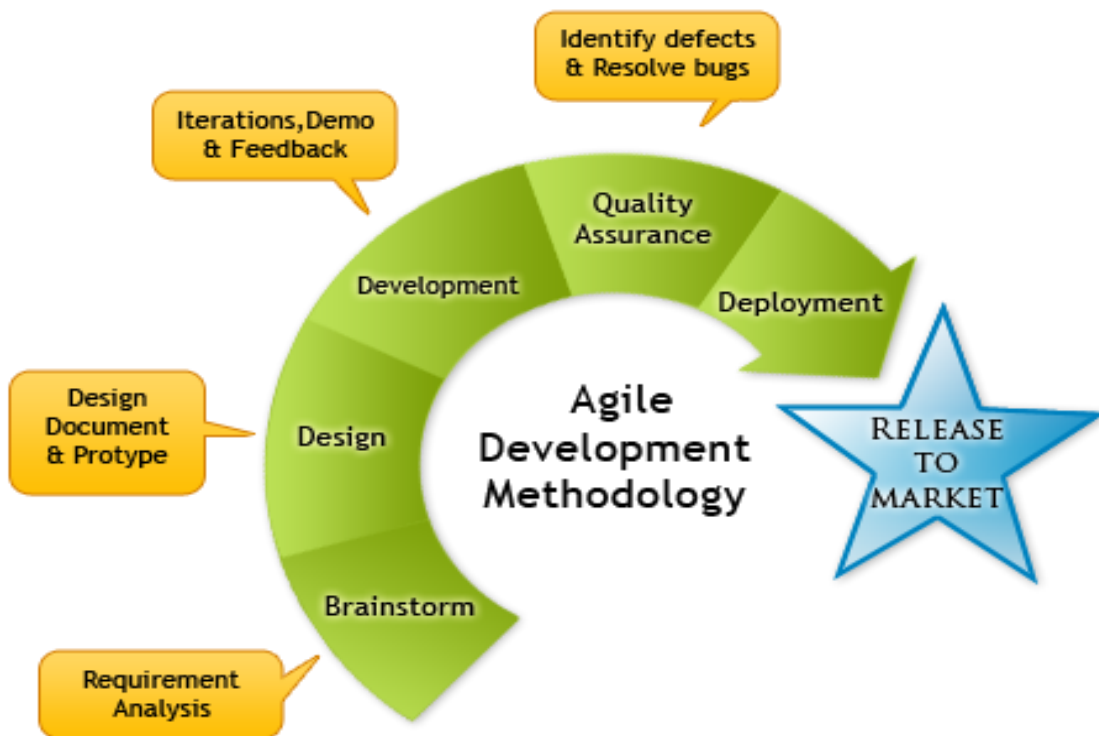


Figure 1.2 Agile Development Methodology

Agile development methodology is being chosen by the author for this this project specifically because of its ability to provide opportunities to evaluate the direction of a project throughout the development lifecycle. Comparing with the traditional waterfall methodology which only allows for example, software development to be done once, if there is any mistake(s) occurs during the development process, a person need to restart all over again in scratch as waterfall is more prone towards predicitability, whereas agile methodology is more prone towards adaptability. Being said that, agile methodology is a good option for a small project which has the possibility of having constantly changing requirements or changes in any stages in the future. As mentioned before, this methodology is designed to cope and adapt which allows necessary changes can be done without a person having to restart all over again.

The project will be done in steps by steps method to ensure the continuous smooth flow of the project with the estimated timeline of 2 semesters.

The stages of the project will be further explained in below:

Stages	Explanation
Brainstorm	During this stage, requirement analysis will be done. Brainstorm on which features that will be included will be done. The author will then be distributing survey to the target market which is young Malaysians upon their awareness on first aids knowledge. The analysis of this survey will be helpful in later stage of the project.
Design	This is where the design stage of the prototype will take place based on the requirements gathered from the previous stage.
Development	After the design stage has completely, the development stage will begin its phase. Here is where the iterations, demos and feedback from the user will be taken place. This is to

	ensure that the prototype performs as it should be.
Quality Assurance	In this phase, the prototype will be inspected and identified if there is any problem with the prototype. Defects and bugs will be resolved, if any.
Deployment	This will be the stage where the product is being deployed and ready for the market.

Table 1.1 Table explaining stages in Agile Development Methodology

3.2 Requirement Analysis

Requirements needed for the mobile application are as below:

- a) User
 - I. Possess smart phone/tablet
 - II. Have basic knowledge in operating mobile application
- b) Tools used in developing the mobile application
 - I. Android phone
 - II. Laptop
 - III. MIT App Inventor
 - IV. Java TM Platform SE Binary
 - V. Internet
- c) Limitations
 - I. The author will only use drawn pictures acting as a visual aid as real-life pictures will make the application lags due to heavy size.
 - II. The author is still new with MIT App Inventor, thus, the mobile application might be not as attractive as professional-made app.
 - III. There will no embedded videos to explain in further details due to limitation of time and also expertise.

3.3 Project Activities

As of now, some parts of project had already reached its completion. The author has gone through thoroughly on researches that touch upon the topic of awareness in first aids knowledge. Recent articles and journals on relevant topics regarding first aid and the help of visual aids are also studied by the author. With the knowledge gained on the related subject matters, the author hope that this knowledge will help the author in the later stages of the project.

3.4 Experiment Design

In the later stage of the project which is the quality assurance (user testing) stage, the author decides to do its user testing for the project by gathering feedbacks from volunteers to try out the application from time to time. By doing this, the author can know in full details on what needed to be improved and to be added in the application in the future.

3.5 Key Milestone

Week/Date	Activity
Week 2	Project selection
Week 6	Submission of extended proposal
Week11	Proposal Defense and Progress Evaluation
Week 14	Interim Report

Table 1.2 Key milestone for FYP 1

Week/Date	Activity
Week 7	Submission of Progress Report
Week 10	Pre-Sedex
Week11	Submission of Draft Report
Week 12	Submission of Dissertation (Soft bound)
Week 13	Submission of Technical Paper
Week 15	Submission of Project Dissertation (Hard bound)

Table 1.2 Key milestone for FYP 2

3.6 Gantt Chart

Gantt Chart FYP 1														
Activities	Week													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Project Title Selection	█	█												
Project Title Search	█	█												
Research on project			█	█	█	█	█							
Submission of proposal			█	█	█	█	█							
Submission of extended proposal				█	█	█	█	█						
Further study on research matter							█	█	█	█				
Conduct interview and survey									█	█	█	█		
Interface Design										█	█	█		
Viva preparation and submission : Proposal Defense and Progress Evaluation										█	█	█		
Submission of Interim Report												█	█	█

Chart 1.1 Gantt Chart for FYP 1

Gantt Chart FYP 2															
Activities	Week														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Continuation of project	█	█	█	█	█	█	█								
Submission of Progress Report						█	█								
Continuation of project								█	█	█	█	█			
Pre-Sedex									█	█					
Submission of Draft Report											█	█			
Submission of Dissertation (Soft Bound)												█	█		
Submission of Technical Paper													█	█	
Oral Presentation														█	█
Submission of Project Dissertation (Hard Bound)															█

Chart 1.1 Gantt Chart for FYP 2

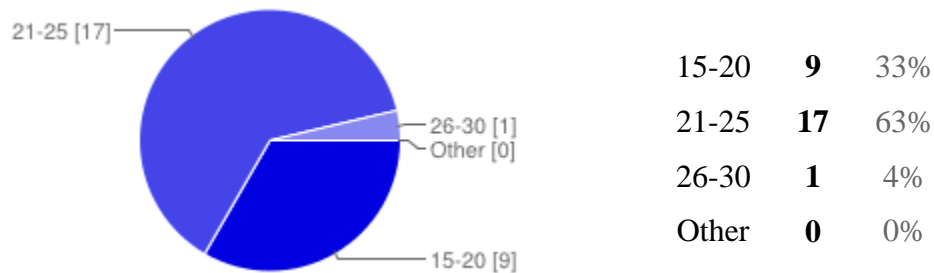
CHAPTER 4

RESULT AND DISCUSSION

Survey

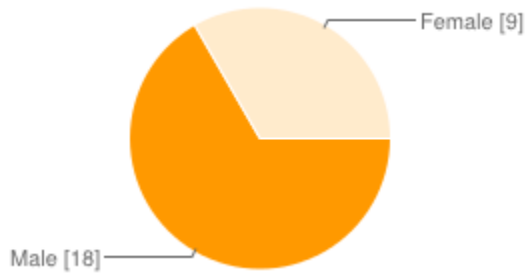
To help the author to gain better understanding on this project, the author opted to do a preliminary survey. The respondents of the survey comprises of UTP students, high school students and also working adults. The author believed that by having various respondents, it would be a great help in finding feedback upon the mobile application from the respondents. The survey questions are mostly close-ended questions consists of 9 questions.

Age



As seen as figure above, most respondents of the survey came from the 21-25 age group which is 63%, followed by 15-20 age group which is 33%, and lastly only 4% for the age 26-30. This is to know basically the age group of the respondents as the survey is only targeted for young people age from 15-30.

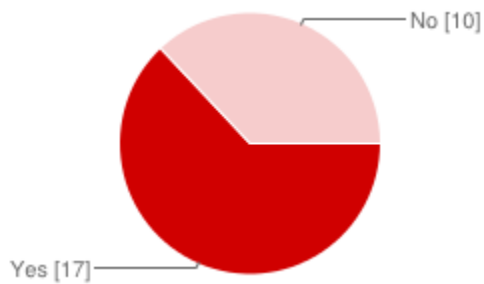
Gender



Male	18	67%
Female	9	33%

Based on the figure above, the respondents of the survey are mainly male dominating with 67% while female only with 33%.

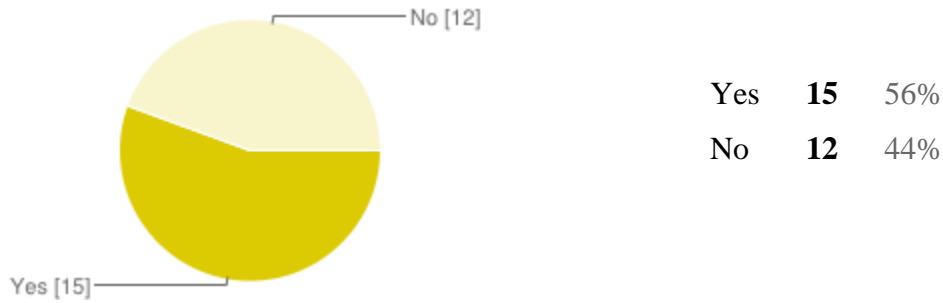
Are you aware of first aid knowledge?



Yes	17	63%
No	10	37%

Referring to the above figure, the question aims to know the level of awareness in first aid knowledge in youngsters. 63% of the respondents responded that they are aware of the first aid knowledge. Only 37% of respondents answered 'No'. This may be because of they might not been exposed to the first aid knowledge from an early age. For the ones who answered 'Yes', they might involved themselves in Red Cross Association in their school days or had training in first aid knowledge.

Do you know any basic first aid treatment procedure?



This question aims to know if respondents know upon any basic first aid treatment procedure. 56% respondents answered 'Yes' while the rest of the respondents answered 'No'. Even though, in the previous question, few said 'Yes' if they are aware on first aid knowledge but it seems that it shows if there is an awareness it does not mean that they know any basic first aid treatment procedure.

What basic first aid treatment that you know of?

CPR	11	28%
Cuts	11	28%
Burns	8	20%
Broken limbs	3	8%
Choke	7	18%
Other	0	0%

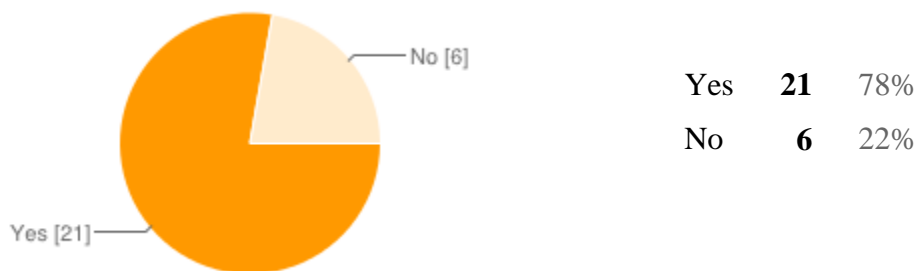
For those who answered 'Yes' for the previous question, the question asked them on what types of basic first treatment that they know of. The question allowed them to choose which basic procedure(s) they know as this question is designed in a checkbox format. Highest among them are CPR and cuts with the percentage of 28%, followed by burns (20%), choke (18%) and lastly broken limbs (8%)

Do you agree that due to language barrier, people do refuse to learn?



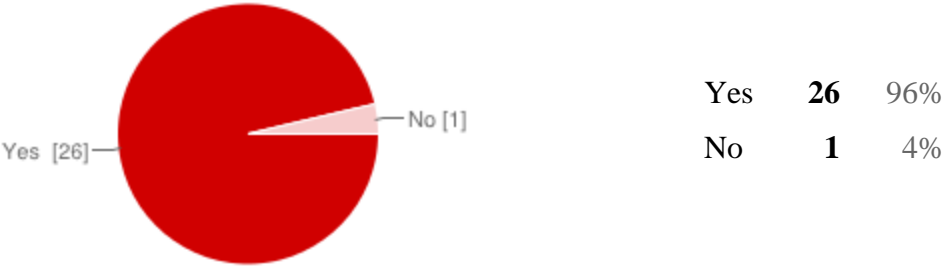
In this question, the author aims to know the opinion whether if they agree that due to language barrier, people do tend to refuse to learn. It is found that 37% of the respondents agreed while 30% decided to go neutral on the question asked. This might be because they might be fluent with both English and Bahasa Melayu that they do not feel the language barrier.

If there is a mobile app in Bahasa Melayu, focusing on providing the first aid knowledge would you use it?



This question aims to know on their response if there is a mobile app in Bahasa Melayu that provides the first aid knowledge. Most respondents of the survey (78%) responded 'Yes' indicating support to the mobile app that the author is currently developing. However, 22% of them responded otherwise, this might due to the reason that they might not need it.

If there is a mobile app that includes visual aid to facilitate the learning of first aid treatment, would you think it would be helpful to you?



In this question, the author would like to know if the help of visual aid in the proposed mobile app would be helpful to the respondents. 96% of the respondents, which is the majority thought that it would be helpful to them in facilitating the learning of first aid treatment through the mobile app.

Interface

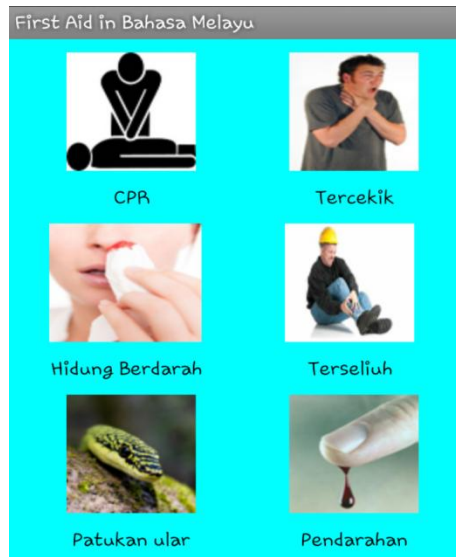


Figure 1.2 Interface

Figure 1.2 above shows the preview of interface for this mobile application. As of now, the author focuses more on common injuries as the main focus of this mobile application. CPR (Cardiopulmonary resuscitation) is being added as the main basic requirement of the mobile application and the basic measure in most emergency treatments. Other treatments that are included are tercekik (choke), hidung berdarah (nosebleed), terseliuh (sprain), patukan ular (snake bite) and pendarahan (bleeding). The general flowchart is as below:

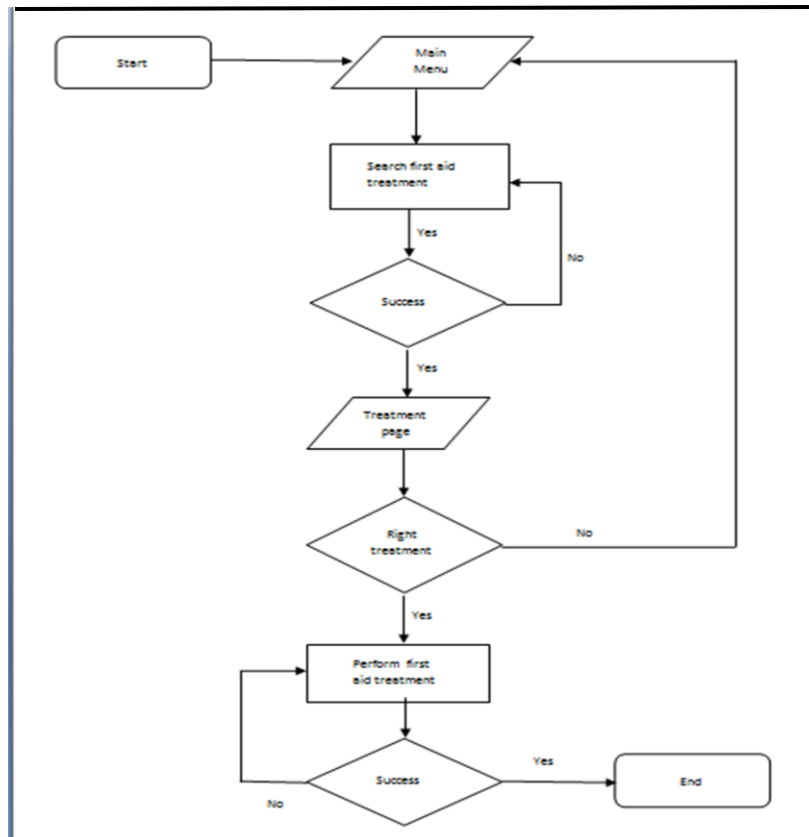


Figure 1.3 General Flowchart of the mobile app

To begin using the first aid app, user needs to search for the first aid treatment that he or she desires. As of now, the search option is still in development stage and the user needs to search manually by scrolling down the page. Once the user manages to find the treatment that he or she wants, he or she needs to press the button for the application to proceed to the respective treatment page. After that, the user can start treatment based on the instructions provided by the application. With the aid of drawn pictures, it will help the user better to assist the user during administering first aid treatment to a victim.





CPR	CPR
1, Periksa salur pernafasan mangsa dan keluarkan sebarang objek jika ada	6, Lakukan tekanan dengan nisbah 100 mampatan seminit mengikut rentak
	7, Kira 'satu, dua, tiga, empat' dalam nisbah 100 mampatan seminit
2, Berlutut di sebelah mangsa dan bersedia untuk mampatan dada	8, Lakukan mampatan mengikut rentak, berterusan dan tidak berterabur
3, Letak tapak tangan di tengah dada (dua jari atas ulu hati)	9, Lakukan 5 pusingan (1 pusingan=30 mampatan dada dan 2 nafas penyelamat). Untuk nafas penyelamat, dongakkan dagu mangsa sebanyak 45 darjah dan picit hidung mangsa sebelum hembus nafas ke mulut mangsa
	
4, Lakukan tekanan dada 1 1/2 hingga 2 inci sebanyak 30 mampatan	10, Setelah selesai, periksa nadi mangsa
5, Guna berat badan, bukan bengkokkan siku untuk lakukan tekanan	
	11, Ulang process sehingga mangsa sedar/bernafas atau bantuan tiba

Figure 1.4 Sample of treatment page

Based on Figure 1.4, it shows a sample page of a first aid treatment. Through this, the user can follow a step-by-step instructions provided by the first aid application. The drawn pictures in the mobile application acts as visual aids to help the user better in administering treatment to the victim at bay. It is also to provide better understanding for the user so that proper treatment will be administered by the user. The author decided to use drawn pictures due to possible of copy right issues, to reduce the size of the mobile application as much as possible and also to provide originality towards the project.

As the author is still new to MIT App Inventor, the output will not be as professionally made like other mobile application available around. The author is still in learning process to learn the tips and tricks of the program. By the end of project, the author aims to attempt to make a simple yet useful mobile first aid application to be used by the users.

Pilot user testing

The author conducted a pilot user testing. This pilot user testing is to determine the initial impression of the mobile application and also to know whether the visual aids provided in the mobile application is helping the future user of the mobile application. The user has done the testing with 5 volunteers. The volunteers are required to test the mobile application given by the author whether they understand the application with visual aid or without visual aid and once done, the participants need to answer 5 questions regarding the pilot user testing.

The questions included in the pilot user testing are:

- I. Do you understand what is being explained by the app without the aid of visual aid?
- II. Do you understand it better with the help of visual aid?
- III. Do you find the app useful?
- IV. Will you install this app to your smart phone/ tablet in the future?
- V. Comment

For the first question, 4 out of 5 volunteer participants responded that they do not understand what is being explained by the app, proving that visual aid is important in assisting instructions. On the other hand, only a participant responded that he or she understood the instructions without the help of visual aid

For the second question, all 5 volunteer participants responded yes. This statement supports the responds given from the previous questions. This shows that people do understand better when there is the help of visual aid involved.

All 5 volunteer participants responded that they find the mobile app useful. This shows that this mobile application is having a good response based on the 5 volunteers, showing that the initial impression of mobile application is good.

When being asked of installing this application on their smart phone/tablet in the future, 4 out of 5 responded that they will install the mobile application when it is available in the future in Google Play. This shows that the mobile application has initial support based on the feedbacks of the volunteers.

In the survey, the participants did add a few comments on the mobile application. Firstly, a volunteer participant commented that the mobile application is best with visual aid because certain terms in the mobile application are unfamiliar to the general public. Next, the other comment is that it would be nice if the mobile application has more interactive design. Lastly, a participant suggested that it should have more treatments such as broken bones since it is one of the most common injuries especially for athletes playing sports such as basketball, football and etc.

There will be another user testing to be done in the future. The other user testing will be focusing on the validity of the content in the mobile application. The user testing will be done under the supervision of someone with a medical background to validate whether the content of administering first aid in the mobile application is accurate and precise.

CHAPTER 5

CONCLUSION

In conclusion, First Aid Mobile App in Bahasa Melayu is still under development as for the time being. This project is heading its way in fulfilling the objective which is the author aims to develop a Bahasa Melayu medium platform mobile application for Malaysians who are not well-versed in English with the aid of visual aid in order to help easier learning in first aid treatments. In addition, the project is fairly relevant to all Malaysians, focusing to the younger generations because this mobile app will help to encourage them in learning the correct first aid treatments in order to help save a life in the future. As there are still numbers of Malaysians who are not well-versed in English, this will certainly helps them to learn without having to worry about the language barrier. In having the app in the national language, the author hopes to help those Malaysians who want to learn proper first aid procedures.

For future works in this project, the author would like to suggest that since the application is not using real-life pictures, instead the author will be using drawn pictures for the time being, it is delighting to have the application can used a real-life pictures in the future as a visual aid in order to help users to enhance their understanding in understanding the instructions better. An embedded video will also be helpful in the future as videos are much more helpful in giving clearer instructions for the mobile application users to use this application.

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