Domino in “OursCraft”

By Yiming CAI, Yue PAN, Ke CHEN

Description

The project is divided by two parts. The first part is about making an editor like “minecraft” to support (from easy to hard, we can optionally add each of them):

- freely objects placing with “square maze rule” (we should only place our objects by row/column unit) (**easy**)
- freely lights placing for three types of lights and parameters settings (**easy**)
- toon shading (**easy**)
- skybox(background) setting (pre-setting some skybox materials for users to change) and texture reflection (**easy**)
- particle effect supporting (**easy**)
- placing sound effect (**easy**)
- shadow of the objects from the lights (**medium**)
- water reflection and refraction (**medium**)
- “NPC” and surrounding animation (interaction) (**medium**)
- motion blur (**hard**)
- Screen space ambient occlusion (**hard**)
- support “components objects” like city buildings and save it for next use (create a building and save its model) (“can be EC?”)

The first part we make is to show our “diy” engine’s supporting in many kinds of function in computer graphic. And we can use this engine to make a beautiful environment by ourselves.
After creating an environment, we add the second part.
We create a special object class called “**domino**“, we can define it as “a box with any given size(l * w * h)” and any given six faces’s texture or colors.
They should be under the rules below:

- There shouldn’t be any object placed on the top of **domino**
- domino can have arbitrary size that does not obey the rule of “square maze rule” (e.g. we can make the domino any height freely if we wish to make dominos fall from low place to high place :))
- Once we “touch” a domino from one direction, it should obey the physical rule like “go down continuously”. So there will be collision detection with tight boundng boxes (**medium**) and basic physics supporting (**maybe EC?**) and audio effect(**easy**)

And then finally we can create a world with an amazing domino project, then making tracking cameras to record **its fallen** from many different views.

Schedule

Due Date	Part	Responsibility Man
2017.12.1 Fri	Finish the blog website(like github repo url or website)	
2017.12.3 Sun	Finish basic engine (object placing,skybox, lighting, etc.) for first snapshot	
2017.12.3 Sun	Finish basic domino part (including configuring domino and collision)	
2017.12.4 Mon	Finish the first blog and Finish the combanation	
2017.12.8 Fri	DIY basic environment(including dominoes placement)	
2017.12.8 Fri	Copy backup for another man to start some advanced parts	
	by this time, we should finish a “at least can be shown” project =_=	
2017.12.10 Sun	Finish the advanced part like NPC&OBJ animation, water reflection, motion blur… anyway, the time to “pick score” from the final project Inc	
2017.12.11 Mon	Finish the blog	
2017.12.12 Tue	Finish camera tracking settlement and then record our project	
2017.12.13 Wed	Prepare for presentation	
2017.12.14 Thu	Good Luck	