Team DK3TM

Members: Kyle Cheng, Diwas Timilsina, Matt LaRose, Devin Gardella, Eli Goldstein, Kai Wang, Kelly Wang, Tony Liu, David Yan.

Specification

1) Create a report with content as listed below under ‘Report Contents’
2) Write a program to procedurally generate buildings from a random seed and grammar:
    a) Building generation takes a random seed and building type, which parameterize expansion
    b) Terminals are loaded directly from OBJ files (of primitives) with texture coordinates and textures and materials
        i) 7 basic models, with number of types: 3 roofs, 1 spire, 3 wall expansion
    c) nonterminals are stories, expanded outward to a max depth of two before nonterminal (building interiors undefined)
3) Generation of smaller-scale city with infrastructure objects
    a) objects include streets, lightposts, etc
4) Make a 6 minute presentation briefly giving an overview of the work accomplished and the processes behind them.
5) **Film:**
    a) We will draw from the style of camera movement and angles in the Timeless and city tourism videos, which feature wider panning shots, and shots of interesting parts of the city interior to show off uniqueness. The shots will be generated using splines
    b) Use G3D preview renderer and postprocessing

Software Architecture

Python scripts for building generation

1) interface between city layout and building generation programs
    a) Building type: general building, which has set of grammar expansion rules
    b) Building generator: link building type and city generator by expanding type requested by city generator into format usable by the city generator
    c) City generator: generate city layout, which corresponds to placement of buildings of particular types. Creates the scn files

Report Contents

1) Brief summary of at least one research paper on building generation
2) At least one visually compelling image of the final scene at 720p or higher.
3) A 10-45 second 720p MP4 film with a brief discussion about the video making process. (Film direction, rendering)
4) A section explaining key software, algorithms, production processes used to accomplish tasks 1-4 detailed in our ‘Individual Tasks’ (total 4 sections).

Individual Tasks

See the Google Calendar for Schedule.

1) Building a grammar for procedural buildings
2) Building Layout
3) Complex Building Primitives
4) Materials/Textures
5) Concept art/storyboarding
6) Report / Presentation

Division of Labor

Procedural Building Group (Matt, Eli, Tony, Kyle) : take care of building generation. Communicate frequently with the building layout team on how our code will communicate.

Building Layout Group (Kai, David): take care of placing the buildings generated by the Procedural Building Group.

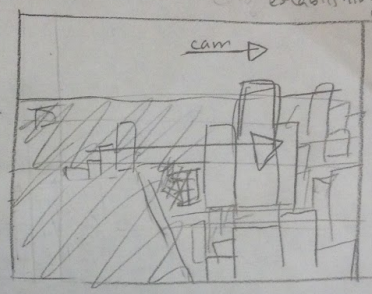
Primitives and Modeling (Devin, Diwas, Kelly): will be working directly with both groups allowing them to focus entirely on coding. We will be building the models, objects, and textures in a uniform way to allow other groups to utilize them immediately.

Each group will be flexible, if any team finds they need more man power to get something done, other groups will jump in. This means everyone will be required to keep up with the development journal and know exactly what is going on at each minute.

Project Manager: David (team management and keeping everyone on track)
Project Designer: Kyle (knowledge of technicals)

STORYBOARD - DK3TM (Inspired by the Timeless and establishing shots of cities)

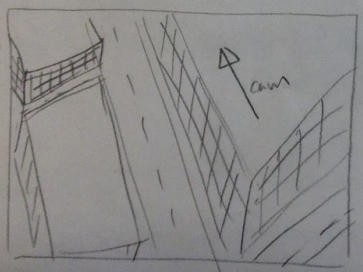
Fade in from black



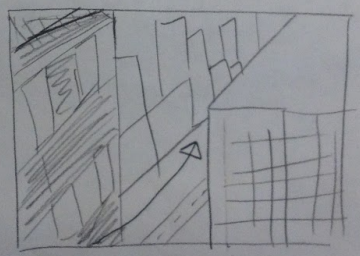
Slow pan right over tops of buildings

Zoom in on most impressive building / skyscraper

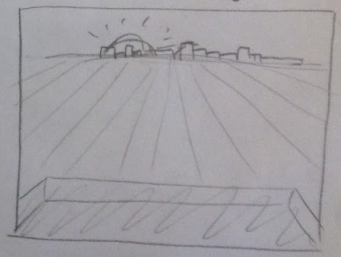
☆ Turn to night time?



Bird's eye view following a street



Fly through city between skyscrapers



End with zoom out of night time shot atop a hill