出國報告（出國類別：其他：國際會議）

出席印尼峇里島 2016 ICCBS 國際研討會報告書

服務機關：**國立高雄應用科技大學**

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派赴國家：**印尼**

出國期間：**2016.06.17-2016.08.29**

報告日期：**2016.09.29**

摘要

　　我的研究報告主題是「An Android-Based Pregnancy Predicting System」，本篇研究於 2016 年 6 月 25~27 日在印尼峇里島舉辦之「5th International Conference on Bioinformatics and Biomedical Science (ICBBS 2016)」公開發表，報告時間為下午第 4 場次之「Bioinformatics & Medical」時段，上午時間除參與了 4 場演講，亦旁聽了 Biomedicine 的發表。完成研究報告的口頭簡報後，針對我的研究內容，也回答了與會者的所有提問。在這場研討會中，我學習到很多新資訊和知識，學習不會結束，更重要的是與很多參與者變成研究交流的好朋友。最後，感謝學校的經費補助，使這次出國發表的行程得以成行。

關鍵詞：pregnancy, Android-based pregnancy predicting, software,國際研討會、印尼峇里島。

目次

一、目的

　　2016 年 6 月 25~27 日舉辦之「5th International Conference on Bioinformatics and Biomedical Science (ICBBS 2016)」接受了我的研究報告投稿，研究主題為「An Android-Based Pregnancy Predicting System」，並邀請進行口頭發表，故本次前往印尼峇里島參與 ICBBS 研討會。

二、過程

會議地點

Patra Jasa Bali Resort & Villas, Bali, Indonesia.

研討會簡述

　　ICBBS 2016 國際研討會由 association of the scientists and engineers in Chemical, Biological, & Environmental Engineering (CBEES) 協會主辦，本屆研討會主要研究領域包含 3 大主題：Bioinformatics and Computational Biology (包含 Protein structure, function and sequence analysis、Computational proteomics 及 Algorithms, models, software, and tools in Bioinformatics 等多項主題)、Biomedical Engineering (Biomedical imaging, image processing & visualization、Bioelectrical and neural engineering 及 Biomechanics and bio-transport)及 Other Related Topics (Biostatics、Biometric 及 Biomeasurement)。發表的論文將會分別收錄在 Journal of Life Sciences and Technologies (JOLST, ISSN: 2301-3672)與 International Journal of Pharma Medicine and Biological Sciences (IJPMBS, ISSN: 2278-5221)兩個期刊之中。

會議議程

Brief Schedule for Conferences

Day 1	**Afternoon, June 25, 2016 (Saturday)** **Venue: Lobby** Arrival Registration 13:30~17:00 (Committee Meeting 14:00~16:00)
Day 2	**June 26, 2016 (Sunday) 8:50~17:30** **Venue: Gianyar Room & Klungkung Room** Arrival Registration, Keynote Speech, and Conference Presentation

Morning Conference

Venue: Gianyar Room

Opening Remarks 8:50~8:55

(Prof. Tjokorda Gde Tirta Nindhia, Engineering Faculty, Udayana University, Bali, Indonesia)

Keynote Speech I 8:55~9:30

Topic: "Sustainable Use and Zero Waste for Water Resources"

(Prof. Orawan Siriratpiriya, Environmental Research Institute of Chulaongkorn University, Thailand)

Keynote Speech II 9:30~10:05

Topic: "Indonesian Wild Silkworm Cocoon as Biomaterial"

(Prof. Tjokorda Gde Tirta Nindhia, Engineering Faculty, Udayana University, Bali, Indonesia)

Coffee Break & Photo Taking 10:05~10:40

Keynote Speech III 10:40~11:15

Topic: "Dietary Methylselenocysteine Prevents Mammary Carcinogenesis by Recoupling the Expression DNA Damage and Response Genes to the Circadian Clock"

(Prof. Helmut Zarbl, Rutgers, The State University of New Jersey, USA)

Keynote Speech IV 11:15~11:50

Topic: "In Situ Arsenic Removal in Groundwater for Rural Communities by Iron Sorption and Arsenic Immobilization"

(Prof. Solomon W. Leung, Environmental Engineering Civil and Environmental Engineering Department, Idaho State University)

Lunch 12:00~13:00	**Venue: The Coffee Shop**

Afternoon Conferences

Session 1: 13:00~15:00 **Venue: Gianyar Room** 8 presentations-Topic: "Food Science & Biochemistry"	**Session 2: 13:00~15:00** **Venue: Klungkung Room** 8 presentations-Topic: "Biomedicine"
Coffee Break 15:00~15:30	
Session 3: 15:30~17:30 **Venue: Gianyar Room** 8 presentations-Topic: "Environment"	**Session 4: 15:30~17:30** **Venue: Klungkung Room** 8 presentations-Topic: "Bioinformatics & Medical"
Dinner 17:40	**Venue: The Coffee Shop**

Day 3	**June 27, 2016 (Monday) 9:00~17:00** One Day Visit & Tour

Tips: Please arrive at the conference room 10 minutes before the session begins to upload PPT into the laptop.

會議過程

Day 1 (2016.06.17 – 2016.06.23)

　　我提早抵達印尼，為了與即將前往高應大就讀之研究生會面，並協助其與代辦簽證與文件之仲介者聯繫，以確保他們能順利前往臺灣。預計約有 18 位印尼學生將於高應大就讀，而有另一些學生就讀臺灣的其他大學。

Day 2 (2016.06.24)

　　前往峇里島，為了當天將抵達的朋友們確認所有行程及事項皆安排妥當。

Day 3 (2016.06.25)

　　受 Bali State Polytechnic 之邀，前往該校參觀並參加了他們的活動慶典。我亦邀請臺灣同學們與會，體驗印尼文化的多樣性。

Day 4 (2016.06.26)

　　上午第 1 位演講者 Orawan Siriratpiriya 教授，來自泰國 The Environmental Research Institute of Chulaongkorn University，他講述環境的相關議題，包含水的回收再利用。第 2 位則是來自印尼 Udayana University 的 Tjokorda Gde Tirta Nindhia 教授，演講主題是關於印尼野生蠶繭於生技材料上的應用。第 3 位 Helmut Zarbl 教授，來自美國 Rutgers, The State University of New Jersey，發表有關細胞內 DNA 損害反應及修復的日夜生理時鐘的觀念。最後，由來自美國 Environmental Engineering Civil and Environmental Engineering Department, Idaho State

University 的 Solomon W. Leung 教授探討重金屬在農村地下水的影響。早上議程以這 4 場精彩演講完美結束，並於演講後全體留影紀念。

　　下午的 4 場發表，分別於 2 個場地進行，我們選擇參與 Biomedicine and Bioinformatics & Medical 這兩個主題的發表場次，而我們的論文被歸為第 4 場的 Bioinformatics & Medical 主題。先聽完 Biomedicine 的主題發表後，發現雖然是不同的研究領域，有很多不懂的知識，但也發現很多有趣的研究議題值得探討，例如醫療系統或復健及肌肉感知等等；另也有一些在健康醫療上的應用，如蠶繭。接續著 Bioinformatics & Medical 主題，也就是我們的研究主題發表。因為有很多專家與會聆聽我的報告，並針對我的研究內容提問，使我有點緊張，但我仍感謝他們的提問，而我也開心我能詳細回答所有問題。會後我與其他與會成員交換了聯絡方式，並希望未來能有合作的機會。

Day 5 (2016.06.27)

跟著研討會參訪行程走，其行程介紹如附錄所示。一路上我們參訪了峇里島的大學、醫院及著名景點，同行的有美國人、印尼人、泰國人、南非人還有中國大陸的人，旅途間不斷的溝通交流，不僅有英語能力的交流，更多的是各國文化之間的交流。

三、心得及建議事項

　　受限於 1 萬元的有限經費補助，我們試著安排和尋找物美價廉的行程和機票，尤其在峇里島，食物的花費較高。然而，畢竟印尼是我的家鄉，能回到家鄉並發表研究報告仍是相當美好的一趟旅程。

　　然而本次旅程中，還是遇到行程臨時變動的問題，這也是為什麼我和我的朋友們在峇里島多待了一些時間。另外，在語言溝通上，也因遇到英文不拿手的人（其來自香港）致使無法交流表達意思，幸好我與臺灣的友人同行才得以順利溝通。希望往後的研討會事務與行程能更專業與有效的安排規劃，才能吸引更多人共同參與。

　　最後，還是再次感謝學校的補助金，減少了旅程的部分經費負擔，使這趟出國發表的行程順利，圓滿。

附錄

研討會行程

One Day Visit & Tour

June 27, 2016 (Monday) 9:00-17:00

(Tip: We will depart on time, please arrive at the Lobby before 9 a.m.)

1. Visit Turtle conservation at Serangan Island 09:00 - 11:00

The Turtle Conservation and Education Center (TCEC) opened by the governor of Bali, Mr Dewa Barata (20 January 2006) on Serangan island of Bali. TCEC is developed as part of the comprehensive strategy to eradicate illegal turtle trading on the island. Established on a land of 2.4 ha, the TCEC is trying to support the community of Serangan to find the alternatives beside illegal turtle business. The centre harnesses the potential of education, tourism, conservation and research, with a liberal sprinkling of business, to give endangered turtles one more chance on Serangan.

The four fundamental aspects to the centre include putting a definitive end to turtle trade, by encouraging the public not to consume turtle products (religious use or otherwise), and to generally support turtle conservation; providing turtles for rituals - without their killing - and monitoring turtle size and numbers, so that their use can be strictly controlled and regulated; offering employment opportunities for locals from Serangan; and finally, acting as a watchdog for turtle trade - in Serangan in particular and Bali in general.

2. Visit Udayana University (University hospital, Institute of peace and Democracy

(Photo session in front of Rectorat Building) 11:00-12:00

In the beginning of the 1960s, the people of Bali aspired to have a Tertiary Institution on the island. In order to realize this aspiration, on May 12th 1961, several figures from the educational sector, government, and community leaders conducted a conference led by Prof.Dr. Purbatjaraka,and assisted by Prof. Dr. Ida Bagus Mantra as secretary.

The conference discussed the steps required for the preparation of the establishment of a tertiary institution in Bali. An agreement was also reached for the formation of a committee led by dr. Anak Agung Made Djelantik, Head of the Board of Health in Bali, with a team of eight members.

Subsequently, the committee formed an institution named the Tertiary Education Institution of Bali, chaired by Ir. Ida Bagus Oka (Coordinator of Public Works Boards in the Southeast Islands Region); vice chaired by Dr. I Gusti Ngurah Gede Ngurah, assisted by two secretaries, Prof. Dr. Ida Bagus Mantra, and Drh. G.D. Teken Temadja. This institution succeeded in forming the Preparatory Committee for the establishment of Udayana University Bali on January 15th, 1962.

By a decision of the Directorate General of Higher Education, Ministry of Education and Culture of Indonesia, Udayana University (UNUD) was officially founded in August 17, 1962. Initially Unud consisted of four

faculties: Letters, Medicine, Veterinary Sciences and Animal Husbandry and Education and Teacher Training. The Faculty of Letters was actually established on 29th September 1958, however, the time it was a subsidiary of the Faculty of Letters of Airlangga University in Surabaya (East Java). This Faculty was thenintegrated into Udayana University in 1962. Although it was founded on August 17, the anniversary date of Udayana University is not August 17, but was choosen to be on September 29 to commemorate the date of establishment of the Faculty of Letters in 1958. Unud has develop rapidly, in 2015 the university has 13 faculties, 25 master programs and 10 doctoral programs.

Udayana University today's is listed as one of the 50"Promising Universities of Indonesia" published by the Ministry of Education of Republic Indonesia, out of nearly 2.500 higher education institutions around the country. The university has a strong position as one of the leading university particularly in the Eastern Indonesian Territory.

3. Lunch at Garuda Wisnu Kencana

Mandala Garuda Wisnu Kencana, or **Garuda Wisnu Kencana** (GWK), is a cultural park covering approximation 60 ha area located in Ungasan, Badung Regency, or about 10–15 minutes driving from Bali Ngurah Rai International Airport. It is devoted to the Hindu God Vishnu, and his mount, Garuda, the mythical bird who become his companion.

Currently, the statue of Vishnu is 23 metres (75.5 ft) high, although the original plan was for a 120-metre (390 ft) gold-plated Vishnu riding Garuda on top of an 11-storey entertainment complex. Garuda wing span will be 64 metres (210.0 ft) across. The idea was not without controversy, and religious authorities on the island complained that its massive size might disrupt the spiritual balance of the island, and that its commercial nature was inappropriate, but some groups agree with the project, because it will make new tourist attraction over barren land.

In 2013 Nyoman Nuarta and PT Alam Sutera Realty Tbk (IDX:ASRI) joined to build villas and apartments in the GWK area in exchange for Rp150 billion ($14.4 million). Nuarta plans to spend Rp20 billion to make another bust and to move the existing bust to another site 300 meters from the original site. It plans to spend additional Rp29 billion to make the new statue of stainless steel instead of galvanized steel as proposed previous design.

4. Tour to Uluwatu Temple

Uluwatu Temple (Indonesian: *Pura (Luhur) Uluwatu*) is a Balinese sea temple (*pura segara*) in Uluwatu (Kuta South, Badung). The temple is regarded as one of the *sad kahyangan* and is dedicated to Sang Hyang Widhi Wasa in his manifestation as Rudra.

The temple (*pura* in Balinese) is built at the edge (*ulu*) of a 70 meter high cliff or rock (*watu*) projecting into the sea. In folklore, this rock is said to be part of Dewi Danu's petrified barque.

Though a small temple was claimed to have existed earlier, the structure was significantly expanded by a Javanese sage, Empu Kuturan in the 11th Century. Another sage from East Java, Dang Hyang Nirartha is credited for constructing the padmasana shrines and it is said that he attained moksha here, an event called *ngeluhur* ("to go up") locally. This has resulted in the temple's epithet *Luhur*.

5. Dinner (farewell party) at Muaya Beach Jimbaran

研討會論文簡報

AN ANDROID-BASED PREGNANCY PREDICTING SYSTEM

Dony Novaliendry
Cheng-Hong Yang
Li-Yeh Chuang

OUTLINE

- INTRODUCTION
- METHOD
- ANALYSIS AND SYSTEM DESIGN
- RESULT
- CONCLUTION
- REFERENCES
- QA

INTRODUCTION

- The development of information and communication technology is now getting fast and progressive and almost all aspects of human life are related to information and communication technology.
- Information and communication technology is not something new anymore.
- Smart phone has now great influence on the people's life, since it functions not only as communication tool, but also as social media and information finder through internet facility existing in smart phone.

Mobile Applications for Pregnancy

- Mobile Pregnancy can determine the birth date.
- Pregnancy Weight Gain Calculator-Sure Baby by CX Interactive shows the appropriate weight during pregnancy.
- My Pregnancy Today by baby center can show the fetal development images and watch what's happening inside the womb with 3D animations.
- iPregnancy by Grogory P. More. Price 3.99 USD. This application has been awarded Best Pregnancy Planner by Parent Magazine, due to its comprehensive components that address every part of a woman's pregnancy experience, from conception right through to naming the baby. But only a preview of 2D-3D ultrasound data is shown each week of pregnancy.
- Sprout Pregnancy Essential by Med ART Studios. Price 3.99 USD can create and display 3D models of the developing fetus. The model can rotate at any direction to get more detail but it is available only for iOS.

The Techniques of Calculating Pregnancy Age Using Naegele Method

To determine the pregnancy age, the Naegele formula [4] can be used as follows:

- Month less 3
- Year added 1
- Date added 7
- Note: 1 month = 30 days

Example

The birth estimation day (*HPHT*) is on 17 August 2015, then the calculation is 17-7 = 10 (date), 8 (August) – 3 = 5 (May) and year 15 + 1 = 16. Thus, the birth estimation day or *HPL* is 10 May 2016. But, *HPL* is commonly given plus-minus time of about 7 days. Thus, the possibility of *HPL* is 3 – 17 May 2016. While, the method to calculate the pregnancy age, for example HPHT, is 17 August, meaning that 17 September is the first month and so forth.

Android

- Android is *software* for mobile device covering operating system, *middleware* and key application. Android has some advantages as software that uses the computer code basis that can be distributed on an open source basis so that the users can develop new application in it [5][6][7].
- The fans of open source then develop a community that develops and shares the *firmware*-based Android with a number of adjustments and additional features, such as FLAC *lossless audio* and capacity to store the application downloads in the micro SD card [8].

ANALYSIS AND SYSTEM DESIGN

- Use Case Diagram
- *Class* Diagram
- *Sequence* Diagram
- Interface Design

Use Case Diagram

- Use Case Diagram is a modeling for information system behavior.
- It is made to identify any functions which exist in an information system and person who is eligible to use the function [9].


An Android-base Pregnancy Prediction System
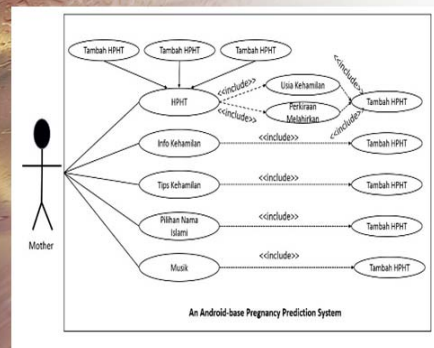
Class Diagram

- *Class* Diagram illustrates the system structure from the definition aspect of classes that will be made to develop the system.
- A class diagram describes the types of objects in the system and the various kinds of static relationships that exist among them [10].

Sequence Diagram

- Illustrating the interaction among the objects in and around the system in form of the messages that is depicted toward time.
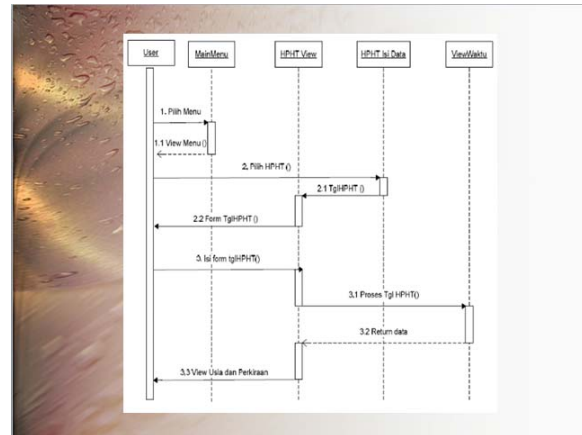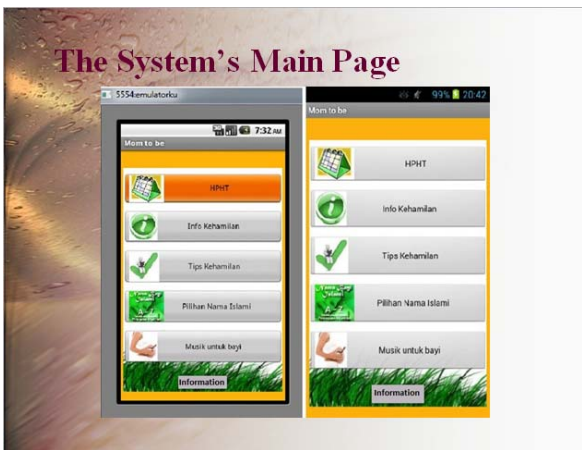

Interface Design

- Design is carried out to illustrate, plan and make the sketches of some separate elements to become a whole and functioning entity.

IMPLEMENTATION AND DISCUSSION

- The System's Main Page
- HPHT Page
- Page of Pregnancy Info
- Pregnancy Tips Page
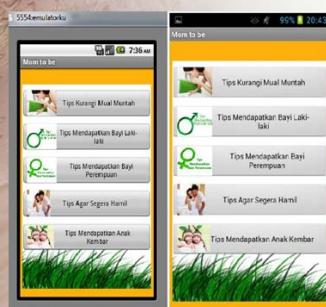- The Page of Islamic Name Choices

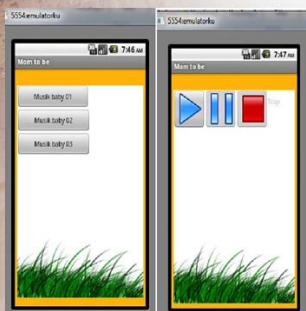## The System's Main Page

HPHT Page

Page of Pregnancy Info

Pregnancy Tips Page

The Page of Islamic Name Choices

Music Choice Page

CONCLUTION

Based on the results of Android-based Pregnancy Predicting Mobile-Assistant, the following conclusions can be inferred:

- This application is developed to assist pregnant women in finding any information around their pregnancy and able to facilitate and accelerate the calculation of the pregnancy age estimation and birth time estimation.
- This application can be run in the Android-based devices with the minimum OS Froyo specification and also the simple alternatives for pregnant women who use the Android mobile device in finding information about pregnancy.

REFERENCES

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THANK YOU

AN ANDROID-BASED PREGNANCY PREDICTING SYSTEM

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Abstract - Pregnancy is one of the valuable moments waited for by every married couple. Many people consider that without having a child, a marriage is not complete yet. On the other hand, a nine-month pregnancy is not an easy matter to go through, especially the first pregnancy. Many changes happen to a mother during her pregnancy term. Lack of knowledge and information will always become a problem for a mother-to-be. Utilizing the progressive development of sciences and also communication technology will enable us to readily collect any information during pregnancy. This article describes the android-based pregnancy predicting software. By this software, the user, especially pregnant women, can collect any information concerning pregnancy age, childbirth estimation, pregnancy information, pregnancy methods and also some choices of Islamic names for the baby to be born.

Index Term - Pregnancy, Android-based Pregnancy Predicting, Software

I. INTRODUCTION

The development of information and communication technology is now getting fast and progressive and almost all aspects of human life are related to information and communication technology. Information and communication technology is not something new anymore. It is because many people have used information technology in engaging in their daily activities. Particularly upon the discovery of mobile devices such as smart phone, which anyone from the background and class whatsoever can buy and use it. Smart phone has now great influence on the people's life, since it functions not only as communication tool, but also as social media and information finder through internet facility existing in smart phone.

To operate the functions available in smart phone, an *Operating System* (OS) is highly necessary. One of the operating systems commonly used at present is android-based operating system. This android-based operating system is mostly used right now due to its wide application support that can be downloaded by the users through Android Market or Play store.

The open-source Android Operating System can be utilized by the developer to make a mobile application that can assist pregnant women particularly those who are highly activated in obtaining information concerning their pregnancy.

There are some mobile applications for pregnancy available in the market such as [1]:

- Mobile Pregnancy can determine the birth date.
- Pregnancy Weight Gain Calculator-Sure Baby by CX Interactive shows the appropriate weight during pregnancy.
- My Pregnancy Today by baby center can show the fetal development images and watch what's happening inside the womb with 3D animations.
- iPregnancy by Grogory P. More. Price 3.99 USD. This application has been awarded Best Pregnancy Planner by Parent Magazine, due to its comprehensive components that address every part of a woman's pregnancy experience, from conception right through to naming the baby. But only a preview of 2D-3D ultrasound data is shown each week of pregnancy.
- Sprout Pregnancy Essential by Med ART Studios. Price 3.99 USD can create and display 3D models of the developing fetus. The model can rotate at any direction to get more detail but it is available only for iOS.

II. THEORETICAL BASIS

A. Pregnancy

Pregnancy is something very special since it relates to the physiological, biological and

psychological aspects that change the life of a woman. It is a period where a woman brings with her fetus embryo in her womb/body. In the process of pregnancy there happens many gestations (for example in the cases such twin or triplet pregnancy). Human pregnancy takes place for 40 weeks between the menstruation time and 6-week childbirth as of the insemination. The medical term for pregnant woman is "*gravida*" while the human in her womb is called embryo (preliminary weeks) and then fetus (up to the childbirth). *Primigravida* is a woman who is pregnant for the first time, while *multigravida* is a woman who has ever been pregnant twice or more [2].

Pregnancy takes place for 40 weeks between the last menstruation time through the childbirth or about 38 weeks as of the insemination. The medical term for pregnant woman is gravida, while the human in her womb is called embryo in the preliminary weeks and then called fetus. Woman who is never pregnant is called gravida 0.

There are three trimesters of pregnancy stage, namely: (1). First Trimester of 1-3 months, (2). Second Trimester of 4 – 6 months, and (3). Third Trimester of 7 - 9 months [3].

B. The Techniques of Calculating Pregnancy Age Using Naegele Method

Calculating the pregnancy age is commonly carried out based on the menstruation cycle, namely on the last day of menstruation. This calculation will lead to the knowledge about the age and conditions of the fetus and predicting the day of childbirth. Many pregnant women just guesses the age of their pregnancy based only on their memory and feeling that they do not really know the exact age of their pregnancy.

By calculating the pregnancy age accurately, you can know exactly the development stages of the fetus in your womb. This will enable you to find and fulfill the pregnancy nutrition needed at the time of such development.

In addition to using special device to calculate the pregnancy age, the calculation can be done manually using the calendar of menstruation period. Calculating the pregnancy age by this method requires careful attention, especially concerning the menstruation cycle because the basis of calculation is the last day of menstruation.

To determine the pregnancy age, the Naegele formula [4] can be used as follows:
- Month less 3
- Year added 1
- Date added 7
- Note: 1 month = 30 days

The birth estimation day or *Hari Perkiraan Lahir/HPL* can be formulated as HPHT - 7, month HPHT-3, and add 1 in the year. But, if the month cannot be subtracted with three or the months January – March, then add it with 9, but do not add 1 in the year. For example, *HPHT* is on 17 August 2015, then the calculation is 17-7 = 10 (date), 8 (August) – 3 = 5 (May) and year 15 + 1 = 16. Thus, the birth estimation day or *HPL* is 10 May 2016. But, *HPL* is commonly given plus-minus time of about 7 days. Thus, the possibility of *HPL* is 3 – 17 May 2016. While, the method to calculate the pregnancy age, for example HPHT, is 17 August, meaning that 17 September is the first month and so forth.

C. Android

Android is *software* for mobile device covering operating system, *middleware* and key application. Android has some advantages as software that uses the computer code basis that can be distributed on an open source basis so that the users can develop new application in it [5][6][7].

The fans of open source then develop a community that develops and shares the *firmware*-based Android with a number of adjustments and additional features, such as FLAC *lossless audio* and capacity to store the application downloads in the micro SD card [8].

III.   ANALYSIS AND SYSTEM DESIGN

There are some types of devices which used by the system. However, it is not absolute that every modelling device is integrated into the system. This means that we can use a half of the devices.

A. Use Case Diagram

Use Case Diagram is a modeling for information system behavior. It is made to identify any functions which exist in an information system and person who is eligible to use the function [9].
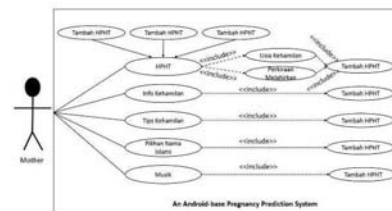

Figure 1. *Use Case* Diagram for Android Pregnancy Predicting

Use case constitutes a scenario depicting of the interaction between User and the system [10]. *Use case* diagram of Pregnancy Assistant Mobile is shown in Figure 1 above.

B. *Class* Diagram

Class Diagram illustrates the system structure from the definition aspect of classes that will be made to develop the system. A class diagram describes the types of objects in the system and the various kinds of

static relationships that exist among them [10]. Class diagram for the application of Pregnancy Assistant Mobile is shown in Figure 2 below:
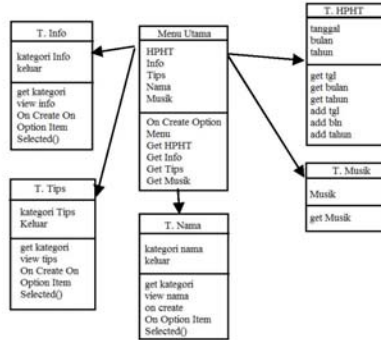

Figure 2. *Class* Diagram for Android Pregnancy Predicting

C. *Sequence* Diagram

Illustrating the interaction among the objects in and around the system in form of the messages that is depicted toward time. The Sequence Diagram of *HPHT* is shown in Figure 3 below:
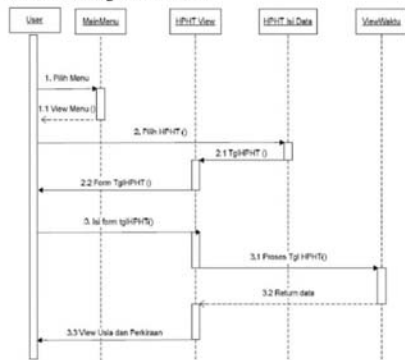

Figure 3. The Sequence Diagram of *HPHT*

D. Interface Design

Design is carried out to illustrate, plan and make the sketches of some separate elements to become a whole and functioning entity. The display of interface design is shown in Figure 4 below:

Figure 4. Screen Design of Main Menu

IV. IMPLEMENTATION AND DISCUSSION

A. The System's Main Page

Main page is preliminary display at the time of making access to an application. The preliminary display of the pregnancy assistant mobile application is displayed in Figure 5 below:

Figure 5. The Main Page Display

The first main page display as in Figure 5 is the page display on emulator and the second is the display in smart phone. The main menu display consists of menu *HPHT*, Pregnancy Information, Pregnancy Tips, and Islamic Name Choices. The user of pregnant mother can choose the menu existing on the main page such as *HPHT*, Pregnancy Info, Pregnancy Tips, Islamic Name Choices and Music.

B. HPHT Page

The *HPHT* Page is used to obtain information about pregnancy age and estimation of birth time. The display of *HPHT* page from emulator and smart phone is shown in Figure 6 below:

Figure 6. The Display of HPHT Page

The display of *HPHT* page as in Figure 6 can be used to calculate pregnancy age and birth estimation by inputting the date of the First Day of Last Menstruation (*HPHT*). Upon the date of HPHT has been input, it will be displayed the pregnancy age and the birth time estimation.

C. Page of Pregnancy Info

Pregnancy Info Page is a page containing any information needed by pregnant woman. There are information about Preliminary Signs of Pregnancy, Important Nutrition, Fetus Development, Foods to be avoided, and Good Sleeping Position during Pregnancy. The display of Pregnancy Info page from the emulator and smart phone is shown in Figure 7 as follows:

Figure 7. Display of Pregnancy Info

D. Pregnancy Tips Page

The Pregnancy Tips Page is a page containing the tips around pregnancy and pregnancy plan. The display of pregnancy tips from the emulator and smart phone is shown in Figure 8 below:

Figure 8. Display of Pregnancy Tips

E. The Page of Islamic Name Choices

The page of Islamic Name Choices contains the Islamic male and female names. The display of the Islamic name choices from the emulator and smart phone is shown in Figure 9 below:

Figure 9. Display of Islamic Name Choices

1) Male Name Choices

The display of Male Name Choices contains information about the male name choice with the display from the emulator and smart phone being shown in Figure 10.

Figure 10. Display of Male Name Choices

2) Female Name Choices

The display of Female Name Choices contains information about the choice of female names with the display being shown in Figure 11.

Figure 11. The Display of Female Name Choices

F. Music Choice Page

The Music Choice Page is a page containing music choices. The display of music choice page from the emulator and smart phone is shown in Figure 12 below:
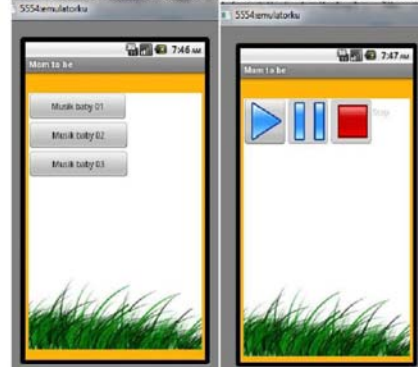

Figure 12. The Display of Music Choices

V. CONCLUTION

Based on the results of Android-based Pregnancy Predicting Mobile Assistant, the following conclusions can be inferred: This application is developed to assist pregnant women in finding any information around their pregnancy and able to facilitate and accelerate the calculation of the pregnancy age estimation and birth time estimation. This application can be run in the Android-based devices with the minimum OS Froyo specification and also the simple alternatives for pregnant women who use the Android mobile device in finding information about pregnancy.

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