

Project Proposal for CG 100433 course

Team member

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Project Title

First person 3D-Cube-game

Motivation

We want to use CG knowledge to build an interesting game. The reason why we finally choose this topic is that we think it requires various knowledge in computer graphics, such as 3D Transformation、Lighting、Mapping and so on. It will be a little bit challenging but achievable to our team, and the implementation of such an assignment will help us better understand the knowledge of computer graphics.

And most importantly, it is fun!

The Goal of the project

- **Modeling:**
 - We will build a model as realistic as possible to present fingers and magic cube.
 - We're going to present our model in the first person perspective.
 - We're going to add materials and lighting to the model to make it more realistic.
- **Interactive:**
 - Players can control the fingers in the game through mouse and keyboard.
 - The players will have a feeling of playing a real magic cube.

The Scope of the project

- Excluding ray tracing technology temporarily.
- Third person perspective is not supported.

Related CG techniques

- Modeling
- Motion
- Lighting

Project contents

- **Modeling:** complete the modeling of a three-dimensional magic cube that can rotate, hands, and the surrounding environment.
- **Movement:** each layer of the cube can rotate freely like a real cube, and the hands can rotate the cube.
- **Interaction:** players can use the mouse and keyboard to rotate each layer of the cube, and successfully recover the cube to achieve the goal.

Implementation plan

1. Complete the modeling of hands and the magic cube by the 11th week
2. The movement of each component by the 14th week
3. The production of the lighting system and the surrounding environment by the 16th week.

Roles in group

- First of all, Tao Yanting, Wang Zhida and Gao Kangrui are responsible for the opening report, and Wang Zheng and Tu Xinyu are responsible for preparing the project proposal.
- Later, Tao Yanting and Wang Zhida were responsible for the modeling and movement of the cube, Gao Kangrui, Wang Zheng and Tu Xinyu were responsible for the modeling and movement of the hands.
- Finally, all of us will together realize the illumination, the modeling of the surrounding environment and the human-computer interaction.

References

<https://learnopengl-cn.github.io/>