Create a 3D map from the old town of Lopburi Province on Mobile

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Abstract: Research in creating a three-dimensional model for tourist attractions in the Old Town, Lop Buri Province, which has data sources from the Lop Buri Old Town Tourism Information Book, divided by age according to the era of the various places. Solved by creating three-dimensional models which is a research method with the objective of 1. To build an archaeological site that is the main point in all three dimensions according to the era. 2. To create a tourist map of the Old City in Lop Buri Province in a three-dimensional model 3. To assess the satisfaction of users of the Old Town Tourism Map in Lop Buri Province 4. To transfer technology to interested parties or interested agencies Which begins by bringing information from books And analyze concepts for use in event planning It consists of collecting data in a multi-angle, horizontal real-time shooting for creating historic sites in a three-dimensional model. To import into a two-dimensional tourist map model. Target group Are interested parties and 80 tourists. Research findings that the overall satisfaction level at a high level. The overall average score is 4.29, the standard deviation is 0.678 and when analyzed in each aspect, it is found that the highest score is at the technical level. With an average score of 4.73, the standard deviation of 0.458, with the highest level of satisfaction

Keywords: 3D Model, Maps, Historic town

1. Introduction

In the past, the area of Lopburi Province used to be the location of an ancient city for many times, whose original name is Lavo since the Khmer reign. There is important evidence that Phra Prang Sam Yot (located in Muang Lop Buri District), a Khmer art in the Bayon period, around the 18th century and there is a San Phra Kan, which is old in the same period. The word "Lavo", presumably, comes from the word "Lava" (Lawaburi became Lopburi today). The Sanskrit word "Lava" means "water" (which may mean that the city has a lot of water). When it comes to Christmas with the words Uthai (Lava + Uthai), it becomes Lawothai (as Suk + Uthai becomes Sukhothai) in the inscription of "Volvo Thaipura". But it is said that the word "Lavo" comes from Mon language, which means mountain due to this town's mountainous landscape. Lopburi is a city with a long history because of the traces of human habitation consecutively since the prehistoric period at least 3,000-4,000 years ago. From the discovery of many archaeological evidence, including evidence, documents and inscriptions, many pieces were mentioned in Lopburi, for example, in the 11th-15th Buddhist century, there is evidence is the northern chronicle saying that Phraya Kanawandis had given Brahmin to build the town of Lavo since 1002 and in the 19th Buddhist century, evidence that Lopburi was probably the town that King U-Thong had reigned before he moved to establish the Ayutthaya Kingdom. In the Ayutthaya period, Lopburi was the most prosperous because King Narai the Great (reigned in B.E. 2199-2231) established Lopburi as the second capital city. When King Narai the Great passed away in the year 2231 at the Sutthasawan Throne Hall Within Phra Narai Ratchaniwet, Lop Buri, it immediately lost importance. King Phra Petracha moved all government units back to Ayudhya, and in the later period no king had finished staying in Lopburi. Until the Rattanakosin period, King Mongkut's reign favored the restoration of Lopburi in 1863 with the restoration of the city walls, fortresses and the city gates including the construction of the royal crown Phiman in the royal palace with the royal name "Phra Narai Ratchanivet", which is now home to the Museum of King Narai the Great. After the change of government, Lopburi was maintained again. In the era of Field Marshal Plaek Pibulsongkram as prime minister, a new town was planned and a military unit was established in Lopburi. Lopburi is therefore known as a military city because it has 11 military units. Lopburi is now a "economic city, tourist city and military town". From the past to the present, it can be seen that Lop Buri has many historical attractions from many eras. The number of people visiting various places comes from different areas, both at home and abroad, especially foreigners have traveled mainly to trace their history. The data collection that is available today is to collect information in the form of various inscriptions and have been developed as a database. The data collection in each format is only to collect information that allows the interested person to see only the characters and illustrations, thus making the current interest less concerned with the inscriptions or even a database that is stored to be searched. In addition, tourists who come to the ancient sites can only access information on the flyer type.

From the aforementioned problems, the researcher is able to foresee the application of multimedia 3D technology by processing in a video format and presenting on social media systems or social networks that are

becoming popular today. The management of tourist information in 3D format is to solve the problem of accessing documented information.

2. Research Objectives

1. Make a three-dimensional model of the archaeological site that is the main point in Lopburi Province according to the era

2. Make a tourist map of the old town of Lopburi in three dimensions

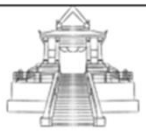
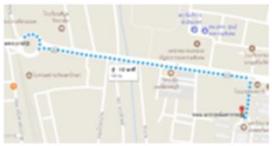
3. To assess the satisfaction of users of the old city tourist map in Lopburi Province

4. To transfer technology to interested parties or interested agencies

3. Research Methodology

The research carried out the scope of the content-based information obtained from the Lopburi Old Town Tourism Guidebook, a book that was screened by the Office of Fine Arts 4, Lopburi, and the content is then summarized as preliminary information for tourists to help tourists understand and make easier decisions. The target population is the general population of 80 people. There is a plan and an operating process by planning areas to collect data in the form of photographs in different angles for analysis, planning and designing a 3D model with a planning process in each perspective. Different perspectives of the 3D model and other perspectives can be obtained from the fielded images as well. The method of drawing from photographs is an example of a model using a 3D modeling program to achieve realism in a 1: 1 scale system, then use a 3D simulation design program that reduces the size of the model view in other angles, such as a high-angle view and a side view. When the 3D modeling process is complete, perspective is done by placing camera angles and lighting in different angles with a caption using storyboard grid system as shown in the chart below.

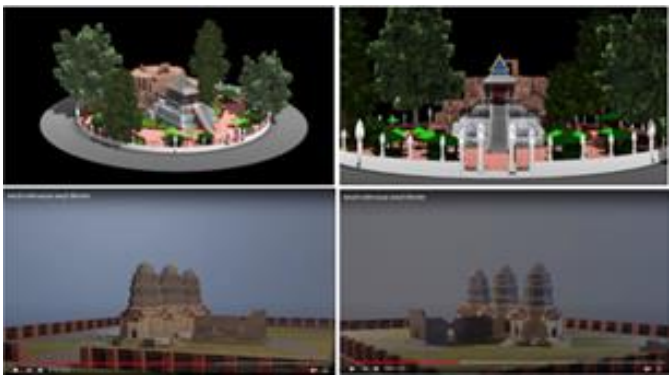
Story Board

Model	Character	Detail
1		Sponsor logo Soft background music
2		Place name Descriptive picture Soft music Displayed for 8-10 seconds per corner
3		Other place names Descriptive picture Soft music Displayed for 8-10 seconds per corner
4		Other place names Descriptive picture Soft music Displayed for 8-10 seconds per corner
5		A picture showing the location's address coordinates Descriptive picture Soft music Displayed for 4-6 seconds

After modeling the 3D model as planned with the storyboard, render it. When the rendering process is complete, the rendered file will be hundreds of still image files, depending on the resolution of the image being set. After that, the rendered image converter will be compiled and converted into a video file to present the 3D model in video format. It is then edited to the audio system recorded from the information in the pre-prepared tourist guide book by using the scene design method as shown in the picture.

Model	Character	Detail
1		Sponsor logo Soft background music
2		Scene 1 Place name Perspective 1 Descriptive picture Soft music Displayed for 8-10 seconds per corner
3		Scene 2 Perspective 2 Descriptive picture Soft music Displayed for 8-10 seconds per corner
4		Scene 3 Perspective 3 Descriptive picture Soft music Displayed for 8-10 seconds per corner
5		Scene X Perspective X Descriptive picture Soft music Displayed for 4-6 seconds per corner

After the file has been edited and rendered, it will be published on social media and social media platforms for use in the survey and satisfaction survey according to the satisfaction survey. Thereafter the specified satisfaction assessment period, take the data for analysis and conduct research after the rendering of the image.



4. Conclusion

The objective of the research was to develop a three-dimensional model of Ancient sites in Lopburi and presenting tourist attractions, archaeological sites in a three-dimensional model in a video format. The information within the video provides a rough overview of the historical site to help make it easier to make decisions before traveling to that place or to the historical site. The analysis results obtained from the evaluation of the satisfaction with the media from the general public or interested people are divided into 5 parts: 1) Content 2) Technical 3) sound 4) pictures 5) Overall benefits. There are statistical processing of each workpiece and can be summarized as follows. 1) The overall content had a mean of4.40 and the standard deviation of 1.056. 2) The overall technique had a mean of 4.73 and the standard deviation of 0.458. 3) The overall sound had a mean of 4.53 and the standard deviation of 0.64. 4) The overall picture had a mean of 4.07 and the standard deviation of 0.777 and 5) The overall benefit had a mean of 3.73 and the standard deviation of 0.458. Therefore, the total average was 4.29 and the standard deviation was 0.68. From the satisfaction assessment and observing the behavior of the target audience by the researcher while viewing the results, it was revealed that, after viewing the 3D model with good results, it can effectively and appropriately grab the attention of the target audience.

5. Discussion

From conducting research to map tourism for this ancient site, it was found that the finer the model, the more processing it needs to be processed on the Internet. In any area where there is a lag in the Internet, tourists or viewers will lose their interest in that place, but will have a genuine interest in that attraction. This research project has been resolved by presenting 3D models through social media and social networks as an alternative.

6. Suggestion

Research on 3D modeling of ancient sites should be applied in conjunction with virtual work in order to stimulate cultural tourism, learning for children or as a tool for deciding on the area before going to travel, for the elderly or interested people.

7. Acknowledgement

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