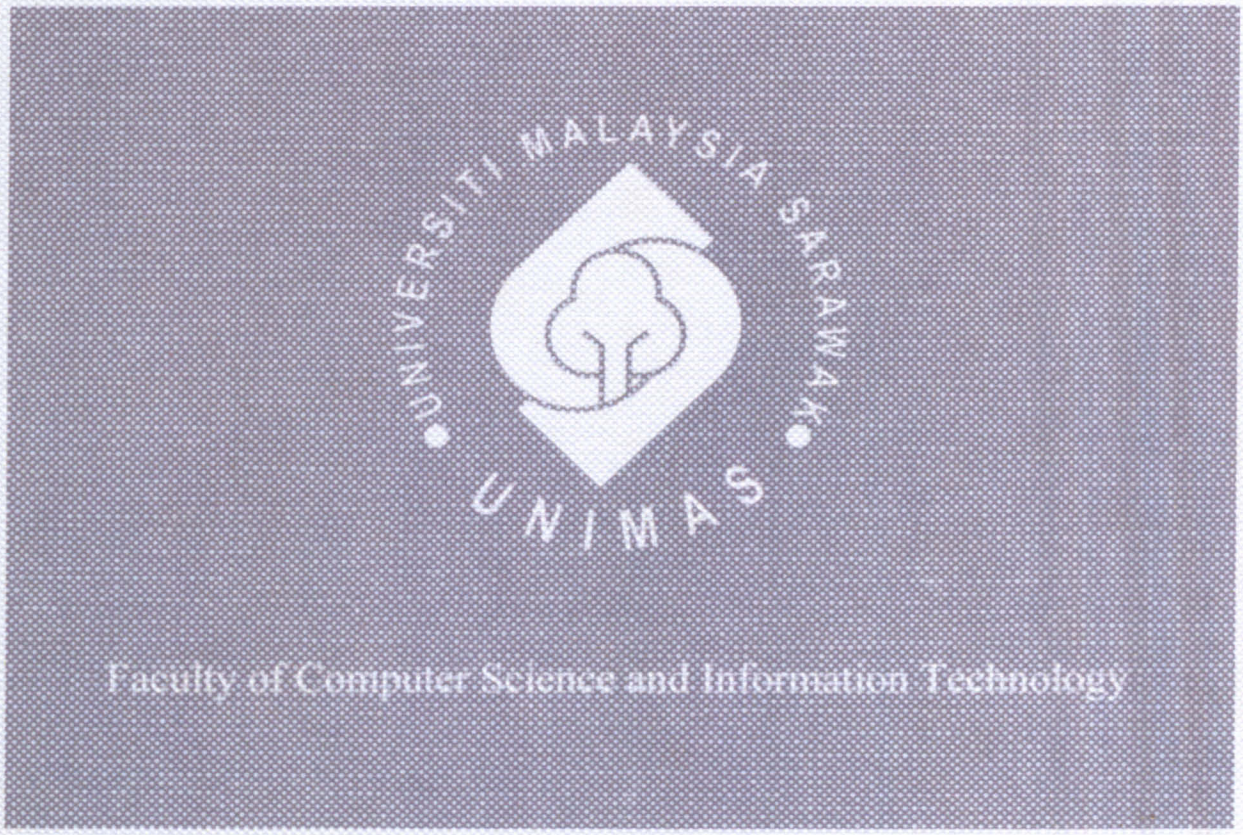
ARAWAK
ak, Malaysia
81076



ASIAN TRADITIONAL DRESS-UP APPLICATION

Shirley Ngu Ling Ling

Bachelor of Computer Science with Honors
(Information System)
2015

Pusat Khidmat Maklumat Akademik
UNIVERSITI MALAYSIA SARAWAK

P.KHIDMAT MAKLUMAT AKADEMIK
UNIMAS
1000288556

ASIAN TRAL[illegible] APPLICATION

SHIRLEY NGU LING LING

This project is submitted in partial fulfilment of the
requirements for the degree of
Bachelor of Computer Science with Honors
(Information Systems)

Faculty of Computer Science and Information Technology
UNIVERSITI MALAYSIA SARAWAK

2015

UNIVERSITI MALAYSIA SARAWAK

THESIS STATUS ENDORSEMENT FORM

TITLE ASIAN TRADITIONAL DRESS-UP APPLICATION

ACADEMIC SESSION: 2014/2015

SHIRLEY NGU LING LING

(CAPITAL LETTERS)

hereby agree that this Thesis* shall be kept at the Centre for Academic Information Services, Universiti Malaysia Sarawak, subject to the following terms and conditions:

1. The Thesis is solely owned by Universiti Malaysia Sarawak
2. The Centre for Academic Information Services is given full rights to produce copies for educational purposes only
3. The Centre for Academic Information Services is given full rights to do digitization in order to develop local content database
4. The Centre for Academic Information Services is given full rights to produce copies of this Thesis as part of its exchange item program between Higher Learning Institutions [or for the purpose of interlibrary loan between HLI]
5. ** Please tick (√)

☐	CONFIDENTIAL	(Contains classified information bounded by the OFFICIAL SECRETS ACT 1972)
☐	RESTRICTED	(Contains restricted information as dictated by the body or organization where the research was conducted)
☑	UNRESTRICTED	

(SHIRLEY NGU LING LING)

Permanent Address

NO. 49, YAN MIN PARK, JALAN TUN HUSSEIN ONN, 97000 BINTULU, SARAWAK

Date: 30 June 2015

Validated by

(MADAM CHIU PO CHAN)

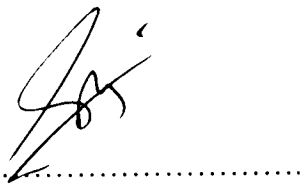
Date: 30/6/15

Note * Thesis refers to PhD, Master, and Bachelor Degree

** For Confidential or Restricted materials, please attach relevant documents from relevant organizations / authorities

Declaration

I hereby declare that the thesis is based on my original work except for quotations and citations which have been quoted respectively. I also declare that no portion of the work referred to in this report has been submitted in support of an application for another degree at University Malaysia Sarawak (UNIMAS) or qualification of this or any other university or institution of higher learning.



.....

(Shirley Ngu Ling Ling)

June 2015

Acknowledgement

I would like to take this opportunity to express my profound gratitude to my supervisor, Mdm Chiu Po Chan, for her advices and guidance along the development of project in two semesters of study. Her kindness, ideas and her experiences had put me on the right track and enabled me to complete this application.

Besides, I would like to thank all of my friends who willing to help and take part in Asian Traditional Dress-up user acceptance testing and provide precious comments and recommendations for Asian Traditional Dress-up Application.

Pusat Khidmat Maklumat Akademik
UNIVERSITI MALAYSIA SARAWAK

Table of Contents

Abstract viii

Abstrak ix

Chapter 1: Introduction 1

1.1 Introduction 1

1.2 Problem statement 2

1.3 Objectives 3

1.4 Methodology 3

1.5 Scope 4

1.6 Significance of project 5

1.7 Project Schedule 5

1.8 Expected Outcome 5

1.9 Project Outline 5

1.10 Conclusion 6

Chapter 2: Literature Review 7

2.1 Introduction 7

2.2 Literature Review on the Existing Application 7

2.2.1 Asian Folk Dress Up 8

2.2.2 National Costumes Dress Up 9

2.2.3 Guess Clothing 11

2.3 Table of Comparison between Existing Applications 12

2.4 Platform used for Asian Traditional Dress-up Application 14

2.5 Software 15

2.6 Conclusion 16

Chapter 3: Requirement Analysis and Design 17

3.1 Introduction 17

3.2 Requirement Planning Phase 17

3.2.1 Hardware and Software Requirement Analysis 17

3.2.2 User Requirement Analysis 17

3.3 User Design Phase 22

3.3.1 Workflow of Asian Traditional Dress-up Application 22

3.3.2 Context Diagram 23
3.3.3 Data Flow Diagram Level 0 24
3.3.4 Data Flow Diagram Level 1 25
3.4 Conclusion 27
Chapter 4 Implementation 28
4.1 Introduction 28
4.2 Application Implementation 28
4.2.1 Dress-up the character 32
4.2.2 Answer Quiz 35
4.2.3 Study Traditional Costume 39
4.3 Implementation Strength of Asian Traditional Dress-Up Application 41
4.4 Conclusion 42
Chapter 5 Testing 43
5.1 Introduction 43
5.2 Testing 43
5.2.1 Functionality Testing 43
5.2.2 User Evaluation 46
5.3 Conclusion 51
Chapter 6 Future Work and Conclusion 52
6.1 Introduction 52
6.2 Achievements 52
6.2 Future Works 53
6.3 Conclusion 54
References 55
Appendices 58
Appendix A: Project Gantt Chart 58
Appendix B: Interview for Asian Traditional Dress-up Application 60
Appendix C: Questionnaire 61
Appendix D: Test Cases 63
Appendix E: Post - Questionnaire 74

List of Tables

Table 2.1: Comparison between three existing application. 13

Table 5.1: Demographic Profile..... 46

Table 6.1: Achievement of the Objectives 52

List of Figures

Figure 2.1: Home Page 8
Figure 2.2: Dress up and make up on that model 8
Figure 2.3: Choose a model 9
Figure 2.4: Dress up and make up on that model 9
Figure 2.5: Save or Email the model with selected background 10
Figure 2.6: Fill-in the blank 11
Figure 2.7: Answer and ask to proceed next question 11
Figure 2.8: Android Platform Architecture 14
Figure 3.1: Type of Asian Traditional Costumes that participant know 18
Figure 3.2: Weaknesses in traditional costume learning 19
Figure 3.3: Features of interface required among the participants 20
Figure 3.4: Type of quiz preferred among the participants 21
Figure 3.5: The workflow of the traditional dress-up application 22
Figure 3.6: Context Diagram of the traditional dress-up application 23
Figure 3.7: Data Flow Diagram in Level 0 24
Figure 3.8: Data Flow Diagram in Level 1 for Dress-up the Character Process 25
Figure 3.9: Data Flow Diagram in Level 1 for Answer Quiz Process 26
Figure 3.10: Data Flow Diagram in Level 1 for Study Traditional Costume 27
Figure 4.1: Splash screen of the application 28
Figure 4.2: Alert dialog to insert user name 28
Figure 4.3: Alert dialog to insert a valid user name 29
Figure 4.4: Alert dialog to select default gender 30
Figure 4.5: Main Screen 30
Figure 4.6: Settings Screen 31
Figure 4.7: Select skin color 32
Figure 4.8: Alert dialog of displaying dress-up instruction 32
Figure 4.9: Select traditional costume 32
Figure 4.10: Select background 32

Figure 4.11: Display feedback of selected traditional costume matched with selected background..... 33

Figure 4.12: Display feedback of selected traditional costume unmatched with selected background..... 33

Figure 4.13: Alert dialog of saving the screenshot..... 34

Figure 4.14: Alert dialog of displaying information of traditional costume..... 34

Figure 4.15: Alert dialog of displaying quiz instruction..... 35

Figure 4.16: Quiz Screen..... 35

Figure 4.17: Source code for random question selection in the quiz..... 36

Figure 4.18: Correct answer screen..... 37

Figure 4.19: Wrong answer screen..... 37

Figure 4.20: View result screen..... 38

Figure 4.21: Alert dialog of displaying education instruction..... 39

Figure 4.22: Education Screen..... 39

Figure 4.23: Alert dialog of displaying information of traditional costume..... 40

Figure 4.24 Alert dialog of displaying details of traditional costume..... 40

Figure 5.1: Interface Visibility..... 48

Figure 5.2: Learnability evaluation result..... 49

Figure 5.3: Participant Opinion..... 50

Abstract

Nowadays, dress-up games has become very well-known games which provide opportunity for players to develop their creative skills. There are also some traditional dress-up games developed for the players to play during their leisure time. However, most of the design in the traditional dress-up game is mainly for entertainment purposes. The players just dress-up the character with beautiful and pretty dress instead of understand about why the character needs to wear this costume, what is the name of that costume, and when to wear this costume. In this project, a traditional dress-up application is developed to help user to learn the traditional costumes knowledge of different countries in Asia using Android phone. In this application, the style of Asian traditional costume of a character is shown after user dress-up the traditional costume on that character. User also can study country name, its traditional costume and the details of the part of traditional costume through the application. Futhermore, quiz is provided in the application. In order to ensure the traditional dress-up application fulfill the user requirements, testing and evaluation are done with the 30 participants in UNIMAS. The participants are chosen randomly. Based on the results of testing and evaluation, majority of the users satisfied with the usability of the traditional dress-up application.

Abstrak

Pada masa kini, permainan pakaian telah menjadi permainan yang diketahui. Permainan ini memberi peluang kepada pengguna untuk membina kemahiran kreatif mereka. Terdapat juga beberapa permainan pakaian tradisional dicipta kepada pengguna untuk mengisi masa lapang mereka. Walau bagaimanapun, kebanyakan permainan pakaian tradisional dicipta terutamanya adalah untuk tujuan hiburan. Pengguna hanya berpakaian watak itu dengan pakaian yang indah dan cantik daripada memahami tentang mengapa watak perlu memakai pakaian ini, apa nama pakaian itu, dan apabila memakai pakaian ini. Dalam projek ini, aplikasi pakaian traditional dicipta untuk membantu pengguna dalam mempelajari pengetahuan tentang pakaian tradisional dalam negara yang berbeza di Asia dengan menggunakan telefon bimbit Android. Dalam aplikasi ini, gaya pakaian tradisi Asia yang dipakai oleh watak tersebut akan ditunjukkan selepas pengguna berpakaian pakaian tradisi pada watak itu. Pengguna juga boleh belajar nama negara, pakaian tradisi dan butiran pakaian tradisional melalui aplikasi ini. Selain itu, kuiz juga disediakan dalam aplikasi ini. Untuk memastikan aplikasi pakaian tradisional memenuhi keperluan pengguna, pengujian dan penilaian dilakukan dengan 30 peserta di UNIMAS. Para peserta yang dipilih secara rawak. Berdasarkan hasil pengujian dan penilaian, majoriti pengguna berpuas hati dengan kebolehgunaan aplikasi pakaian tradisional ini.

Chapter 1: Introduction

1.1 Introduction

Traditional costumes play an important role in the country's history and culture. During special events and festivals, people from different ethnic group wear their traditional costume. People are familiar with their own traditions includes their traditional costumes. They are not familiar with the traditional costume of other races. With this, there are various types of games includes traditional dress-up games had been developed.

Nowadays, traditional dress-up games has become very well-known games which provide opportunity for players to develop theirs creative skills. *Permanent Exhibits* (n.d.) stated that this game can help users to understand about the past, present and future of that country. Players can play the traditional dress-up game during their leisure time. However, most of the design in the traditional dress-up game is mainly for entertainment purposes. The players just dress-up the character with beautiful and pretty dress instead of understand about why the character needs to wear this costume, what is the name of that costume, and when to wear this costume. Besides that, there is only few traditional dress-up games can be found with containing both gender traditional costumes.

In addition, mobile phone has become a pervasive medium that assists us in our daily life. Among all the modern communication devices, the more familiar devices that the public used are mobile phones, especially smartphone. It is easy to use, portable, small size and small weight. Therefore, this final year project is to design and develop a mobile application to help user to learn more traditional costumes knowledge of different countries in Asia using Android phone.

People can download the application into the smartphone and play it anytime and everywhere. In the application, user can choose the character they want. User can dress up the traditional costumes on the selected character with beautiful background that they prefer. The name of selected traditional costume is given and brief information of that costume is provided. After design the costume, user can save the picture as a record. Besides this, quiz is provided in the application.

1.2 Problem statement

- Lack of Asian traditional costume knowledge
  - In fact, most of the people had learnt the basic knowledge of traditional costume from the school, for example Malay textbook KSSR in Primary Year 3. Some of the examples with pictures are shown in the textbook such as pictures of the traditional costume with different race in Malaysia such as saree, dhoti, cheongsam, samfu, baju Melayu and baju kurung. However, the knowledge of traditional costume that learnt from the textbook is limited.
  - The traditional costume knowledge that gained is limited. Most of the people know the common traditional costumes such as Kimono in Japan, Hanbok in Korea, and others.
- Knowledge of traditional costume is limited in some dress-up games in Malaysia
  - Many traditional dress-up games are designed for user to dress up the character without describe the information of traditional costumes. Thus, they play the dress-up game without understand why the character needs to wear this costume,

what is the name of that costume, this costume is offered for which countries, and when they wear this costume.

- Currently there only few traditional dress-up games can be found with containing both gender traditional costumes. User can find and learn the female traditional costumes knowledge easily compared to male traditional costumes knowledge in traditional dress-up game.

Therefore, a Traditional Dress-up application will be developed in this project.

1.3 Objectives

The objectives of the project are shown below, which are:

- To design and develop attractive traditional dress-up application for users to learn the traditional costume knowledge.
- To evaluate the effectiveness of traditional costume learning.

1.4 Methodology

To make sure the project can be completed in a very short amount of time and get faster and better result, Rapid Application Development (RAD) methodology is used in this project. RAD methodology are consists of four phases, which are requirements planning, user design, construction and implementation.

First phase of RAD Methodology is Requirements Planning Phase. In this phase, the problem statement, objective, methodology, project scope, significant of project, estimation of the project timeline and expected outcome in this project will be identified. Besides that, the related

existing system are studied and concluded in the literature review section. After that, to identify the requirements for traditional dress-up application, the technique used for the information gathering is through an interview and questionnaire with target users. The interview and questionnaire session are conducted with the students in University of Malaysia Sarawak (UNIMAS). Based on the gathered information, the workflow and data flow of the application will be created for the traditional dress-up application. After analyzing the application needs, the next phase to proceed is called as User Design Phase. In this phase, user interface design of actual application also will be developed.

In Construction Phase, The users can review the interface design of the application and give their opinions about the design. After that, the user requirements are fine-tuned and syntactical errors will be removed from the design. Then, the design of traditional dress-up application is finalized and then the application is built in mobile phone. Some documentation is provided such as user manual of this application.

Finally, the Implementation Phase is the last phase which involves implementing the application. In this phase, the application is built and refined. The amended parts of the application are tested and then introduced to the public.

1.5 Scope

This Asian Traditional Dress-up Application is suitable for the adults who are interested to learn traditional costume knowledge.

Pusat Khidmat Maklumat Akademik
UNIVERSITI MALAYSIA SARAWAK

1.6 Significance of project

At the end of the project, the significant of the traditional dress-up application is to foster a positive learning environment and experience about traditional costume learning. The application can encourage users to keep learning.

1.7 Project Schedule

The project schedule of the project can be seen at Appendix A.

1.8 Expected Outcome

At the end of the project, a mobile-based application would be developed. Through the application, user can enrich their knowledge about traditional costumes.

1.9 Project Outline

In Chapter 1, the overview of the entire project is given. The problems in learning Asian traditional costume knowledge are stated in the problem statements. Furthermore, the objectives, methodology used, project scopes, significant of project, estimation of the project timeline and expected outcome in this project are identified.

Chapter 2 is focuses on the review of the existing mobile applications that are related to Asian Traditional Dress-up Application. After the existing applications are studied, comparison between the applications is carried out. This review will be the guideline to develop the proposed application

The requirement analysis and design for the project is conducted in Chapter 3. The interview and questionnaire session are conducted with the students in University of Malaysia Sarawak (UNIMAS). Based on the gathered information, the overview of system design, structure, and workflow of the proposed traditional dress-up application is conducted for the traditional dress-up application.

In Chapter 4, the implementation of the project will be discussed. The implementation of each module for the traditional dress-up application is discussed. Besides that, a user manual also prepared for the users.

In Chapter 5, application testing will be carried out to ensure that the application is well performed. There are two types of testing has been conducted to test traditional dress-up application, which are functionality testing and user evaluation.

Chapter 6 is the last chapter of the project. This chapter should present conclusions, achievement and future work to the application.

1.10 Conclusion

In conclusion, the overview of the entire project is given in this chapter. The problems in learning Asian traditional costumes knowledge are stated in the problem statements. Furthermore, the objectives, methodology, project scopes, significant of project, estimation of the project timeline and expected outcome in this project will be identified to acquire the clear idea for the next steps.

Chapter 2: Literature Review

2.1 Introduction

This chapter focuses on the review of the existing mobile applications that are related to Asian Traditional Dress-up Application. It will define the description of three existing applications that related to Asian Traditional Dress up, comparison between the applications, and conclusion. This review will be the guideline to develop the proposed application because some ideas or concepts can be obtained after review the existing application.

2.2 Literature Review on the Existing Application

There are three existing mobile applications that are related to the Asian Traditional Dress-up Application which are Asian Folk Dress up Application (*Google Play*, 2013). National Costume Dress Up (*Google Play*, 2014) and Guess Clothing Application (*Google Play*, 2014).

2.2.1 Asian Folk Dress Up

Figure 2.1: Home Page

Figure 2.2: Dress up and make up on that model

Source: Asian Folk Dress Up from Google Play (2013)

This mobile application was created by Educa Studio in Year 2013. This application focuses on four countries in Asia, which are Japan, Korea, Indonesia and China. There are Kimino from Japan, Hanbok from Korea, CheongSam from China and Batik from Indonesia and others. Besides that, user can select items provided onto the Asian character in the application to create unique dress up.

Strength : This application is free and it can be downloaded on the App Store. User can create unique dress up by choosing the items provided on the left hand side of the interface. For example, user can change the background, body colors, shoes, hair modes, dress and others. After design the dress-up, user can save their dress up into history which are shown in Figure 2.2. They can remove or reload saving their

gallery anytime, anywhere. They also can export their dress up on their own phone image gallery.

Weakness : A "Random" button on the right hand side of the interface is provided for user to random select the costume. However, the selected traditional costume is not match with the background once clicking the button. This may cause reduce the user satisfaction when they playing it.

2.2.2 National Costumes Dress Up

Figure 2.3: Choose a model

Figure 2.4: Dress up and make up on that model

Source: National Costume Dress Up from Google Play (2013)

National Costume Dress Up is an application that created by Sand Mobile in Year 2014. This application provides chances for users to show off their inner design talent. In this application, there have four models from different countries prepared for user to choose from. User has to choose a model before start to dress-up. Figure 2.3 show that user has to choose an Indian model.

After that, this application provides hundreds of combinations for users to make up and various types of beautiful clothes to dress up which is shown on Figure 2.4. For example, if user selects an Indian model, it will display various types of sarees, earrings, jewelries and accessories which are always matches with Indian cultural.

Figure 2.5: Save or Email the model with selected background

Strength : This application is free to download. User can download it from App Store. In this application, user is required to choose the traditional costume of a particular country before they start playing the game. Hence, user can learn the traditional costume of the selected country. With this, users can improve their traditional costume knowledge fast and effectively. In addition, user can take a screenshot of this character and save it into photo gallery or email their friends immediately which is shown in Figure 2.5.

Weakness: The information provided is limited. For example in Figure 2.3, some users might not sure the origin of the particular traditional costume although picture is provided.

2.2.3 Guess Clothing

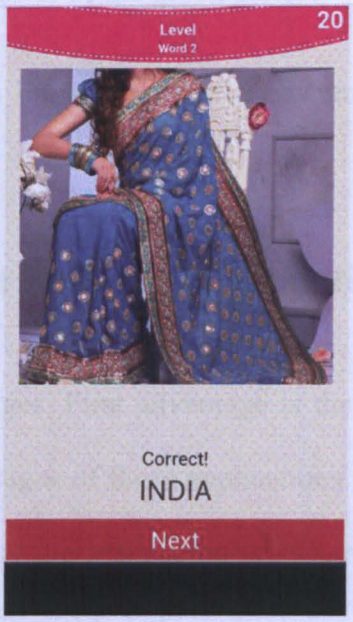


Figure 2.6: Fill-in the blank *Figure 2.7: Answer and ask to proceed next question*

Source: Guess Clothing from Google Play (2014)

Guess Clothing is a fascinating educational application for user to learn the origin of the traditional costume. This application was released in year 2014 by Edu city. It is similar as a quiz test on users about their traditional costumes knowledge for various countries. In Figure 2.6, a picture of the traditional costume is displayed. Then, user is required to fill-in the name of the traditional costume's country based on the picture provided above. Figure 2.7 shows correct answer for that picture and ask the user to proceed to next question. Whereas, if the answer is wrong, the application provides immediate feedback to user and ask user to try again until the

answer is correct. In a word, it is ideal for children to learn the traditional costume learning and it will let children addictive on that application.

Strength : The interface of this application is simple and easy to use. User can understand and play the game by just fill-in the answer of the given picture.

Weakness : It is hard for beginner (user with limited traditional costume knowledge) to play without tips provided.

2.3 Table of Comparison between Existing Applications

These three applications have similar advantages. First advantage is they are free to download. Besides that, convenience is one of the advantages of these applications. Once the application is downloaded into a mobile phone, user can play the application anywhere and anytime although there is no internet access or phone signal. The table below shows comparison between three existing application.