COMP 3501 Final Project Report

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S1. Introduction. What is the main idea of the game? What should the player expect to see?

Our game takes place in an abandoned factory where the player can explore the area and collect notes about what happened and why the factory is abandoned. They will be able to walk around both the outside and the inside being able to see old machinery, vehicles, storage crates and much more

S2. Walkthrough. Explain the controls and direct the player to all points of interest within the game.

The controls for the game are simple:
Mouse or Arrow Keys - Moves the camera
WASD - move forward, left, back and right respectively
ZX - roll the camera
Q - Quit the game
Escape - Stop animations
Space - Jump
` - noclip
G - Pause the game and Interact
Y - Radsuit screen effect

There are several pages scattered around the map that the player can collect. There is one in the parking lot, two in the factory courtyard, and three in the different buildings around the map. If the player gets all the pages, touching the boar object (the one in the building that's red), should send the player to an end phase and quit the game

S3. Technical requirements. Go through the list of technical requirements and say how your project meets each one (or does not, in the unhappy event that you did not manage to include one of these elements).

0. Written in C++ using OpenGL to render; readable code with no serious bugs, suitable class hierarchy, and good documentation.

The entire project is written in OpenGL and our code is well-organized and documented. We also made sure to properly name our files so that the code is easily readable

1. Large textured heightfield terrain with collision detection.

We created a large environment with working collision detection. Also, some of the objects in our world, specifically the pages, have working collision detection as well

2. Game environment populated by textured, illuminated objects.

All of our game objects have textures applied to them and they also all use a shader that applies a lighting effect to our objects

3. At least one use of a screen-space special effect.

We have a few screen space effects in our project. One of which is a radiation effect and we also have a hazmat effect. These effects can be toggled between eachother using the Y key.

4. At least two distinct particle systems.

The particle systems we have in our project include spark particles (similar to those sent off of electrical faults or from a grinder), dust particles that follow the player and dripping water particles.

5. At least two hierarchical objects with independently moving parts (e.g., a robot arm reaching, or branching plants swaying in the wind).

The pages present in our game are directly attached to our factory map and rotate using their own animations.

6. Player-centric camera with player controls linked to current orientation.

We have successfully implemented a working camera that the player can fully control. We were able to use mouse movements rather than button presses to move the camera as well giving the player smoother and easier movement.

7. A skybox.

We have successfully added a working skybox to our project

8. Multiple phases within running the project: e.g., title screen, gameplay, game over screen

We have implemented phases into our project, having implemented a start screen as well as an ending and several phases that tell the game's story. While creating the phases we ran into an issue where they wouldn't display properly after we implemented our height map. But we were able to make them work although it did introduce a few new bugs.

S4. Beyond the minimum. Describe in what respects your project exceeds the minimum requirements. What are you especially happy with? What aspects of the game did you spend an inordinate amount of effort on?

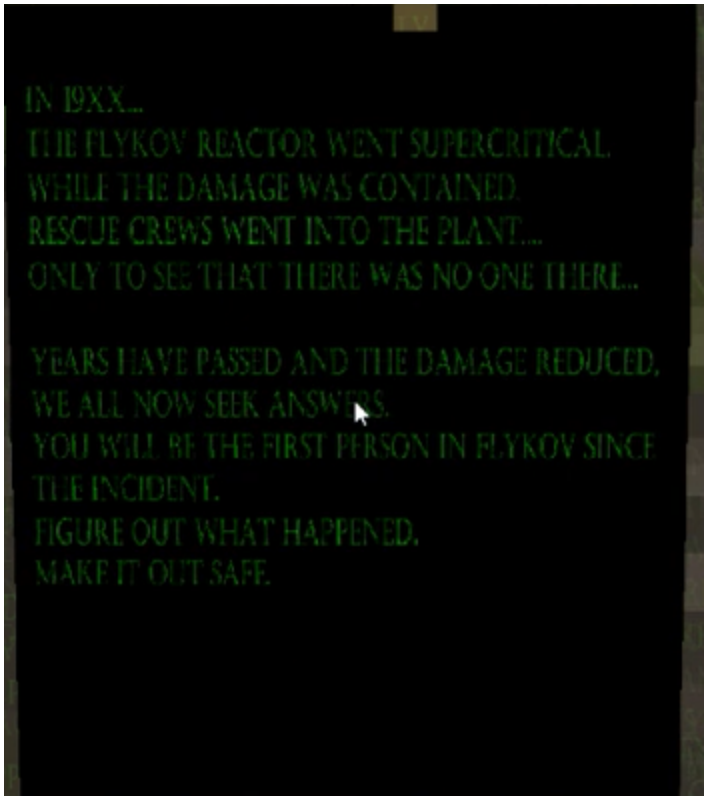
We have implemented some environmental storytelling into our project, as well as some collectable items. We were also able to implement some basic indoor environments in our game world as well. We have also added a working heightmap to the project as well as jumping.

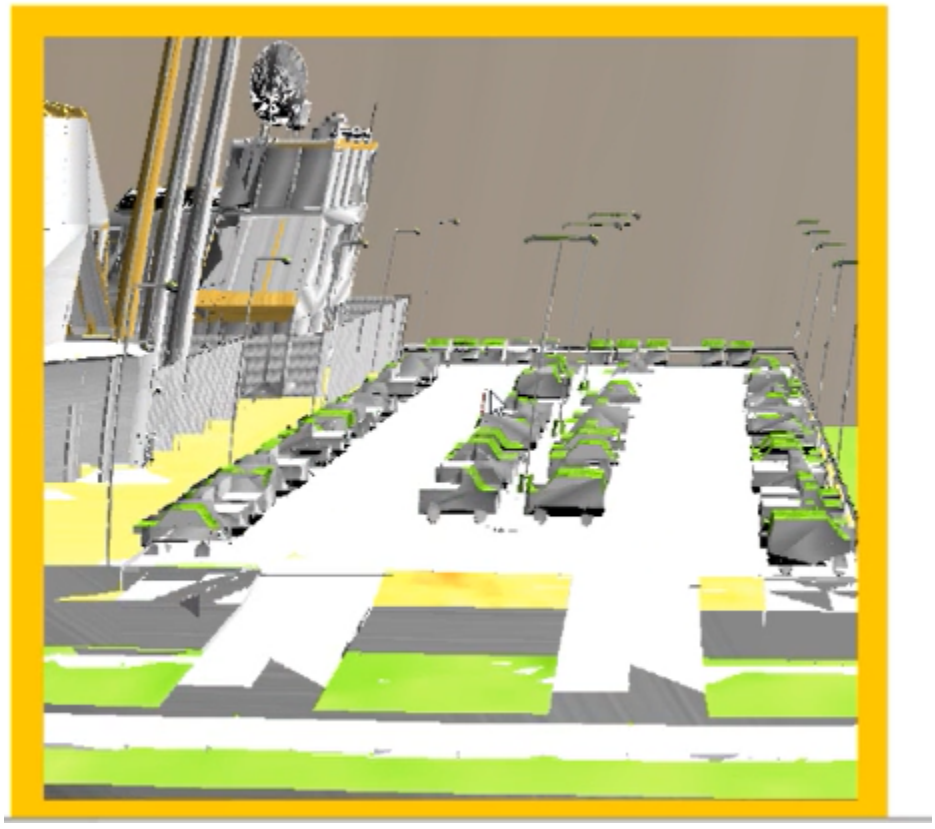
S5. Post-mortem. Discuss your project relative to your hopes and initial proposal. What more would you like to do, if you had more time? What ideas did you have that turned out not to be feasible? What ideas worked extremely well? Discuss any bugs or incomplete aspects of the game here. Provide some advice that you wish you could have heard at the start of the term

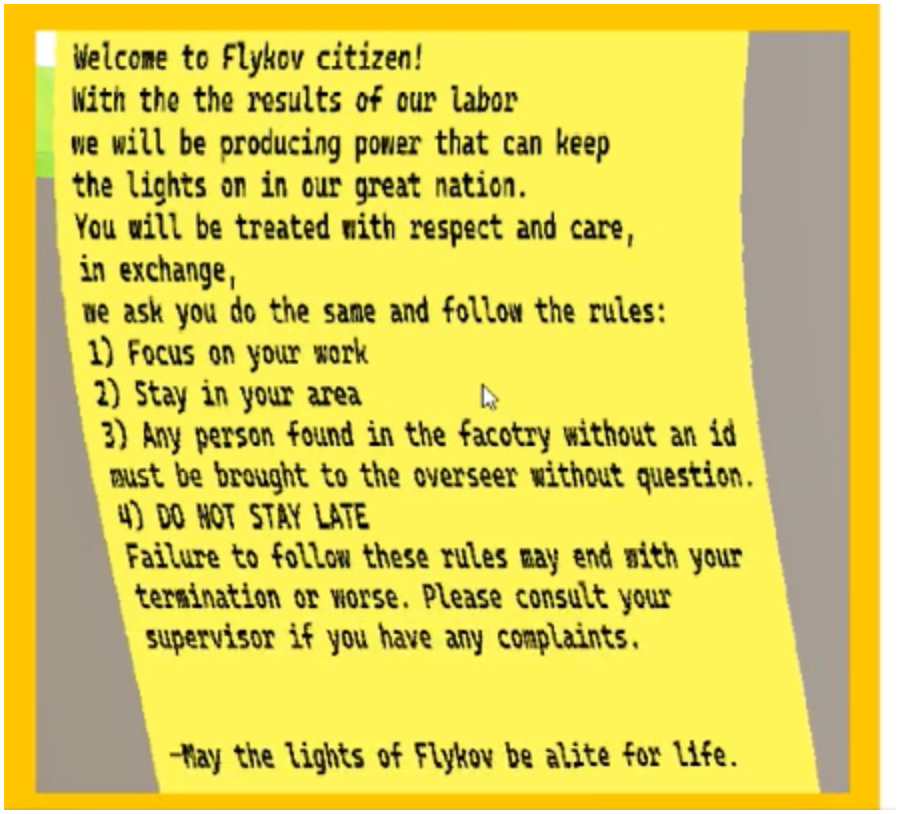
To start we weren't able to complete many of our long-term goals for the project, including shadows, and some of the game objects we had planned like broken glass and toolboxes. We did however implement some different objects that were not included in our original project proposal. We also weren't able to add any lookouts to our game world. We also have a bug where whenever you activate a phase you are sent back to spawn.

Attached below are some screenshots from our finished project:


MELTDOWN
PRESS ANY KEY TO START


IN 19XX...
THE FLYKOV REACTOR WENT SUPERCRITICAL.
WHILE THE DAMAGE WAS CONTAINED
RESCUE CREWS WENT INTO THE PLANT...
ONLY TO SEE THAT THERE WAS NO ONE THERE...
YEARS HAVE PASSED AND THE DAMAGE REDUCED,
WE ALL NOW SEEK ANSWERS.
YOU WILL BE THE FIRST PERSON IN FLYKOV SINCE
THE INCIDENT.
FIGURE OUT WHAT HAPPENED.
MAKE IT OUT SAFE.




Welcome to Flykov citizen!
With the the results of our labor
we will be producing power that can keep
the lights on in our great nation.
You will be treated with respect and care,
in exchange,
we ask you do the same and follow the rules:
1) Focus on your work
2) Stay in your area
3) Any person found in the facotry without an id
must be brought to the overseer without question.
4) DO NOT STAY LATE
Failure to follow these rules may end with your
termination or worse. Please consult your
supervisor if you have any complaints.
-May the lights of Flykov be alite for life.