

## RA prototype in Haciendas del Poniente de Yucatán

### Prototipo RA en Haciendas del Poniente de Yucatán

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#### Abstract

This project is geared to the need of supporting tourism in the western part of the State, this software will allow to better dissemination of finances both known as unknown, offering a very innovative and attractive technology for the end user, since it will contain in a very dynamic way the most important features, its history, its origin Myths environment, and above all an update of the records of the farms West of Yucatan, many of which are national heritage has. For this reason this project which intends to through a mobile app with augmented reality technology to disseminate the information more relevant and important different farms in the area west of the State registered and not in the SEFOTUR arose, and thus achieve strengthen tourism in the farms in the western part of the State.

**Android, Haciendas, Mobile app, Augmented reality, Yucatan**

#### Resumen

El presente proyecto está orientado a la necesidad que se tiene de apoyar al turismo del poniente del estado, este software va a permitir mejor difusión de las haciendas tanto conocidas como desconocidas, ofreciendo una tecnología muy novedosa y atractiva para el usuario final, ya que va a contener de una forma muy dinámica las características más importantes, su historia, su origen, los mitos entorno a ellas, y sobre todo una actualización de los registros de las haciendas con las que cuenta el poniente de Yucatán, muchas de las cuales son Patrimonio de la Nación. Por tal motivo se planteó el presente proyecto el cual pretenda a través de una aplicación móvil con la tecnología de realidad aumentada dar a conocer la información más relevante e importante de las distintas haciendas existentes en la zona poniente del estado registradas y no en el SEFOTUR, y así lograr fortalecer el turismo en las haciendas en el poniente del estado.

**Android, Haciendas, Aplicación móvil, Realidad aumentada, Yucatán**

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## Introduction

The henequen haciendas arose in the second half of the 19th century due to the impulse of the old families that since colonial times owned large land properties, due to the participation of their heirs and the new wealthy groups that had developed in commerce. These haciendas represented the basis of the Yucatan economy for 100 years (Ancona, 1995).

In the mid-1940s, when synthetic yarns were invented, the henequen industry fell sharply and with it, the splendor of the haciendas. In the last decade of the 20th century, the haciendas of Yucatán once again recovered a great boom and splendor, now as places of perfect harmony for rest, reflection and meditation, but above all to offer visitors to Yucatán unique experiences (State Government, 2012).

According to the tourism promotion secretariat (SEFOTUR) in Yucatan there are 60 henequen farms registered for national and international tourism, however, according to research carried out by teachers and students in the tourism area of the Universidad Tecnológica del Poniente, and by the residents themselves close to these places, there is no exact number of the estates, since up to now it has been detected that approximately in each police station in each town in the western part of the state there is a farm.

This information is not updated in the Tourism Development Secretariat in Yucatan, and much less in the ears of national and international tourists, which greatly reduces the visit to these places, and causes the residents not to receive income as they should. generate these places. In addition, when these visitors visit any of these farms registered and not registered in SEFOTUR, most of them do not have tourist guides that explain their origins, their characteristics and the important events that have arisen on the farm. For this reason, the present project was proposed, which aims through a mobile application with augmented reality technology to make known the most relevant and important information of the different existing farms in the western area of the state registered and not in SEFOTUR, and thus manage to strengthen tourism in the haciendas in the west of the state.

## Methodology to be developed

The development of the project consists of the following phases: information gathering, multimedia content generation, software development, results and software implementation.

### Information gathering

This phase consisted of doing a field study in the western area of the state of Yucatán, visiting police stations in search of their farms to take the census of said places, through the information obtained by the same residents, owners or people close to them.

In addition to helping to obtain the most important information about each farm, such as its characteristics, its origin, its history, the myths and legends that the inhabitants tell about these places, the most relevant events or anecdotes, what attractions and entertainment it has for the tourist, what are the possible routes to get to these places, the type of transport that can be used to get there, and to perform representations of some legends or myths.

### Multimedia content generation

This phase will consist of taking photographs of each of the most relevant places, the residents and the training offered in each of the farms.

Likewise, of the taking of videos of settlers who tell the legends, myths or description of how they lived on the haciendas, as well as the hacienda in general.

This phase will also consist of selecting and editing all the photos and videos that will be used in the application. And the development and design of the application logo, and the icons that would be placed in the system.

### Software development

Software development has been divided into the following sub-phases: design and development of graphical interfaces, server development, application development, testing.

## Design and development of graphical interfaces

This phase consists of designing the application's graphical interface according to the user's usability guidelines.

As well as the selection of icons, colors, sizes and shapes of each of the application windows.

### Developing a web service

This phase consisted of analyzing, designing and developing a relational database in Mysql, necessary for the application.

Once the database is finished, the creation of a web service developed under the php programming language is continued, the architecture that will be used for this development will be the Model-View-Controller (MVC), the modeling to in turn, it will be developed under object-oriented programming, and this server will serve to feed and respond to the requests that its client requests, in this case the mobile application.

### Mobile application development

This phase consists of the realization of the application under any mobile device platform, which is developed with Android Studio.

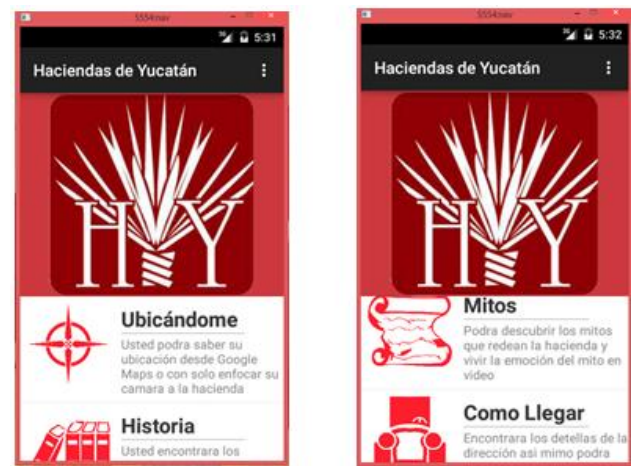
The development of this project will be composed of different modules or sections among which you can find:

- Locating me. This module is going to be that through the location where the person is, they can determine in which farm they are. Through augmented reality, when focusing on the farm, it shows you the information about said farm, such as the name, its size.
- History, which through augmented reality technology and the logo of the farm will show a video of a guide telling the history of the farm.
- Myths. This section contains various myths pertaining to the hacienda.

- How to get. This section through the Google API, will contain a map of how to get to the farm, which route to take, and what transportation is available.

### Results

The result of this project was the generation of the prototype of the mobile application "Haciendas de Yucatán", which contains different modules or sections which are shown below.



**Figure 1** Main screen with the main sections of the application

The main sections are as follows:

- History section: the history option is shown in which through seeing more a summary of the farm is displayed, and when clicking on the icon, the guide is shown through augmented reality telling the story



**Figure 2** History section of the Haciendas de Yucatán application

- The Myths section contains the information of some myths that the hacienda contains.

- The Locating section is composed of two tabs in which at the beginning it locates you in the location where you are and when you click where I am by augmented reality it tells you where you are.



**Figure 3** Locating section of the Haciendas de Yucatán application

- The section on how to get there is a tab with two tabs in which in the first section you will find the important details about the farm such as its schedule, entertainment, and in the map tab you will find the options of the route you should take.



**Figure 4** How to get there section of the Haciendas de Yucatán application

## Conclusions.

The mobile application is currently under the Android operating system, the application is in the prototype and testing stage, since due to the large number of farms that are registered, unregistered and abandoned in Yucatan, it requires more time to Research of the information, the farms included in the application is just a small sample of all those that exist only in the West of Yucatan. The application has been tested on various mobile devices to see its behavior, it has been positive. At the end of this application and put it on the market, it will be of great benefit to the communities near the haciendas, since most of them are in rural areas and the inhabitants will have better sources of income as there are more tourists, as well which will be a great benefit for the haciendas since many of them are abandoned and this will help to keep them.

Likewise, this application will be of great benefit to both local, national and foreign tourists, since currently the Yucatecans themselves do not know of the existence of these farms, national and foreign tourists will have more options for visits to less commercial farms than they would. are known nationally and internationally, and just as being able to have a magnificent experience by delving into the history, myth and experiences that each Yucatan hacienda has.

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