

Virtual world of mexican cinema

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Abstract

Virtual reality is an artificial computer-generated environment in which users are able to interact with each other by means of characters and manipulating objects, the scenarios built by computer are known as virtual worlds. This document presents the design and construction of a virtual world focused on the theme Mexican Cinema, in a way of Virtual Museum. This Virtual Museum has five rooms: Sound Film, Golden Age Cinema, Transition Period, New Mexican Cinema, as well as a virtual cinema that presents shorts of some films representative of the Mexican Cinema, this museum is staged by means of 3D objects, photographs, videos and allows the interactive navigation of the user through the virtual world, in order to publicize the most relevant facts of Mexican Cinema.

Virtual Reality, Virtual World, Virtual Museum, Mexican Cinema, Stages of Cinema

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Introduction

The virtual worlds have the possibility to represent mirror worlds, or imaginary world, etc. Currently virtual worlds together with Virtual Reality open a new stage of development for the creation of systems and education. Through the inclusion of Virtual Reality, all this is possible to recreate educational centers, shopping centers, recreational places, etc. Specifically, this project focuses on the history of Mexican Cinema, the idea of this project is to develop a virtual museum about the history of Mexican Cinema, considering films created, important personages, history of the cinema, cinematographic equipment used for the projections of the films.

Some related works of this project is the Virtual Museum for the Bastion of Solitude of San Francisco, Campeche [1], this museums focuses on the culture and history of Mayan architecture, created as didactic material in institutions, also for the interaction of people from other parts of the world. A second work is the virtual visit to the Palace of Fine Arts of Mexico City [2], created to carry out the virtual visit by the general public. Finally, the project "Virtual Visit to the Vatican" [3], includes photographs of art jewels of all time.

Virtual Worlds

[4] describes a Virtual World as a 3D environment, which simulates the real world in terms of topography, social and economic conditions and communication, but do not have limitations. In [5] is said that virtual worlds offer a way of escape, fantasy, socialization, collectivity and, in some cases, a source of income, are similar to real in the sense that they contain all types of human social interaction, including friendship, love, economics, war, politics, etc.

Characteristics of virtual worlds according to [6]:

- Interactivity. The user is able to communicate with other users.
- Corporeity. The environment is subject to certain laws of physics, and has limited resources.
- Persistence. Although there is no user connected to metaverse, the system still works and will not stop. The user's position is saved.

Our project uses corporeity.

Museums

In [7] it is commented that the role of museums as preservers of objects is essential, so is the information about their collections.

There are five generations of museums [8]:

- The first generation of museums is characterized as scientific and technical, it presents the classic concept of storing precious pieces, rare items, masterpieces of nature or man.
- The second generation includes technological museums, based on the Industrial Revolution and the artisan classes.
- The third generation introduces the interaction, centering in the experience visitor.
- The fourth generation can be identified as incorporating scientific theme parks. Its most prominent feature is the combination of information, education and entertainment in a product.

- Finally, the fifth generation uses the media, audiovisual show, special effects, surround sound techniques, virtual reality spaces resulting in scientific communication and education. Likewise, technology has led to the generation of fully virtual museums, where the physical museum is not relevant.

The Mexican Virtual Cinema is located in the fifth generation, since the physical location does not exist and Virtual Reality is used.

Virtual Museums

The advance of the new virtual environments means, without doubt, a radical transformation in the conception of the museums. The most revolutionary idea of digital technologies is interactivity. Interactivity is the option of manipulating virtual objects and allows us to navigate the contents to the user's rhythm [9].

Virtual worlds based on 3D technology have always brought a halo of novelty, creativity and recursion when it is used [10]. Originally, intended for the video game industry and simulators of all kinds, such as health, aviation and education. Currently, some virtual worlds have been developed for the user's knowledge, interactivity and the development of imagination. There are different projects of virtual museums most of them are photos in 360°, some are not totally developed in 3D.

Mexican Cinema

The Mexican Cinema is a Film Production made in Mexico or abroad with Mexican budget. The Mexican Cinema excels in Latin America, it started with silent films in 1896. In 1929 was introduced the sound film. One of its best known periods is the Golden Age from 1936 until 1957, Golden Age reached the internationalization. In 1952 themes of fighters were introduced. In the late 1950s and early 1960s emerged the rock and roll movies.

At the beginning of the sixties the UNAM created cineclubes in Mexico and in 1963 founded the University Center of Cinematographic Studies. In 1970 the film was used as national and international media, a time known as State Cinema. The private film industry emerged between the seventies and eighties, it was characterized by the production of low cost films, in short time and low quality. The film produced on the northern border known as Cabrito Western was produced in the eighties [11], [12]. In 1983, the Mexican Institute of Cinematography (IMCINE) was created to produce quality films. Mexico currently has a good time in the cinema, the number of films made each year is greater, in 2013, Mexico made 126 films reaching a historical maximum from the Golden Age [13].

Methodology

For the development of this project, we use a sequential methodology, the methodology considers that the project is of the Area of Virtual Reality with a defined theme: Virtual Museum of the History of Cinema.

1.-Analysis of requirements	2.-Design and modeled	3.-Implementation	4.-Tests and Corrections:
Goals: A) Selection of museum areas B) Selection of museum pieces C) Selection of references			
Hardware A) Developed B) User	A) Design and modeled of software		A) Unitary
Software A) Developed B) Of application	B) Design of material: Photographic Galleries, videos, text, Descriptive audios, 3D models, texturized, markers, images	Codification	B) Integration C) Functional
Principles of Usability [8] A) Interaction B) Presentation C) Navigation D) Panoramic E) Sound F) Orientation and help	C) Interface Design		D) Usability E) Corrections
Principles of Usability A) Interaction B) Presentation C) Navigation D) Panoramic E) Sound F) Orientation and help			

Figure 1 Methodology

Detailing the methodology:

1- Analysis of requirements consider:

Specific goals in this case selecting areas of the museum, key parts and literature to supplement the original information.

Definition of hardware of development and end-user

Definition of software of development

Define principles of usability considering interaction, presentation, navigation, panoramic, sound, guidance and help [14].

2. Design and Modeled of software: UML, 3D objects, as well as taking into consideration usability aspects.

3. Implement

4. Finally, like all quality software is important to realize different tests as: unitary, of integration, functional, of usability. Also it is necessary correct each problem detected.

Virtual Museum Of Mexican Cinema

In this project was developed a virtual world on the history of Mexican Cinema, it is directed all the people. For the development of this project, we investigated was about of Mexican Cinema, Virtual Museums and Virtual Reality. The project is developed in Blender [15] and Unity 3D [16], both compatible with each other. Figure 2 shows a General Diagram of the project, which is composed of 5 important scenarios: Sound Film, Golden Age, Period of Transition, New Mexican Cinema, in addition a Virtual Cinema.

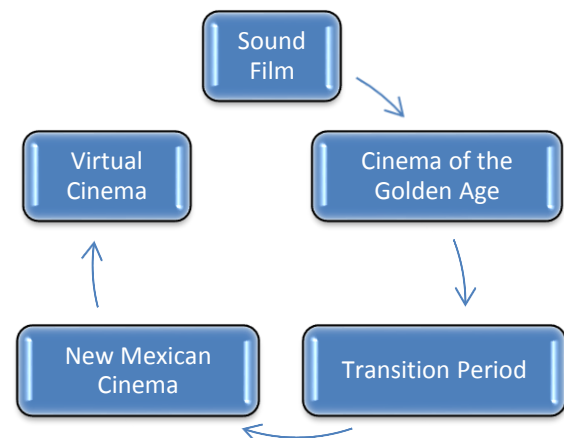


Figure 2 General Diagram of the Virtual Museum of Cinema

Virtual Museum of Mexican Cinema

Figure 3 shows the main entrance and the gardens of the Museum of Mexican Cinema.



Figure 3 Main entrance of the Virtual Museum of Mexican Cinema

Virtual Sonorous Film Room

The Sound Film began in 1929, with the incorporation of synchronized sound, this project includes a Virtual Room of the sound film with photographs and history, see Figure 4



Figure 4 Room Sound film

Virtual Room of the Golden Age of Mexican Cinema

The Golden Age of Mexican Cinema began in 1936, in this time the Mexican film industry had high levels of quality, it corresponds to the second room of the Mexican Virtual Museum, the room contains information on films, actors, cameramen, writers and characters, we use photographs, 3D models, text and audio.



Figure 5 Room of the Golden Age

Virtual Room of transition of the Mexican Cinema

The 1960s was a stage of transition for Mexican cinema, in this time emerged new filmmakers, the films produced in that decade reflect the search for new forms of expression.

Figure 6 shows the Virtual Room of the Mexican Cinema transition, the Virtual Room presents propaganda of different films of this time. In this area are reproduced short films and historical information.

Virtual Room of Modern Cinema

In the 1990s, Mexican Cinema recovers with highly critical films, a new generation of filmmakers, actors, writers, technicians and spectators emerge. 3D models, actors' photographs, films, as well as information of the time, and short films of the New Mexican Cinema, are shown in the Virtual Room of the Modern Cinema, see Figure 7



Figure 6 Virtual Hall of the Transition Period

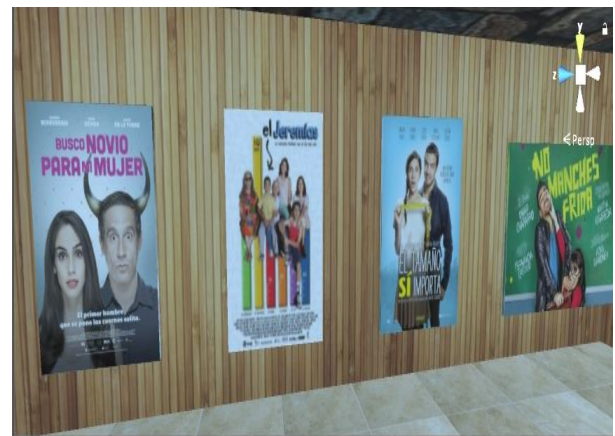


Figure 7 New Mexican Cinema Room

Virtual Mexican Cinema

Inside the same museum there is a virtual cinema in which the user can reproduce shorts films of the Mexican Cinema, see. Figure 8.

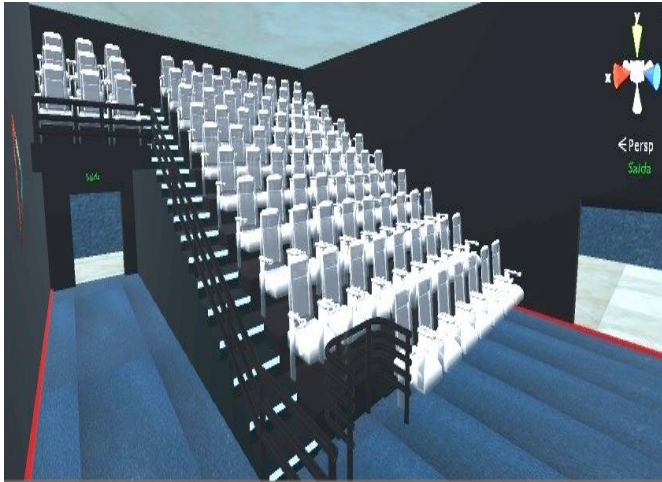


Figure 8 Virtual Cinema where films shorts are projected

Tests And Results

During the tests, we reviewed 3D models, we checked that the models did not have any Bug, as well as, we reviewed each structure of the buildings included in the Virtual World, the possible faults of the audios and videos udes in the Project. By way of example, we reviewed that the buildings in project not contained unsuitable transfers of light. When doing this test, we noticed that in the buildings when putting the sun light some shadows of the other 3D objects were reflected. The problem was fixed by modifying the texture of UI Text to TextStandard. In the same way, we performed unit tests in each room and tests of integration.

Conclusions

The technology is giving contributions in many areas, benefiting in education and culture, enabling citizens to be better informed. However, even in today's museums of Mexico, this effort is still inadequate, much work is required to improve the goals that technology imposes on us.

In developing this project, we can see the potential of Technology, especially in the area of Virtual Reality, we have the possibility to show different historical and cultural scenarios. Through research, we have know that people have low level knowledge of historic of Cinema, so it is important to publicize the cinema using different tools. The Virtual Museum of Mexican Cinema is created for the general public.

For the development of this project the cascade methodology was adapted, in this work we have incorporated key aspects for using Virtual Reality in a museum.

In general, Blender and Unity met the expectations, due to both tools are viable for the development of Virtual Reality.

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