

CPT205-Computer Graphics

New Year's Greeting Card

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1. Brief introduction

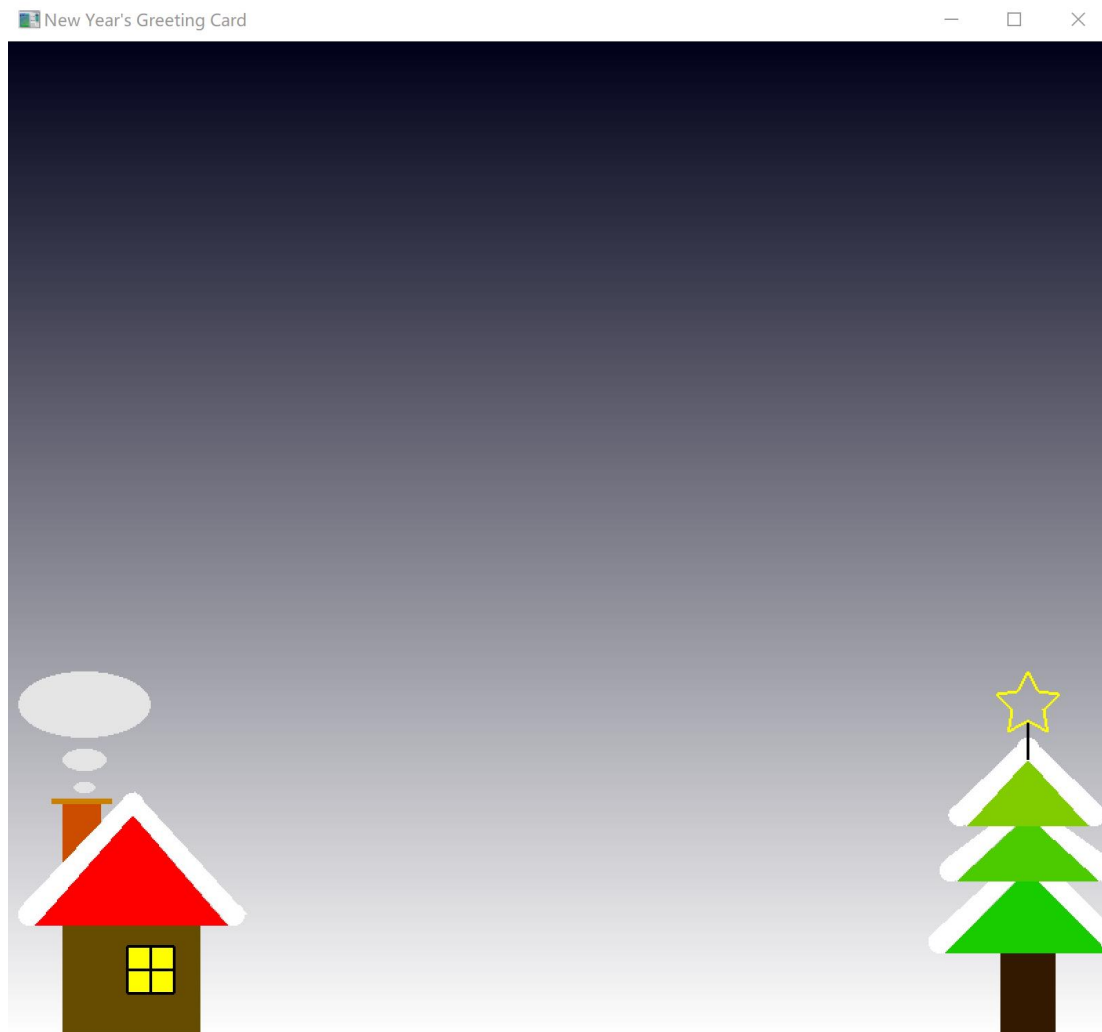
This project aims to achieve dynamic greeting card generation through the design of background, animation and greeting card itself. Additionally, applying certain color collocation makes the greeting card further beautiful. This article will illuminate the background, animation and greeting card production process relating to the project respectively.

2. Instructions

2.1 Background

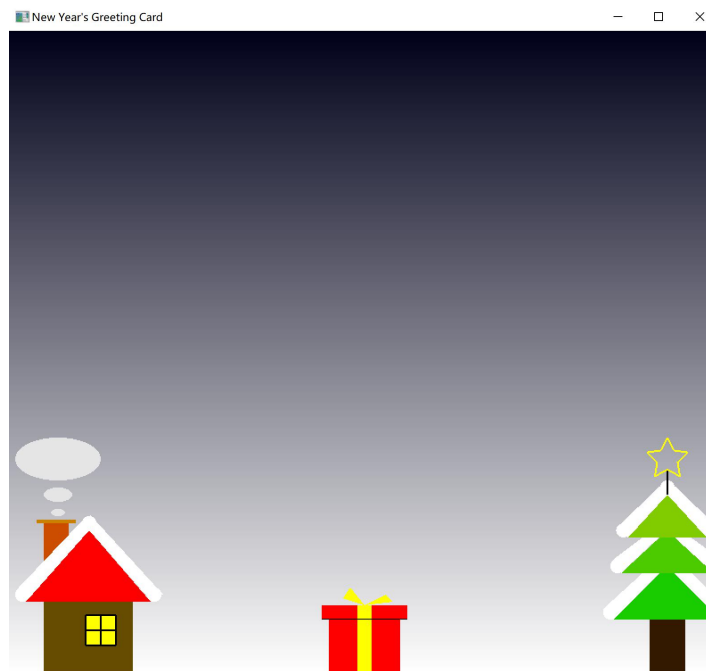
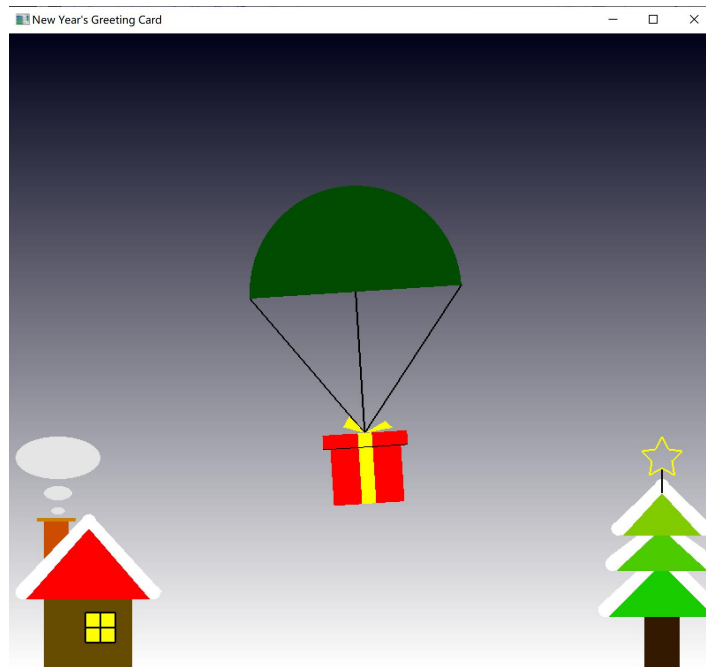
In the process of background rendering, this project used the basic drawing function in GL/freeglut library to draw house, sky and tree by graphic stitching. It also used trigonometry to draw the smoke from the chimney and the five-pointed star at the top of the tree.

The image below shows the final effect of the background:

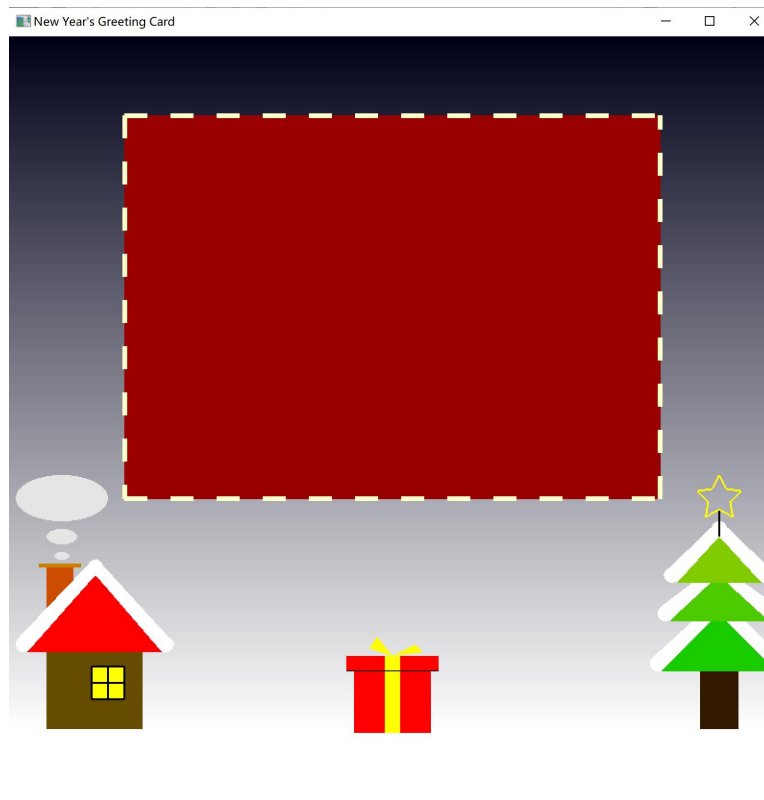
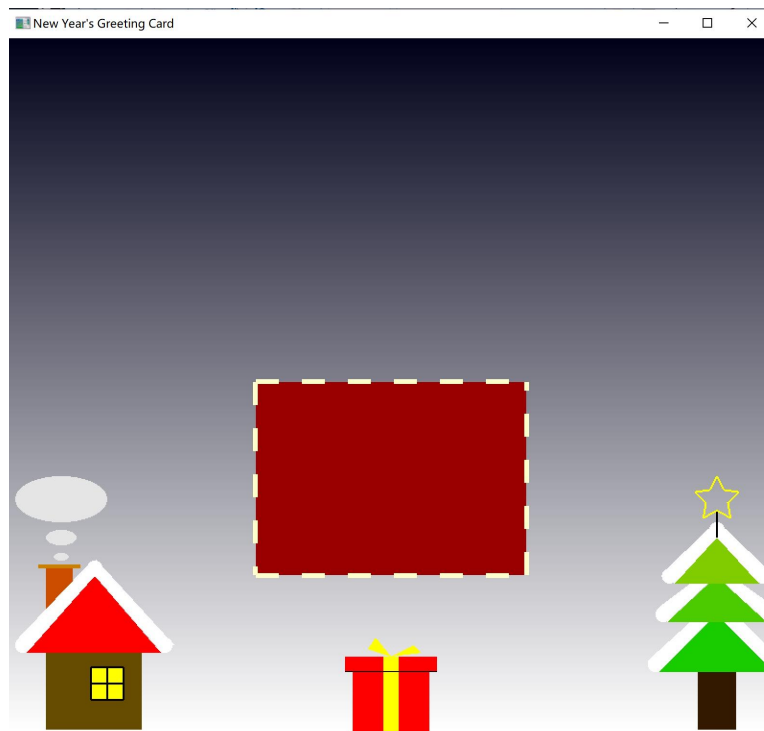


2.2 Animation and mouse interaction

In this project, clicking anywhere in the background will create an animation. The content of the animation is: a box with a parachute falls from the sky, the parachute automatically disappears after landing. In addition to the basic drawing function, the project also used the `glRotatef` function and set parameter in `OnTimer` function to create the parachute swing effect.



After the box is still, the project defined parameters in the mouse_input function so that mouse clicks were sensed only within the box coordinates. The card was then scaled so that it came out of the box and grew, creating the effect of the card popping out of the box.



2.3 Card Design

The background of the card is a knox snowflake. This project used animation with the help of parameters in OnTimer function to automatically transform snowflake from triangle to final appearance, and the text "Happy New Year" will automatically appear after the snowflake is generated.

