Design and Implementation of the Korean Muallaf Center Applications as a Guide to Procedures for Praying for Korean

W A A Praditasari, I Kholis, and A A Budiman

Abstract— Based on data analysis proved that during 2015-2060, the number of Muslim population increased rapidly by increasing 70%, which is included converts in South Korea. The developments of Islam in South Korea characterized by the growing mosque of Seoul, Itaewon Mosque Islamic Center. The main constraint factor for Korean converts is there is still no prayer guide in Hangeul feature. Constraints experienced by converts, most important is prayer. The Korean Muallaf Center is an application that helps converts to include wudu, prayers, and easy-to-understand religious worship. The purpose of this research is to help converts to understand the guidelines of Islam with Hangeul, so that they can practice it. The methodology of this research is with literature study, application design, implementation, and evaluation of application usage. The results of this study are the Korean Muallaf Center Applications that have been used by Muallaf Korea.

Keywords— *Islam, Muallaf, South Korea, Application of Prayer Guide, Korean Muallaf Center*

I. INTRODUCTION

From the source of data analysis mentioned that the data of Muslim families in the year 2030 -2035 as many as 225 million inhabitants. Between 2015-2060, the world population is expected to increase 32% to 9.6 billion. During this period, the Muslim population increased rapidly by increasing 70%. The increase includes among those who converted to Islam from a previous religion, or atheist.

Data from the BBC explains that some of the changes in geographical factors related to Muslim change will shift from Asia and the Pacific to Africa over the next few decades. The author has also conducted a direct Observation of the development of Islam in the Big Cities of South Korea Seoul, Busan, and Jeju. Itaewon Mosque in Seoul, Al-Fatah Mosque in Busan and Jeju Islamic Center whose founder is a professor and a native Korean citizen who founded an Islamic association in Jeju.

The number of Muslim enthusiasts (Muallaf) in Korea is very high, while the main factor is not in Hangeul feature. In a country whose majority religion is not Islam. South Korea is a country with a very significant increase in the number of converts. The author made direct observations in South Korea. Muallaf Korean is very high, but constrained Language. Facilities of worship facilities are also very rarely encountered. Learning media are generally in English, while many still stammer to understand Islam because of Language difficulties.

The Itaewon Islamic Center, Seoul, is the biggest organization of Korean Moslem which help the Korean Moslem community, especially Muallaf, to practice and learn Islam. In this place, the teacher of Moslem (Ustadz) and Leader of Moslem (Imam) held many programs to help Korean Moslem Community. Unfortunately, another cities of South Korea did not have Islamic Center so Moslem had to travel to Seoul to learn Islam.

Based on this background, a review of the use of the information system currently used and what are the issues to support the improvement of learning means aimed at providing a Guide for the Conversion in Korea so that the expected output of this research is to help converts to understand the guidelines of Islam with hangeul , so they can practice it. The design is approach that is suitable for the issue, which one of the implementation.

II. UI & UX METHOD

This paper is implementation of User Interface and User Experience method. UI Method has been used to design user interface of the application. UX Method has been used to collect the information of user experiences. Data source is from direct interview with Korean Convert to Islam.

A. The problems

From the above description, the formulation of the problem gained is how the behavior of users (users) on the use of an information system from the user experience of respondents in this research is the new convert to Islam (Mualaf) in South Korea. They needs a support, education, guidance, etc. But, Information about Islam in Korean language more

B. Limitation Problems

To undertake this research, it is necessary to limit the problem of focusing on research scope and time constraints, problem limitation for example data from existing converts in Korea, or South Korean citizens who wish to study Islam.

C. Literature Review

II.1 User Experience Approach

The first stage is an Analysis that consists contextual inquiry, business process analysis, contextual analysis, design informing model analysis.

II.2 Design

The next stage is Design Thingking (User Personal) and Design Production (Wireframe).

II.3 Prototype

This stage consists of making prototype medium fidelity and evaluation of the prototype result.

II.4 Implementation

Implementation stage to apply what has been done in the previous steps

II.5 Research Objectives

The purpose of this research are:

As research activities of lecturers in the framework of research development in Informatics Engineering course. As a form of social technopreneur who answered the existing problems, in this case research is a convert in Korea.The expected output of recommendations based on the prototype made with reference to the method of User Experience approach. The phenomenon studied is an effort to help the enthusiasts of Islam in Korea. The purpose of this study is to provide educational understanding that can be easily understood and can guide them to learn Islam more easily.

II.6 Benefits of research results

Learning facilities for the converts are not too many, although many have started to learn to know Islam. The most important component that must be learned by converts is the prayer. Learning in Hangeul is very difficult to find by the converts there. The difficulty of understanding the language is huge to learn. This Application of Solat Procedure Guidelines is intended for converts in Korea. The features presented are easy to understand. Great benefits to help understand and guide Korean converts.

II.7 Research methodology

This research used waterfall technology. Flowchart of the system is given below.
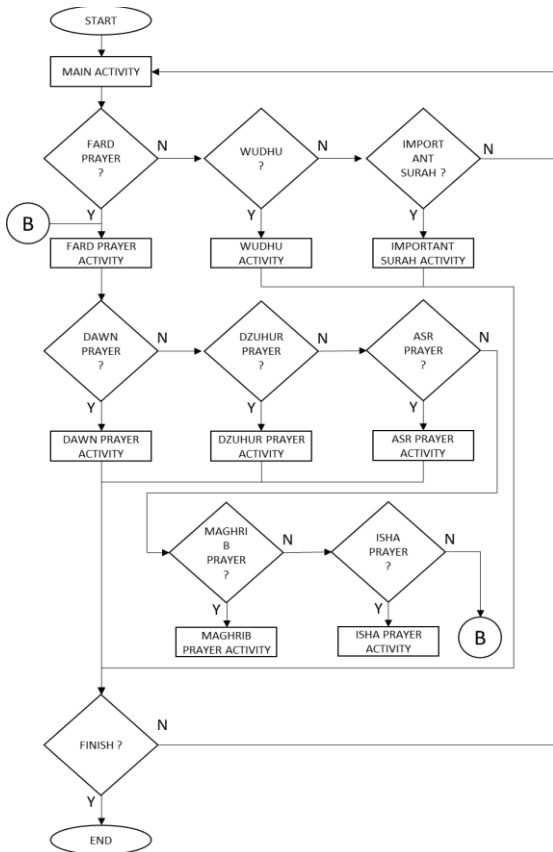

Fig. 1. Flowchart of system

Based on Fig. 1, Korean Muallaf Center Application have 3 option buttons, such as Fard Prayer, Wudhu, and Important Surah. Fard Prayer will intent to Fard Prayer Activity, which has 5 Fard Prayers, such as Dawn Prayer, Dzuhur Prayer, Asr Prayer, Maghrib Prayer, and Isha Prayer. Each Fard Prayer have Hangeul feature and Pictures to guide the user. Furthermore, Wudhu Activity will display the guide of taking ablution. The last option is Important Surah, which display the important chapter of Holy Quran. Furthermore, The system is described in sequence diagram below.
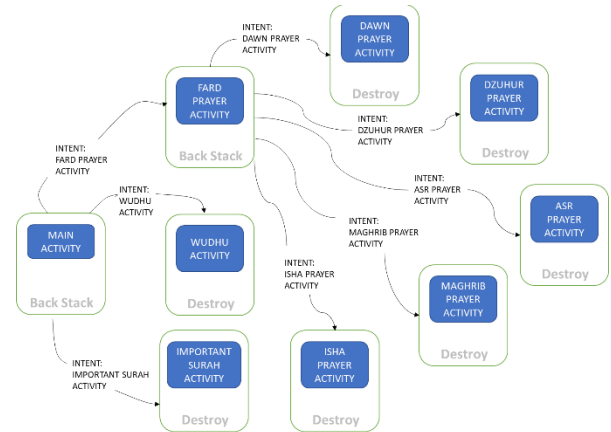

Fig. 2 Sequence diagram of system

Based on Fig. 2, the system will be saved in Back Stack on MainActivity and Fard Prayer Activity if the system intent to another Activity. For example, when user use inten to Wudhu Activity from Main Activity, it will be back to Main Activity if user press Back Button. The system will Destroy in another Activities if user press Back Button.

A.   Data Collection Methods and Features

Based on the problems and research objectives, the research method for data collection used is Waterfall method, prototyping, User Experience approach used in making this application. The data collected by the author is the result of direct observation, details of the needs of the converts in Korea. Waterfall is a suitable and efficient method applied to this research. Consists of: Needs Analysis (Starting from the constraints, required, as well as features that are useful to facilitate the user application), Design (Design of application display, features, system structure, architecture or hierarchy of the system to be created), the design has been made, then in the form of coding or programming language), Testing Phase At this stage the system test, to know which should be equipped for application needs. Trial-errors of this stage are established to make the system reliable and the bug level low or minimize errors. Evaluation stage of repair after the system feasibility test phase, this is done periodically to support the system running properly.

B.   System Development Method

Technology Acceptance Model is a method used in this research, the purpose of this method is to predict the acceptance of information received by users to technology with usability, trust and ease of using the system. The user experience and user interface sides are highly favored in this

application, because the ease will make the user feel the benefits of this application.

III. RESULTS AND DISCUSSION

Needs analysis in this study is based on the source from Ustadz and Imam Masjid Itaewon, Seoul, South Korea. Korean converts have obstacles in prayer guides due to the lack of information on prayer guides in Hangeul (Korean). South Korea, which is a country that has dependence on Smartphone, always bring Smartphone in the hands of Korean Society. Therefore, the application of prayer guides for Korean converts is necessary.

Most Koreans lack the ability to speak English. Many Korean converts who lack or even lack the ability to speak English. Therefore, the Korean Muallaf Center Application requires Hangeul letters for Korean people to understand in the use of such applications.

Moslem Korean have been increased significantly in recent years. The data are given below.

Table 1. Population of South Korean

[Table] Population and composition by province (2015 ~ 2045)

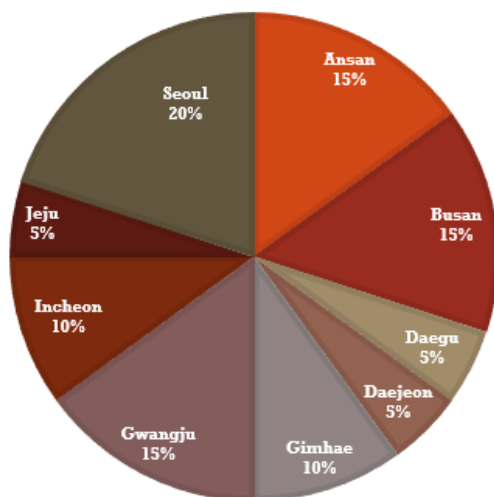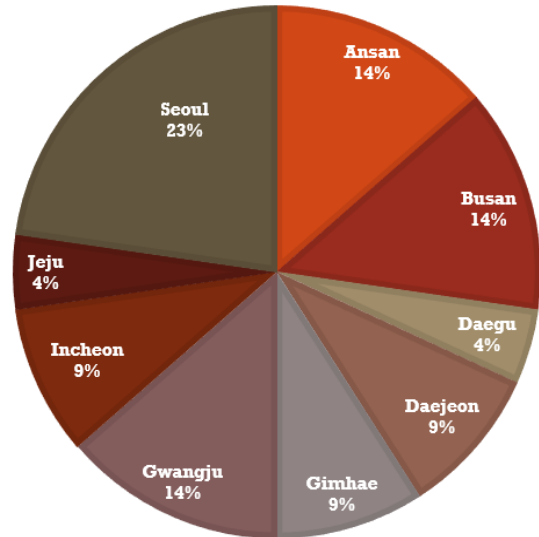| Regions | Population (10,000 persons) | | | | | | | From 2015 to 2045 | |
	2015	202	2025	2030	2035	2040	2045	Change	Percent change (%)
The nation	5,101	5,197	5,261	5,294	5,283	5,220	5,105	4	0.1
Seoul	994	964	955	943	926	906	881	-113	-11.3
Busan	345	340	334	328	321	310	298	-47	-13.7
Daegu	247	245	241	237	231	224	215	-32	-12.8
Incheon	288	298	308	315	319	318	314	25	8.8
Gwangju	151	150	149	148	146	142	138	-13	-8.6
Daejgon	154	152	154	156	156	155	152	-2	-1.2
Ulsan	116	117	119	119	118	115	111	-5	-4.4
Sejong	19	38	43	47	51	54	56	38	201.0
Gyeonggi	1,242	1,322	1,364	1,390	1,397	1,385	1,356	113	9.1
Gangwon	152	153	155	157	158	158	157	5	3.4
Chungbuk	159	163	167	171	173	174	172	13	8.3
Chungnam	210	220	229	236	241	243	242	32	15.1
Jeonbuk	184	182	182	181	180	178	174	-10	-5.2
Jeonnam	180	179	179	179	178	177	174	-6	-3.1
Gyeongbuk	268	268	269	269	268	265	259	-9	-3.3
Gyeongnam	333	339	341	342	340	335	325	-8	-2.3
Jeju	60	68	72	76	79	80	80	20	34.2
Seoul Capital Area	2,525	2,583	2,627	2,648	2,642	2,609	2,551	26	1.0
Jungbu Area	694	726	748	767	780	784	780	86	12.4
Honam Area	574	579	582	584	583	577	566	-8	-1.3
Yeongnam Area	1,309	1,309	1,304	1,295	1,279	1,250	1,209	-101	-7.7

Fig. 3. Korean Moslem Population in 2016

Fig. 4. Population of Korean Moslem in 2018

The charts compare the source of Moslem aged population in region in South Korea in 2012 and 2018. Between these years, Korean Moslems have been increased in Seoul, as Capital of Country. Seoul has Moslem Center Organization, exactly located in Itaewon Mosque. Korean Moslems have been supported by another country, such as Turkey, and Arabic Peninsula Country. The percentage of Korean Moslem is given below.

Fig. 4 illustrated the percentage of Korean Moslem in each several cities of South Korea in 2016. Seoul have the most percentage of Korean Moslem in South Korea with 20%. Moreover, Fig. 5 illustrated the percentage of Korean Moslem in each several cities of South Korea in 2018. Seoul still have the most percentage of Korean Moslem in South Korea with 23%. Based on Fig. 4 and Fig. 5, Daejeon have been increased significantly with 4%. It is because of Daejeon Islamic Center which has been established on 2017.

A. Main Activity (Korean Mualaf Center)

The features required in the application are as follows. Design (Design of the application display, features, system structure, architecture or hierarchy of the system to be created)

B. Fard Prayer (Korean Mualaf Center)

The features required in the application are as follows.
1. The writing is in the form of a hangeul letter. Besides Arabic, transliteration and translation in hangeul are required.
2. Prayer guide pictures and ablution
3. Important letters and sura-short letters to be memorized.
4. Text to speech so users can follow the pronunciation.

C. Programming Stage

This study used Open Source Software issued by Google to create Android Applications, with name Android Studio. In Android Studio, a view is required using the xml language and algorithms that use Java language. Here is the look of the Android Studio Software.
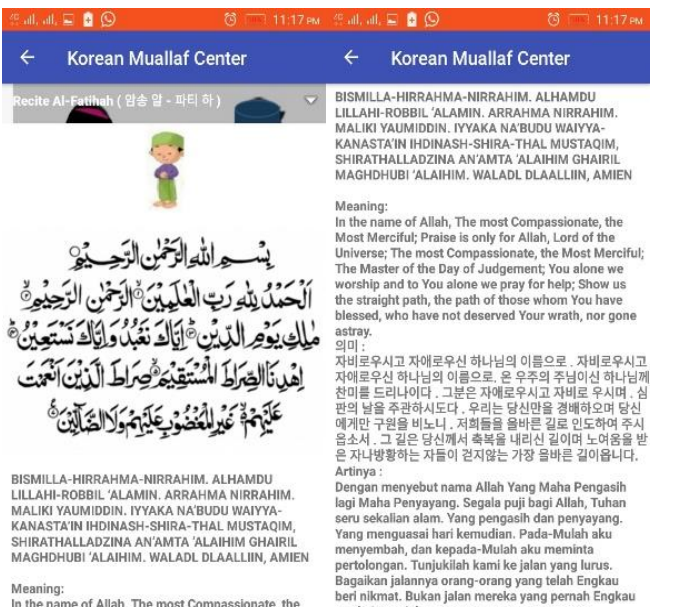
Fig 1. Applicationi Korean Muallaf Center Home, Main Activity, Wudhu Activity
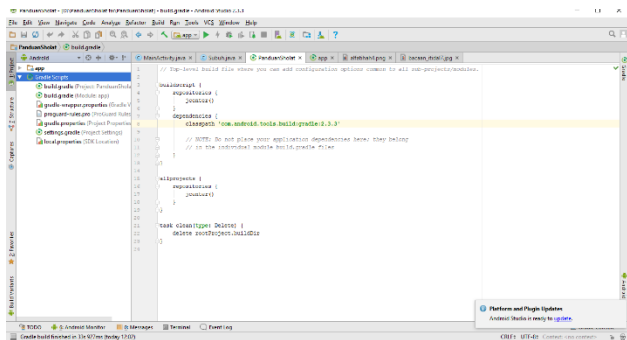

Fig 2. Fard Prayer

Fig 3. Programming Step

In the Programming Step, the system used Java, XML, and Gradle Files. Java is used to make the algorithm of the system. All of Activity was produced in Java and linked to XML files respectively.

XML files is used to design the UI of Application and Properties of Application in AndroidManifest Files. Gradle files contained the library which is used in the program and Target version of Android.

D. Testing Phase

At this stage tested the system, to know which should be equipped for application needs. Trial-errors of this stage are established to make the system reliable and the bug level low or minimize errors. Once tested, the features added in the app are as follows.
1. Text to Speech to help pronunciation of Application use.
2. Background Picture to give aesthetics on the Application.

E. Evaluation

Evaluation phase after repair of the system feasibility test phase, this is done periodically to support the system running

properly. This app has been tested to Ustadz and Itaewon Mosque Imam, Seoul, South Korea.

IV. CONCLUSION

The results of this study are the Applications of the Korean Muallaf Center on Android smartphones that feature Hangeul language and pictures of prayer guides, wudu and important letters. This app has been used by Ustadz, and Itaewon Mosque Imam, Seoul, South Korea, as well as Moslem Selebgram, OlaboraSong.

Some suggestions given about this application are as follows.
1. This application requires the addition of a better use of Hangeul vocabulary.
2. This application required the addition of an approach to the Korean Society in accordance with its culture.
3. It needs update of the Application data so that the application has more features, such as Learn Quran, Tajwid, etc.

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