## ANIMATE 2D ANIMATION VIDEO FOR SOCIETY: FACE THE WORLD



UNIVERSITI TEKNIKAL MALAYSIA MELAKA

#### **BORANG PENGESAHAN STATUS TESIS**

JUDUL: ANIMATE 2D ANIMATION VIDEO FOR SOCIETY: FACE THE WORLD

SESI PENGAJIAN: 2016/2017 Saya WOON KUNG CHUNG

mengaku membenarkan tesis (<u>PSM</u>/ Sarjana/ Doktor Falsafah) ini disimpan di Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dengan syarat-syarat kegunaan seperti berikut:

- 1. Tesis dan projek adalah hakmilik Universiti Teknikal Malaysia Melaka.
- 2. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan untuk tujuan pengajian sahaja.
- 3. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan tesis ini sebagai bahan pertukaran antara institusi pengajian tinggi.
- 4. \*\* Sila tandakan (/)

(WOON KUNG CHUNG)

(PROF. MADYA. DR. HJH. NORASIKEN BAKAR)

Alamat tetap: 444, JALAN TAIPING

KG. CHUI CHAK, 36700 LANGKAP

**PERAK** 

Tarikh: <u>28 AUGUST 2017</u> Tarikh: <u>28 AUGUST 2017</u>

CATATAN: \* Tesis dimaksudkan sebagai Laporan Akhir Projek Sarjana Muda (PSM)

\*\* Jika tesis ini SULIT atau TERHAD, sila lampirkan surat daripada pihak
berkuasa.

## ANIMATE 2D ANIMATION VIDEO FOR SOCIETY: FACE THE WORLD

## WOON KUNG CHUNG



This report is submitted in partial fulfillment of the requirements for the Bachelor of Computer Science (Interactive Media)

## FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY UNIVERSITY TEKNIKAL MALAYSIA MELAKA

## **DECLARATION**

I hereby declare that this project report entitled

## ANIMATE 2D ANIMATION VIDEO FOR SOCIETY: FACE THE WORLD

is written by me and is my own effort and that no part has been plagiarized

STUDENT:

(WOON KUNG CHUNG)

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

I hereby declare that I have read this project report and found this project report is sufficient in term of the scope and quality for the award of Bachelor of Computer Science (Interactive Media) With Honours.

	Shr	
SUPERVISOR:		Date : 28 AUGUST 2017
(ASS, PROF, D	OR. HJH. NORASIKEN B	INTI BAKAR)

## **DEDICATION**

To all Malaysian citizens, may this 2D animation project is helpful and learnable for the society. This project also dedicated to my supervisor, my friends, and my family for their constructive and unrelenting support.



#### **ACKNOWLEDGEMENTS**

I would like to thank Ass. Prof. Dr. Hjh. Norasiken Binti Bakar for giving assistant to complete this project successfully. Without her, I'm not able to complete my project in the expected time.

I would like to thank my beloved parents and friends who been giving me support and motivation throughout my project. Without their support, I may don't have the strength and courage to complete this project successfully. Thank you.



#### **ABSTRACT**

This project developed a linear 2D animation video about the current society issue which is lack of face-to-face communication caused by some high technology development nowadays. This story indicated a meaningful message for those youths and adults about the important of face-to-face communication. The objectives of this research are to study the appropriate method to develop 2D animation. After that, design the 2D animation and develop the 2D animation. Besides that, evaluate the effectiveness of the integrated video whether this video will help the users in understanding the lesson convey through it or not. The methodology used by this research is video production process which are pre-production, production, and post-production. The testing conducted using face-to-face questionnaire method for both multimedia experts and public users. The collected data and results shows that most of the participants satisfy with this 2D animation video and the lesson from this 2D animation is conveyed successfully to all audiences. However, there got many weaknesses on this 2D animation project and the improvement should be made for future from colour, animation, and more aspect to let the entire 2D animation looks more interesting and attractive.

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

#### **ABSTRAK**

Projek 2D animasi tersebut dibangunkan adalah berkaitan dengan isu-isu semasa masyarakat terkini iaitu kekurangan komunikasi antara satu sama lain secara bersemuka disebabkan pembangunan teknologi yang tinggi pada masa kini. Cerita tersebut mengandungi mesej yang bermakna untuk belia-belia dan orang dewasa mengenai kepentingan komunikasi antara satu sama lain secara bersemuka. Objektif kajian ini adalah mengkaji kaedah yang sesuai untuk membangunkan animasi 2D tersebut. Reka bentuk dan pembangunan animasi 2D sangat penting dalam menghasilkan video tersebut. Di samping itu, projek ini juga akan menilai keberkesanan video bersepadu tersebut terhadap para pengguna dalam memahami pelajaran yang hendak disampaikan melalui video tersebut. Metodologi yang digunakan dalam kajian ini mempunyai tiga (3) fasa iaitu: fasa pra-pengeluaran, fasa pengeluaran, dan fasa *pasca*-pengeluaran. Instrumen yang telah digunakan dalam pengujian keberkesanan video tersebut melalui kaedah soal selidik bersemuka untuk pakar pembangun multimedia dan pengguna awam. Hasil kajian telah menunjukan bahawa kebanyakan peserta telah melihat video animasi 2D tersebut hingga akhirnya dan kesedaran kepada pengguna mengenai pentingnya komunikasi telah berjaya dilahirkan melalui video animasi 2D ini. Penambah baikan video tersebut boleh dilakukan terhadap warna, animasi, dan aspek lain untuk membuatkan animasi 2D tersebut lebih menarik.



## TABLE OF CONTENT

CHAPTER	SUB.	JECT	PAGE
	DEC	LARATION	ii
	DED	DICATION	iii
	ACK	NOWLEDGEMENTS	iv
	ABS'	TRACT	v
	ABS'	TRAK	vi
	TAB	LE OF CONTENTS	vii
× 5	LIST	T OF TABLES	xii
SALL ME	LIST	OF FIGURES	xiv
CHAPTER I	INTI	RODUCTION	1
E	1.1	Introduction	1
SAIN	1.2	Project Background	1
مالاك	1.3	Problem Statements Objectives	3 5
UNIVE	1.5 <b>RSITI</b> 1.6	Scope TEKNIKAL MALAYSIA MELAKA Project Significance	6 6
	1.7	Summary	7
CHAPTER II	LITI	ERATURE REVIEW AND	
	PRO	JECT METHODOLOGY	8
	2.1	Introduction	8
	2.2	Domain	8
		2.2.1 Animation	9
		2.2.2 Linear Animation	9
		2.2.3 Non-linear Animation	10
		2.2.4 Multimedia Elements	10

		2.2.5	Methodology to develop	13
		:	2D Animation	
		2.2.6	Effectiveness in	
		1	understanding the lesson	15
		1	through 2D animation	16
	2.3	Existing	g System	
		2.3.1	Case Study 1: Are You	16
			Lost In The World Like	17
			Me	
		2.3.2	Case Study 2: Disconnect	17
		2.3.3	Case Study 3: Changing	
			Batteries	17
		2.3.4	Comparison Between	
AL MAL.	18/4	10.	Existing System With This	
S. Carlotte		<b>Y</b>	Project	18
TER	2.4	Project	Methodology	19
E		2.4.1	Pre-Production	19
JAIND		2.4.2	Production	20
1.112		2.4.3	Post-Production	20
با مارك	2.5	Project	Requirements	21
UNIVER	SITI 1	2.5.1	Software Requirement	21
		2.5.2	Hardware Requirement	22
	2.6	Sample	Questionnaires	23
	2.7	Reliabl	e Research	24
	2.8	Summa	ury	25
CHAPTER III	ANAL	YSIS		26
	3.1	Introdu	ction	26
	3.2	Current	Scenario Analysis	26
		3.2.1	Are You Lost In The World	
		-	Like Me?	27
		3.2.2	Disconnect	27
		3.2.3	Changing Batteries	28

	3.3	Requir	ement Ar	nalysis	28
		3.3.1	Project 1	Requirement	28
		3.3.2	Storyline	e	30
		3.3.3	Sample	of Scene	31
		3.3.4	Characte	er Details	33
		3.3.5	Design A	Analysis	36
			3.3.5.1	Twelve Principle of	
				Animation	36
		3.3.6	Software	e Requirement	42
			3.3.6.1 S	Software Development	
			F	Requirement	43
		3.3.7	Hardwa	re Requirement	44
	3.4	Project	t Schedule	e and Milestones	45
AL MAL	3/4	3.4.1	Activitie	es	45
		3.4.2	Gantt Cl	nart	47
E C	3.5	Summ	ary		48
E					
CHAPTER IV	DESIG	GN			49
5 No (	4.1	Introdu	-:-	اهنیده سید تبد	49
	4.2	Scene	Sequence	Diagram	49
UNIVER	SITI	4.2.1	Plot 1 Plot 2	MALAYSIA MELAKA	50 51
		4.2.3	Plot 3		52
		4.2.4	Plot 4		53
		4.2.5	Plot 5		54
	4.3		inary Des	ion	54
		4.3.1	-	ard Design	55
		4.3.2	Planning		57
		4.3.3	Script	2	58
		4.3.4	•	er Profile	59
			4.3.4.1	Main Character	60
			4.3.4.2	Supporting	
				Character	62

	4.4	Summary	65
CHAPTER V	IMPL	EMENTATION	66
	5.1	Introduction	66
	5.2	Media Creation	66
		5.2.1 Production of Texts	67
		5.2.2 Production of Graphics	70
		5.2.3 Production of Audio	72
		5.2.4 Production of Animation	75
	5.3	Media Integration	77
	5.4	Product Configuration	
		Management	78
		5.4.1 Configuration	
MAL	AYSIA	Environment Setup	78
¥ .		5.4.2 Version Control Procedure	79
TEX	5.5	Implementation Status	80
E	5.6	Summary	81
SAIND			
CHAPTER VI	TEST	ING	82
با مارك	6.1	Introduction " Cue of the last	82
UNIVER	6.2	Test Plan	82
		6.2.1 Test User	82
		6.2.2 Test Environment	83
		6.2.3 Test Schedule	84
	6.3	Test Strategy	85
	6.4	Test Implementation	85
		6.4.1 Test Description	86
		6.4.2 Test Data	87
	6.5	Test Result and Analysis	87
		6.5.1 Pilot Test	87
	6.6	Analysis Testing	89
		6.6.1 Multimedia Experts	89
		6.6.1.1 Pilot Testing	89

			6.6.1.2	Cronbach's Alpha	
				Value	101
		6.6.2	Public U	Jsers	102
			6.6.2.1	Real Testing	102
			6.6.2.2	Observation	112
	6.7	Summ	ary		112
CHAPTER VII	CONC	CLUSIO	ON		113
	7.1	Introd	uction		113
	7.2	Discus	ssion		113
		7.2.1	Objectiv	ve 1	113
		7.2.2	Objectiv	ve 2	113
-1	AVe	7.2.3	Objectiv	ve 3	114
AL MAL	N. 9/4	7.2.4	Objectiv	ve 4	114
ğ	7.3	Obser	vation on	Weakness and	
TEX		Streng	gths		114
E	7.4	Propos	sitions for	Improvement	115
SAIND	7.5	Projec	t Contribu	ution	116
1.112	7.6	Summ	ary		117
ا مارك	REFE	RENC	ES	اوبيوم سيبي لي	118
UNIVER	APPE	NDIX :	IKAL N	IALAYSIA MELAKA	121
	<b>APPE</b>	NDIX	II		128

## LIST OF TABLES

TABLE	TITLE	PAGE
2.1	Comparison Between Different Type of	
	Video	18
3.1	Types of Eyes	33
3.2	Types of Mouths	34
3.3	Types of Hands	34
3.4	Types of Legs	36
3.5	Software Requirement to Develop 2D	
. 5	Animation	43
3.6	Hardware Requirement to Develop 2D	
H	Animation	44
3.7	List of Activities During Development of	
8	Project	45
3.8	Project Schedule	47
4.1	Details Of Plot 1	50
4.2 <sub>UNI</sub>	Details Of Plot 211KAL MALAYSIA MELAKA	51
4.3	Details Of Plot 3	52
4.4	Details Of Plot 4	53
4.5	Details Of Plot 5	54
4.6	Plan Template	58
5.1	Details of Font Being Used	69
5.2	List of Audio Produced	73
5.3	Configuration Environment Setup	79
5.4	Implementation Status	81
6.1	Details of Test User	83
6.2	Testing Schedule	84
6.3	Segment for Multimedia Experts Testing	86
6.4	Segment for Public Users Testing	86

6.5	Scale of Questionnaire for Multimedia	
	Experts and Public Users	88
6.6	The Rule for interpreting Alpha	88
6.7	Mode, Median, Mean for each question	
	from Functionality Testing	90
6.8	Mode, Median, Mean for each question	
	from User Acceptance Testing	93
6.9	Mode, Median, Mean for each question	
	from Interactivity Testing	95
6.10	Mode, Median, Mean for each question	
	from Content Testing	98
6.11	Mode, Median, Mean for each question	
	from Attitude Testing	100
6.12	Cronbach's Alpha Value for Multimedia	
	Experts Testing	101
6.13	Mode, Median, Mean for each question	
E	from Functionality Testing	104
6.14	Mode, Median, Mean for each question	
1/12	from User Acceptance Testing	106
6.15	Mode, Median, Mean for each question	
UNIV	from Attitude Testing	109
6.16	Mode, Median, Mean for each question	
	from Attitude Testing	111
7.1	Weakness of Project	115
7.2	Strengths of Project	115

## LIST OF FIGURES

DIAGRAM	TITLE	PAGE
2.1	Linear Multimedia	9
2.2	Non-Linear Multimedia	10
2.3	Elements of Multimedia	11
2.4	Utilisation of Methodologies In	
	Creating Standalone Multimedia, Audio/	15
	Visual and Mobile Computing Systems	
	Rate	
2.5	Are You Lost In The World Like Me	16
2.6	Disconnect	17
2.7	Changing Batteries	17
2.8	Activities in Three Phases of Animation	
E	Development	19
3.1	Street Background	31
3.2	Street Background	32
3.3	Outside Sam's House Background	32
3.4	Playground Background	33
3.5	Example of Squash and Stretch	37
3.6	Example of Anticipation	37
3.7	Example of Staging	38
3.8	Example of Straight Ahead Action and	
	Pose to Pose Animation	38
3.9	Example of Follow Through and	
	Overlapping Action	39
3.10	Example of Slow-out and Slow-in	39
3.11	Example of Arcs	40
3.12	Example of Secondary Action	40
3.13	Example of Timing	41
3.14	Example of Exaggeration	41

3.15	Example of Solid Drawing	42
3.16	Example of Appeal	42
4.1	Storyboard Template	56
4.2	Front, Back and Side View of Sam	60
4.3	Front, Back and Side View of	
	Sam's 'buddy'	61
4.4	Front View of Sung and His 'Buddy'	62
4.5	Front View of Sam's Father and His	
	'buddy'	63
4.6	Front View of Sam's Mother and Her	
	'buddy'	63
4.7	Front View of Babies	64
5.1	Select Title > New Title > Default Still	67
5.2 MAL	New Title Pop-out Window	68
5.3	Choose Font Type, Style, and Size Then	
E S	Apply the Text Into the Composition	68
5.4	Flow of Graphics Production	71
5.5 Almo	Hand Drawn Illustration by Using Brush	
) مارك 5.6	Tool Colouring the Hand Drawn Illustration by	71
HMIVEE	Using Live Paint Bucket	72
5.7	Completed Hand Drawn Illustration	72
5.8	Flow of Audio Creation	74
5.9	Edit Sound with Audacity	74
5.10	Animation Production in Adobe After	
	Effects CS6	75
5.11	Secondary Action in "Face the World"	76
5.12	Exaggeration of Character	76
5.13	Anticipation of Character Movement Pose	77
5.14	Process of Media Integration	78
6.1	Public Users Testing	81
6.2	Cronbach's Alpha Formula	88
6.3	Results of Functionality Testing from	

	Questionnaire	89
6.4	Results of User Acceptance Testing from	
	Questionnaire	91
6.5	Results of Interactivity Testing from	
	Questionnaire	94
6.6	Results of Content Testing from	
	Questionnaire	96
6.7	Results of Attitude Testing from	
	Questionnaire	99
6.8	Results of Functionality Testing from	
	Questionnaire	102
6.9	Results of User Acceptance Testing from	
	Questionnaire	105
6.10	Results of Attitude Testing from	
	Questionnaire	107
6.11	Results of Soft Skill Testing from	
ESTAINE	Questionnaire	110
يا ملاك	اونيؤمرسيتي تيكنيكل مليسي	
UNIVER	SITI TEKNIKAL MALAYSIA MELAKA	

#### **CHAPTER I**

#### INTRODUCTION

#### 1.1 Introduction

This chapter discuss about the issue of society nowadays which is technologies may cause lack of face to face communication between humans. From this chapter, the background, problem statements, and objectives will be stated and guide to what does this research discuss about obviously. Besides that, the scope of this project will be discussed too to specify the user target, software and hardware used and more. After that, the project significance also will be discussed in this chapter.

## 1.2 Project Background

Technologies nowadays such a machinery that makes our life easier and smoother. Currently, most of the people especially young generation rely on modern technology to aid them to do their work. For example, microwave ovens cook food easily without using stoves, washing machine wash clothes without using hand anymore, and many more. It can say technology is now such a big part of our society and our foreseeable future.

For the communication part, technology also play the important role in their social life. Technology usage has grown significantly in past few years ago, such as smartphone, tablet, laptop, smartwatch and more because it allows users to access information with the touch of a finger. It such the good news for every single people in the world because current technology able to utilize in many form or fields especially communication part.

Based on the research, smartphone penetration among adult population in Malaysia continue to grow to 71% as reported in early year 2016. The number of smart phone sales in Malaysia was 2,499,800 units in 2011, which was equivalent to 38% growth (Yong et. al, 2014). This means that approximately 22 million people have their own electronic devices to access the social media, anywhere at any time. Furthermore, a significant amount of people still accesses by wearable tech devices.

Technology has become an integral part of the way that people communicate with one another and has increasingly taken the place of face-to-face communication (Emily, 2015). Some smartphone use is disruptive such as when one interactant begins to text message someone outside of the face-to-face encounter (i.e., smartphone cross-talk) and consequently ignores others around him or her (Omar, 2014). Almost all youngster or adult just keep looking at their mobile phone and playing the screen and these phenomena consider common nowadays in almost every country no matter where you go.

Technology may have influenced social behaviour due to the online environment, and it might be unrelated to the lack of face-to-face communication (Ceulemans et. al, 2012). It will be interested to spend too much time on chatting and message with others. Then, soon can become addicted to social networks if overuse on it, which is obviously not good. It may lead the them become self-closing and the skill of communication become more worst. After that, it also will wreck any relationship especially with families.

However, 21st century conversations are typically not very exclusive because smartphones allow interactants to have conversations with others not immediately in their presence and distract them with other forms of entertainment (Omar, 2014). They have grown up around computer technologies such as desktop computers, laptops, video game consoles, cell phones, and the internet most of their life, thus

making the assimilation of new technologies into their lives feel normal (Omar, 2014).

The fact is, before all those technologies evolved, people usually used to spend more time together to do what they want to do as long in face to face form. Thus, they felt happier and human relations were smoother and more harmonious but now, they only communicate in virtual world, not in reality society. This make them live within their own zone and their face to face communication skills with others are become unfamiliar. It also may lead them become self-closing and the skill of face to face communication become more worst and wreck any relationship especially with families.

These phenomena should be reduced. Apart from internet to spread the awareness, the most nature video, 2D animation also can be the powerful tool to spread the messages or warning to them. So, "Face the World" developed to raise the awareness to notice them about the important of reality communication skills and it able to help us to interact more smoothly and harmoniously with people on a face to face basis with ease and without any misunderstanding or barriers.

For the conclusion, "Face the World" such a awareness for those youths and adults. It is an 2D animation about the lack of tradisional face to face communication issue between human that appear after the growth of technologies. The message which hidden inside this 2D animation is let those people notice about this issue and will help them to reflect themselves too.

#### 1.3 Problem Statements

Here come with the problem statements that happen in our real-life scenarios and it proves that the level of needed to build a "Face the World" 2D animation to let the society nowadays more harmonic. Many studies have been conducted regarding technology's effect on social interaction and face to face communication since the rise of cellphone and social media usage in the late 2000s (Emily Drago, 2015).

#### i) Insufficient communication face to face with others

People nowadays facing the screen for all day long, constantly checking on their phone or other communication device and social profiles at anytime and anywhere instead of face to face converse with others. Even it is gathering with other, they still chat with using some social apps but not face to face conversation. People who had conversations in the absence of mobile devices reported higher levels of empathetic concern, while those conversing in the presence of a mobile device reported lower levels of empathy (Shalini Misra et. al, 2014).

## ii) Technology lead to lack of conventional communication skills

Despite these cognitive strains, we are enamoured by our mobile communication technologies. We rely on their ability to respond to our needs and interests in a highly complex, fast-paced technological society (Shalini Misra et. al, 2014). People no longer spend their quality time going out bonding with family or friends in society nowadays but always stick with their smart phone no matter what are they doing such as having meal, toilet, studying, gathering even sleeping. This emphasized the fact that as the use of devices and technology that allow people to communicate digitally increase, face-to-face interaction decreases (Emily Drago, 2015). Also, this may come with bad impact and make them lack face to face communication with others because they always playing with their phone.

#### iii) Not aware about this communication issues

Those high technologies lead the people to losing their natural converse ability to face to face communicate with the physical world and the people around them indirectly. However, they still didn't notice about that but the fact is this issue already become their daily routine in their life as usual.

## 1.4 Objectives

The problem statements stated above perhaps can be solved by developing this 2D animation for society. Here states with the objectives of building this 2D animation.

## i) To study the appropriate method to develop 2D animation.

There got variety of method to produce a 2D animation. However, the better and most suitable method able to smoothen the job and let all the work on the right track. Thus, it will save more consumed time to completed the task.

#### ii) To design the 2D animation.

Before the development of this project, the design of all details of this 2D animation such as characters, background, objects, and more will be conducted with brainstorming and idea to generate it (Bakar, N. & Zaman, H. B., 2007). All the brilliant idea able to generate a great output.

#### iii) To develop the 2D animation.

Development of this project will be started with using the most suitable and chosen methodology. All the steps of the methodology applied into the 2D animation then created the good result and output.

'ERSITI TEKNIKAL MALAYSIA MELAKA

# iv) To evaluate the effectiveness of the integrated video will help the users in understanding the lesson convey through the 2D animation.

This 2D animation such a lesson for the users and the expect result will notice the users about the important of face to face communication between peoples.

## 1.5 Scope

This project implements a 2D animation about the society issue technology may cause youths and adults lose their natural conversation ability with others. The software and hardware used to develop this 2D animation were Adobe After Effects, Adobe Illustrators, and WACOM Bamboo (drawing tablet).

This 2D animation is mainly developed for the youths and adults who own at least one of the electronic devices such as smart phone, laptop, smart watch and more in current society no matter he or she already worked or still studying for their future. The age range for the target user who taken in this project is between 20 to 30 years old because that such an exuberant period to using those technology thingies as this 2D animation purpose to aware all those technology peoples.

Around 120 peoples conducted in the research. The location will be located at Faculty of Information and Communication Technology's (FTMK), Universiti Teknikal Malaysia Melaka (UTeM) inside the main campus or around the Bukit Beruang, Malacca area.

## 1.6 Project Significance

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

"Face the World" 2D animation is an implication animation about the current society issue which is face to face communication. It can identify the impact between technology and relationship between peoples and let them make some changes on it. Beside that, this 2D animation able to evaluate the effectiveness toward society based on its exciting text, background, colourful image, audio and the hidden message inside it. This 2D animation also able to stimulate the people to engage more on physical interaction but not just communicate in virtual world.

The most beneficial people of this project are the teens and adults who own the high technology communication devices. By this project, the teens and adults with high technology starter pack will be aware about this serious society issue and