CGUE - Mystery House - 2nd Submission

Gameplay

The aim of the game is to escape from a house in which you(as the player) are locked. The only way to achive this, it seems, is to collect keys, which are inside of closed boxes. In order to open the boxes, you have to solve different puzzles. Finally you have to go through 3 rooms to find the latchkey. But you have to hurry up, your Life Points decrease. Different kinds of snacks can be found in the rooms, to gain some Life Points. When you are out of life points you have to start again in the first room. If you are close enough to an object you can interact with it. For the 3D game play we created a loft.

Common

According to desired difficulty you can read the walk-through on the last page of this document to find out what to do to escape the room.

The House has 3 rooms which are the 3 levels at once. If you lose the game(you lose all your life points) you have to start again in the first level.
You are able to interact with the puzzles, the keys and the food. If you stand next to one of the food items, pressing 'o' , you will gain life points.

The player can move in all directions by pressing w,a,s,d and look around by moving the mouse. The player walks independent from the computer speed. This is ensured by passing the calculated delta_time and multiplying it with the movement. (controlls) This is implemented via glm::lookat, which is the glm tool for calculating the matrix for the camera. The user input (mouse and keyboard) is collected by gflw functions. keyboard actions are polled, so that no action gets lost. (controlls)
Beside the puzzle box texture and the floor at the loft, the Textures are all selfmade.

Effects

CelShading + bacface Oulining (apple, ham, puzzle picture)

To reach CelShading we multiplied the outputColor from the normal shader times the desired Number of different Colors, casted to int to lose accuracy and devided back and cast back to float to get the desired result. White colors are not processed, because they would wind up having red, green and blue shading.

Backface Outlining is pretty straight forward. Simply Draw the Object again, without texture, activate frontface culling and scale it by a factor.

Shadow Mapping (unfortunatly the omnidirectional shadow map doesn´t work but we will try to fix it till the game event
)[http://learnopengl.com/#!Advanced-Lighting/Shadows/Shadow-Mapping,
https://lva.cg.tuwien.ac.at/cgue/wiki/lib/exe/fetch.php?media=students:cgue_shadow_mapping.pdf]

Edge Detection outlining
http://coding-experiments.blogspot.co.at/2010/06/edge-detection.html
Used the formula and a similar shader that is given in the link. Produces Outlining as a post processing effect.

bloom
Post Processing Effect. Takes a 2d Texture, then applies a bright pass filter, two 1d-gauss-filters and blends it back together by adding the textures.
http://learnopengl.com/#!Advanced-Lighting/Bloom

Keys:

F2 Frametime onOff
F3 - Wireframe on/off
F4- toggle Texture Quality
F5- toggle Mipmapping
F6- Shadow Mapping/ Bloom

Walk through

Room1:
In the first room you see 2 pictures. One with the question and the other with the puzzle.
You see different card on the puzzle picture and you should count how many of the symbol, shown on the question picture, there are.
So the solution is 7. Go to the picture with the question take a close look and press 7.
Now the box disappear and you can collect the key by running through the key.
Optionally you can take a bite of the delicious apple you find next to you by watching it from a very close position and pressing the 'o' key.
To get into the next room, go to the door with the smaller lock and press 'o'.

Room2:
The next puzzle question is on the right side. The puzzle itself is placed on the back Wall. On the code pad you see an numerical code and 5 question marks. If you separate the code of 10 numbers in pairs the 2 numbers give you the position of the right symbol on the wall. The first number is the number of the line and the second of the column. So you finally get the code CJNPV . If you choose a wrong number you have to start withe the first symbol again.

If you now enter the correct code the codepad input part glows green and the box disappear and you are able to collect the key.
If you need life points you eat the ham by pressing 'o'.

Room3:
Now you have to go upstairs. in the front part of the room you find a small refreshment. Then go into the big room there is a red button push it ('o'). Now there are 5 keys but which one is the right to escape. Now it would be good if you remember which lock is on the front door, if not …. run .
For the unathletic people, the right key is the one in the left corner if you look from the button to the stairs. Collect the right key, be careful because you collect always the last key you run through. Now go back to the first room and open the front door.