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CURL as an Educational Tool

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Abstract: ***In nowadays fast-growing world, Web application developers should respond to frequent change needs and requests. Development managers need to maintain development costs low while confirming an adequate degree of technical expertise and application support capability. IT managers are asked to encourage ever more demanding application properties in a budget for server and networking infrastructure. While users are not satisfied with the current degrees of Web application capability and quality, clients accustomed to the user interface of client-server applications try to be frustrated with the functionality and usability of current Web applications. Besides, along with Web access to applications, highly creative clients demand sophisticated visualizations and application properties, not to indicate attractive document presentation and standardized data entry. Curl is the basic solution that can decrease development, and infrastructure costs while simultaneously facing expanded user needs. The unique properties of the Curl platform gather to introduce these advantages for Rich Internet Applications for the enterprise.***

Keywords: Learning Managements System, e-Learning, Learning, CURL

I. INTRODUCTION

Nowadays, at the era of technology and Modern technological boom, there is a great chance of integration of mobile devices (PDA, smartphones) with a Learning Management System would be considered as well since individuals mobility in educational settings, called m-learning.

That cause extending a LMS according these mobile devices, by the creation of an IM service integrated with the system. When this integration happened there will be various important factors processing.

The vital and widespread of these devices are assisting using these devices for e-learning educational objective. In addition, these devices manufacture produce larger screens, better battery duration and moreover comfortable keyboards to have actually mobile learning. Using mobile devices as methods of a LMS for a wide range of services, primarily to notify the users about realities, events, news, happening in their educational setting. (Chen, Pu-Shih Daniel, Amber D. Lambert, 2010) Most learning management systems face the following properties: stability, high availability, usability, interoperability, scalability, and security. Although these Management Systems need a student to sign-in to check in any update associated to his courses.

A late checking might lead to missing something important related to his course. Since most students hold smart devices everywhere, then it would be a good idea to control the course and to notify the learner with any update at the real time using a message received on his smart device. So, the basic objective of this project is to enhance a mobile application with administrative tasks that assist the lecturer to control the course and notify the students participating in the course with any update associated to the course. Besides, the proposed App will maintain the students' privacy by permitting the user, students or tutors, interacts with particular methods which is belong to education matters not for social or communication methods. (Motiwalla, Luvai F., 2007)

II. LITERATURE REVIEW

A. Learning Management Systems

In an educational context, e-learning platforms are familiar as Learning Management Systems (LMSs) which are "internet based, software giving the chance for teachers to control materials distribution, communications assignments, and other factors of instructions for their courses. Nowadays, LMSs have become an integral factor of the educational systems in most universities and interest is increasing in hybrid approaches that blend in class and online activities. A LMS is not tried to replace the traditional classroom setting, but its basic role is to supplement the traditional lecture with course content that can be accessed from campus or the Internet. While the potential advantage of augmenting the traditional class with LMS have been realized and discussed, what have stayed unknown are student and teacher reactions to using a LMS as an addition to the traditional lecture. (Cavus, Nadire, Hüseyin Uzunboylu., 2008) Mobile Learning as a result for technology era is a gathers e-learning and mobility. M-learning has enhanced communication quality among learners and teachers. In addition, Mobile learning supports learners' access remote learning resources. It has a respectable climate for collaborative learning. Mobile learning is a new type of learning that permits individuals to learn without limit of place. The mobile technology in higher education acts a basic role in education by using the m-

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learning applications to complement classroom or distance learning. Mobile learning (m-learning) is the extension of e-learning into wireless/handheld (W/H) computing devices. For the period of 2003 and 2004, mobile learning versions has existed, it means a great introduction of mobile learning. (Brown, Tom H., 2005)

B. The Basic advantages of Mobile Learning

1) It introduces for self-directed and self-paced learning.
2) Mobile technology helps the user to be in touch by providing communication's applications.
3) It permits and encourages distance learning.
4) It is very useful for live training or show the content.
5) It is an interactive learning.
6) It encourages different learning requirements of learners.
7) It is a great encouragement for among learners, and instructors.
8) M-learning is an excellent method to decrease cultural and communication obstacles between faculty and students through any communication methods which students prefer. (Sarrab, Mohamed, Laila Elgamel, 2012)

C. The Benefits of Cloud Competing In Educations

Cloud computing has happened with new models attributable to Web 2.0. Most of our universities don't have a good IT infrastructure. Moreover, they haven't had the ability to train their staff to serve the need for e- learning. So, cloud computing factors the need to download and even run the applications on the users' computers by providing service models for educational resource storage and databases, e-mail, educational methods and apps for learners and teachers and customers all over the world involved in educational programs. Besides, it lets the universities concentrates in their primary objectives on learning, teaching, and researching. (Kadirire, James. 2007)

D. Android Platform

Android Operating system is the most vital one of all the android devices in today's world. AOS introduces features to the devices on how to be which is very similar to other operating system. JAVA is the basic language that uses in this system. Android is the group of well-equipped cell phones, increasing social networking, and efficient web technology services and demands for location based products are all responsible to provide an efficient and versatile platform for Augmented Reality. (Meier, Reto, 2012)

The applications that the users download on their android mobile phones or tablets are the android applications which are particularly written for the android operating system. These applications can be downloaded on windows desktop computer or laptops, just if there is an Android Emulator running in the windows system. This emulator assists to establish a virtual feel of android mobile device on the desktop pc. Android is an independent OS designed only for mobile device which is robust. (Kramer, Jeffrey Alan., 2013)

E. The Android System Architecture

The Android System Architecture Framework validates how the various components of the Android system interact with one another. There are four major layers in the Android architecture as showing on figure 4: the Applications, Application Framework, Libraries, and Linux Kernel. Each section depends on another to accomplish an operation on the Android device. (Groff, Jennifer, Chrystalla Mouza, 2008)

F. Linux Kernel

The Linux Kernel is utilized to connect with the device hardware and upper layers of the Android software stack. The Kernel introduces operating system functionality like multitasking, process management and memory management. It can associate with different hardware modules like audio and display. (Papazoglou, Michael P., Willem-Jan van den Heuvel, 2011)

G. Android Runtime

Android Runtime is a run time atmosphere that performs transformation of application byte code into native instructions. Android applications run on a Virtual Machine called the Dalvik VM. Dalvik is kind of JVM used in android devices to run apps; Dalvik performances well. For low processing power and low memory atmosphere. Applications which written in Java are converted to Dalvik executable (dex) format. This format uses less memory than conventional Java byte code. (Anshari, Muhammad, Yabit Alas, Lim Sei Guan, 2015)

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H. Core Libraries

Core libraries are designed to deal with the Dalvik VM. A principle Java development climate includes classes that hold several of missions like string handling, database access, graphics, networking and even more. The Android runtime core libraries are java based and provide APIs for writing Android applications. The core libraries are Java wrappers for the underlying C/C++ based libraries. (Lawton, George., 2008)

I. Application Framework

The Application Framework is designed by a group of services in which Android applications run. This model based idea is that Android applications are made from reusable, interchangeable and replaceable parts. The basic blocks of the application model are the activity manager, content providers, and place and resource managers. These blocks are some of the android application immediately deals with.

J. Applications

The applications form the topmost layer of the stack which the end user interacts with. Most of an android device user deals with this layer for basic functions like phone calls, accessing the Web browser etc. These involve both the built-in applications came with the actual Android development and the third party applications downloaded by the user after buying the device. Some of the principle applications that are pre-downloaded with the android device are web browser, contact directory. (Chen, Pu-Shih Daniel, Amber D. Lambert, 2010)

K. The Advantages of Android Platform

There are different features of using Android Platforms:

a) Android is totally concentrated on application development.
b) It presents multitasking; which reflects android can run more than one application concurrently.
c) Android OS is customized as changing UI, file system; Data transfer etc. is simple than other OS.

L. CURL definition

CURL is considered the most basic method in a web scraper's toolbox does not need any programming qualifications and can be found on everyone's command line on Mac OS X and Linux.

Everyone can download it for Windows as well but Ms. Google will have to help you with that. Curl is a feature that goes and grabs something from the internet for you. Curl is especially handy when you want to save a range of things from the internet which have a URL with a consecutive number sequence.

(Daniel Stunburg, 2015) CURL is a computer software project presenting a library and command-line method for switching data through different agendas.

The CURL project results in two products, CURL and lib curl. The name stands for "Client URL". The Swedish developer Daniel Stenberg is the author and developer. (Hala Jamal & Ameera Shanaah, 2011)

M. Main characteristics of Curl

Curl was conceived by a group of MIT scientists during the late 1990s to introduce a fully featured and robust technology beyond HTML and JavaScript, enabling the enhancement of very rich Internet customer applications. The traditional Curl language was designed to be a content language with a unified notation for information, style, and behavior. Curl proceeds today's AJAX term. Curl does not need changes in the back-end infrastructure we have today for Web based enterprise applications, mostly built upon J2EE or Microsoft's .Net. Curl provides a new customer-side technology fully complementary to these server-side alternatives. The unique Curl Platform consists of three parts:

a) Programming language (Curl content language) made to result in interactive Web content.
b) A runtime engine (the Curl RTE) that performs Curl programs and infuses the out coming component.
c) An IDE (integrated development atmosphere) to construct rich Internet customer side applications. (Mell, Peter, and Tim Grance., 2011)

Strict commitment to principles like XML for transmission of data and HTTP for communication enables integration with both Java- and Net-based back ends.

Here is how a Curl-based application works: Upon an initial request from a user, the back-end server will send down the application code and, its related data in a compressed file that can be an order of extent smaller than a comparable HTML based application.

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The full power of the application is in the hands of the user; it runs on the user's local machine, not the server. It will request additional data from the server as required. (The Cloud Changing the Business Ecosystem, 2011)

The server is freed from much of the processing it does because the application offloads all the presentation work and suitable business logic missions onto the customer.

The network is freed from the constant back-and-forth requests and sending down of fresh web pages that make the pre-AJAX model.

The great savings in server load and network bandwidth make Curl-based applications enormously scalable. This is the basic of AJAX, where a local agent drags data in asynchronously from the server for faster customer performance and minimizes network round-trips. (Popovic, Kresimir, and Zeljko Hocenski., 2010)

The object-oriented power of the Curl language shed applications very extensible.

The runtime climate involves more than 4000 APIs that programmers can utilize out of the box; developers can create their own properties on top, with no limits.

This thought is with the "evocable service" term at the heart of tries like Service Oriented Architecture and web services. The resultant productivity acquires are important with this "assembly of components" model of application construction. (Ali, Maaruf, Mahdi H. Miraz., 2013)

N. The benefits of Curl

1) Enhanced application usability through richer, more interactive user interfaces.
2) "One-Stop Shopping" for client-side user interface implementation
3) Fast Simple, application development.
4) Reduced application maintenance costs.
5) IT cost savings from Web deployment of Rich Internet Applications.
6) Reduced server load and network bandwidth requirements.

O. Research Questions

1) What do we mean by Mobile learning?
2) What is the CURL?
3) Is the CURL a useful tool for Educational purposes?
4) What are the main benefits of Curl?
5) What are the main steps to design a CURL tool for educational purposes?

P. Significance of the Study

Literature analysis reflects that despite plethora of literature, the research on CURL work is fragmented. There are several of which would investigate different individual practices, although, no integrated study, which would address human resources in a systematic way by concentrating on three dimensions, their effects and differences is a deeper research is required. To authors' knowledge there are no academic articles, which would study the CURL as an effective tool on Educational objectives. There is a shortage of studies on the determinants.

Q. Limitations Of The Study

Researcher was carried out in a short span of time, where in the researcher could not widen the research, hence 100% accuracy for applying the application can't be assured.

III. METHODOLOGY

Research methodology part aims to give an explanation of the selected methodological approach and its relevance for the purpose of this research.

A conceptual model for empirical research, with the definitions of the structures and variables will be determined. Also, the selected method, data collection, sampling and analysis methods will be introduced. In this research the researcher will use the practical experience to design a Google cloud messaging application to assess its use in educational purposes.

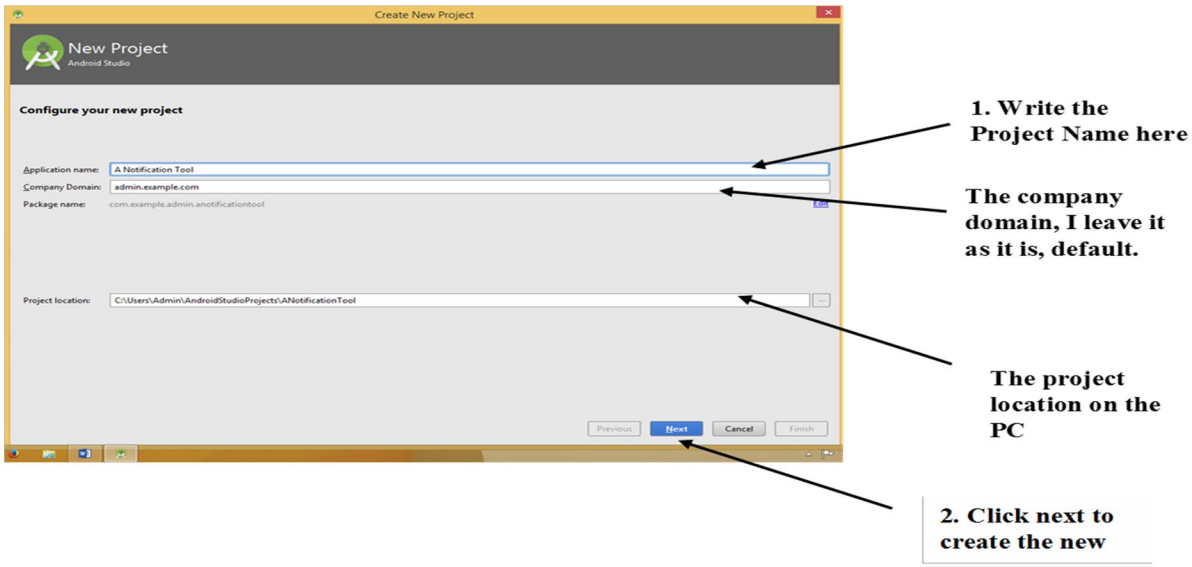
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IV. RESEARCH DESIGN

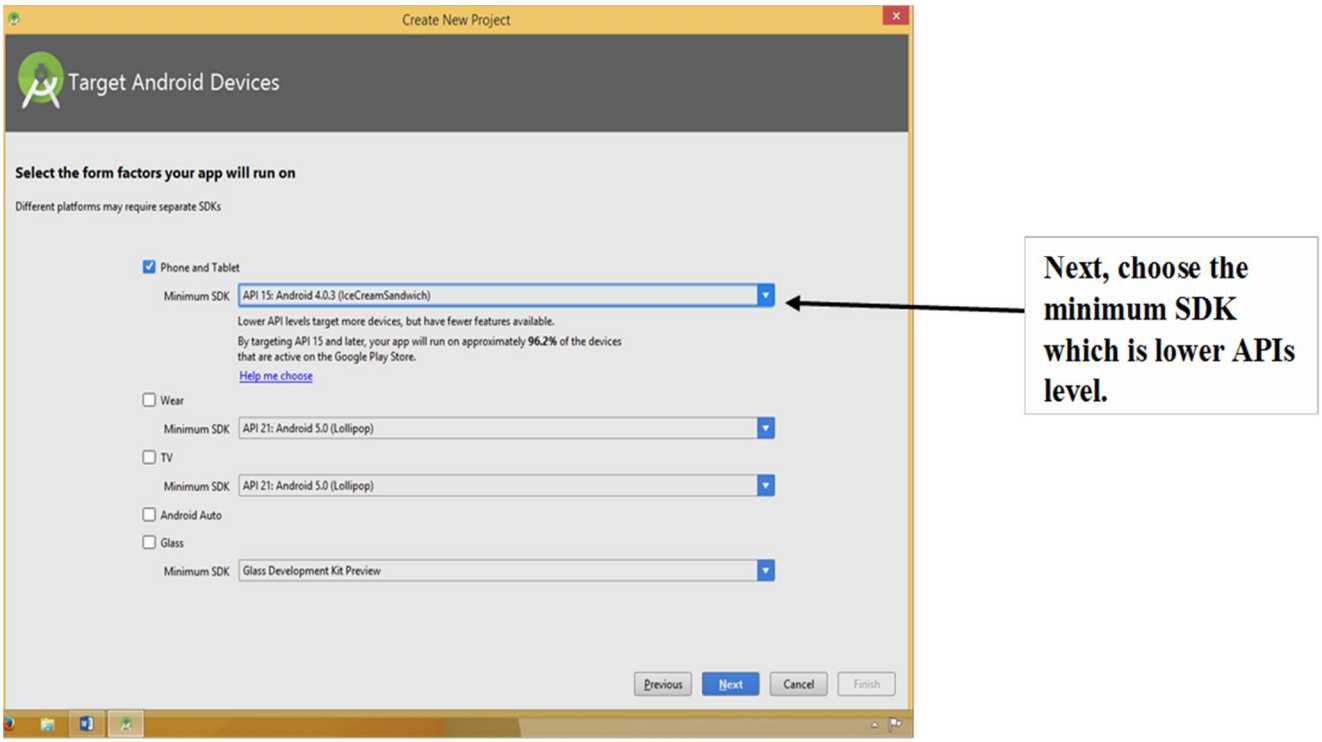
The researcher in this study adopted a quasi-experimental mixed methods design with the experimental group working on mobile learning activities and the control group following their normal curriculum.

A. Setting Up GCM Client "Android Application"



(Figure 1)

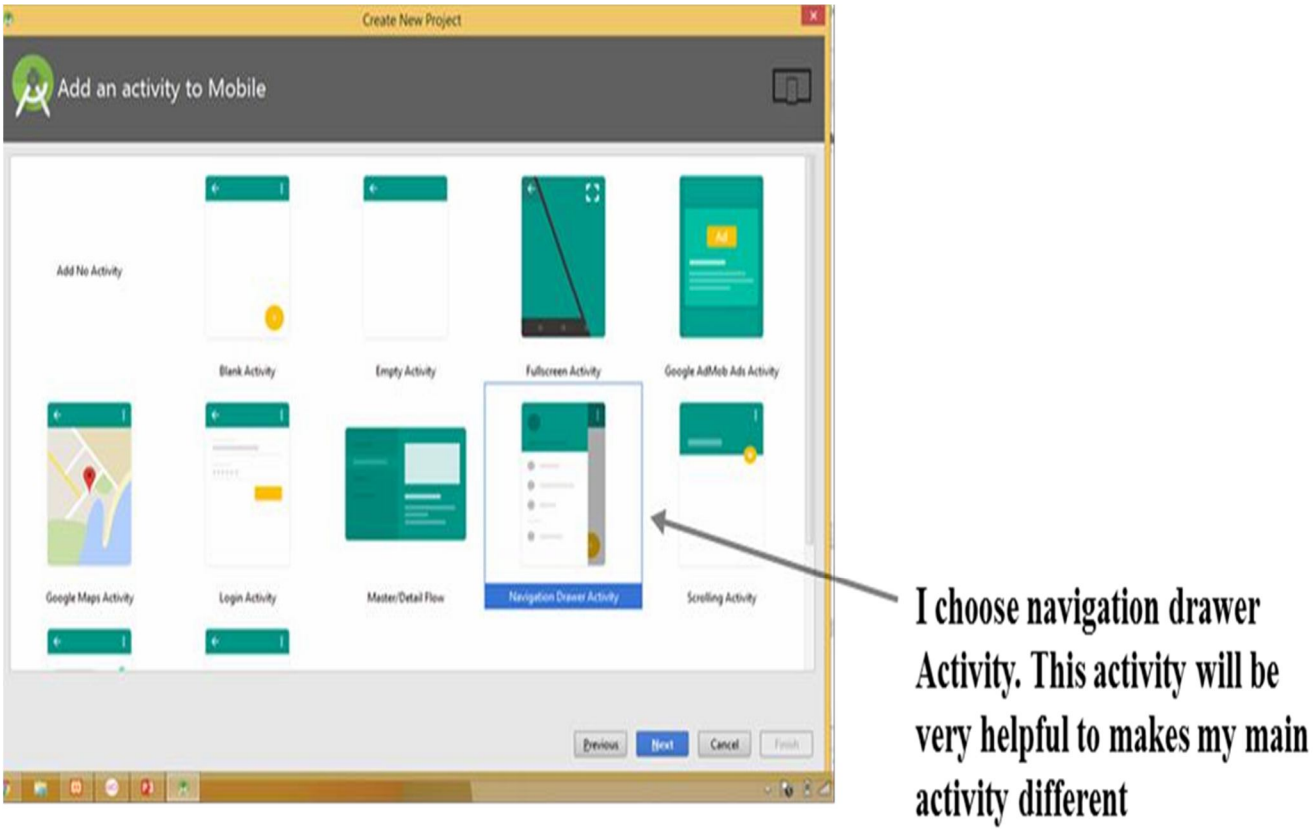
To set up Google Client Messaging client, there are various steps to make it consequently. First, start the Android Studio, and then clicks on New Project on the File menu, The New Project dialog box will show as in figure 20.



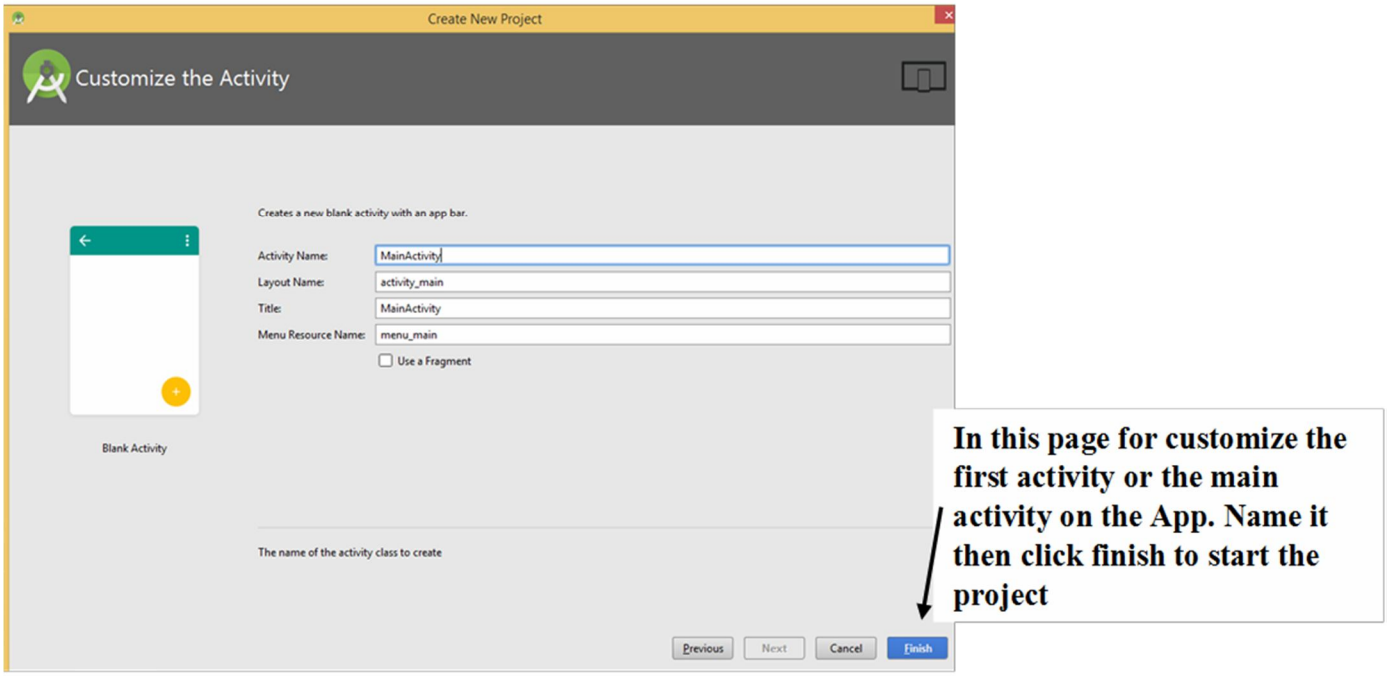
(Figure 2) Target Android Device dialog box

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After performing the pervious steps, then follow the steps in figure 21

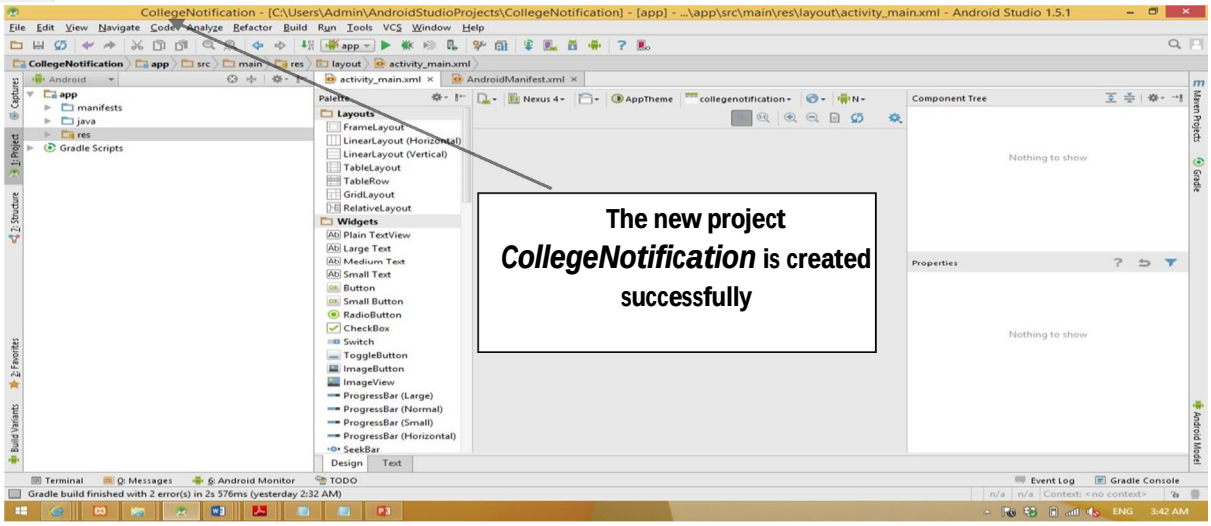


(Figure 3) add an activity to Mobile dialog box



(Figure 4) Customize the Activity dialog box

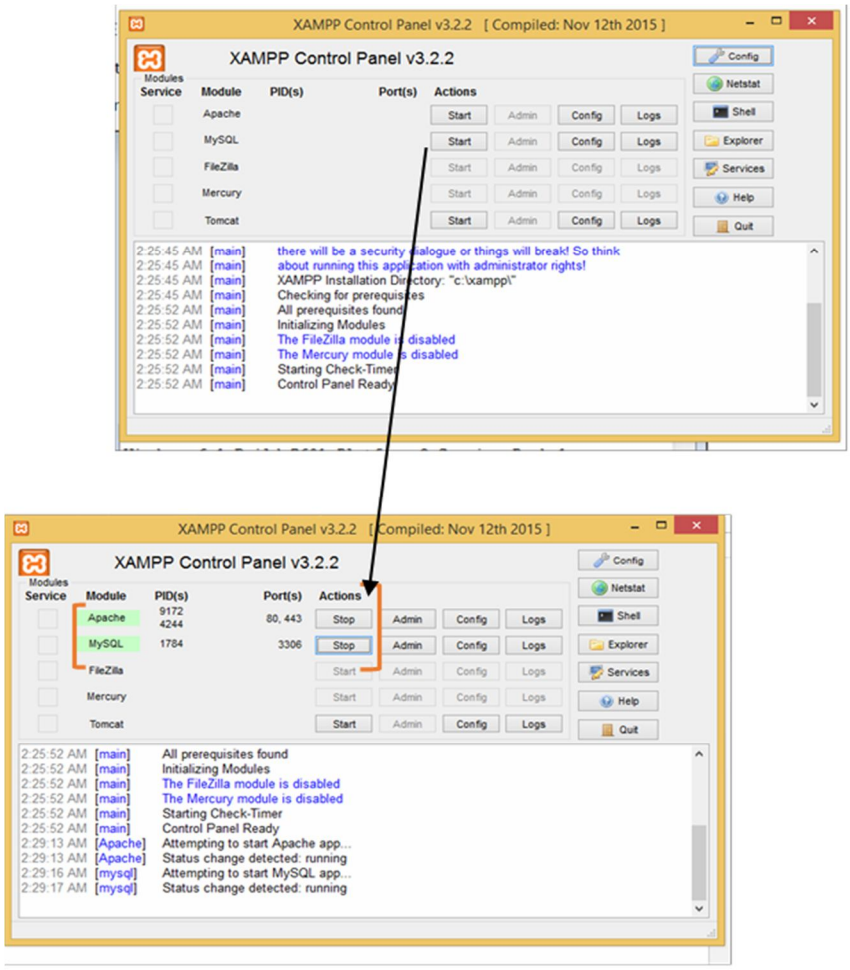
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(Figure 5) The project runs on the android studio

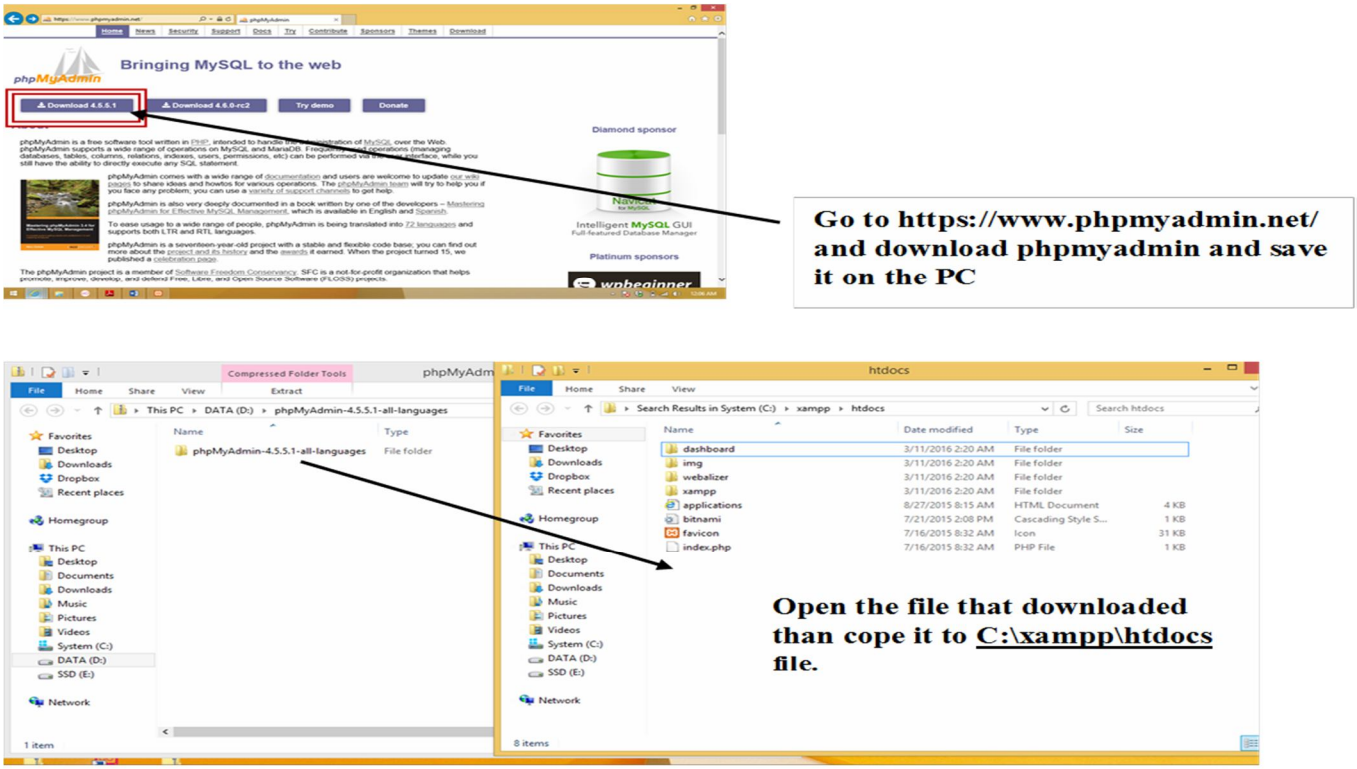
B. Setting Up Google Cloud Messaging Server

Download a Local Host Server, Google recommends XAMPP Local host. XMPP is asynchronous App servers for downstream and upstream, that can catch data up to 4 KB of data. XMPP moves an acknowledgment if there any fail on sending the notification, So, download and run the XAMPP; on the XAMPP control panel, begin Apache and My SQL as on figure 25, and 26.



(Figure 6) XAMPP Control Panel

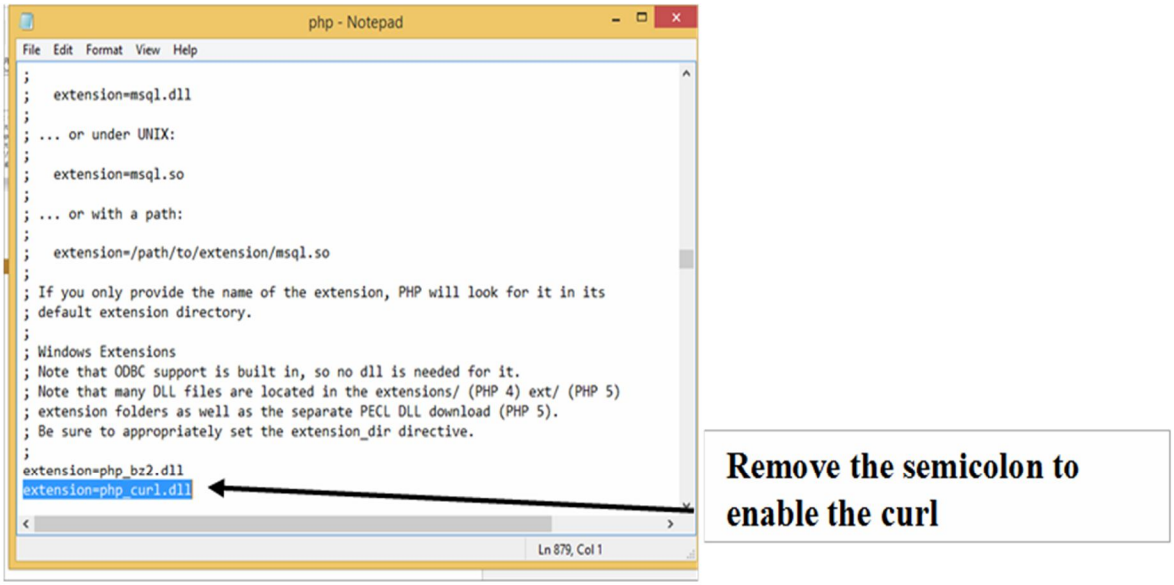
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(Figure 7) PHP My Admin and ht doc's folder

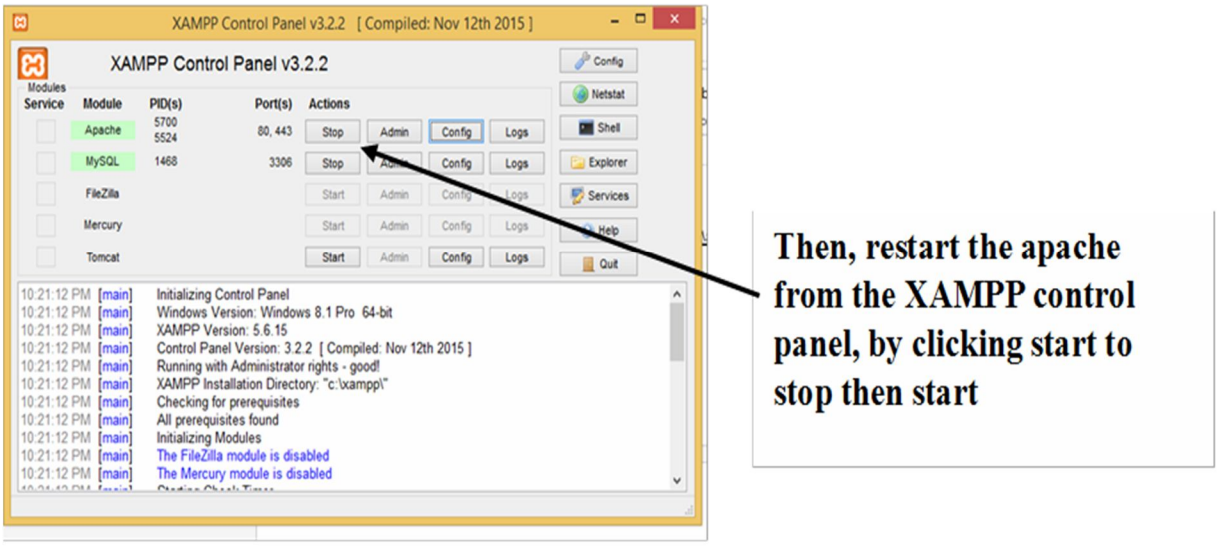
C. Enable CURL

Go and open C:\Program Files\xampp\apache\bin\php.ini; and then Search for extension=php_curl.dll; as appear in figure 27, and 28. Curl is essential to make two server interacts with each other. In my case, Google cloud messaging server and App server



(Figure 8) Enable the Curl

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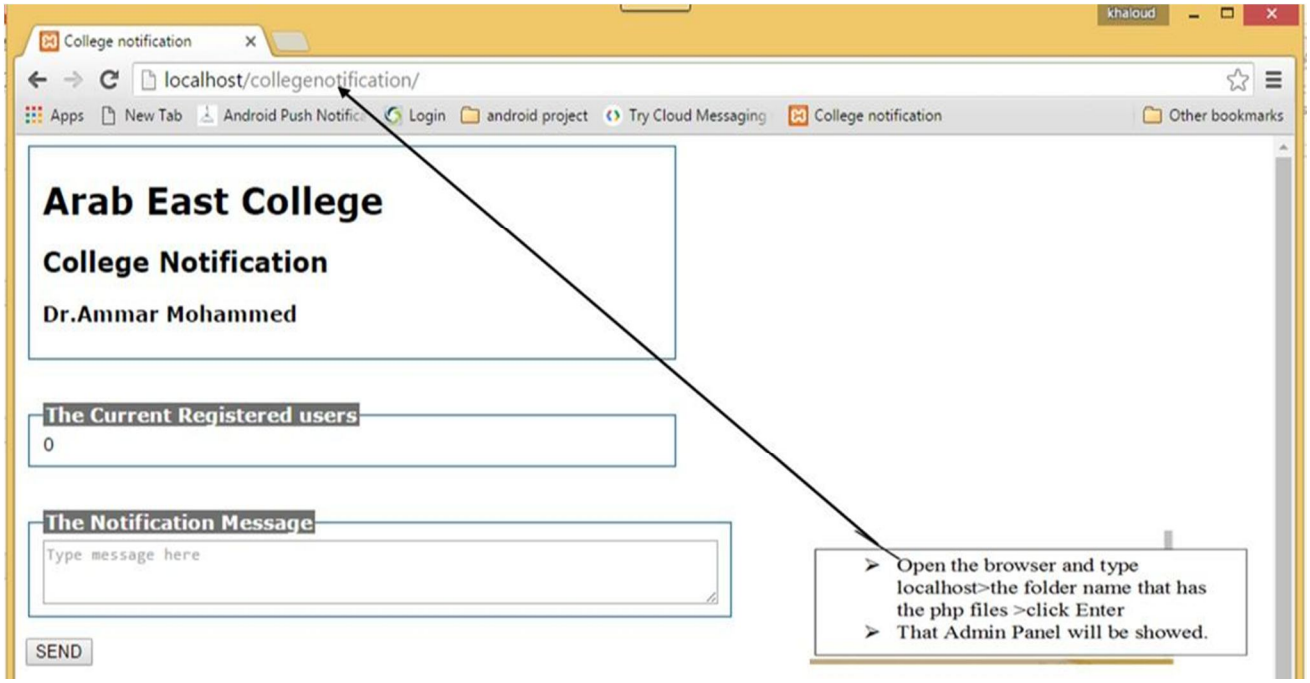
(Figure 9) Restart the Apache & my SQL after enable the Curl

After Setting up the development environment; then the environment is ready for development a notification method for Mobile Course Management Campus Guide.

V. RUNNING & TESTING AN ANDROID APPLICATION

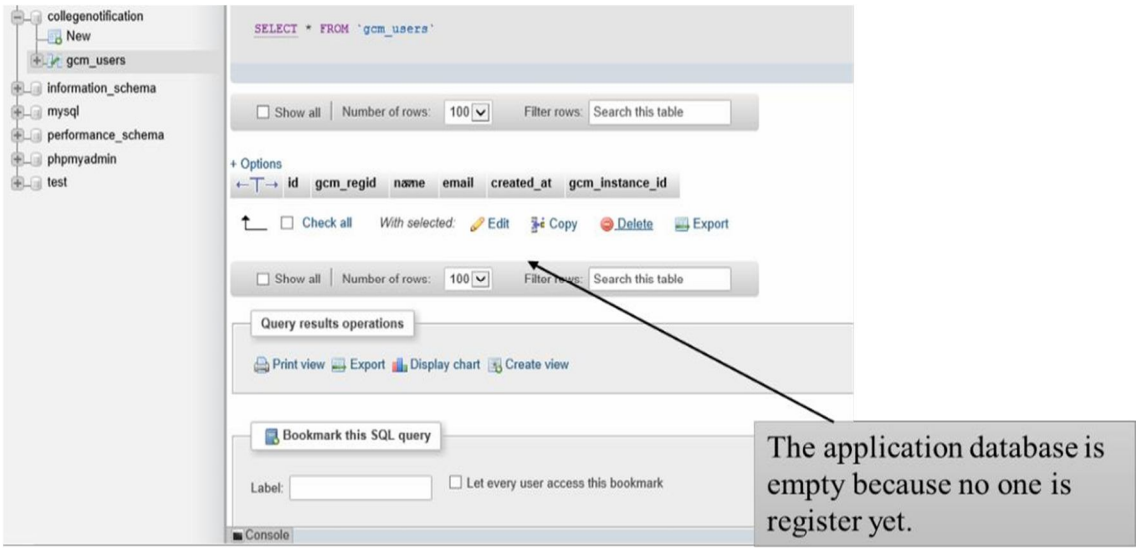
A. Run &Test the Local Server

The admin panel interface for sending notification to the customer app, this interface revealed after running the app local host. The index reflects that there are zero client register, as showing on figure 50. The app sever database is empty because no one is register yet as showing on figure 51.



(Figure 10) The admin panel page

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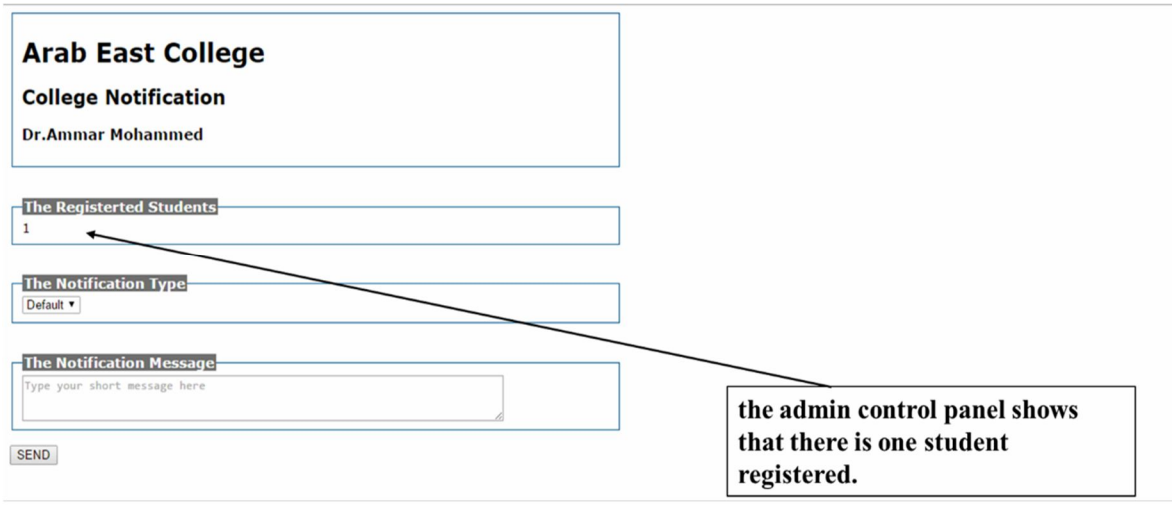


(Figure 11) The app database is empty

The student information who is registered are appears in the app data base. And the admin can send a notification to the client app, which is registered as showing on figure 11.

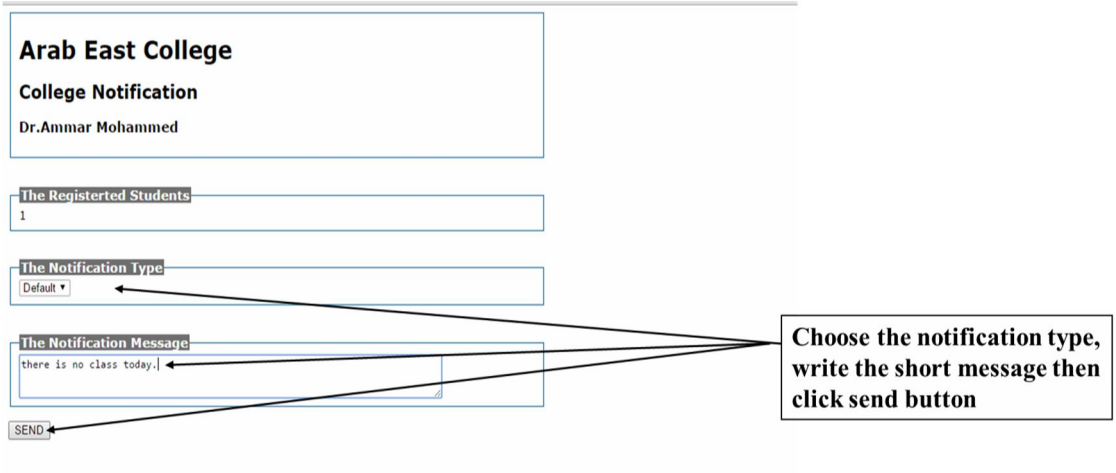


(Figure 12) The application database table



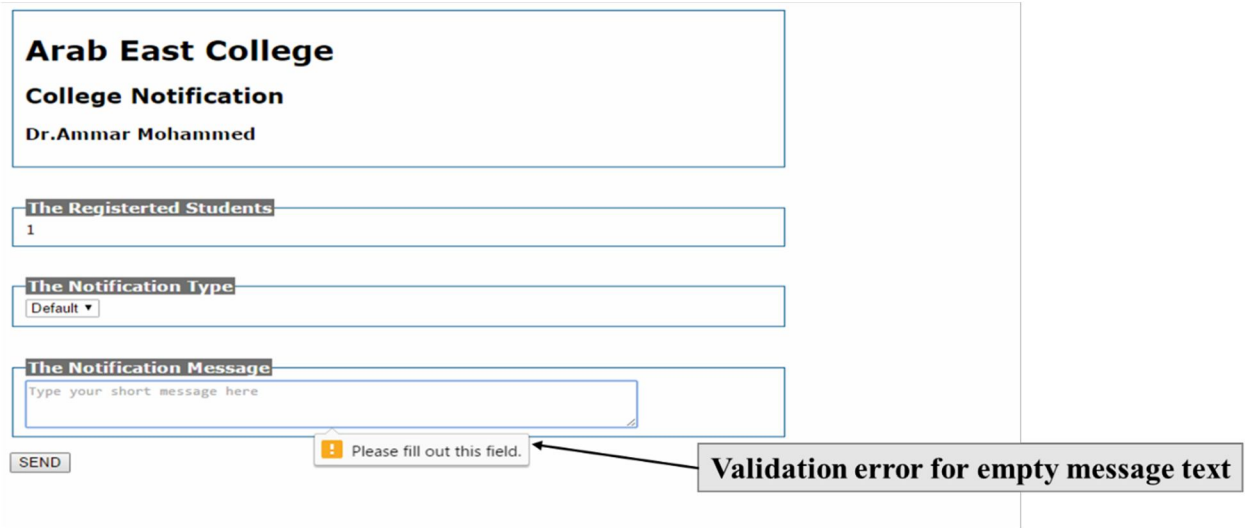
(Figure 13) The Admin Panel Page Show the Number of Registration

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(Figure 14) Sending the Notification

By choosing the message type and writing the notification on the dialog box then click SEND, the app client will receive the message immediately if he/she is connected to the internet, look at figure 14. And figure 15 shows the validation that is the college notification database has for not sending an empty notification for the students at all. Moreover, the message text will be save on the message history table with the time of sending and the name, the email of the receivers as showing in figure 16.



(Figure 15) Validation Error



(Figure 16) the message saving after sending

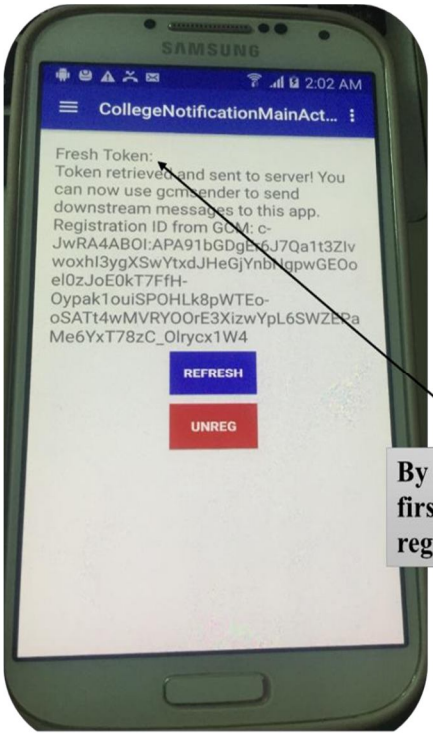
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B. Run &Test the App Client

After installing the application from the Google Play, now the student can register with the Google Cloud Messaging and with the App server to get the notification. The app is appearing on the student device UI.

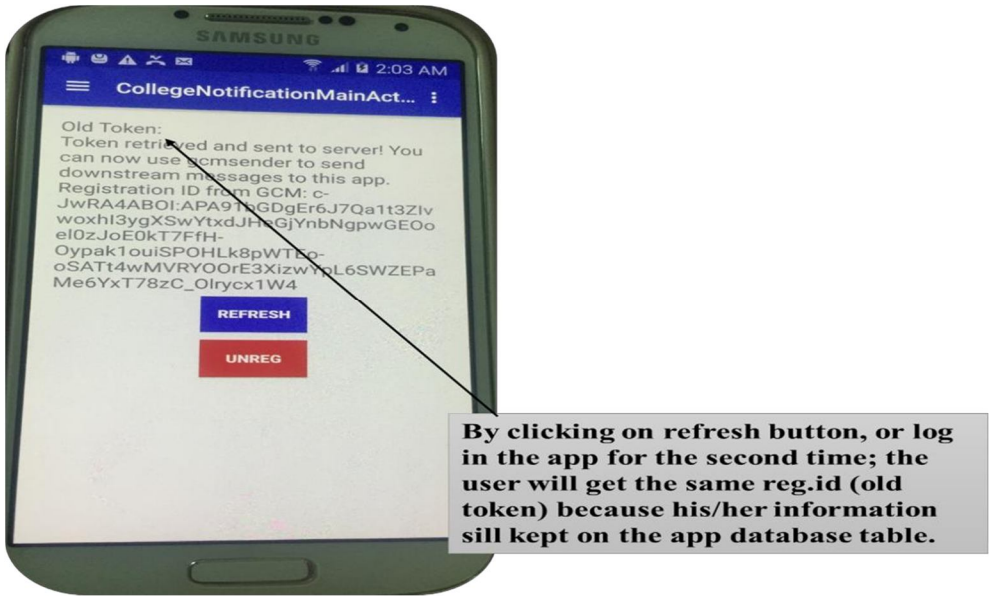


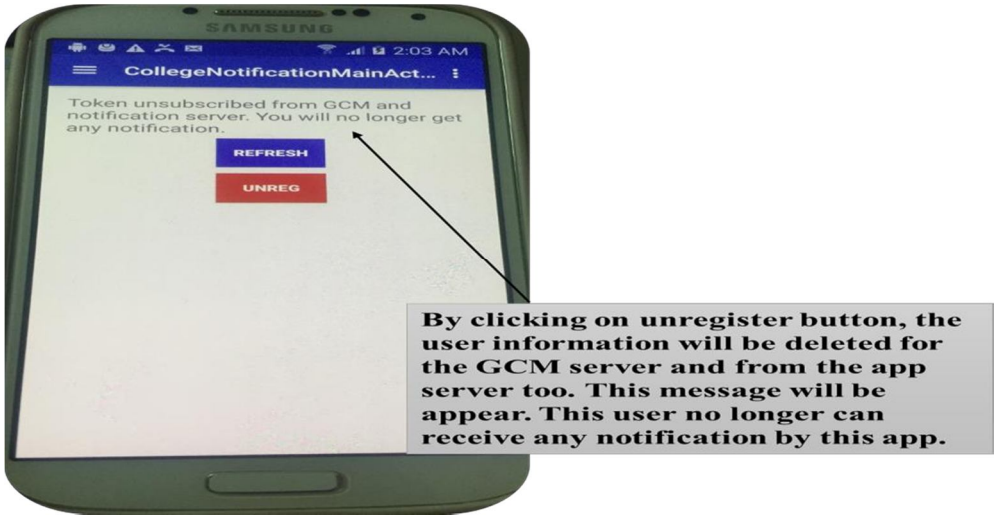
The app now downloaded on the client device. The client is ready to get the registration ID and then receive notification.



By opening the app for the first time the user will get registration ID (fresh token)

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C. Discussion

Learning management systems have been utilized widely for learning in corporate training and in higher education institutions. Those kinds of systems help instructors in obtaining their learning objectives of delivering learning content to their learners. Those management Systems need students to login into the system to check in any modification associated to their courses as assignments, quizzes, scheduling. A late checking on the learner side might be a method that cause missing something essential associated to his course assignments and requirements. This late checking method can be finished or eliminated, since most learners and most time hold smart devices, by enhancing a mobile application with administrative missions that help the lecturer to notify the learners sharing in the course with a message sent to his smart device when there is any update associated to the course.

The connection between learners, and students and sharing information, and co-operation being faster by the digital and information revolutions and the spread of information and communication technologies. Technology raises the ability of peer-to-peer communication in higher education. Learning Management Systems is one example of web-based systems. LMS permits tutors and learners to have a positive online connection by sharing instructional materials, evaluating class notices, or submitting course assignments. The spread of computing and mobile communication, especially mobile technologies, impact the learners' deals and connection activities between themselves or with their tutors. The Mobile technology is the next borderline research for its probability in enhancing the learning and education experience for the tutors and their learners.

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In my project, I've developed a mobile app as a web application that serves instructors to send their learners notifications messages. The mobile app will be installed by students from Google Play to register and begin to receive notifications messages, the web app will be utilized by the instructor to send the notification messages. The developed mobile app as web app use the Google Cloud Messaging service which holds all factors of messages queuing and delivery to customer mobile applications running on target devices, and it is free. The instructor notification messages could be a reminder of deadline of submitting assignments, course lecture cancellation, etc. This web app could also be embedded into Mobile Course Management system.

The push notification will show on the customer device screen once it's sent by the instructor with no need to open the application. Once the mobile app downloaded, it registers to GCM server and gets a registration token, which can be refreshed by clicking on the refresh button on the mobile app menu. Mobile app customers can unregister by clicking the unregister button of app menu.

VI. CONCLUSION

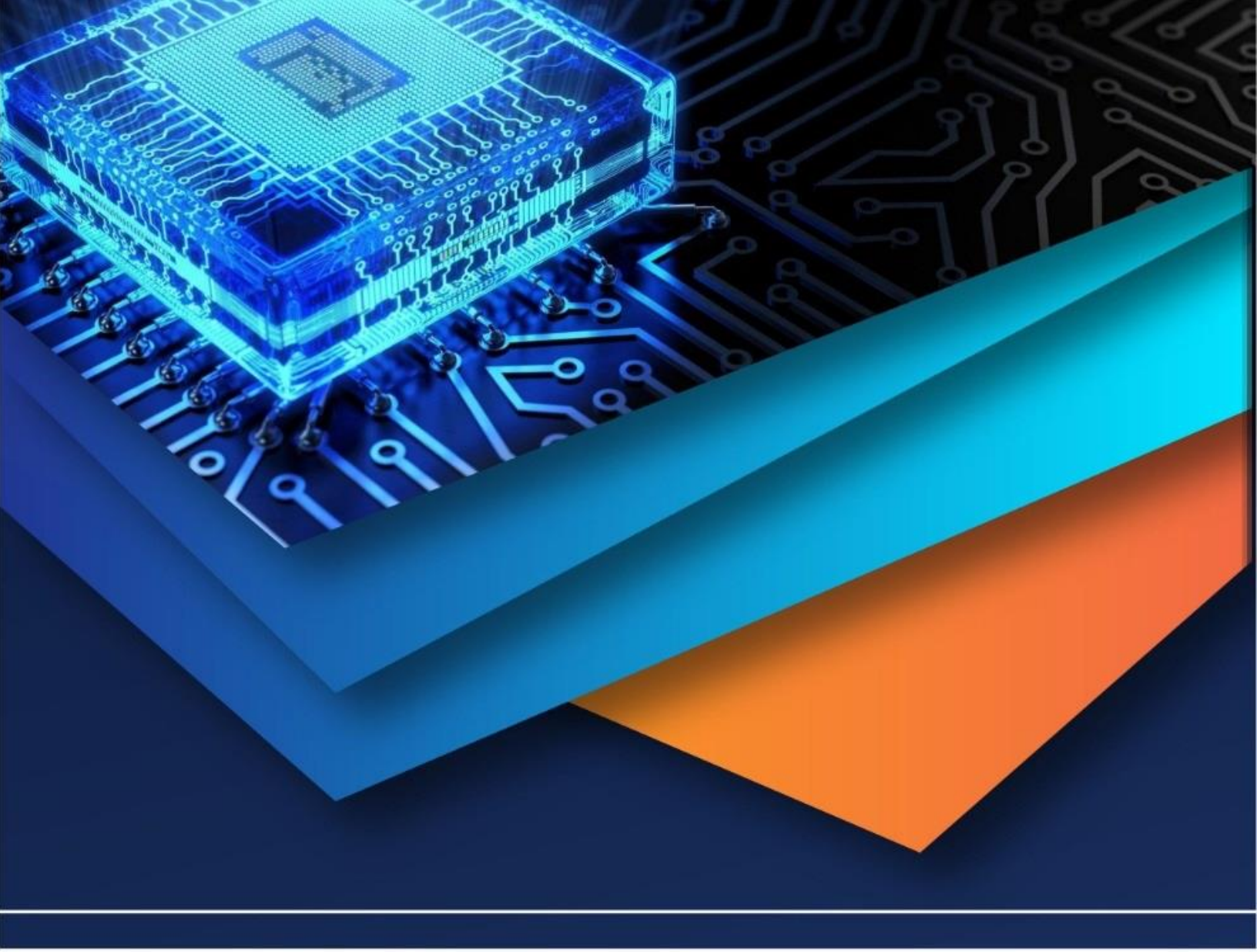
E-learning is a learning tool based on networks and computer devices which is growing these days around the world. There is a particular type of E-learning, M-learning objectives at the use of mobile devices by anybody in anywhere at any time. Researchers in the higher educational system consider that mobile learning is a basic edge that will encourage today's learners by enhance their learning and success.

Using technology in the classroom assists learners to obtain their targets properly. The use of technology in the classroom to help instructors in meeting their learning objectives has become familiar since 1990s. One of the technologies that have been applied for both company training and use in institutions of higher education are learning management systems. A learning management system is a software application made with the particular intent of helping instructors in meeting their learning objectives of delivering learning content to learners.

REFERENCES

[1] (Armbrust, Michael, et al. (2010): "A view of cloud computing." Communications of the ACM, 53.4 50-58.
[2] (Foster, Ian, et al. (2008): "Cloud computing and grid computing 360-degree compared. "Grid Computing Environments Workshop, GCE'08. Ieee, AACe Journal 16.1 21-46.
[3] Ali, Maaruf, and Mahdi H. Miraz. (2013): "Cloud Computing Applications." Proceedings of the International Conference on Cloud Computing and e-Governance.
[4] Allen, Sarah, Vidal Graupera, and Lee Lundrigan. (2010): Pro smartphone cross-platform development: iPhone, blackberry, windows mobile and android development and distribution. Apress.
[5] Anshari, Muhammad, Yabit Alas, and Lim Sei Guan. (2015): "Pervasive Knowledge, Social Networks, and Cloud Computing: E-Learning 2.0." Eurasia Journal of Mathematics, Science & Technology Education 11.5: 909-921.
[6] Chen, Pu-Shih Daniel, Amber D. Lambert, and Kevin R. Guidry. (2010): "Engaging online learners: The impact of Web- based learning technology on college student engagement." Computers & Education: 1222-1232.
[7] Dimovski, Dime. (2013): Database management as a cloud-based service for small and medium organizations. Diss. Master Thesis, Masaryk University Brno.
[8] JIOW, Hee Jhee. (2015): "Singapore's Cybercrime Regulation based on Lessig's Modalities of Constraint.
[9] Koole: "Mobile learning in distance education: Utility or futility." International Journal of E-Learning & Distance Education 24.2.
[10] Kramer, Jeffrey Alan. (2013): "DroidSpotter: A Forensic Tool for Android Location Data Collection and Analysis.
[11] Le Guan, Xu Ke, Meina Song, and Junde Song, (2010): "A Survey of Research on Mobile Cloud Computing", IEEE/ACIS 10th International Conference on Computer and Information Science (ICIS), pp. 387-392.
[12] Litayem, Nabil, Bhawna Dhupia, and Sadia Rubab. (2015): "Review of Cross-Platforms for Mobile Learning Application Development." IJACSA) International Journal of Advanced Computer Science and Applications 6.1
[13] Lonn, Steven, and Stephanie D. Teasley. (2009): "Saving time or innovating practice: Investigating perceptions and uses of Learning Management Systems." Computers & Education 53.3 686-694.
[14] Meier, Reto. (2012): Professional Android 4 application development. John Wiley & Sons.
[15] Mell, Peter, and Tim Grance. (2011): "The NIST definition of cloud computing.
[16] Papazoglou, Michael P., and Willem-Jan van den Heuvel., (2011): "Blueprinting the cloud." IEEE Internet Computing 15.6 74-79.
[17] Popovic, Kresimir, and Zeljko Hocenski: (2010):"Cloud computing security issues and challenges." MIPRO, proceedings of the 33rd international convention. IEEE,
[18] Roche, Kyle, and Jeff Douglas. "Introduction to App Engine." Beginning Java™ Google App Engine. Apress, 2010. 7-23.
[19] Stärk, Robert F., Joachim Schmid, and Egon Börger. Java and the Java virtual machine: definition, verification, validation. Springer Science & Business Media, 2012.
[20] The Cloud Changing the Business Ecosystem, KPMG, 2011.

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