

**MOBILE APPLICATION: SAFETY EDUCATION FOR KIDS**





MOBILE APPLICATION: SAFETY EDUCATION FOR KIDS

NORAMALINA BINTI NORSHAM

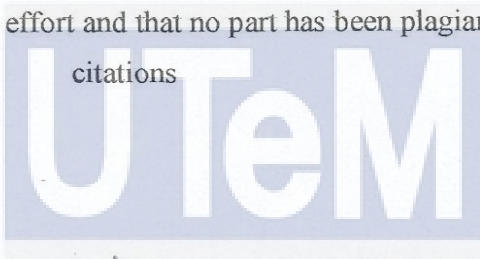
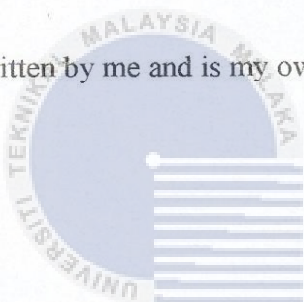


FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY  
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

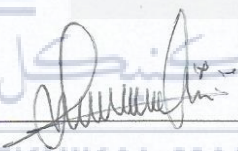
## DECLARATION

I hereby declare that this project report entitled  
**MOBILE APPLICATION: SAFETY EDUCATION FOR KIDS**

is written by me and is my own effort and that no part has been plagiarized without  
 citations



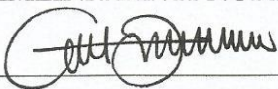
STUDENT :

او نيو ر سيتي تيجنكل مليسيا ملاك  


Date: 11 / 08 / 2016

(NORAMLINA BINTI NORSHAM)

SUPERVISOR :



Date: 11 / 08 / 2016

(MR. SHAHRIL BIN PARUMO)

## DEDICATION

Every challenging work, needs self-efforts as well as guidance of elders especially those who were very close to our heart.

My humble effort I dedicate to my sweet and loving  
Father & mother, family and beloved friends

Whose affection, love, encouragement and prays of day and night make me able to finished this thesis,

Along with all hard working and respected, I dedicate to my supervisor, Mr. Shahril Bin Parumo for his guidance and motivation in order to help us to complete the thesis.

Also thank you to my evaluator, Madam Dr. Siti Nurul Mahfuzah Binti Mohamad for evaluate my project

## ACKNOWLEDGEMENT

I would like to thank to ALLAH S.W.T for giving me an opportunity to finish my final project.

Also, I would like to thank you to both of my beloved parent

Haji. Norsham Bin Md.Yusof and Hajjah Mahani Binti Abdullah for always support me with their prayers to Almighty ALLAH S.W.T. Without them, I would never be able to finish my project.

Never forget to my sibling brother Muhammad Ezani, Muhammad Qhairin and little brother Muhammad Hafiz Safwan, thank you for all of your wisdom and encouragements.

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

I would like to thanks to Mr. Shahril Bin Parumo for giving assistant to complete this project successfully. "Thank you sir!"

## ABSTRACT

The increased number of accident among children these day, lead to death and serious injuries. Accident such as drowning, abduction, road accident and so others injuries can occur everywhere and anytime. At age of kids, they had difficulties to protect themselves and careless about surrounding. We as an adult must take a responsibility together in order to protect our young generations from harm and dangerous. In the process of to educate children about safety, several initiative had to be taken to help to reduce this problem. To create and educate kids by learning are important because it can help them to increase their thinking skills. In a high technology world nowadays, give us an advantages to reduce time and thus increase human productivity. Mobile phone or now generally known as smartphones can allow us develop or build variety of application. The main purposes for this project is to educate the children to be more aware about safety. Process for this research take a several phase to be done. Starting from introduction, analysis the requirement needed, design the project, implementation and testing the mobile application. The result from this project shows that mobile application can help increase the knowledge of kids about safety.

## ABSTRAK

Peningkatan kadar kemalangan kanak-kanak meningkat hari demi hari menyebabkan kematian dan juga kecederaan. Kemalangan seperti lemas, penculikan, kemalangan jalanraya dan sebagainya boleh berlaku bila-bila masa dan di mana sahaja. Umur seperti kanak-kanak, mereka mempunyai kepayahan untuk melindungi diri mereka sendiri dan kadang lalai tentang keadaan sekeliling. Kita sebagai orang dewasa seharusnya mengambil ini sebagai tanggungjawab bersama-sama dalam melindungi generasi muda dari bahaya. Dalam proses untuk mendidik kanak-kanak menerusi pembelajaran pelbagai inisiatif yang perlu diambil untuk mengurangkan permasalahan ini. Bagi mendidik kanak-kanak ini, ianya adalah penting kerana mampu meningkat kemahiran berfikir mereka. Pada zaman berteknologi tinggi hari ini, ianya memberi kita peluang dalam menjimatkan masa sekali gus meningkatkan produktiviti manusia. Telefon mudah alih atau sekarang lebih di kenali telefon pintar membenarkan kita untuk membangunkan pelbagai aplikasi. Tujuan utama projek ini dihasilkan adalah untuk mendidik kanak-kanak untuk lebih perihatin tentang keselamatan. Proses penyelidikan ini memerlukan beberapa fasa untuk di hasilkan. Bermula dengan pengenalan analisis keperluan, mereka bentuk projek, implimentasi dan juga uji kaji ke atas aplikasi telefon. Hasil dari keputusan projek ini menunjukkan aplikasi telefon boleh membantu meningkatkan pengetahuan kanak-kanak tentang keselamatan.

UNIVERSITI TEKNIKAL MALAYSIA MELAKA



## TABLE OF CONTENTS

CHAPTER	SUBJECT	PAGE
	<b>DECLARATION</b>	i
	<b>DEDICATION</b>	ii
	<b>ACKNOWLEDGEMENT</b>	iii
	<b>ABSTRACT</b>	iv
	<b>ABSTRAK</b>	v
	<b>TABLE OF CONTENT</b>	vi
	<b>LIST OF FIGURES</b>	ix
<b>CHAPTER 1</b>	<b>INTRODUCTION</b>	
	1.1 Introduction	1
	1.2 Problem Statement	2
	1.3 Objective	2
	1.4 Scope	2
	1.4.1 Specific User	2
	1.4.2 Specific Functionality	3
	1.5 Project Significance	3
	1.6 Expected Output	3
	1.7 Conclusion	3
<b>CHAPTER 2</b>	<b>LITERATURE REVIEW AND PROJECT METHODOLOGY</b>	
	2.1 Literature Review	5
	2.2 Domain	6
	2.3 Existing System	6
	2.3.1 Car Safety (BabyBus)	7
	2.3.2 Safety for Kids (TinyTapp)	8
	2.3.3 4Bambini Mobile Apps	9
	2.3.4 Comparison of Existing system	10

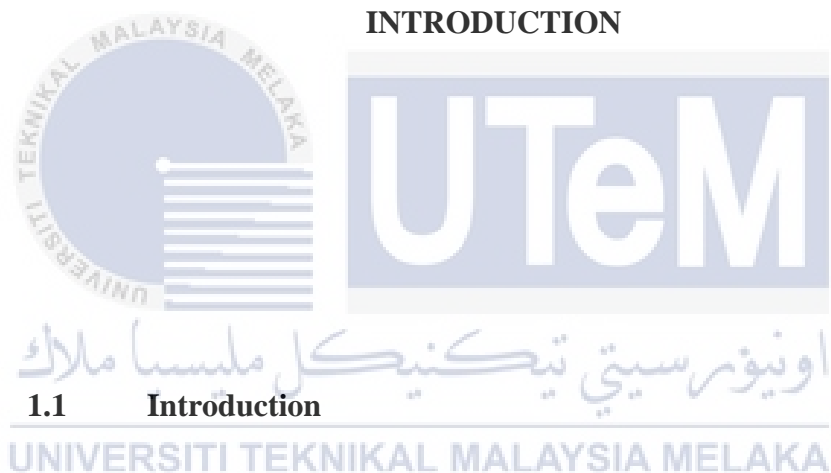
2.4 Project Methodology	11
2.4.1 Instructional Design	12
2.5 Project Requirement	13
2.5.1 Software Requirement	13
2.5.2 Hardware Requirement	14
2.6 Conclusion	14
<b>CHAPTER 3 ANALYSIS</b>	
3.1 Current Scenario Analysis	15
3.2 Requirement Analysis	16
3.2.1 Project Requirement	16
3.2.2 Software Requirement	17
3.2.3 Hardware Requirement	17
3.2.4 Others Requirement	18
3.3 Project Gantt chart	18
3.4 Conclusion	19
<b>CHAPTER 4 DESIGN</b>	
4.1 Introduction	20
4.2 System Architecture	21
4.3 Preliminary Design	22
4.3.1 Storyboard Design	22
4.4 User Interface Design	25
4.5 Conclusion	25
<b>CHAPTER 5 IMPLEMENTATION</b>	
5.1 Introduction	27
5.2 Media Creation	28
5.3 Media Integration	31
5.4 Conclusion	31

<b>CHAPTER 6</b>	<b>TESTING</b>	
6.1	Introduction	32
6.2	Test Plan	33
6.2.1	Test User	33
6.2.2	Test Environment	34
6.2.3	Test Schedule	35
6.3	Test Strategy	36
6.3.1	Interview Method	37
6.3.2	Questionnaire	37
6.4	Test Result and Analysis	38
6.4.1	Interview Result and Analysis	38
6.4.2	Questionnaire Result Analysis	40
6.5	Conclusion	42
<b>CHAPTER 7</b>	<b>CONCLUSION</b>	
7.1	Weakness and Strength	43
7.2	Preposition for Improvement	44
7.3	Project Contribution	44
7.4	Conclusion	44
	<b>REFERENCES</b>	45
	<b>LIST OF APPENDICES</b>	
	Appendix A	46
	Appendix B	47
	Appendix C	48
	Appendix D	49

## LIST OF FIGURE

<b>DIAGRAM</b>	<b>TITLE</b>	<b>PAGE</b>
2.1	Car Safety and Repair by BabyBus	7
2.2	Safety for Kids by TinyTapp	8
2.3	4Bambini Mobile application	9
2.4	Course Map	12
5.1	Example of Font	28
5.2	Example of Vector Graphic	29
5.3	Audio production using Audacity	30
6.1	Graph Survey respondent after using application	38
6.2	Graph Mean of Expert Matter Content	41

## CHAPTER 1



Children's safety is very important nowadays. As a responsible citizens, we must help to keep children and kids safe. In order to protect them, we should use a suitable method to increase and develop their skill to think and react in dangerous situation. Many dangerous situation can happened for example drowning in the pool, abduction, car accident and other things. There is so many factors may lead to this kind of situation, one of them maybe because of the lack of early exposure on safety. Early education is very important to kids and children because it can sharpen thinking and also attention skills. Besides that, it can decrease problem behavior among kids. In this generation, kids are exposure to a new 'toy' which is gadget. Mobile phone, iPad, tablet and others a very common thing that kids, or

children will play with. Thus, in this opportunity, developing a mobile application for education is a best way. It help children or kids to play and in the same time learning. Therefore, Safety for Kids mobile apps can teach kids and children about the awareness of the safety among them.

## **1.2 Problem Statement**

Many kids and children are exposed to danger. The percentage of abduction, car accident and injuries at home increase every year. Parents are less concerned about their children's safety and it is not easy to teach and show children on how to handle dangerous situations outwardly. We need a method to help to solve this problem. Mobile Applications is one of the method that can help us.

## **1.3 Objective**

The objectives for this project is to study the requirement of developing safety education application for kids. Also is to design and develop mobile application on safety education for kids. Finally, the objectives of this project is to evaluate the effectiveness of the mobile application.

## **1.4 Scope**

### **1.4.1 Specific User**

Focused on five to six years old kids or children.

### 1.4.2 Specific Functionality

In this mobile application, kid or children are given a choice to choose between three field about safety, whether it is about road safety, safety at swimming pool or safety/action that need to be taken when a stranger appear. Kids or children can learn and play a simple interactive game.

### 1.5 Project Significance

This project focused on about safety. This includes about road safety, safety at swimming pool and also safety or action that need to take when stranger appear. If this project successful, we may prevent kids or children from harm and dangerous. And this project will help parent or guidance in way to teach their kids.

### 1.6 Expected Output

For the output of the project, Hopefully this mobile application can fulfill the objectives of the project which is can achieved the requirement of developing safety education application for kids, and can see the effectiveness of this project among the kids or children. In fact, it can help kids and parent to learn about the safety for their kids.

### 1.7 Conclusion

For the conclusions, Mobile application that want to develop is for kids that aged between 5 to 6 years old and focused on the safety surrounding kids. This surrounding include safety when stranger appear, safety at swimming pool and also safety at the street. This mobile application will teach kids about safety and action to take when face any harm or dangerous. The objective of this project is to study the

requirement for developing mobile Apps for kid, to design the mobile Apps, and also to see the effectiveness of the Mobile Apps to the children or kids. Next chapter will discuss about literature review and project methodology. In that chapter will also discuss about existing system and comparison. Besides that, methodology that will be used in this project.





## CHAPTER 2

### LITERATURE REVIEW AND PROJECT METHADODOLOGY

#### 2.1. Literature Review

In this era of globalization, give a lot of opportunities and benefits in our life, especially in raising generation Z nowadays. “ Within a few years after the introduction of Apple’s popular iPad tablet, mobile tablet software, commonly referred to as "apps," has rapidly grown in popularity and has become a much-debated issue in the education and child-development spheres.”( Clement L.Chau, 2014). Thus, by developing mobile apps for education and teach children, it will help children and kids to increase their ability and skills. Other than that, we can improve the safety of children and kids in our country. The advantages that we will get when using a mobile apps which are interactive element that we can provided in mobile apps and alternatives modes of teach for children (Sayudh Sarkar, 2014) .It help kids to be more aware about the environment and the dangerous in front of them. Mobile application also can teach kids on how to manage and react to harm and also improve their ability to think. Based on Richard S. Weissman, (2015). Today, 89 percent of time spent on mobile devices is on mobile apps, with only 11 percent on the mobile web. This breakdown highlights the distinct

disadvantage businesses without a cutting-edge mobile app face in terms of consumer engagement. This show that mobile apps play crucial role in our society. Instead of using classroom learning, we can use mobile application approach to attract kids and children. In early childhood, children develop the linguistic, cognitive, social, and emotional building blocks for future development, according to Shonkoff, J. & Phillips, D. (Eds.). (2000). this source show that, early education to children and kids can have a lot of benefits plus by using technologies, it can reduce boredom among kids and children while learning.

## 2.2. Domain

This project will involve an education field that help us to teach kids and children from danger. There is a lot of method that we can use. But in this era of technologies, mobile application can help to attract children's interest to learn about safety. Classroom learning nowadays are not the only ways to teach kids. Safety for kids are very important because kids and children are precious but in the same time we need to be up-to-date and need to find another way to attract kid's interest in this technology world. While their keeping up with technologies, their also can learn.

## 2.3. Existing System

Based on research that had been made by James A. Therrell (2012), computers are often used to play games, but they also can be used to produce a wide variety of responses such as playing digital music and films as well as playing with a wide range of software. All are attractive to a wide range of children. Besides, there are lot of existing system that have been developed by a developer to help increase the productivity of human life and also help to saving a time instead of sending their kids to classroom or other places to study.

### 2.3.1 Car safety and Repair by BabyBus Group

One of it is a mobile application that has be developed by BabyBus Group. BabyBus Group developed a mobile app for kids that provide a simple game for kids to play. BabyBus offers different categories for kids to play with their product. It help both parent and kids to learn. This application is designed simple but yet creative and can attract kids to play with it. Also, different categories can help kids to focus on one game at one time. BabyBus Group divide the categories according to general knowledge, logic and reasoning, creativity and many more.



Figure 1.1: Car Safety and Repair

### 2.3.2 Safety for Kids by TinyTapps

Other than that is Safety for Kids from tinytapp. This application help children to learn about basic about safety. Safety for Kids mobile application gives option to kids to play and choose.



Figure 1.2: Safety for Kids Mobile Application

### 2.3.3 4Bambini Mobile Application

Others mobile application that developed for kids to learn about safety is 4Bambini mobile application that show kids on how to react to certain situation that are been given about safety. This game need to be purchased if the user want to add other situation.



Figure 1.3: 4Bambini Mobile Application

### 2.3.4. Comparison of Existing System

**Table 1.1: Comparison of Existing system**

<b>Mobile Application Name</b>	<b>Car Safety and Repair (BabyBus)</b>	<b>Safety for Kids (TinyTapp)</b>	<b>4Bambini</b>
Interface	<ul style="list-style-type: none"> <li>• Good Interface</li> <li>• Interactive and creative</li> </ul>	<ul style="list-style-type: none"> <li>• Simple interface.</li> </ul>	<ul style="list-style-type: none"> <li>• Simple</li> </ul>
Content	<ul style="list-style-type: none"> <li>• Lot activities that can be play.</li> <li>• Good interactivity</li> </ul>	<ul style="list-style-type: none"> <li>• Limited activities interact with kids</li> </ul>	<ul style="list-style-type: none"> <li>• Limited activities because need to purchase</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>• Button function well.</li> <li>• Leads kids in a proper way.</li> </ul>	<ul style="list-style-type: none"> <li>• Not really detect on touch event</li> </ul>	<ul style="list-style-type: none"> <li>• Simple instruction for kids to follow.</li> <li>• Leads kids in a simple and proper way</li> </ul>

## 2.4. Project Methodology

In this project, ADDIE Model is used as project methodology. ADDIE Project is a framework and a guideline to developer for develop effective training and performances support tools in five stages.

**Table 1.2: ADDIE Instructional design**

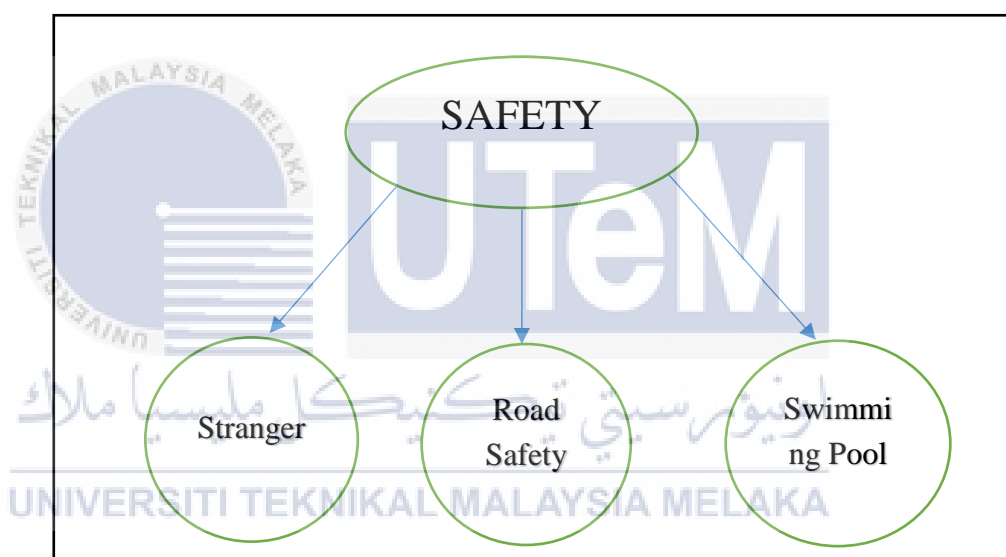
Phases	Activities
Analysis	In this phases, developer state goals and objective for this project. Besides that, in this phase, developer will state user target and user characteristic that needed for this project development. Developer also search for the existing system and do comparison between the systems and also time for complete this project.
Design	Design phase ask developer to design interface for mobile application. Design main character and other features for interface. Besides that, software that will be used to develop this project has been finalized. The details of main content also have been state in this phase. Multimedia element in this project is select based on its needed.
Development	Work on the data and all material from analysis and design phase. This project is about mobile application development, thus, in this phase project is develop based on the storyboard. In other hand, the content and also learning assessments in the project has been finalized.
Implementation	Developer will implement the system for user use which is the user target are among kids. The elements such as text, graphic that have been drawn is combine together and develop the mobile application. This stage also include mobile application testing among the kids.
Evaluation	In this phase, developer have to test mobile application and get a respond from user and the improvement of the mobile application are based on the user's feedback.

## 2.4.1 Instructional Design

### -Educational Goals

The goals for this project is to achieve all the objective that have been stated from the beginning. In the final stage for this project, this application will gives a basic education plus in interactive way to learn. We will see if kids get some lesson from playing this mobile application. The goals of this project is to educate children about safety.

### -Course Map/Flowchart



**Figure 1.4: Course Map**

### -Metaphor

Theme for this entire course is basically for kid's mobile application which is can interact kids to play with. So interface must be suitable for kids to see and use. Mobile application for kids use many combination of color to interact interest from kids to play. Besides that, character, icon and also interactive button must be create based on children needed. As a theme, developer choose bright and colorful theme.