# DanSing Project Documentation

Summary :

It's a club where the user has 2 options dancing to a song following a dance video or singing which has 2 modes Karaoki or singing with the song
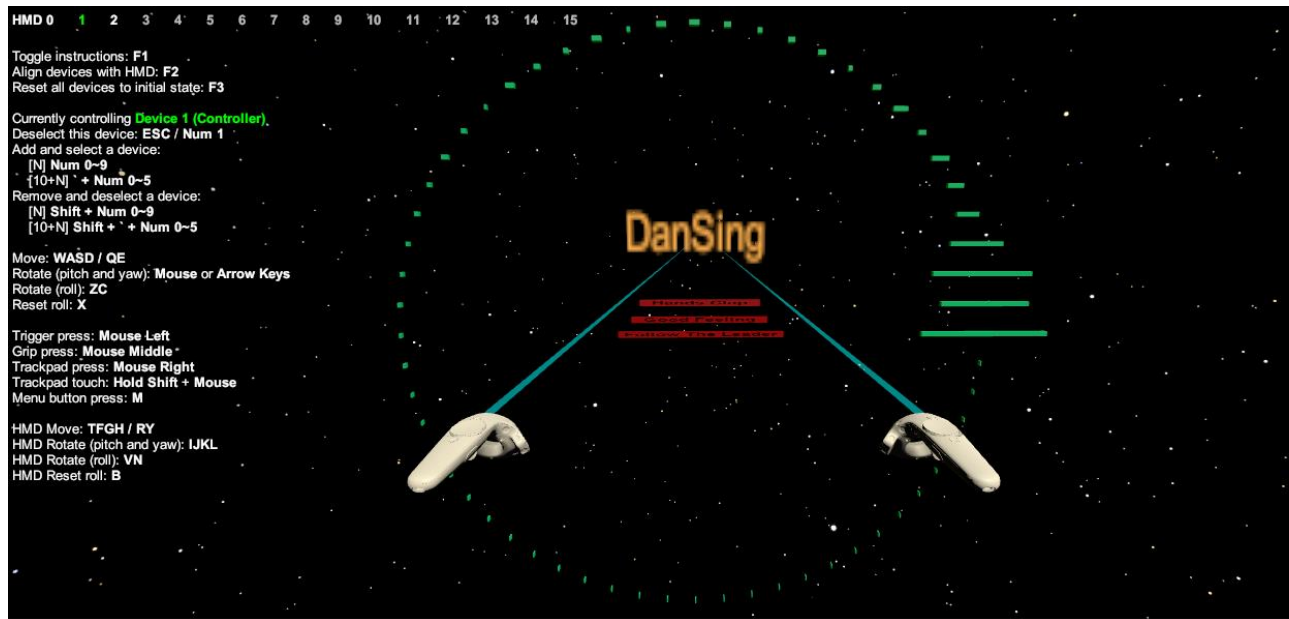
- **Scenes**

main scene : the main scene where the user chooses between dancing and singing with a backgroung music playing and audio visualization effects to the backgroung music applied on cubes shaped in a circle
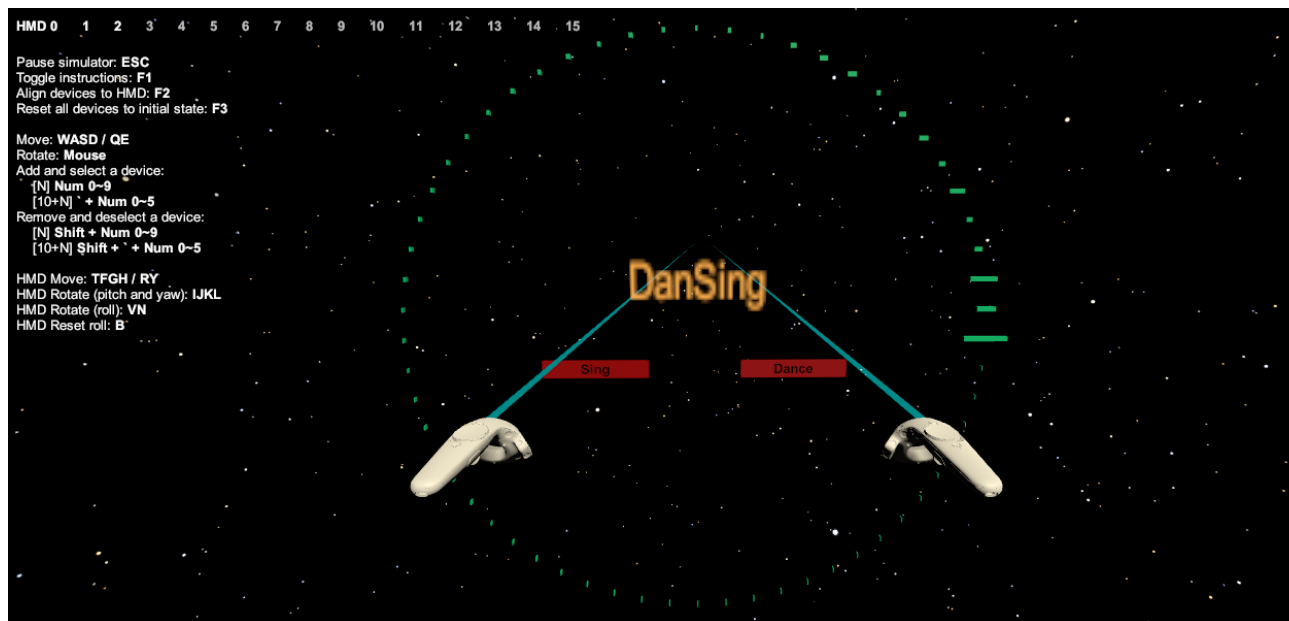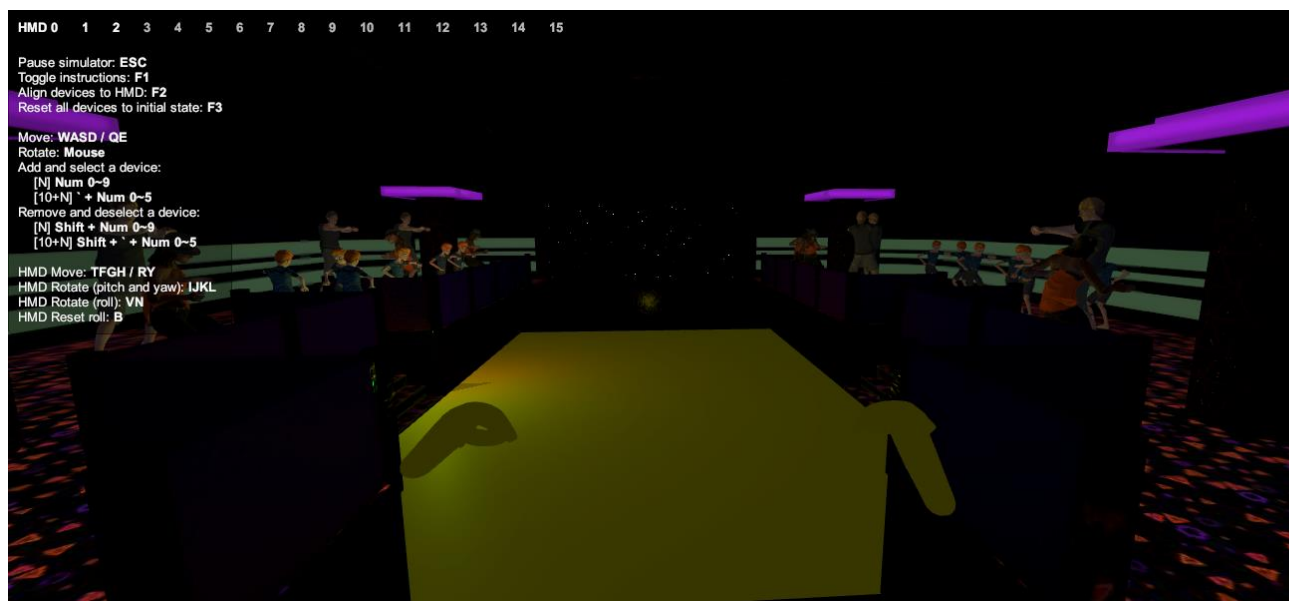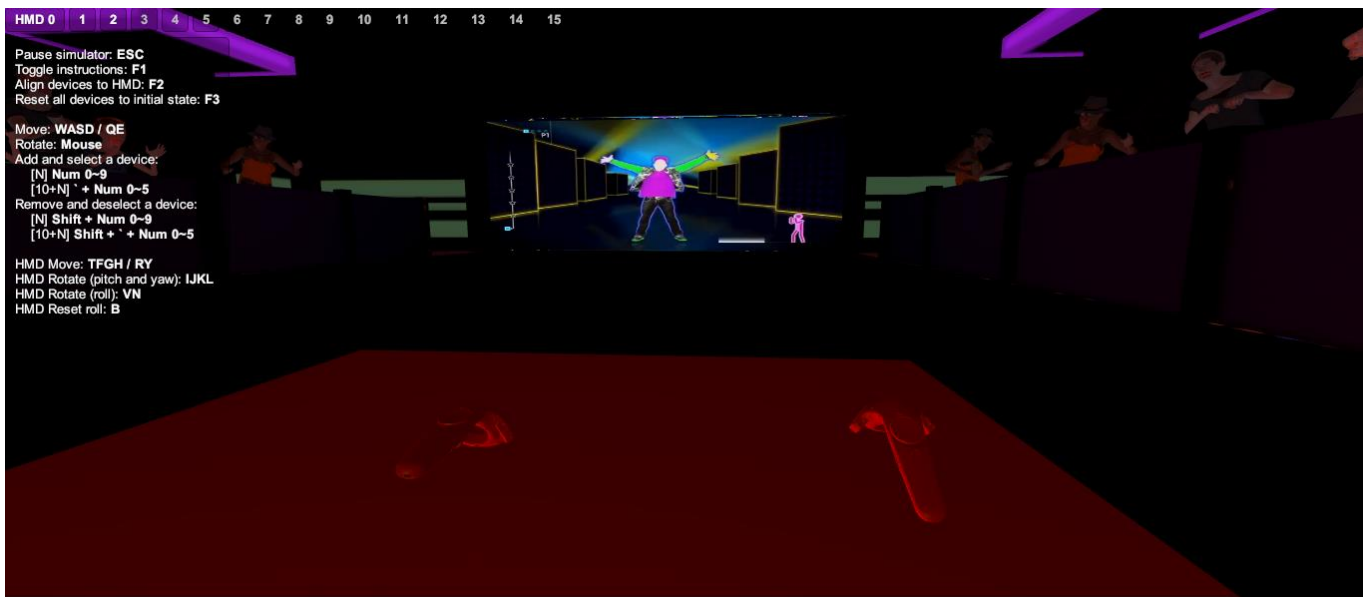
Dance menu scene :

a menu appears where the user chooses between 3 songs to dance on

Dance club scene : the user gets in a dancing club filled by lighting colors and surrounded by dancing characters when they push the trigger of the controller the dancing video starts and the user should follow the moves

Pause simulator: ESC
Toggle instructions: F1
Align devices to HMD: F2
Reset all devices to initial state: F3

Move: WASD / QE
Rotate: Mouse
Add and select a device:
    [N] Num 0~9
    [10+N] ` + Num 0~5
Remove and deselect a device:
    [N] Shift + Num 0~9
    [10+N] Shift + ` + Num 0~5

HMD Move: TFGH / RY
HMD Rotate (pitch and yaw): IJKL
HMD Rotate (roll): VN
HMD Reset roll: B

If the user chooses singing in the main scene then
The following comes :-
Sing menu Scene : a menu appears and the user
chooses between Karaoke mode or singing with the
song mode

Pause simulator: ESC
Toggle instructions: F1
Align devices to HMD: F2
Reset all devices to initial state: F3

Move: WASD / QE
Rotate: Mouse
Add and select a device:
    [N] Num 0~9
    [10+N] ` + Num 0~5
Remove and deselect a device:
    [N] Shift + Num 0~9
    [10+N] Shift + ` + Num 0~5

HMD Move: TFGH / RY
HMD Rotate (pitch and yaw): IJKL
HMD Rotate (roll): VN
HMD Reset roll: B

DanSing

Karaoke
Sing with the song

Karaoke scene : audio visualization effects applied on some cubes when the user speaks they get affected by the voice of the user

When the user push the trigger the music starts and the lyrics of the song appears .. the user should follow the lyrics and gets a score at the end of the song of how familiar the user's words to the main lyrics

Sing with the song Scene : it's the same look of the Karaoke scene but the visualized cubes get affected by the main song when the user push the trigger of the right controller the song starts when the user push the trigger of the left controller then the microphone is on and they can sing with the song without a score

Pause simulator: **ESC**
Toggle instructions: **F1**
Align devices to HMD: **F2**
Reset all devices to initial state: **F3**

Move: **WASD / QE**
Rotate: **Mouse**
Add and select a device:
    [N] Num 0~9
    [10+N] ` + Num 0~5
Remove and deselect a device:
    [N] Shift + Num 0~9
    [10+N] Shift + ` + Num 0~5

HMD Move: **TFGH / RY**
HMD Rotate (pitch and yaw): **IJKL**
HMD Rotate (roll): **VN**
HMD Reset roll: **B**

Our song on
the radio but it
don't sound
the same

- **Development**
  The main scene is a UI interactions with 2 buttons on click on any of them load the second scene Whether the singing menu scene or the dancing menu scene
  The audio visualization applied by getting the spectrum data of the audio and applied them with max and main height values to the y scale of the cubes
  Dancing menu scene: it's a UI interactions with 3 buttons of the song the user likes to dance on ..
  Any of them gets the user to the dancing club scene
  Dancing club scene: it's a dance club asset with 3 types of characters each has an animation clip and 4 point lights with different colors and their colors keep changes and a changing light color plan that the user dances on
  Singing menu : it's also a UI interaction

Karaoke scene : I used the Watson sdk speech to text service to get the microphone audio and played it to the user so they can feel like they speak in a real mic and to also get the speech of the user in a string but I aslo used the Windows recognition speech because I found that it's more accurate in recognizing speech than Watson sdk and I saved the lyrics of the song in a string and 2 strings one holds the speech by Watson sdk and the other holds the speech by the windows recognition

Then I compared the 2 speeches to the lyrics then get the 2 percentages and the more accurate one is the score of the user

Sing with the song scene : the user push the trigger then the song starts with the audio visualized cubes

I also used the Watson sdk speech to text to record the microphone audio when the user push the left trigger and played this audio so it sounds like a real mic

How to play :

1. In The UI scenes : choose any of the buttons by pushing the right controller trigger
2. In the karaoke scene : push the right trigger to start the music and sing in a clear voice with clear words and try to avoid noise around you to get higher score
3. In the sing with song scene : push the right trigger to start the song and the left trigger to turn on the microphone
4. In the dance club scene : push the trackpad button to teleport in the dance area and push the right trigger to play the dance video