# CS 432

Marlian City Drive

## Project Component Documentation

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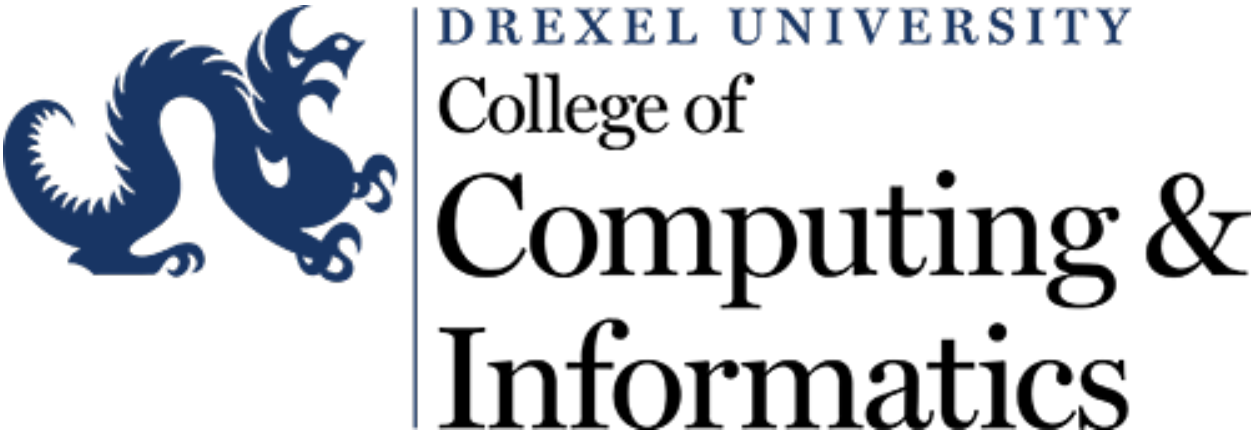
Professor: Matthew Burlick

Team Members:

Ekenedilichukwu Illoh
Ubongabasi Onwiodoukit



Components List

| Component | How was this fulfilled? |
|---|---|
| A 3D World | Multiple 3D objects forming a city view in a 3D world |
| At least one camera to explore the world | A flying camera that follows the car from behind around the city |
| At least one other camera | 4 other cameras positioned inside the car, aerial view and other views |
| Texture mapped objects | Environment mapped with a skybox (sky and trees) |
| At least one light source | A directional light source acting as the Sun from a distance |
| Some animation of drawable objects | A car that moves around the world using keyboard interaction |
| Click on objects and have something occur | Click anywhere in the world and drag around to explore the world |
| Dynamically generated objects | Parts of the city come into view as the car moves around |
| New object geometry | Buildings, the car, street lights etc. |
| At least one advanced concept implemented | Shadows and Reflections present for objects around the city |

Instructions on how to use application (included here because the application takes the whole screen)

Marlian City Drive is a 3D interactive city with a car that drives around. Here the features of the application are outlined:

- You can drive the car using the WASD keys.
- There are five cameras, two located just outside the car, three located inside the car, and the last is an aerial view from the top. You can switch views using the buttons labelled Camera 0 through 5 in the toolbar at the top of the application. You can hide the toolbar when not in use.
- Click anywhere on the screen and move around in order to view the world with the cameras.
- You can also zoom out and zoom in using your trackpad.

Citations/Resources

Below is the list of resources used for this project:

Frameworks:

- ThreeJS - http://threejs.org/
- Tween.js - https://github.com/sole/tween.js/
- Bootstrap for CSS - http://twitter.github.io/bootstrap/index.html

Other resources:

- Car model - http://www.blendswap.com/blends/view/67462
- Trees model - http://www.blendswap.com/blends/view/54458
- Textures - http://www.cgtextures.com/ and http://www.humus.name/index.php?page=Textures

Work Allocation

The goal coming into this project was to give both team members a chance to work on each of the major components for the project so that the concepts learned during the course could be put into practice by both.

Ubong worked on:

- The default flying camera that follows the car from behind
- Drawing and texture mapping some of the buildings
- Loading and positioning the street light models
- Building and implementing the Sky Box
- Using track pad to zoom in and out of the city view

Ekene worked on:

- The 3 cameras positioned inside the car
- Drawing and texture mapping some of the buildings
- Loading the car model
- Using the WASD keys to drive the car
- The shadow mapping of the objects in the world

Both team members cooperatively worked on:

- The reflection effects on the car as it drives around the city
- Dynamically generating the city every time the page is reloaded
- The zoom effect on the camera as the car speeds up