



Night City - ICG



ICG - 2023/24
Alexandre Ribeiro
108122

INITIAL CONCEPT



Futuristic urban city,
filled with lights and tall
buildings

Credit: Cloudpunk

DEVELOPMENT ISSUES



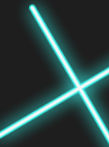
ASSETS

No free assets that fit the desired style

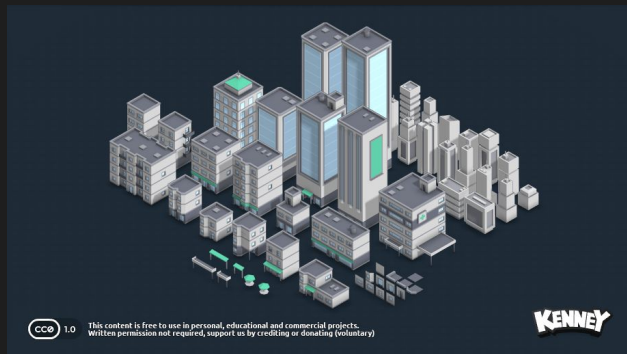


MODELING

High learning curve and creative setbacks

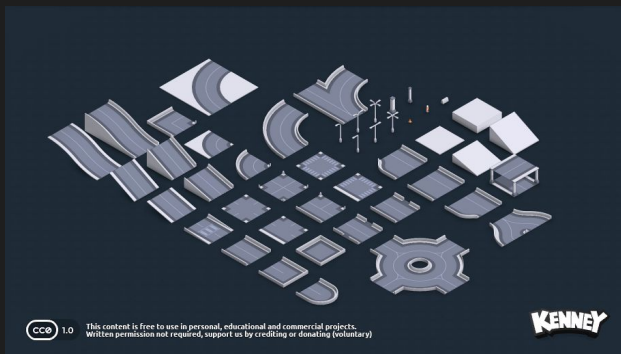


CURRENT CONCEPT



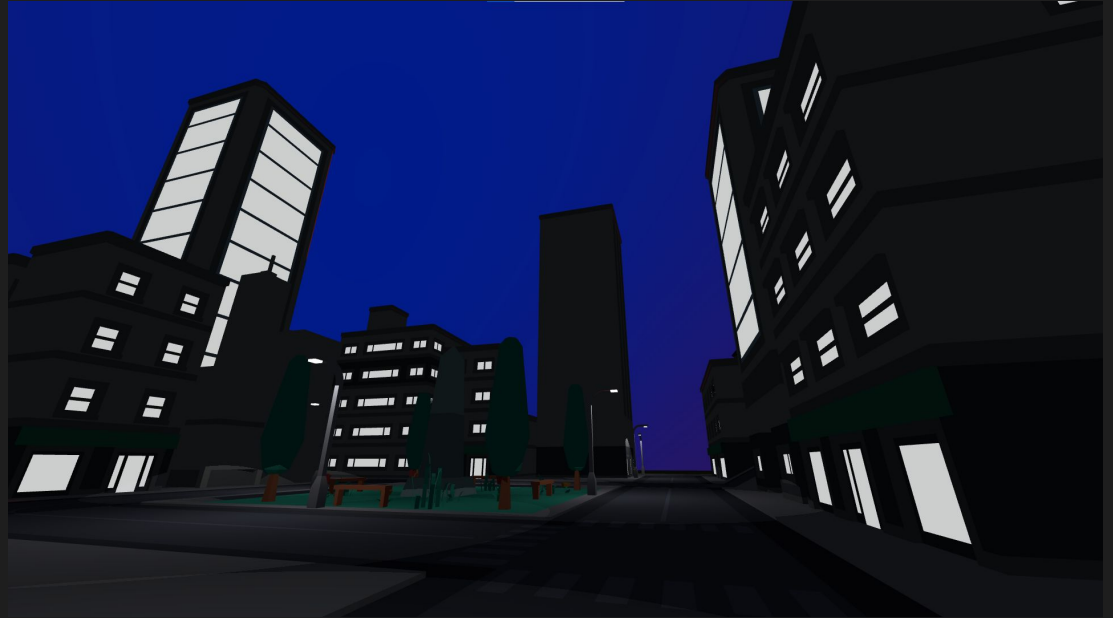
Urban city, with a simple style based on the assets I found

Credit: Kenney

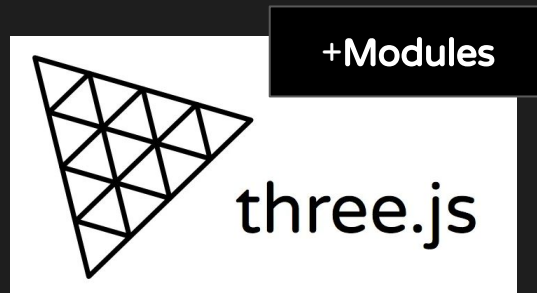


CURRENT RESULT

An interactive model, with
different camera perspectives
and animations



TECHNOLOGIES



GRAPHICS
LIBRARY



MODELING
TOOL



FEATURES

**And my approach on how to
implement them**

FIRST PERSON CONTROLS



RAYCASTING

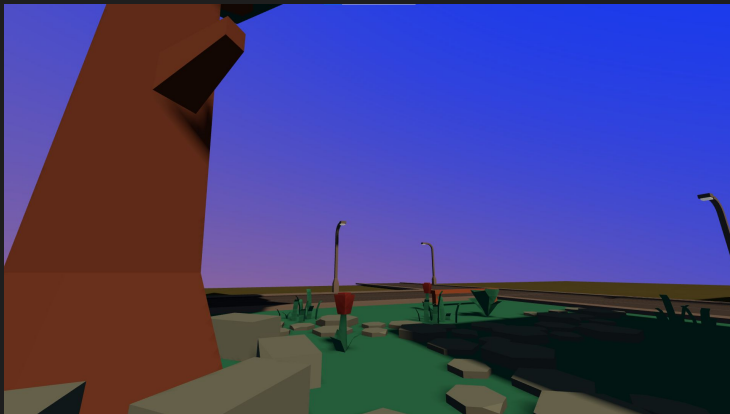
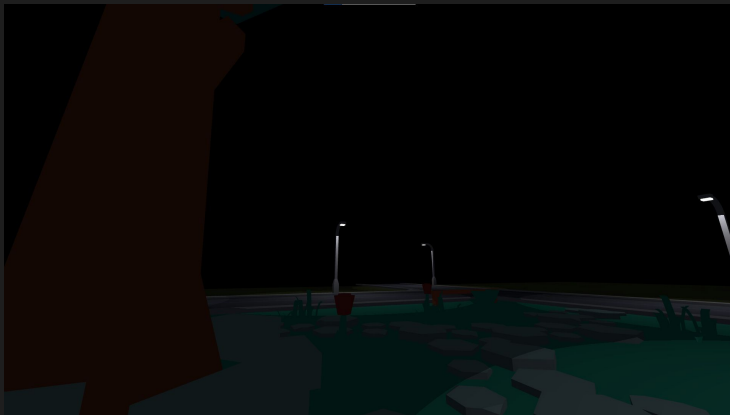
Perspective camera controlled by user input, detecting ground collisions using a **raycaster**



EXTENDED CONTROLS

- **WASD** to move
- **SHIFT** to run
- **SPACEBAR** to jump, with double jump
- **P** to change perspectives
- Step detection, for ramps

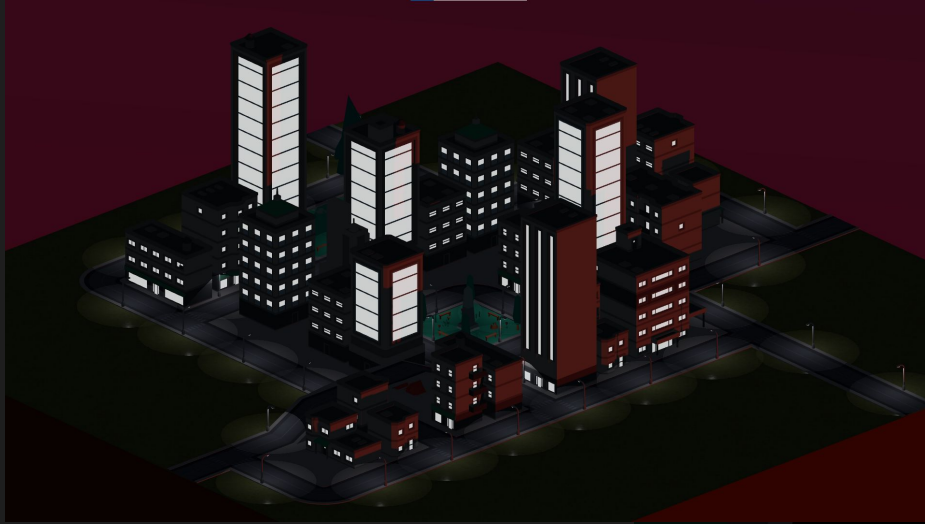
DAY AND NIGHT CYCLE



Made by adapting a THREE.js
module



NIGHT LIGHTS



Lights turn on at night, and
turn off in the morning

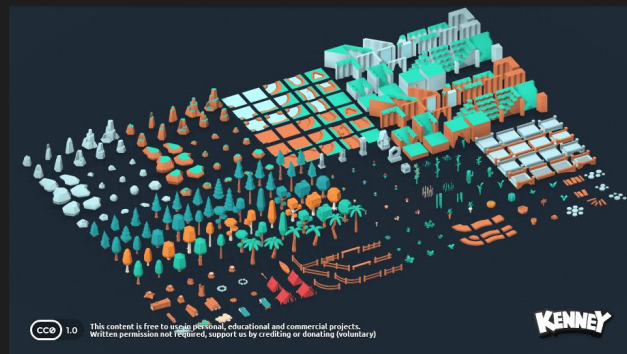
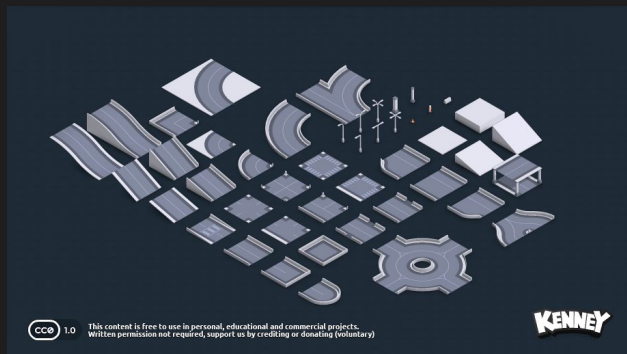
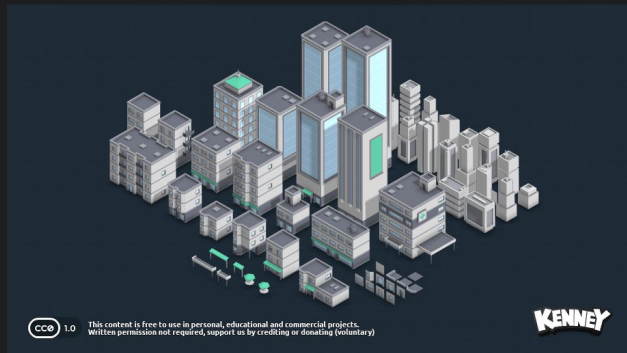




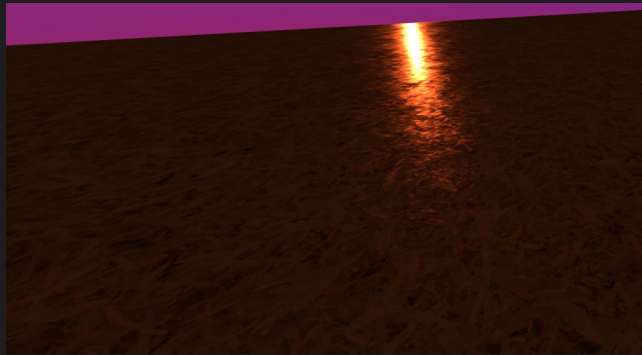
MODELS

Scene graph

MODELS



SCENE GRAPH



Ground, with grass texture

**City, with each model
belonging to a group**

**Streetlight bulbs are
separate from the models**

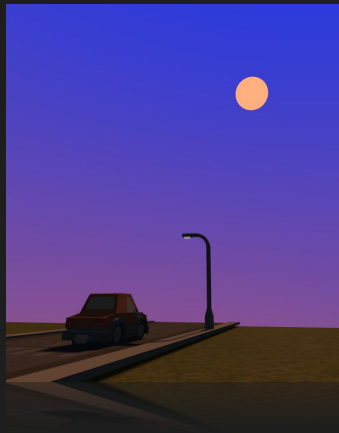


On the left side of the image, there are several abstract geometric shapes drawn with glowing lines. At the top left is a small pink triangle. Below it is a larger cyan triangle. Further down is a cyan plus sign. At the bottom left is a large, irregular cyan shape that resembles a stylized bag or a piece of paper with a handle.

ANIMATION

ILLUMINATION

ANIMATION AND ILLUMINATION



**Spotlights originating from
the streetlights and
directional light from the sun**

**Moving car, rotating sun
and first person controls**





LIVE DEMO

<https://syruz.github.io/ICG/>

DIFFICULTIES



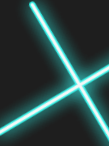
LOSS OF TIME

In the beginning of the project,
which could have been useful



COLLISIONS

Raytracing is not a very effective
nor resource friendly method



IMPROVEMENTS TO COME

COLLISIONS

Using Boxes instead
of raytracing

MAP DECORATIONS

Add more foliage
and other objects

IMPROVED CONTROLS

For a more natural
feel

GAMEPLAY

Item collecting
around the map

MORE LIGHTS

Park lights and car
spotlights

DEBUGGING

Fix bugs and improve
performance



THANKS!

QUESTIONS?

<https://github.com/Sytuz/ICG>

CREDITS: This presentation template was created by **Slidesgo**, including icons by **Flaticon**, and infographics & images by **Freepik**

Project Links

<https://github.com/Sytuz/ICG>
<https://sytuz.github.io/ICG/>