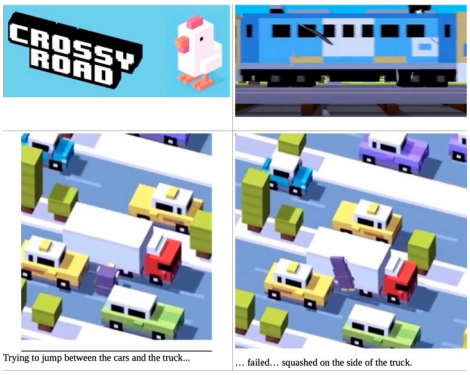
CPSC 386: Introduction to Game Design and Production - Fall 2022

Final Project, **Crossy Road,** due Friday, 16 Dec 2022 (by 2359)

In this assignment, you will recreate the classic Crossy Road game, using the Unreal 4 or 5 Engine, assets created using a Voxel editor such as Magica Voxel, and code written either in C++ (written to interface with Blueprints and the Unreal framework), or with Blueprints, or both.

The 3d assets you will need will all have to be created using an Voxel editor such as Magica Voxel, or from other 3d asset sources from Unreal. The audio resources you will need can be captured using an audio editor such as Audacity from Crossy Road running on a laptop or desktop computer, or running as an iOS or Google app on a mobile phone.

OBJECT OF THE GAME:

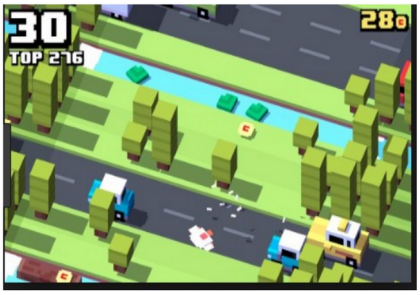


Live as long as possible. There is only one level, but it is dynamic and keeps being created in front of you, and destroyed behind you.

The level is made up of alternating safe areas and obstacles with either vehicles that can strike you, or water you can fall into. You can pause and wait for a safe interval to cross the obstacles -- but not too long, or an eagle will swoop down and pick you off. Unlike the Lord of the Rings or the Hobbit, eagles are not good guys in this game.

Safe areas are grass w/ trees, bushes, and rocks). Obstacles are roads w/ vehicles, RR's w/ trains, or rivers w/ water (unsafe) and moving logs (temporarily safe)). You can move forwards/right/left always, and backwards only within a single safe area/obstacle. (However, most safe areas are only one jump wide.)

The game designer must create the obstacles with moving cars/trucks, trains, or logs so that it is always possible for the player to get through if they are clever enough. This means that cars/trucks/trains must be timed, and trees/bushes/ stumps/rocks must be placed properly.



The actor can be killed by either standing still or failing to move forward for too long (an eagle swoops down), or by being run over, or by running into the side of a car/truck/train, or by falling into a river.

HIGHWAY VEHICLES and HIGHWAYS...

- Cars (Taxi, Short-blue, Long-green, orange, purple)
- Trucks (some ideas: light-blue or blue or red/white trailer, and white/blue oil tanker can explode in flames)
- Roads (1-, 2-, 3-, 4-, 5-, 6-, ..., -10 lane roads). Multi-lane roads have lane markers.

RAILROADS and TRAINS

- Tracks (1- and 2-tracks. Tracks can be between any two obstacles or safe areas.
- Train of 5-6 cars made up of a ead car, middle cars, end car

WATER

- Water w/ white reflection showing limits of motion, 1-, 2-, 3-, 4-, and 5- logs wide (waterfall effect is optional)

- Logs (full (truck)-size and 2/3 size)
- Lily pad

LANDSCAPING

- Grass (1- and 2-trees wide) • Trees (tall, medium, short)
- Rocks (short of various shapes)

MISCELLANEOUS

- Coins with red 'C'

Your object is to… Create all characters and objects using Magica Voxel, and import them into Unreal Engine, create the Blueprint code to duplicate the Crossy Road game (moving the chicken, having vehicles (cars, trucks, and trains go back and forth), have logs go back and forth on the river, and have the chicken live as long as possible.

You will also need to have sound files for the cars, trucks, trains, logs (stepping onto the logs), the chicken moving, the chicken being killed, and picking up coins. If you have the chance to implement the eagle, you'll also need to implement the shriek of the eagle as it swoops down to grab the chicken.

Push the contents of your project to a new GitHub repository using a git client (e.g., the git command-line client, GitHub Desktop, or GitHub for Atom). Do not submit files using drag-and-drop onto the repository web page, and do not push this assignment to the same repository as your previous homework assignments.

Submission Turn in the code for this project by uploading all of the Unreal source files you created, the images directory, and the sounds directory to Canvas. While you may discuss this homework assignment with other student, work must have been completed on your own. To complete your submission, fill out the spaces below, and submit it to Canvas by the deadline. Each member of the team must submit the project. Failure to complete the rubric and have each member of the team submit it will result in a 10% penalty.

CPSC 386 Final Project, due Friday, 16 Dec 2022 (at 2359)

Your name and team members names Sydney Sukhabut

Verify each of the following items and place a checkmark in the correct column. Each item incorrectly marked will incur a 5% penalty on the grade for this assignment.

Completed	Not Completed	**Crossy Road**
☑	☐	**HUD (head's up display)** showing high and current score (jumps / coins collected)
☑	☐	Imported all actor, safe area, obstacle and miscellaneous 3d assets into Unreal 4
☑	☐	Chicken **jumps and looks in the direction it is moving** (WSAD) (no sliding).
☑	☐	Dynamically created (alternating colors of green) **grassy strips** w/**code to populate them with trees/rocks** so there is >= 1 path to pass. Trees should block sides of game.

☑	☐	Dynamically created **highways**, w/**code to populate them with cars/trucks**
☑	☐	Dynamically **created/deleted cars, trucks, trains, and logs**
☑	☐	Dynamically created **RR tracks**, w/**code to populate them w/ trains**, RR crossing works
☑	☐	Dynamically created **river lanes**, w/code to populate them with logs and lily pads. River lanes should allow logs to move in both directions.
☑	☐	**Chicken cannot move if it runs into trees, rocks, or sides of side barriers (20/80 %)**
☑	☐	Running into cars or trucks cause chicken to be squashed (z), OR flattened (x direction)
☐	☐	**Falling in water causes water explosion and chicken sinks into water and squawks.**
☑	☐	**Eagle swoops and grabs chicken** if chicken doesn't move/moves back or screen scrolls.
☑	☐	**Dynamic generation/destruction of lanes of grass, highway, RR and rivers.**
☑	☐	Recorded and implemented chicken, vehicles, coin, and log sounds.
☑	☐	Project directory posted to Canvas by each member of the team

Comments on your submission