IARJSET

ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Vol. 8, Issue 12, December 2021

DOI: 10.17148/IARJSET.2021.81242

Development and implementation of an administration and management system for academic events

Erika R. Llanes Castro[1], Reyes E. Yam Uicab[2], Hernán Ruz Sanguino[3],

Victor M. Chi Pech[4], Lizzie E. Narváez Díaz[5]

Faculty of Mathematics, Autonomous University of Yucatán, Mérida, Yucatán, México[1-5]

Abstract: This work presents the development and implementation of a mobile web system used as a tool to improve the management and administration of academic events, like congresses and anniversaries, in a higher education institution. This software allows the efficient management of the information of events, optimizes existing resources, fosters an organizational culture within the university community and promotes interaction between all the participants of an event

Keywords: Academic events, Web system, Mobile system, QR Code, Software development

I. INTRODUCTION

Technology is a fundamental part of contemporary culture and social transformations, and schooling processes are a substantive part of this cultural change based on technological development. Thus, educational systems worldwide are currently facing a great challenge: the incorporation of information and communication technologies, which theoretically allow providing current and future generations with sufficient knowledge to develop in the current and future world. [1].

The academic event called Anniversary Days of the Tizimín Multidisciplinary Unit (UMT) is used as a pedagogical strategy for the complementary formation of the integral development of students, and it promotes educational experiences in the areas of formation of the careers that are taught at the UMT as well as of any discipline and, on the other hand, strongly promotes sport, culture, and artistic activities.

It is in this context that the importance of developing a mobile web system arises that serves as a support tool for the management of academic events, such as the Anniversary Days of the UMT.

II. ACADEMIC EVENTS

The organization of events is defined as the process that takes place from the conception of the idea of organizing an event to the subsequent evaluation of that event [2]. An academic event is defined as a set of activities like meetings, workshops and/or conferences of a professional, academic, scientific, or technical nature, which are oriented to the training, knowledge dissemination, or teaching of groups of people related to a specialty or field that are concentrated in a given space and time [3].

At UMT, the academic event called Anniversary Days is a space that contributes to the integral formation of students and the entire community, which is important since the integral formation of higher education students is one of the central purposes of educational policies at a global level. Nowadays, it is not enough to respond to a perspective of development of the professional field, but in order to achieve the intended purpose in modern society, it is unavoidable to touch the fundamental aspects of human beings, seeking its harmonization and growth in terms of knowledge and skills, integrating attitudes and values, as well as personal aspects such as physical, psychological, pedagogical, cultural and even personal recreational factors. [4].

Academic events play a fundamental role in the professional training of human beings, they have a very important educational impact and definitely enrich and contribute to the construction of new knowledge. Academic events have an important influence on society and contribute to the teaching-learning process, increasing its effectiveness.

Through inclusion, all participants in academic events have the option of generating debates, contributing with their points of view and generating new knowledge by using them appropriately in their professional work.

For this reason, the realization of events requires a very well-structured planning in order to respond correctly with the expectations of the public [5].

On the other hand, in the case of the Tizimín Multidisciplinary Unit (UMT) of the Autonomous University of Yucatán, the use of ICTs is an important part of the educational model, academics employ software applications to support their

IARJSET ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Vol. 8, Issue 12, December 2021

DOI: 10.17148/IARJSET.2021.81242

teaching-learning processes, as well as the UMT incorporates software systems in the management of its administrative processes; however, it constituted a challenge to incorporate a technological system in the organization and management of the academic events held at the UMT.

ICTs competencies must inevitably be taken into account in the development of the educational and academic career, since their use can contribute to the enrichment of the teaching-learning process [6].

III. WEB SYSTEM

In a few years the Web has evolved enormously, from pages with few images and static contents to complex pages with dynamic contents that interact with databases, which allows the creation of "web applications". Briefly, a web application can be defined as an application in which a user, by means of a browser, makes requests to a remote application accessible through the Internet and receives a response that is displayed in the same browser.

A Web application (Web based application) is a client/server application, where the client (the explorer, browser or viewer), the server (the Web server) and the protocol through which they communicate (HTTP) are standardized and do not have to be created by the application programmer [7].

Currently, Web applications are becoming increasingly popular, and their use has monopolized the scientific, cultural, academic and business fields, among others; and this is due to the multiple advantages that the user has over desktop programs. Among others, the advantages that we can mention are: multiplatform operating system, executed by any computer device that has an internet connection, does not require the installation of programs, only a browser, backup copies are stored on servers, information that is generates can be shared simultaneously by several people, the space occupied by the data is managed by the server and it is easy to use [8].

IV. MOBILE SYSTEM

Little by little, technological advances are allowing the mobile phone to become a device in which all the new communication and information technologies can converge, since through it you can send written messages (sms), send multimedia messages (mms), download free or paid multimedia content (pictures, songs, tones, small video games, etc.), take photos or small video recordings, exchange information via bluetooth, listen to music, surf the internet, watch television, play video games and other daily utilities: clock, alarm clock, agenda, and the truth is that utilities will not stop increasing. At the end of the 90s, mobile telephony was limited to the adult world, and specifically to the professional field, currently the penetration of this technology in the world of youth and children is being spectacular [9].

A mobile application or App is a computer application designed to be run on mobile devices (smartphone, tablet, etc.). They are usually available through distribution platforms, operated by the companies that own the mobile operating systems such as Google Play Store of Google for Android, App Store of Apple for iOS, BlackBerry OS, among others.

Mobile phones are increasingly sophisticated, studies conducted with university students show that they own mobile phones with multimedia capabilities and connectivity, in a growing number, therefore, the use of these devices should be leveraged to develop mobile applications, flexible resources and environments that encourage student participation and motivation [10].

V. QR CODE

QR codes (Quick Response Code) are an information storage system in the form of a dot matrix that encodes information. We can consider them as an evolution of barcodes since it has a similar operation, although they allow greater information storage capacity [11].

The use of QR codes is simple, once you have the content you want to store in the code, the QR code is created using an encoder, and it is placed in any medium you want; once you have the QR code, the decoding task is also extremely simple, since most mobile devices currently have a QR code decoder that, once the application is open, scans the code and offers us the information it contains [12].

In the case of the AppUMTate mobile web system, a system was implemented with functions limited to the control of attendance at the activities of the UMT Anniversary Days.

VI. APPUMTATE SYSTEM DEVELOPMENT

An important stage of the research was the analysis of the processes of the organization of the academic event Anniversary Days of the Multidisciplinary Unit Tizimín, this allowed to verify the problem and served to determine a solution path for the problem. This analysis was carried out through observation, interviews, and the study of the documentation of the analyzed processes. In addition, the study of the bibliography made it possible to select the

IARJSET
ISSN (O) 2393-8021, ISSN (P) 2394-1588
International Advanced Research Journal in Science, Engineering and Technology
Vol. 8, Issue 12, December 2021
DOI: 10.17148/IARJSET.2021.81242

appropriate tools for the development of the computational system that is proposed as a solution to the existing problems in the management of the event.

The complete system is made up of the following 4 independent modules: The mobile application, the web administrative system, the administrative mobile application, and the web service.

The web service is responsible for performing the entire logical process of the system, without a graphical environment and is rather a service that can be consumed by other modules which do have graphical environments, whose main objective is to define access routes through http that carry out the operations corresponding to all the activities of the Anniversary Days. For this, an authentication process is included in each request that is made.

Fig. 1 shows the component diagram of the AppUMTate system and the dependencies between these components.

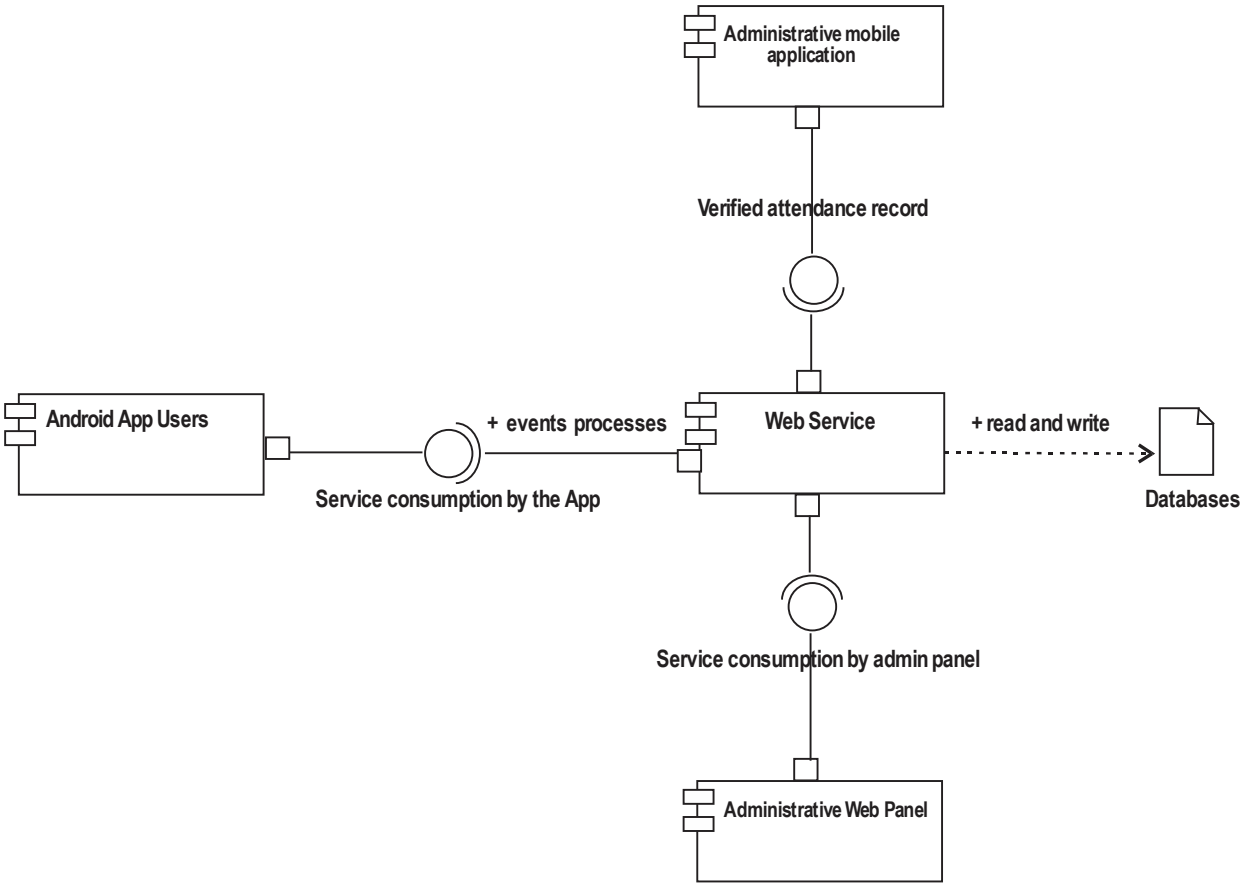

Fig. 1 AppUMTate System Component Diagram

VII. RESULTS

The AppUMTate system allows users to register as attendees to the Anniversary Days through a mobile application for the Android platform, and also presents them with all the activities available during the Anniversary Days in order to register as participants to each of the activities of their interest. Other actions that the participant can perform are: download the full program of the event, download their certificates of participation in the activities they registered and attended, generate an attendance card as evidence of their participation in the Anniversary Days, and answer the survey of satisfaction of the event, this last useful for the event organizers in the evaluation phase. In Fig. 2, 3, 4, and 5, the screens of the mobile App for users are shown. Finally, Fig. 6 shows the administrative web panel.

IARJSET

ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Vol. 8, Issue 12, December 2021

DOI: 10.17148/IARJSET.2021.81242

Fig. 2 User registration screen

Fig. 3 Activity registration screen

Fig. 4 Constancy download screen

Fig. 5 Unique QR code of the user

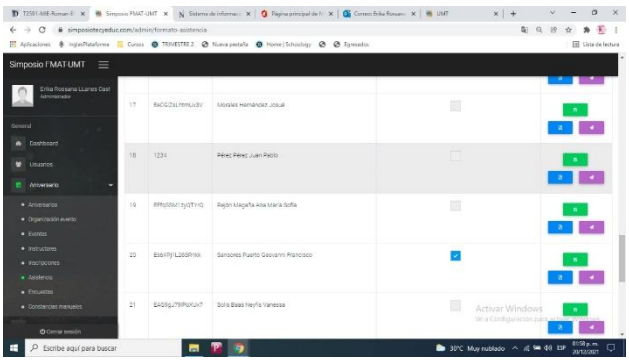

Fig. 6 Administrative web panel screen

VIII. CONCLUSIONS

Following the software development process to manage and administer the necessary resources, the AppUMTate system was completed satisfactorily, and the requirements extracted from interviews with some teachers were fulfilled. This allowed to determine the organizational process applied to the management of the academic event Anniversary Days. With the development of the Web-Mobile application for the management of academic events, the Tizimín Multidisciplinary Unit acquires a tool designed and developed according to its organizational model.

IARJSET

ISSN (O) 2393-8021, ISSN (P) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

Vol. 8, Issue 12, December 2021

DOI: 10.17148/IARJSET.2021.81242

REFERENCES

[1]. F. Iriarte and M. Ordoñez. Desarrollo de una propuesta de intervención educativa para el fortalecimiento del uso de las TIC como herramienta de enseñanza y aprendizaje en instituciones educativas, España, 2014, p 240-241.
[2]. S. Gittlein. La dimensión ambiental en la organización del turismo de reuniones. Aportes para prácticas sustentables. RIDAA-UNQ Repositorio Institucional Digital de Acceso Abierto de la Universidad Nacional de Quilmes. 2016.
[3]. R. Yogui. Gestión de la información para optimizar el proceso de planificación de eventos académicos de la Pontificia Universidad Católica del Perú. Tesis 2018.
[4]. M. Pensado, Y. Ramírez and O. González. La formación integral de los estudiantes universitarios: una perspectiva de análisis de sus áreas de interés. 2017. https://www.uv.mx/iiesca/files/2018/03/02CA201702.pdf
[5]. Y. Díaz and M. Rojas. Diseño del 1° evento académico, como estrategia pedagogica para la circulación de conocimiento especializado, en la sublínea de investigación educación física en ámbitos disformales. 2013. Bogotá D.C.
[6]. J. Crespo. Eventos académicos virtuales. Ideas alrededor de un estado de la cuestión. ASRI - Arte y Sociedad. Revista de Investigación. Núm. 8 (2015)
[7]. J. Molina, M Zea, M. Contento and F. García. Comparación de metodologías en aplicaciones web. 2018.
[8]. A. Ramos and M. Ramos. Aplicaciones Web, 2a Ed., Madrid: Ediciones Paraninfo, S.A. 2014.
[9]. Consejo Audiovisual de Navarra. Familia y nuevas tecnologías Cómo ayudar a los menores para que hagan un buen uso de la televisión, el teléfono móvil, los videojuegos e Internet. 2010.
[10]. F. Sánchez, O. Ortíz, J. Pastor and P. Alcover. Aprendizaje de los lenguajes de programación en la educación universitaria a través de los dispositivos móviles. 2013.
[11]. J. Leyva. Introducción y algunos usos de los códigos QR. 2011.
[12]. S. Okazaki. El uso de los códigos QR en España. 2012.