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# Android-Based Information System for Marriage Counseling

Grace U. Nneji  
School of Information and  
Software Engineering  
University of Electronic Science  
and Technology of China  
Chengdu, China  
ugochinneji@gmail.com

Basil C. Mbonu  
Department of Computer Sciences  
School of Physical Sciences  
Federal University of  
Technology, Owerri  
Imo State, Nigeria  
mbonubasil@gmail.com

Jianhua Deng  
School of Information and  
Software Engineering  
University of Electronic Science  
and Technology of China  
Chengdu, China  
Jianhua.deng@uestc.edu.cn

Mercy C. Nneji  
Department of Mass  
Communication  
School of Social Sciences  
University of Nigeria, Nsukka  
Enugu State, Nigeria  
amakamercy1@gmail.com

Happy N. Monday  
School of Computer Science and  
Technology  
University of Electronic Science  
and Technology of China  
Chengdu, China  
mh.nkanta@gmail.com

Eziefuna E. Onyinye  
School of Life Science and  
Technology  
University of Electronic Science  
and Technology of China  
Chengdu, China  
magnusonyinye@yahoo.com

**Abstract**—This paper proposes a simple but efficient android-based information system for marriage counseling. The information system developed also contains a self-evaluation module in the form of quiz. The methodology adopted in the development of the system is the Rapid Application Development Methodology. The programming language used is Java and XML as the markup language. The contents of the database are gotten from online sources authored by experts on Marriage counseling. Hence, the solutions provided by the system will work well in real life scenarios except in exceptional cases.

**Keywords**—counselor, marriage counseling, information system, young ones, self-evaluation, android application.

## I. INTRODUCTION

Meanwhile, the services of marriage counselors are not readily available. Hence, couples encountering marital problems wallow in this difficulty with little or no sources of information from expert or self-remedy for their marriage [1]. The little advice or counseling gotten from elderly ones who are experienced most times are out-dated which may not be working so fine in the contemporary society [2]. Also, for every venture in life, there is need for preparation [3]. The couples during preparation for their marriage lack comprehensive up-to-date information which is very functional in the present society which leads to ill-informed or ignorant individuals being in marriage. Once they experience that strong and harsh stroke of marital issues they give up and the next option they resort to is divorce [4]. Android mobile devices are versatile tool for the dissemination of information because of its ability to remain operable for longer hours of power outage unlike the personal computers [5]. Most computer solutions that aim at reaching a larger population of any geographic location tend to be based on this platform [6]. Android applications which are software

designed to run on the Android operating system are now popular in the market because of the popularity of these android devices [7], [8]. These android devices are so popular, because of the ability of the operating system to withstand virus attack with little or no damage to the files and applications on the device [9]-[11]. Based on the above, marriage information system bearing solutions to marital problems experienced in marriages can help curtail the rate of divorce, prepare individuals for marriage, assist individuals with information they can use for self-evaluation to determine how prepared they are for marriage [12]-[14]. Marriage counseling is a great way to prepare intended couples to understand new things about themselves. The proposed system bridges the gap between the counselor and the intended couples through the android based information system for marriage counseling platform irrespective of their locations. The rest of this paper is organized as follows. The existing system is discussed in section II. The proposed system is presented in section III. System methodology is detailed in section IV. System design is presented in section V. Architectural design is discussed in section VI. System implementation is detailed in section VII. System testing is discussed in section VIII. Research verification is presented in section IX. Finally, work described in this paper is concluded in section X.

## II. THE EXISTING SYSTEM

Existing systems that would be analyzed from the selected android application include:

1. Marriage counseling advice.
2. Marriage Relationship.

### A. Analysis of Marriage Counselling advice

This is a 6.5 megabyte application that requires Android Operating System version 2.3.3 and above. This app was developed by Love Lounge Apps. The information featured in the android application was issued by a man who failed in his marriage and had to

re-marry five years after. The developer was motivated to develop the app as a result of his failed marriage which he attributed to his lack of the knowledge which he presently possesses. The current version of the application is version 1.1. The features of this system include:

- This feature enables the user to select a particular featured topic. This grants the user access to the rating and sending the featured topic content.
- The feature enables the user to find singles anywhere for dating. This feature is not yet fully developed in the current version of the application.
- View cool stuff for smart phones
- It enables the user to rate featured topic content online, but the user must first log in into his or her Facebook account to rate or post comments about the content in view. This feature is not yet fully developed, as an invalid app id error pops up when the user tries to connect with Facebook.
- This feature enables the user to share the content.
- View fun time Contents.

#### 1) Inputs and Outputs:

a) *Home Interface*: This interface is an output interface bearing sub-interfaces that grant the user access to a featured topic contents. It also bears interfaces for meeting singles, cool stuffs for smart phones. It also bears an interface for accessing premium contents. Figure 1 shows the design interface.



Fig. 1. Home Interface of Marriage Counselling Advice

b) *Content Interface*: This interface shows the user detailed information for a selected featured topic. Figure 2 shows the content of the interface.



Fig. 2. Content Interface of Marriage Counseling Advice.

c) *Rate Interface*: This interface is an input and output interface. It receive users facebook login details as inputs and shows the number of reviews and ratings and also comments on facebook for the content in view. Figure 3 shows the content rate interface.



Fig. 3. Content Rate Interface of Marriage Counseling Advice.

#### B. Analysis of Marriage Relationship

This is a marriage counseling android application developed by Cubevox, which is 550k in size. The current version of the application is version 0.1, it requires android operating system version 2.3 and above. The application provides information on how successful marriages are built. The features of the application include:

- Information on Marriage Relationship.
- Videos on marriage relationship, ranging from how to make a man happy, rebuilding broken trust. This feature connects to sites that host similar contents and download video contents from them and present to the user.
- More Free Apps, here the user sees other free android application that can be installed.

#### 1) Inputs and Outputs:

a) *Menu Screen*: This screen shows all the available topics on Marriage relationships for users to select for reading. It also contains additional menu option for searching videos about marriage

relationship online, sharing content on Facebook, twitter and Google+.

b) *Content Screen*: This screen shows the user details about the selected topic of interest from the Menu screen.

c) *Video Screen*: This screen shows the user videos online regarding marriage relationships for users to play.

d) *Disclaimer Screen*: This screen presents a disclaimer statement to the user, with menu options for going back to the Menu screen tagged Table of Contents and also a menu option for searching for more free apps. Figure 4 shows the menu interface



Fig. 4. Menu Interface of Marriage Relationship

#### C. Disadvantages of the Existing Systems:

- The systems do not incorporate open ended questions that will help the user ascertain his or her readiness for marriage.
- The systems do not feature information from various authors or counselors.

#### D. Problem Statement

- Lack of comprehensive up to date information on best solutions to common marital issues in the contemporary society and resources that bear information on the remedy to these marital problems.
- Lack of a system that sensitizes the mind of young ones about the essentials vices and virtues needed for a successful marriage before they are set for marriage. The informal education gotten on marriage from parents, relatives and neighbors is no longer effective because the young ones are so busy with their electronic gadgets, that they find discussing such issues boring and time wasting. The elderly ones charged with this responsibility are very busy with their tight schedules that they miss to identify that these young ones are not getting enough sensitization on the requirements for a successful marriage.

- Lack of a system that aid individuals during the process of self-evaluation to identify if they possess all that is needed to be successful in their marriage.
- Lack of a system that expose young ones to the right and healthy approach to every marital conflict, seeing that in the contemporary society many unhealthy marriage practices are being played out before these young ones, which may end up influencing them in the negative way.

### III. PROPOSED SYSTEM

The proposed system aims to solve the above mentioned problems encountered in the existing system. The requirements of the proposed system are sub-divided into the following sections:-

#### A. Input Requirements:

Based on the analysis made above, the input requirements of the proposed system include:

- Yes or No answer to the system's open-ended questionnaire to ascertain the user's readiness for marriage.
- Featured topic to view its details.

#### B. Output Requirements

The output requirements of the proposed system include:

- User's percentage readiness for marriage.
- Information on the selected featured content.

#### C. Process Requirements

The processes required for the system to transform any of the above listed inputs to corresponding output include:

- Database connection process. This process will help to connect to the already developed SQLite database containing the featured topics on the selected scope of study. This process will also copy the database to the android device if the database has been updated or the database doesn't exist on the device.
- Record Retrieving Process. This process retrieves records from the database.
- Information Presentation Process. This process takes care of transforming the records from the database to an organized set of information and presenting it to the user in a logical and understandable way.

#### D. Framework of the Proposed System

The user of the system is any individual who wishes to know what marriage entails and how to solve the selected problems in marriage.

#### E. Use case Diagram of the Proposed System

As presented in figure 5, users can carry out the following operations in the proposed system:

- Select a Problem to view featured Topics.



- Select a featured topic to view contents.
- Run the Marriage Quiz to ascertain readiness for marriage.

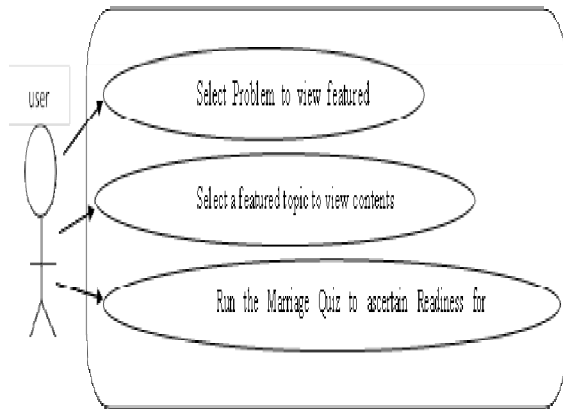


Fig. 5. Use Case Diagram of the Proposed System

#### F. Motivation of the Proposed System

- Introducing "hope" that relationships can succeed and divorce can be avoided.
- Normalizing relationship problems and challenges.
- Ascertaining that relationship and marital success takes work and conscious effort.
- Building a more supportive environment in which to nurture relationships.
- Decisions by engaged or cohabiting couples not to marry each other (thus presumably preventing a later divorce).
- Increased likelihood that individuals or couples will seek help later when they face some serious problems in their relationship.
- Marriage Relationship Education (MRE) programs may serve as a gateway to getting help with unemployment, substance use, depression, or other chronic health problems—all issues that can have a serious negative effect on the couple's relationship or marriage.
- Some participants may for the first time become aware that they are in unhealthy, abusive, violent relationships and decide to take the first steps toward help.
- Couples may become better connected within their communities with other couples.
- If the quality of a couple's relationship improves and they stay together to raise their children, children may benefit indirectly

#### G. Advantage of the Proposed System

The key benefit of the proposed system is that it combines the strengths of the two systems analyzed above and then incorporates a quiz module which other systems do not possess.

#### IV. SYSTEM METHODOLOGY

Every system has a methodology with which it was developed. Considering the limited time

available for the development of this system, the methodology adopted in its development is the Rapid Application Development. This methodology is adopted because it is suitable for this type of platform, considering schedule feasibility, economic feasibility, operational feasibility and technical feasibility.

#### V. SYSTEM DESIGN

The design of any system involves input, process and output. The input and output are represented by the graphic user interface whereas the process design is depicted using design tools like flowcharts, algorithms and data flow diagrams, which show the process of the system and how data is transferred between the components of the system and the conversions into the final output.

##### A. Input Design

The input interface allows users to select from a range of featured topics and take a short quiz as shown in figure 6, 7 and 8.

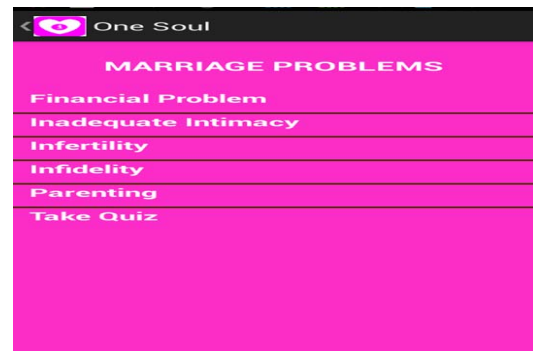


Fig. 6. Marriage Problem Selection & Menu Interface



Fig. 7. Featured Topic Selection Interface.

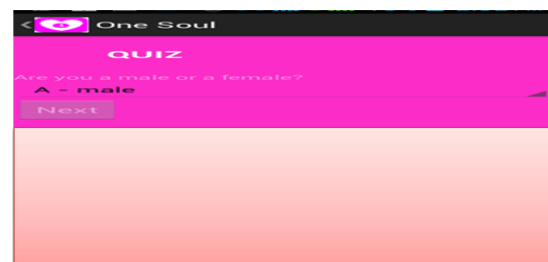


Fig. 8. Quiz Interface.

## B. Output Design

The user supplies input to the system through the input interface and the system uses the in-built mechanism to generate the output. Figure 9 shows the output of the quiz generated information based on inputs. The output available to the user includes:

- Statement of % readiness for marriage from the quiz taken.
- Featured topic of a selected problem.
- Contents of a user selected topic.

Figure 9 shows the design of the output interfaces.

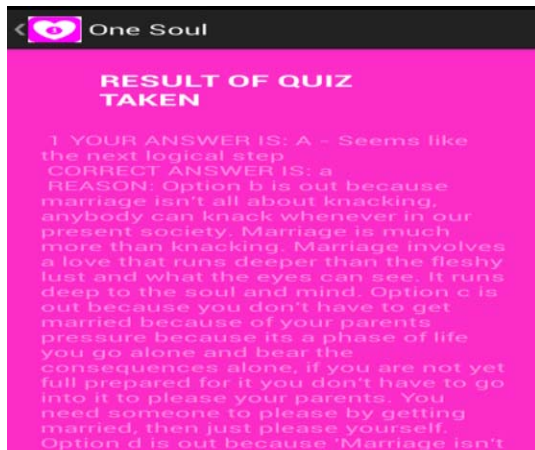


Fig. 9. Statement of %Readiness for Marriage(Quiz Result) Interface

## C. Database Design

The database files maintained by the system include:

- financial
- parenting
- infidelity
- infertility
- intimacy

Tables I shows the fields, field attributes and field descriptions for every database files mentioned above. Table II shows the record structure for quiz database file

TABLE I. RECORD STRUCTURE FOR FINANCIAL, INTIMACY, INFIDELITY, INFERTILITY AND PARENTING DATABASE FILE

Fields	Data Type	Description
Id	Integer	Bears the primary key of every record.
Topic	Text	This is a string that bears topics featured for each marriage problem.
parent_id	Integer	An integer that indicates to which record, a particular content belongs to. Root level topics have their parent_id as 0 while child topics have their parent_id to be the id of their parent.
content	Text	Bears the content of each topic.

TABLE II. RECORD STRUCTURE FOR QUIZ DATABASE FILE

Fields	Data Type	Description
Id	Integer	Bears the primary key of every

		record.
question	Text	This is a string that bears question.
option_a	Text	A string that bears the first option for possible answers to the question.
option_b	Text	A string that bears the second option for possible answers to the question.
option_c	Text	A string that bears the third option for possible answers to the question.
option_d	Text	A string that bears the fourth option for possible answers to the question.
f_answer	Text	A string that bears the correct answer a female user should give to the question.
m_answer	Text	A string that bears correct answer a male user should give to the question.
note	Text	A string that bears an accompanying explanation why the answer should be as stated by the system.

## D. Design for the Information Presentation and Quiz Section of the System

The information presentation section of the system bears set of program statements which the system follows to retrieve records from the database based on the user's selected problem or topic, and presenting same record in an organized and logical manner. The quiz section retrieves the quiz questions from the database and presents it to the user, and then ascertains the correctness of the user's answers and presents the user with the system's generated percentage readiness for marriage.

## VI. ARCHITECTURAL DESIGN

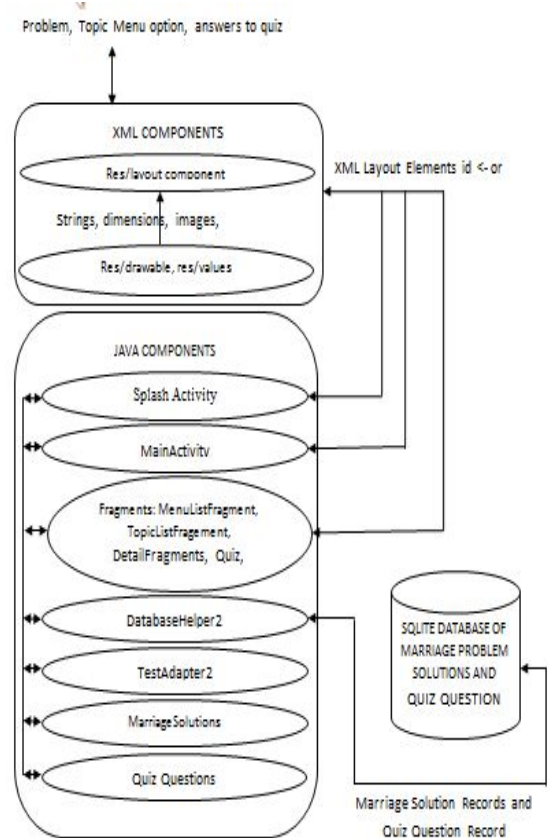


Fig. 10. Architectural Design of the Proposed System

## VII. SYSTEM IMPLEMENTATION

The implementation phase of a software development involves picking the most suitable programming language for achieving the design specifications.

### A. System Specification

1) *Software Interfaces*: The technologies used for the proposed system include:

a) *Eclipse IDE*: This is the Integrated Development Environment that was used in the development of the system.

b) *Android Standard Development Kit*: This is a development tool that makes it possible for java programs to be converted to '.dex' files which android operating systems can execute.

c) *Android Debug Tool*: This makes it possible for the researcher to run the application on a real device and discover errors and warnings and debug them.

d) *SQLite Database*: This technology was used to store the records or information which the system uses.

e) *JDK 8.0*: This is the java development kit used, which serves as the translator of the java codes written in the high level form to the low level form.

2) *Hardware Interfaces*: The hardware interfaces for the proposed system include:-

a) Processor: Dual Core Pentium and above.

b) RAM: 3 GB and above.

c) Disk Space: 108GB and above.

d) For the phone that will run the application, the android operating system version which it can run on include Android version 4.2 to 4.2.2 (jelly bean).

### B. Choice of Programming Language

Android applications can be developed using Android studio, Java, C#, XML etc. Java and XML is adopted for the development of this system

### C. Coding

Every typical Android application project created with Eclipse has the following folders: src, res, assets, and bin; and an AndroidManifest.xml file. The folder 'src' is the main folder where the entire application's java source codes reside, organized in folders termed packages. The src folder of this paper contains a single package which contains the following program files:

1) *ConstantsAndValues*: This is the program file that houses the constants bearing the name of the database files the system uses.

2) *DatabaseHelper2*: This is the program file responsible for creating the database if it doesn't exist, making connection to the database, and retrieving records from the database. The database file is created by copying it from the assets folder to the

directory where SQLite databases used by Android applications reside. The directory is normally of this format: /data/data/applicationPackageName/databases/databaseName.

3) *DetailFragment*: This is the program file responsible for presenting the retrieved records (which have passed through transformation processes and ended up as string) to the user. It is program class that extends Fragment from package import android.app.Fragment.

4) *MainActivity*: This is the program file that serves as the main window of the applications. At beginning of the application, it contains a fragment that bears the menu options of the application. Once the user selects any of the menu options, the menu fragment is replaced by topic fragment or quiz fragment as the case may be. It also takes care of calling the function contained in program file 'TestAdapter2', which interfaces with DatabaseHelper2, and retrieves all quiz records should in case the user selects 'Take a Quiz' from the presented Menu List options.

5) *MarriageSolutions*: This is the program file that models each record in these database files: financial, intimacy, infidelity, parenting, and infertility. When records are retrieved this class is used to transform the record to an object before posting them to a list, which the program file is used to generate the Strings of information to be presented to the user.

6) *MenuListFragment*: This program file extends class Fragment as well. It takes care of displaying the layout file that contains the list of problems this study focuses on. It also adds an ItemSelectionListener on the list of problems selected, so that the system can respond to user's selection. It also declares an interface OnProblemSelectedListener which any activity (MainActivity) that it is to be added to must implement to enable it's communication with other fragments added to the Activity.

7) *Quiz*: This is also a fragment, it is responsible for presenting the user with the quiz questions contained in the database file 'quiz'. It also prepares the resulting string of the quiz, and then passes it to the 'Result' Fragment which presents it to the user.

8) *QuestionQuiz*: Just like MarriageSolutions that class models the records in the 'quiz' database file. It is used to transform retrieved records from the database file to objects that are usable by the other program files of the application.

9) *Result*: This is the fragment that presents the result of the quiz taken to the user.

10) *SplashActivity*: This is an activity that welcomes the user to the application, it launches the application.

- 11)TestAdapter2: This program file interfaces with the DatabaseHelper2 class to retrieve records from the database, call functions that transform the records to objects of MarriageSolutions or QuizQuestions and then put them on a list for other program files to make use of them.
- 12)TopicListFragment: This program file presents to the user topics featured by the app based on the user's selected marital problem.

## VIII. SYSTEM TESTING

Testing was done to verify that the system achieves the goal of this paper. The testing phases include:

- Unit testing
- Integration testing
- System testing

## IX. RESEARCH VERIFICATION

The objectives of this paper are completely achieved. The ability of the proposed system to present the user with solutions for the selected featured topics of a particular marriage problem and also take the user through a quiz that exposes the user to the challenges of marriage that ascertain the users readiness for marriage is a clear indication that the objectives of this paper were achieved.

## X. CONCLUSION AND FUTURE WORK

The information presented compares favorably with the advice or solution a marriage counselor will give or recommend for the selected sub-topics of the scope of study. Also, the information provided on the system can be trusted since it was gotten from online sources which are authored by experts on Marriage counseling. Future work can consider combining AI features to the proposed system in order to combat insincerity on the path of the intended couples.

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