NTUST: 2020 Advanced Computer Graphics

Final Project：Write a program to render the VR view of a 360-degree from two fish-eye camera

Date Due：2021. Jan. 15th Tue. PM11:55, and upload to Moodle. (around 3.5 weeks)

Description：

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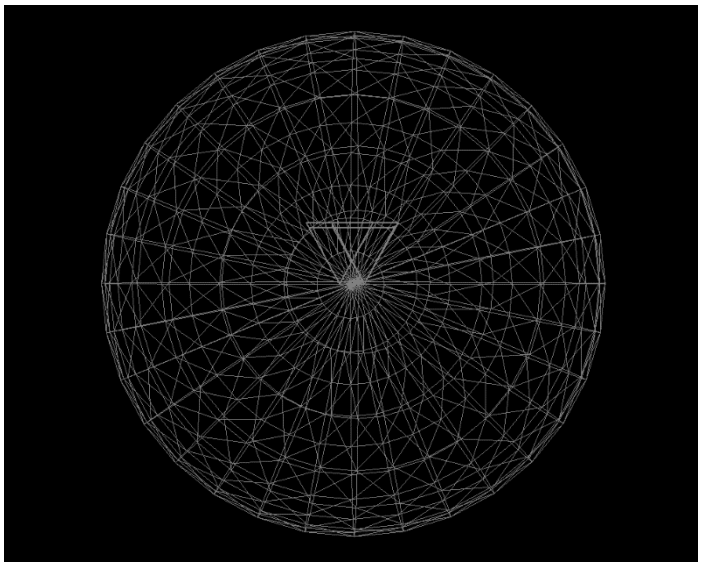
1. Write a program (prefer python, C/C++, other languages are acceptable) to read serious pair images and convert them into sphere (360 degree) coordinate.
2. There are two JPG images, named FRONT and REAR, in folder. Carefully create a sphere and locate TWO virtual cameras into the center of this sphere in the openGL environment. And Please export OBJ and MTL of this sphere model, after you import images.



3. Correctly assign the U-V texture coordinates for every 3D vertex of the sphere.
4. Design the input interface (mouse event) to have rotation / zoom effects.
5. You need to hand in 3 items, (1). Source code in one of python, C/C++/C#, java et. al., with simple comment, (2). Execute file (including all necessary dynamic link files), (3) one-page abstract to describe how you convert the coordinate.
6. Reference Grade: Correctly generating OBJ (and MTL) files (40%) rendering two-view (side-by-side) 360-degree image (40%). Able to control the image by dragging mouse for changing the viewing direction and FOV (20%).

Hint:

- This project will be 25% of the course grade in this semester. Please accomplish all necessary requirements as possible.
- You can try to verify your rendered images on VR-Display.
- Device image (FYR), and Google Cardboard

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