# Count (ME)NA In:
# Advocating for Inclusion Using Virtual Reality (VR)

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**ABSTRACT**
Advocating for the inclusion of Middle Eastern North African (MENA) as a category on the U.S. Census and other surveys that take into account race and ethnicity, Count (ME)NA In is a Virtual Reality (VR) experience that simulates, through a first-person perspective, a few of the obstacles and challenges faced by MENA individuals as a result of their erasure. In order to inspire and initiate change, the project not only spreads awareness about this lesser acknowledged form of racial discrimination, but also proposes "community" as a potential solution, as it is through the activism of communities that most change occurs. Designed for the CAVE2 Hybrid Reality Environment, the project focuses on the Sustainable Development Goal "Reduced Inequality"[2].

**CCS CONCEPTS**
• Arts and Humanities • Interaction Design

**KEYWORDS**
Middle Eastern North African (MENA), Virtual Reality (VR), Unity 3D, U.S. Census, Inclusion

## INTRODUCTION
The United States started the decennial census in 1790, and a race question has been present on every census since then. However, the race question has undergone many changes as it has reflected the political motivations and the racial thinking of each era.[5] Since the Civil Rights Movement, the motivation behind the Census Bureau's racial and ethnic categories changed to a need to record race in order to document inequality.[4] But seeing where it stands, the US Census still has a long way to go, as people are advocating everyday for their inclusion on the Census. One of the many communities advocating for this change are Middle Eastern North Africans (MENA).

Middle Eastern North African individuals are included under the "white" category, meaning Americans who trace their origins to those geographical regions have to check “white” or "other" on documents like the census, medical paperwork, job applications, and federal assistance forms. This lack of information results in a huge blind spot regarding bias and discrimination affecting these people.[3] Similarly, because of a lack of data, MENA Americans have lost out on opportunities for health and social services and even small-business grants. This has rendered a community that experts estimate to be 7 million to 8 million people invisible, underrepresented, and unnoticed.[1]

**PROJECT CONCEPT**

In order to educate the user about the injustices faced by Middle Eastern North African individuals as a result of ethnic erasure, the premise of the project is that the player, a MENA student, is applying to a university as well as a minority-specific scholarship that they are qualified for based on the required criteria. As they do so, they are asked to select the race that they identify with, only to be surrounded by options that, although many, do not include them. As a result, they are made to select either “white” or “other” which not only contributes to the erasure of their history and culture, but also demonstrates that they are nothing more than an afterthought.

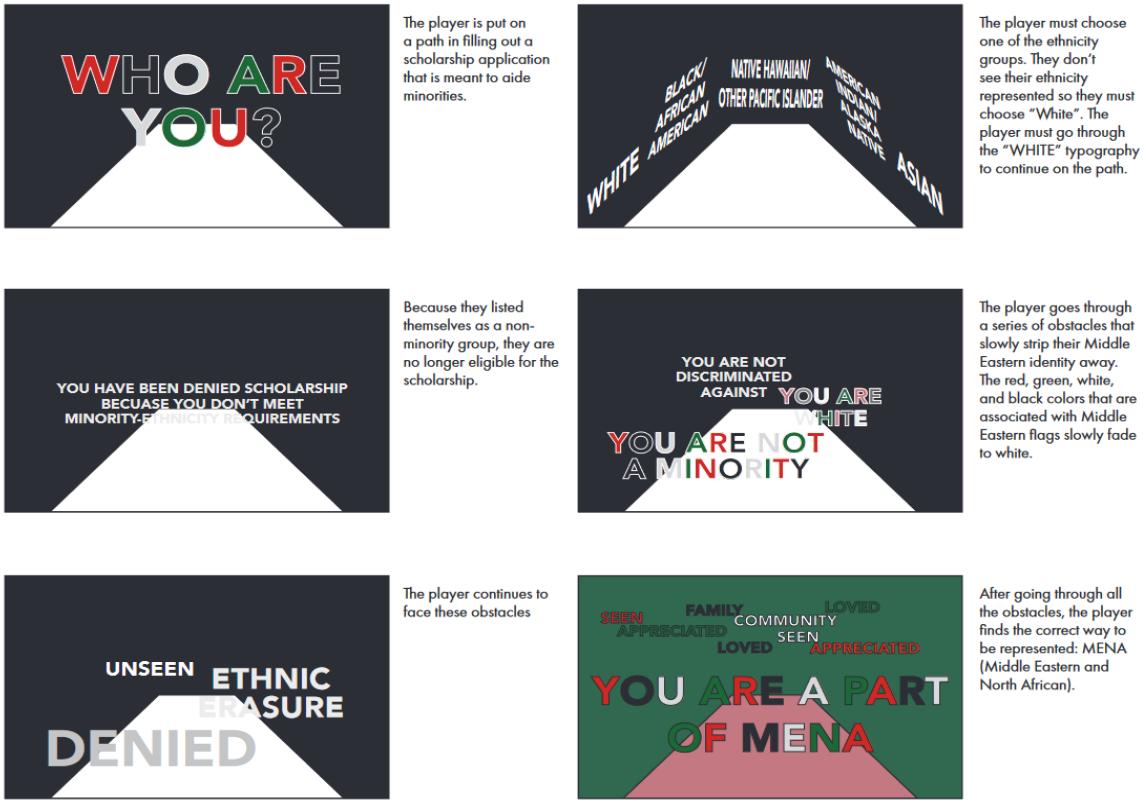


Figure 1: Initial storyboard designed by Azka Mazher using Adobe Illustrator.

As shown in Figure 1, the first storyboard designed to visualize the project's concept during its early developmental stages, the layout of the project is a series of paths determined by the user's limited selection to the question, "Who are you?", or, in the case of the finalized version of the project, "Which of the following races do you identify with?". When the user selects either "white" or "other", they are denied opportunities which is communicated through derogatory typography along their path. In addition, to showcase erasure, the storyboard pitches the "fading" of the colors green, white, black, and red which are the four colors commonly used on Middle Eastern North African flags. At the end of the experience, the player finds community as shown through the return of color. While Figure 1 is no longer fully representative of the project in terms of story, interaction, and aesthetic, many of the original concepts evolved in the final version.


Figure 2: The first race-related question to be answered by the player. The doors surrounding them are their options.

In the project, the common question, "Which of the following races do you identify with?" and its associated selections are represented by a series of doors that surround the player. Attempting to select a door other than "white" or "other", the two selections MENA individuals are usually expected to select, results in the sound of a locked door knob and a message to "Try Another". Selecting the expected categories, on the other hand, although not representative of the individual, opens the door and reveals a path. Rather than providing opportunities, the path leads to the erasure of the player and their identity.

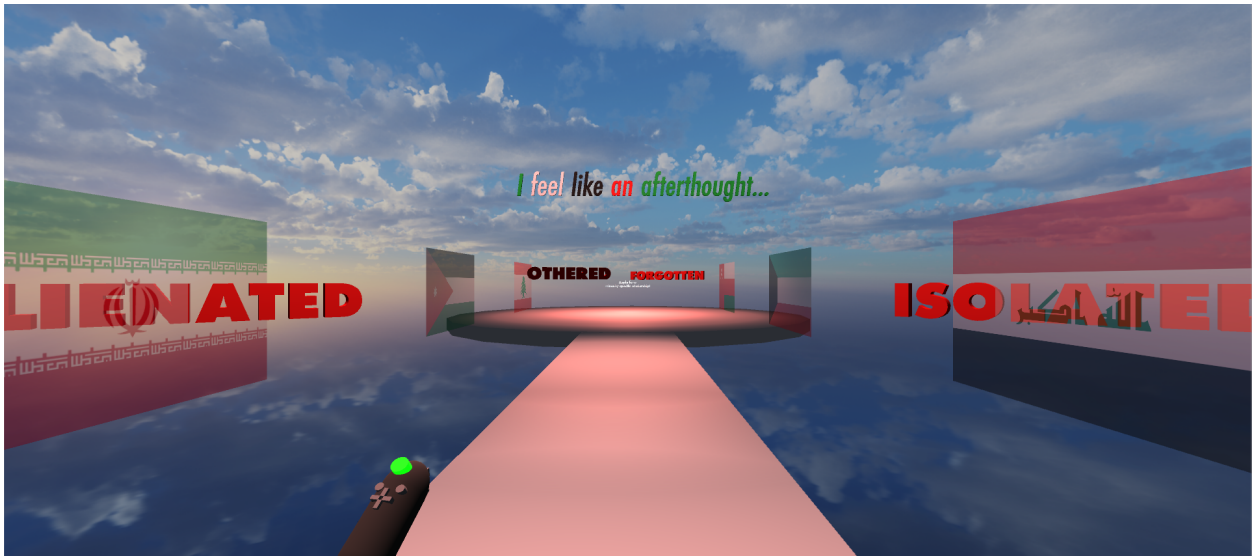


Figure 3: The path revealed after selecting “other” in the desktop simulator of the project.

In order to communicate the aftermath of selecting the wrong identity on the MENA psyche, the thoughts and feelings of the player are displayed above their head in the colors green, white, black, and red. After selecting a category like “other”, the user’s path is cluttered by red words that are associated with that selection such as “alienated”, “isolated”, “othered”, and “forgotten”. Because they feel inescapable, the words stick to the player and clutter their vision as they continue along their journey. Instead of MENA colors fading, MENA flags fade over time, visually showcasing ethnic erasure. In addition, the skybox gets darker and the lighting becomes more red.

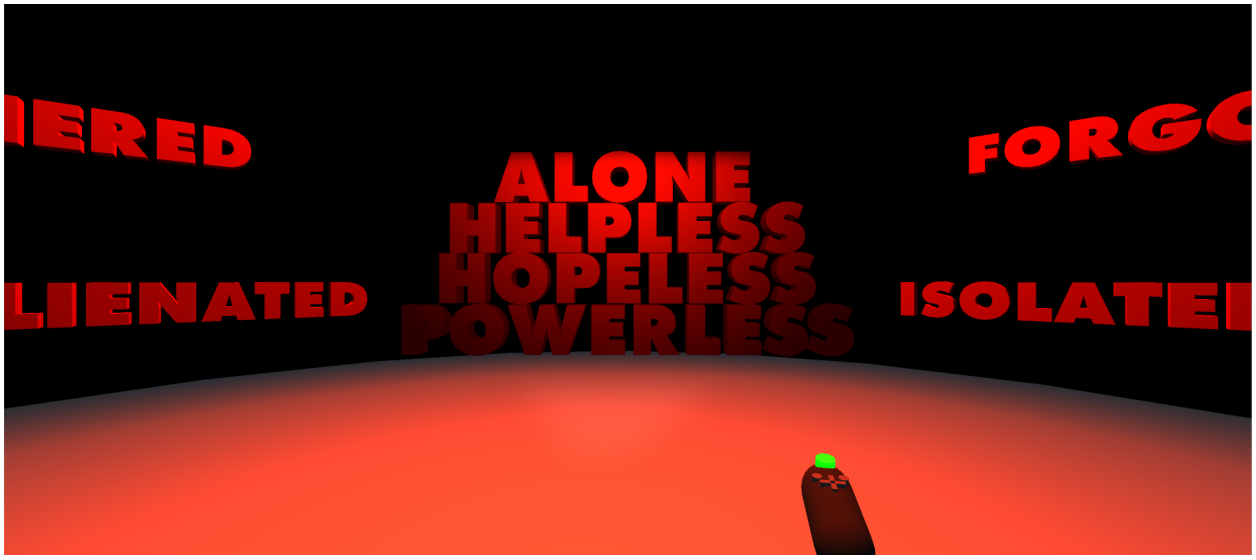


Figure 4: After unsuccessfully reporting a case of racial discrimination, the user’s path is blocked by a wall.

After being denied opportunities they should be qualified for on account of affirmative action and their own efforts, the player attempts to report a case of racial discrimination which, unfortunately for them, does not work. This creates a barrier that is represented by a wall of the words “powerless”, “hopeless”, “helpless”, and “alone”; at this point in the story, the player feels that all attempts at change are futile.

As the skybox darkens to black and all hope is lost, there is a gentle piece of music that quietly fades in as solidarity is suddenly found among community members who have had similar experiences as the player. They encourage the player to create a change by ridding of the words that have come to clutter their vision. This is the player’s call to action. Doing so causes the barrier to fall, revealing a door with the category “Middle Eastern North African” which was missing from all the previous questionnaires.

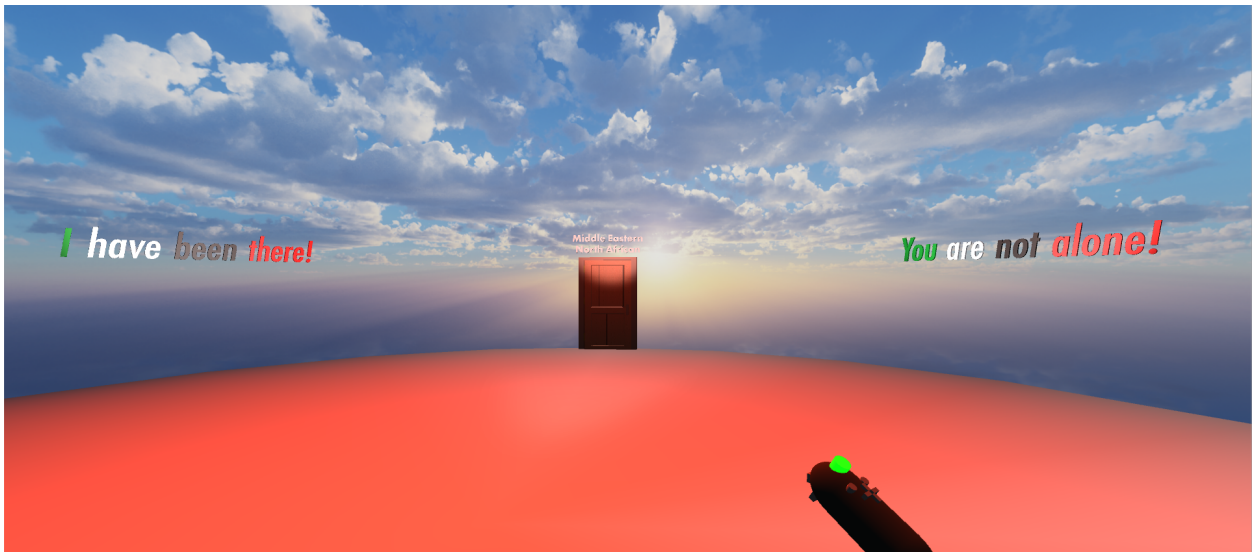


Figure 5: The door for the category Middle Eastern North African that is revealed after the barrier has fallen.

Entering the door leads to a path in which community has been found. The skybox returns to its full brightness, the lighting returns to beige, and the words along the path have replaced the once derogatory ones with “community”, “belonging”, “support”, “inclusion”, “representation”, and “seen”. In addition, the word “welcome” is translated in the five most spoken languages in the Middle East which are Arabic, Turkish, Hebrew, Kurdish, and Farsi. In order to strengthen the feeling of belonging, the typography in the finale, like the thoughts of the player, are colored in green, white, black, and red.


Figure 6: The final path where community is found.

At the end, the player is surrounded by the Middle Eastern North African flags that were once fading along their journey. Now, they are at full opacity. The final message, placed in the center, demands that MENA individuals be represented on the census through the phrase “Count (ME)NA In!”.

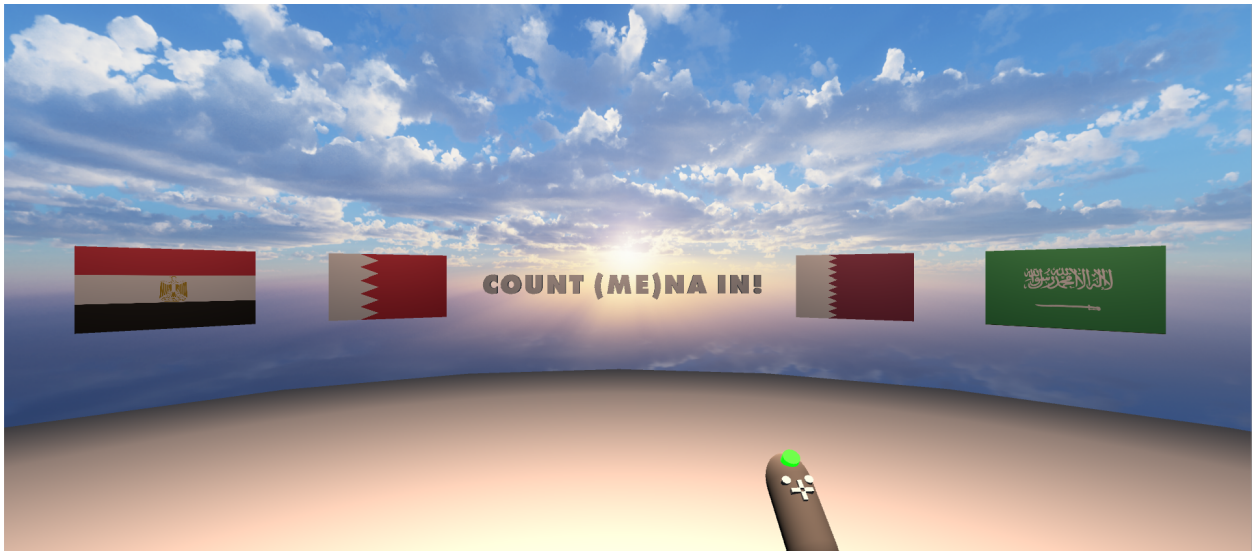


Figure 7: The finale of the experience in which the player is surrounded by Middle Eastern North African flags.

**PROJECT DEVELOPMENT**

Count (ME)NA In was developed over the course of half a semester which totals to about seven weeks. It was created using the game engine Unity 3D, specifically version 2019.2.11f1. This is to ensure that it is compatible with the latest version of a room-scale display simulator created by Ph.D candidate Arthur Nishimoto.

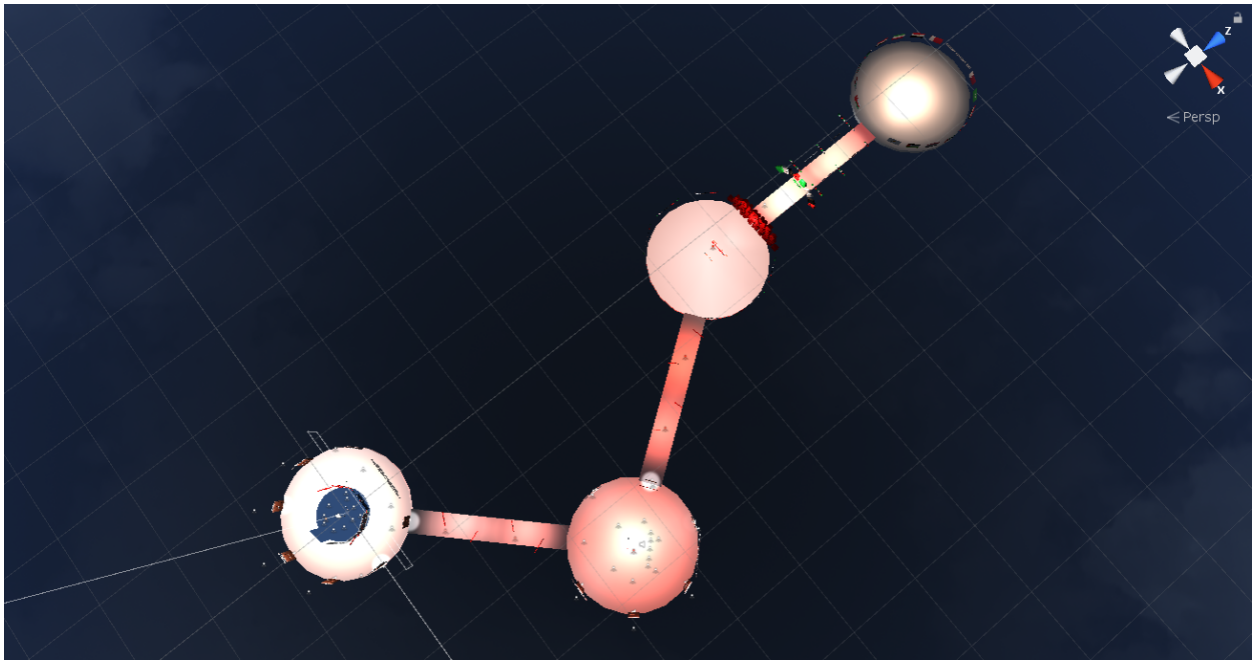


Figure 8: An overhead shot of the entire path in Unity's Scene View.

When developing the Unity scene, the first course of action was finalizing the aesthetic before implementing any scripted interaction. As shown in Figure 8, the project consists of four circular platforms and three paths. The player begins at the left-most circular platform as showcased by the position of the player controller's navy blue circle. As the player makes their way to the third circular platform, the lighting becomes more red. As they head towards the final circular platform, the lighting returns to beige. When it comes to the 3D assets used in the project, they are exclusively typography developed by Azka Mazher, flat flags created by Farah Kamleh, and free-to-use wooden doors modeled and animated by Three Fruits.

When it comes to sound, there are ten audio sources used in the project: an alarming buzzer, a cheering crowd, an opening door, a subtle heartbeat, a locked doorknob, an unsettling piece, a shining spotlight, a brick wall, a collapsing wall, and a gentle piece of hopeful music. The sounds not only set the tone for each section, but also ensure that any changes to the environment triggered by user interaction are not jarring. With the aesthetic finalized, the next step was to begin scripting with a heavy focus on said user interaction.

**PROJECT INTERACTION**

Right at the beginning, the user is requested to apply for university. To do so, the player presses the L2 button on the CAVE2 wand and the up button on the keyboard. These buttons are also used to apply for a minority-specific scholarship and report a case of racial discrimination. Through the inclusion of these interactions, we ensure that it is the actions of the player themselves that drive the story forward and simulate the experience.

After each, the player is made to answer the question, “Which of the following races do you identify with?” with the understanding that their character is Middle Eastern North African. Looking around them, they will notice many racially-categorized doors, but, regardless of the number, they are not included. This leads to a guessing process from door to door until a single door opens. In order to test the doors, the player must walk up to them, as it is a collision that triggers their respective sounds and animations. Based on the experience of MENA Americans, the only doors that will open are “white” and “other” although they identify as neither.

In order to express the way in which the player feels as a result of their erasure, their thoughts are always displayed over their head. When the player moves their head, their thoughts follow, as they are head-tracked along the y-axis. Similarly, when the player walks along each path, the derogatory terms associated with each selected racial category attach to the player and clutter their vision. They follow the player as they continue along the path and move their head, as the terms are also head-tracked along the y-axis.

The most important moment in terms of interaction is arguably after the word barrier has appeared and the community expresses solidarity. The player is inspired by their community members to toss the words that have been following them and cluttering their vision. By pressing the cross button (X) on the CAVE2 wand or the left mouse button on the keyboard, the player can grab and toss the words. By doing so, they are ridding themselves of the labels and initiating change. Ridding of all the words forces the wall to collapse, revealing a door for Middle Eastern North African individuals.


Figure 9: The player on the right is using the CAVE2 wand to grab and toss the word “othered” as instructed.

## PROJECT EXHIBITION

In collaboration with global IBM Design+Technology+Theater Group, the exhibition of the project took place on Wednesday, April 12th of 2023. As the first presentation, Count (ME)NA In set the stage for the following presentations, all of which were successfully showcased to an audience of approximately fifty students, faculty, and guests, including IBM representatives. Rather than being launched through Unity's Game View as it was during its development, the project was configured and built for the CAVE2 Hybrid Reality Environment, a virtual reality room-scale display pioneered by students and faculty at the University of Illinois Chicago's Electronic Visualization Laboratory where the exhibition took place.

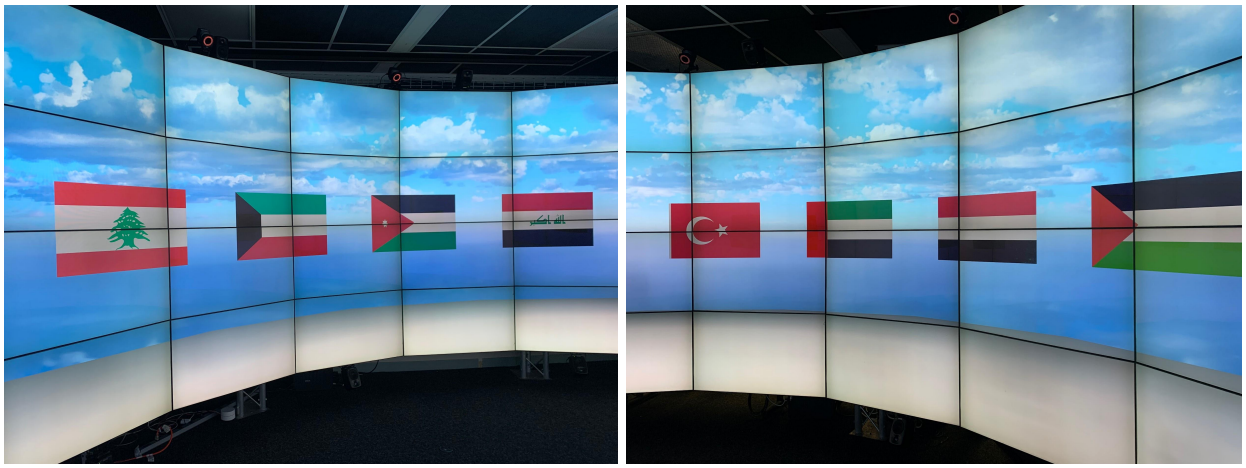

Figure 10: The finale of the project displayed on the passive stereo screens of the CAVE2.

## CONCLUSION

Through its story, experienced through first-person virtual reality, Count (ME)NA In educates its audience about a few of the challenges and obstacles faced by Middle Eastern North African individuals as a result of their exclusion as a racial category on the U.S. Census and other similar surveys. It stresses the importance of community as a source of support and belonging while advocating for change through action. While change can be observed in the modern day through the inclusion of MENA on a select few surveys, there is still a long way to go which is why projects like Count (ME)NA In remain a necessity.

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