An Android Application for Academic City College

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ABSTRACT

This research is aimed to develop an Android Application for Academic City College that will profile information about the school and enable student to access their profile easily on their android phones. This will save many students the time and effort of going from one faculty to another seeking for answers instead the student can get information they want from the App on their smart phones. The App will consist of a live chat that will help students/parents to communicate with the contact center, online registration platform and results checking.

Keywords: android, student, phone

I. INTRODUCTION

An Android application is a software application running on the Android platform. Because the Android platform is built for mobile devices, a typical Android app is designed for a smartphone or a tablet PC running on the Android OS.

Grønli and Ghinea (2011) defined Android as a comprehensive software stack of mobile devices that includes an operating system, middleware and key application. This rich source of software bunch is used in Mobile Technology through its innovation module of The Android Software Development Kit (SDK).

Android is a powerful Operating System supporting a large number of applications in Smart Phones. These applications make life more comfortable and advanced for the users. Hardware's that support Android are mainly based on ARM architecture platform. Android apps are written in the Java programming language and use Java core libraries. They are first compiled to Dalvik executable to run on the Dalvik virtual machine, which is a virtual machine specially designed for mobile devices (Goadrich and Rogers, 2011). Patrick (2014), explains that Android app is a software application running on the Android platform. Because the Android Platform is built for mobile devices, a typical Android app is designed for a smartphone or a tablet PC running on the Android OS. Android apps are written in the Java programming language and use Java core libraries. They are first compiled to Dalvik executables to run on the Dalvik virtual machine, which is a virtual machine specially designed for mobile devices. The Android operating system (OS) is based on the open Linux kernel. Unlike the iPhone OS, Android is open source, meaning developers can modify and customize the OS for each phone. Therefore, different Android-based phones may have different graphical user interfaces GUIs even though they use the same OS.

II. LITERATURE REVIEW

- ### Impact of ICT in Education

The acronym ICT stands for Information Communication Technology. Educational, Scientific and Cultural Organization (UNESCO) define ICT as the combination of informatics technology with other, related technologies, specifically communication technology.

Organization for Economic Co-operation and Development (OECD) define ICT as combination of manufacturing and services industries that capture, transmit and display data and information electronically." (OECD 2002).

We can therefore conclude that ICT as technologies is used for sending and receiving information using technology in a work/industrial environment.

- ### The Role of Smartphones in Education

A smartphone is a gadget that allows people to make phone calls as well as use other features (which used to be found only on personal digital assistants or personal computers) that are not common on a conventional phone. Smartphones give students a wealth of creative options to enhance the classroom experience, including: Access to the internet for research and referencing, Access to e-mail, the ability to snap a picture of the day's homework assignment scribbled on a whiteboard or take a short video of a key lecture moment, Apps like Ever-note to store, catalog, and annotate smartphone photos, Apps like Response-Ware that convert smartphones into classroom "clickers" that can answer multiple-choice questions, Recording lectures with Voice Memo and other third-party note-taking apps, Using QR codes to find relevant websites with a simple click, keeping track of schedules and dates.

- ### How school benefits

According to Padley (2011). The School application provides a simple channel of communication between schools, parents & students ensuring that data can be provided and accessed effectively and efficiently. One centralized data set; making parents' and teachers lives easier. Engaging parents in the school community. Utilizing the latest technology platforms to save the school money. A secure and reliable platform for everybody involved.

- ### Brief history of Academic City College

Academic City College', a NAB accredited institution, has been catering to the tertiary education needs of Ghanaian and west-African students since 2009. Since inception, the College has been offering high quality Bachelors' and Masters' degree programs in Management, Information Technology and Journalism & Mass Communication. From its humble beginnings at a small campus with less than hundred students, Academic City College has grown today to a student strength of more than 2500 at its state-of-the-art campus 'Academic City', located in the heart of Accra. In the past few years, 'Academic City College' campus has become the hub for numerous academic activities including educational

seminars, research conferences and student activities. The College's alumni have established themselves as distinguished professionals in various fields, working at reputed organizations such as international banks, manufacturing firms, corporate offices, government departments, financial institutions and educational institutions in Ghana and West Africa

III. RESEARCH/DESIGN METHODOLOGY

The methodology adopted for the design of the system is called: Linear Sequential Model, because it is suitable for the development of this project due to its simplicity, reliability and also easy to manipulate. The linear sequential model suggests a systematic, sequential approach to software development that begins at the system level and progress through analysis, design, coding, testing, and maintenance. Modeled after the conventional engineering cycle, the linear sequential model encompasses the following activities: figure below shows the Linear Sequential Model.
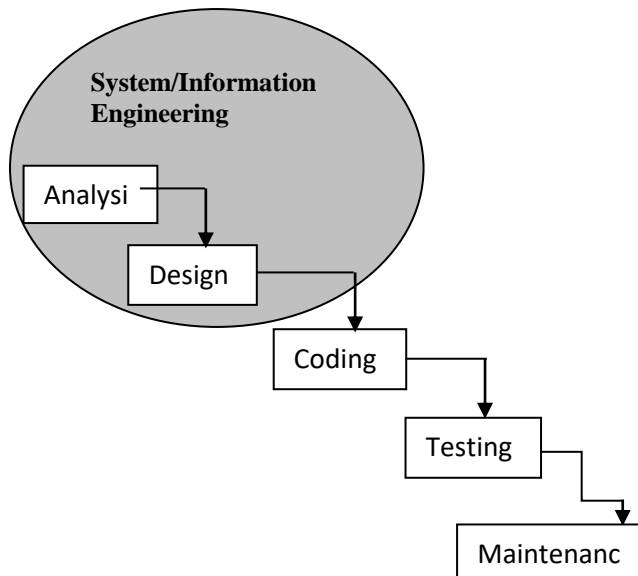

Figure 1. Linear Sequential Model

To ascertain the need for an android app for Academic City College, a number of students were interviewed and questionnaires were used to collect data from students and the data was analyzed using SPSS (Statistical Packages for Social sciences) software. A sample size of 100 students was taken. The statistical data analysis was done mainly thorough descriptive statistics and the Chi-Square method.

Tables 1 to 5 shows the descriptive statistics of the respondents

Table 1: Age of Respondent

	Frequency
18-20	39
21-25	39
26-30	11
40 AND ABOVE	11

Table 2: Gender of Respondent

	Frequency
MALE	62
FEMALE	38

Table 3: Are You and Android User

	Frequency
YES	74
NO	26

Table 4: How Often Do You Visit The Schools Website

	Frequency
MOST OF THE TIME	9
PEROIDICALLY	22
OCASSIONALLY	51
NOT AT ALL	18

Table 5: Do You Prefer An Android App or Website

	Frequency
YES	70
NO	30

- **Chi-Square**

The chi-square test of independence is a statistical test to determine if two or more classifications of the samples are independent or not. A common question with regards to a contingency table is whether it has independence. By independence, we mean that the row and column variables are unassociated (i.e.

knowing the value of a row variable will not help us predict the value of a column variable, and likewise, knowing the value of a column variable will not help us predict the value of a row variable. The methodology of the chi-square test of independence between two qualitative statistic figure values is divided into four steps. The first step is the expression of the null and alternative hypothesis. The second step is to determine the significance level (α). The third step is to calculate the chi-square test statistic (χ^2). The fourth step is to compare the computed (χ^2) with the critical value in the table for the significance level (α) and then to make a statistical decision in regard to the null hypothesis.

According to Moore and McCabe (2003,) the chi-square statistic is a measure of how much the observed cell counts in a two-way table diverge from the expected cell counts.

Therefore, the chi-square tests the following hypothesis:

Ho: Row and column variables are independent – there is no relationship

H_1: Row and column variables are not independent – there is a relationship

If the difference between expected and observed counts is large, there will be enough evidence against the null hypothesis (small P-value) and in favor of the alternative one.

The chi-square test is computed with the following equation

$$\chi^2 = \sum_i^k \frac{(O_i - E_i)^2}{E_i}$$

Where: O_i is the observed number in category i

E_i is the expected number of cases in each category

k is the total number of cells or categories after combining classes

The hypothesis about the distribution is rejected at the chosen significance level (α) if the critical value is less than the test statistic defined as $\chi^2_{\alpha, k-p-1}$

Where:

p = number of parameters

In statistics, the p-value is a function of the observed sample results (a statistic) that is used for testing a statistical hypothesis. Before the test is performed, a threshold value is chosen, called the significance level of the test, traditionally 5% and denoted as α.

Interpreting the results typically involves comparing the P-value to the significance level, and rejecting the null hypothesis when the P-value is less than the significance level.

Two test for independence was run using the chi square and is shown below in Table 6 and 7

Test 1:
H_0: Frequency of Visiting Website and Preference for an Android App are independent
H_1: Frequency of Visiting Website and Preference for an Android App are dependent

Table 6: Chi square results of Test 1

	Chi-Square Value	df	p-value
Pearson Chi-Square	6.271	3	.099

In Table 6 the p-value 0.099 is greater than the significance level 0.05 then we fail to reject the null hypothesis, Thus, we conclude that there is no relationship between Frequency of Visiting Website and Preference for an Android App are independent

Test 2:
H_0: Gender of Respondent and Preference for an Android App are independent
H_1: Gender of Respondent and Preference for an Android App are dependent

Table 7: Chi square results of Test 2

	Chi-Square Value	df	p-value
Pearson Chi-Square	.517	1	.472

In Table 7 also the p-value 0.472 is greater than the significance level 0.05 then we fail to reject the null hypothesis, Thus, we conclude that there is no relationship between Gender and Preference for an Android App are independent

This gives a sufficient basis for an android app to be developed for Academic City College

IV.   DISCUSSION
MIT App inventor 2 was used in carrying out this process. There are eight (8) modules used in this app and are as follows: Home, About Us, Academic,

Student, Training and Consulting, Register Now News, and Contact Us.

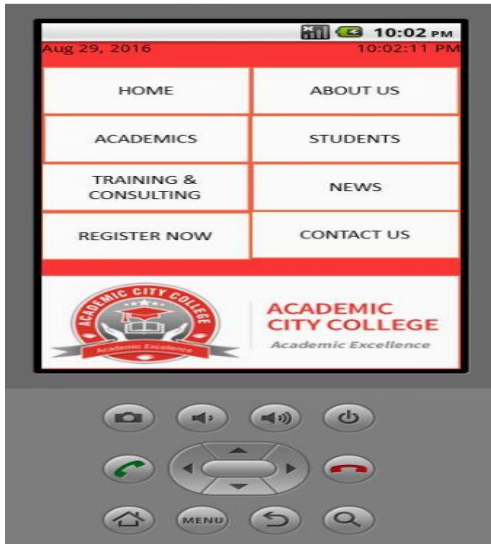- Main Menu: This interface consists of all the links that leads to other pages

Figure 2: Main Menu

- Home page: This interface consists of details about ACC, initiatives, programs offer in ACC and photos.

Figure 3: Home Page

- About us: This interface consists of information about the ACC, the history, vision and mission of ACC.
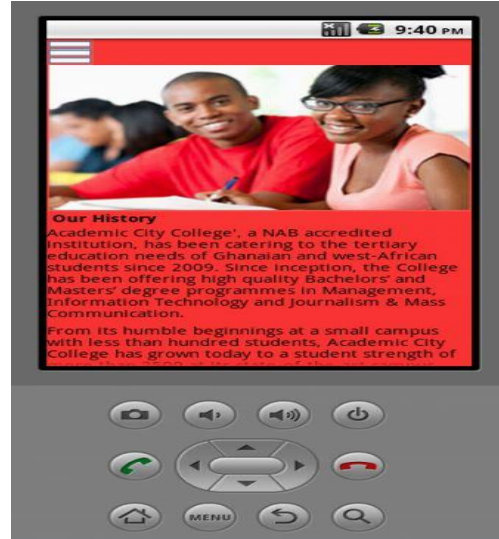

Figure 4: About Us

- Student: This interface consists of SRC, international students, roll of honor, assessment, and admissions.

Figure 5: Student Page

- News: This interface consists of past and existing students of SMU, academic calendar, and upcoming events.

Figure 6: Student Page

- Register now: This interface consist of the registration form and the registration process for student candidates

Figure 7: Register Now Page

- Contact us: consists of the location of the school (Google Map), Email address, Phone numbers and the fax number of the ACC.

Figure 8: Contact Us Page

V.   CONCLUSION

The analysis of the data clearly shows the overwhelming support or the need for an android app for Academic City College since it is the most used mobile platform on campus. The app will be extended to other platforms in the near future.

VI.   REFERENCES

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Miss Idiong Mfon Effiong is a student of Academic City College pursuing Bsc Information Technology. She is an upcoming researcher with strong interest in computer programing and database management.