Tlaloc Vessel AR Experience

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## Contents

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Summary

Using augmented reality, this experience provides users with an immersive way to learn about the ancient Aztec culture, which serves as the foundation of modern-day Mexico. All that's required is a cellphone to scan a predetermined marker that displays a 3D reconstruction of the "Tlaloc vessel", a beautifully crafted artifact exhibited at the Museum of "Templo Mayor" in Mexico City. As users explore the virtual object, they can access informative segments describing the vessel's origin, meaning, and characteristics by pressing on different points around its body. Additionally, the application's buttons, menus, and background music incorporate iconographic and sonorous elements of Aztec culture, further enhancing the immersive experience.
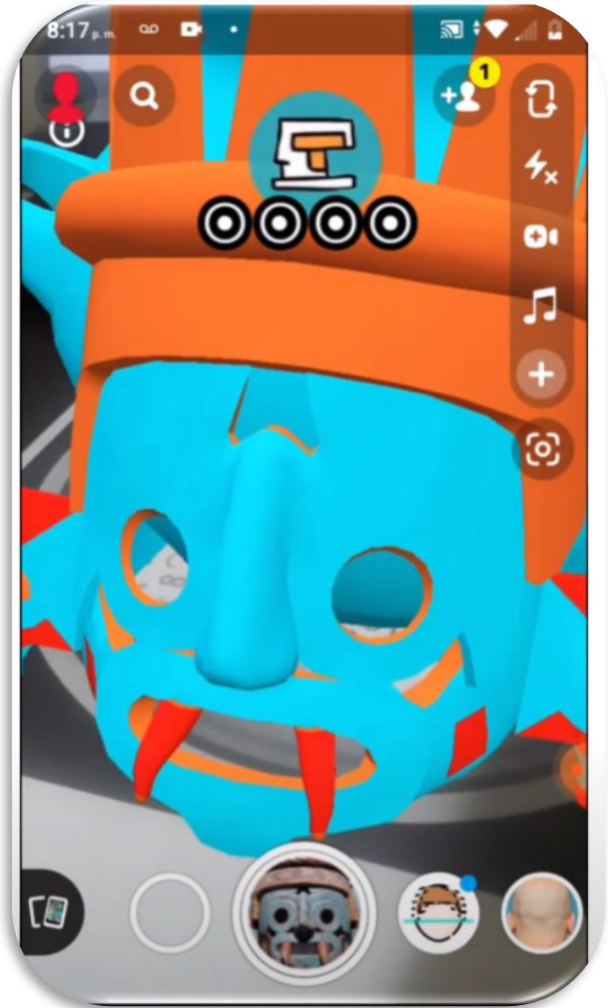
Stakeholder	Sector	Contribution	Technology
Midterm project-VR/AR certificate, Lethbridge college	Educational	Experience design	AR-Marker based
			Lens Studio
		Programming	JavaScript
	Historical heritage	3d modeling & texturing-Tlaloc vessel asset	Blender/ Substance Painter

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Design features

The AR app features four components.

1. Tlaloc vessel model.

The Tlaloc vessel is modeled in Blender and textured in Subtance painter as accurate as possible using reference images from the internet.
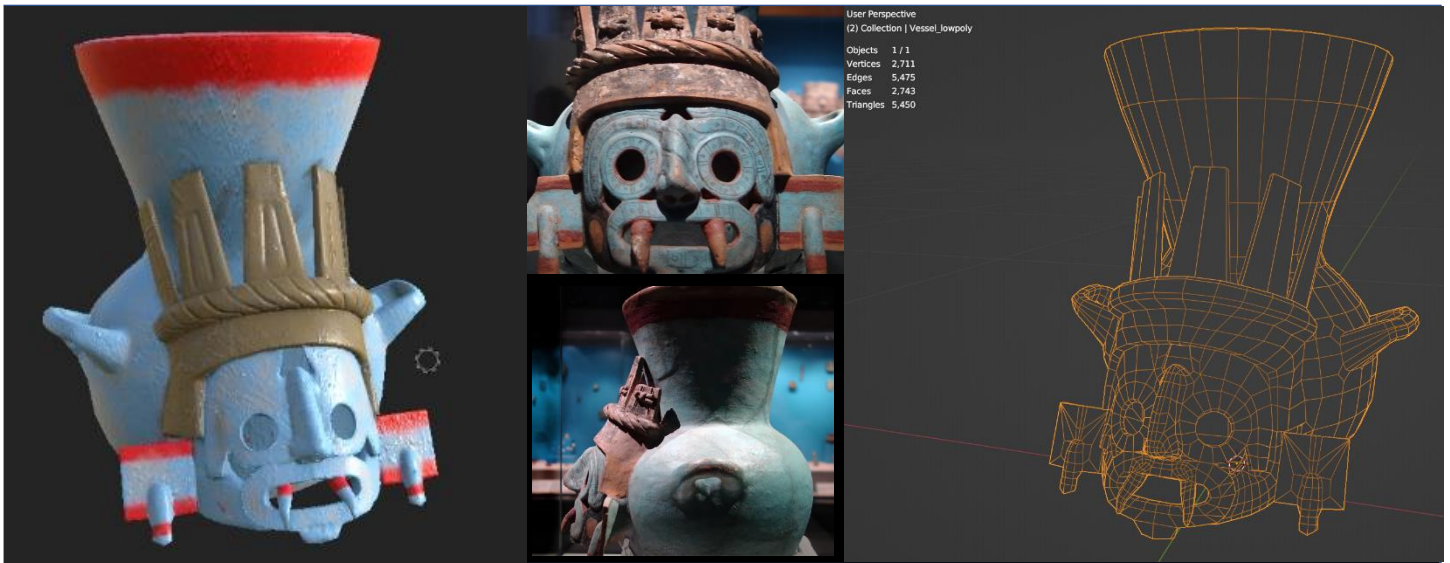

Figure 1. From left to right, the images display a textured 3D model, reference images of a real asset, and the 3D model mesh.

Figure 3 shows the counting system user interface (UI), highlighted within the yellow rectangle, which indicates that 1/4 of the information sections have been visited.
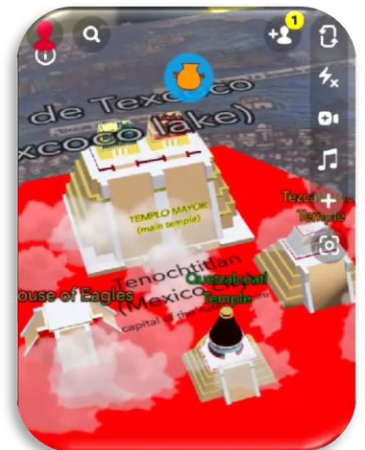
2. Tap points & Counting system

A moving cloud comes to a stop and releases raindrops at specific points around the virtual object. These points indicate tap-able areas that lead to one of four available information sections (*right image*). Each time a section is visited, a white dot appears in one of the circles displayed on the top-middle part of the screen, representing the number of informative sections visited out of the total, as shown in the left image. Users can revisit any section multiple times for review. The counting system UI design is inspired by the Aztec numerical system, displayed in the bottom image.

Figure 2. One of the four information sections available in the experience.

Figure 4. Aztec numerical system, where number 4 is represented with four circles.
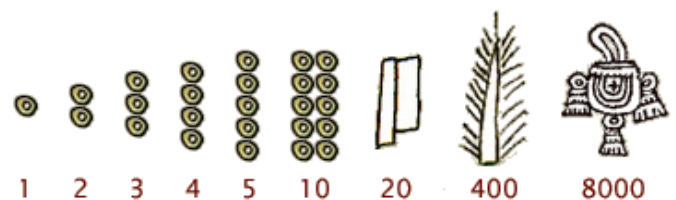
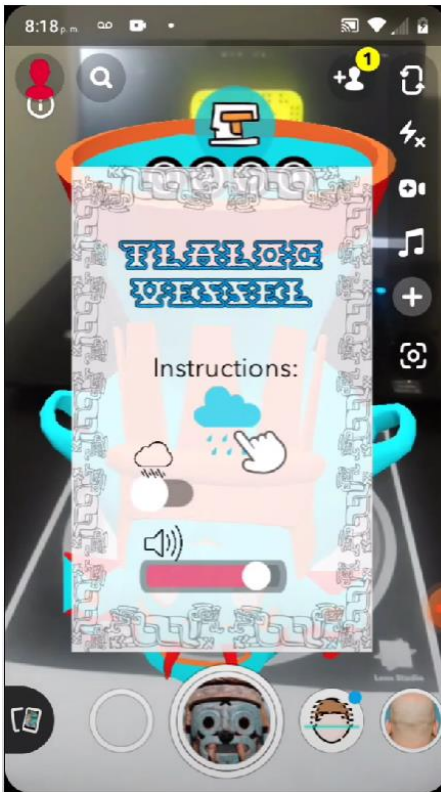## 3. Button icons, Menu borders & Tittle font.

Figure 6. Title screen featuring architectural elements found in the Aztec religious buildings.

The borders and font design of the title screen draw inspiration from the architectural elements found in Aztec religious buildings (as shown in the left image). Additionally, the icons for the buttons to switch between the Title screen and the Vessel view (as seen in the bottom-left and bottom-right images, respectively) feature authentic representations of words in Nahuatl, the Aztecs' primary language. Instead of a written language, the Aztecs used pictograms to represent concepts (as demonstrated in the right image).
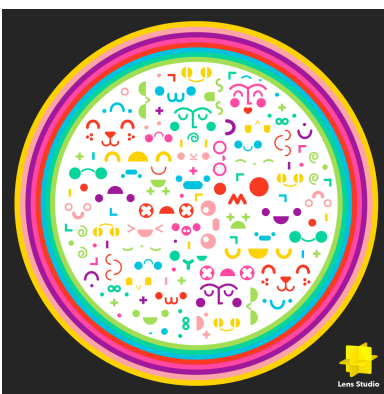

Figure 5. Collection of Aztec pictograms.

Figure 7. These Nahuatl pictographs represent kalli (house) and komitl (vessel) from left to right. They are used as button icons to navigate between the settings/title menu and the vessel view, which displays the 3d model of the vessel.

4. Image marker

Image markers are visual patterns or features that AR software can detect and use to display virtual content or information. In this app, the marker is used to trigger the display of the vessel. The intended image marker features an Aztec calendar with the Tlaloc deity in the center (as shown in the right image), but currently, the app is linked to Snapchat's default image marker (as shown in the left image).
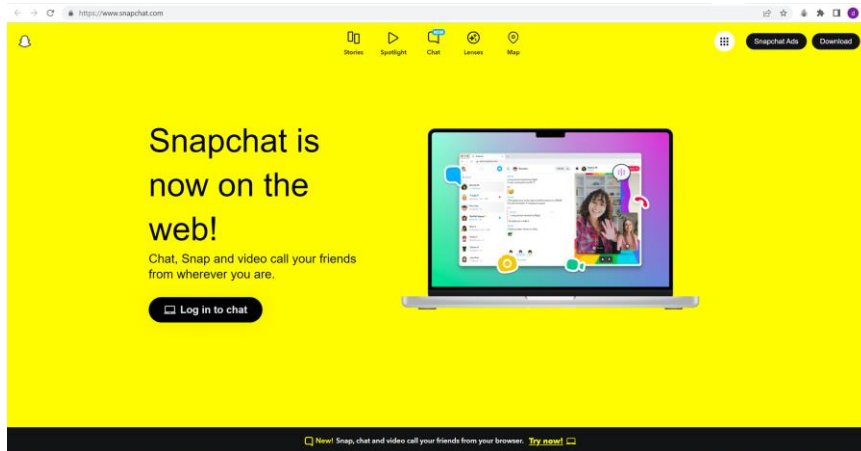
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Try the App in your phone

1. Download & Install Snapchat in your mobile phone.
   https://www.snapchat.com/

2. Create an account & Sign in.

3. Print the IMAGE MARKER.

4. Inside snapchat, scan the following *QR code* to start the app.

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Attachments

Use as image marker for the Tlaloc Vessel AR Experience.