

CROSS-PLATFORM DEVELOPMENT PRESENTATION REPORT

ASSESSMENT DESCRIPTION

For this assessment you are required to create a game using either Unity 3D or Unreal Engine 4, either individually or as part of a team, and build it for multiple platforms. Which platforms you support will depend on your available devices, but your teacher will advise you as to which platforms would be best supported. At a minimum, your game must perform on:

- At least two different web browsers, and
- At least two different digital devices

The game does not have to be a detailed game project but must at least make use of loaded assets and a basic Graphical User Interface (GUI) demonstrating industry best practice. You must also demonstrate the use of your target platform's specific input devices. For example, on a mobile device you would need to demonstrate *touch-screen input* whereas on a PC the project would utilize *controller input or keyboard*.

The project involves several stages of development, outlined below.

What game are you making?

(Describe the game you are making including any win/lose states.)

Ten Próżnia (Polish translation for *The Void*), is a 3D Endless Runner style, heavily inspired by *Race The Sun* developed by *Flippfly*.

The aim of the game is to progressively improve. While there are no rewards to incentivise the player to “win”, the game is designed to be relaxing and enjoyable, while netting some challenge - that is by weaving through a series of obstacles.

The main Goal is to survive as long as you can while building your score and striving to beat it each time.

You may lose the game at any time by either colliding with any of the obstacles, or by falling off the main drag and into the void below.

Why?

(Explain why you chose to make this game.)

The first game I made in unity was a basic Endless Runner.

I saw the opportunity to revisit this old project that I had started with and find out just how much I have learned and improved since my early days. I was ultimately thrilled with my development.

Additionally, the simplistic nature of the game allowed flexibility in developing to several platforms, for example the movements didn't require a complex or tedious amount of re-coding to accommodate for different input methods

List the technical aspects?

(List all the mechanics and technical aspects featured in your game.)

The Player

The player character is propelled forward along the z-axis at a constant force. Using Unity's inbuilt Input Axis feature, the player will be able to move left and right using the A and D or < and > keys. On handheld devices, the input system will make use of two invisible UI buttons, covering the left

and right halves of the screen.

Upon collision with any obstacle, or if the player falls out-of-bounds (determined by fixed height and width coordinates), the player will shatter into several tiny cubes. A restart will be invoked after a few seconds.

Level Generation

The world generates procedurally, to an extent. Each chunk/runway contains predefined positions where obstacles and scoring collectibles can spawn. Each of the obstacle spawn points will loop through a given list (unique to that prefab) and will select a random obstacle to then spawn.

Scoring/Progression

The player has three tracked statistics: Distance travelled, orbs collected, and total score. The distance travelled is measured along the current z-axis, and the total score is calculated based on the amount of orbs collected as well as the distance travelled.

Post-mortem on what changed (from the TDD) and why, what issues you experienced, any feedback you had received.

(Formally evaluate your prototype against the design requirements, discuss and agree on required changes.)

Most of the design elements made it into the game, however one notable feature did not. Power ups and abilities were not implemented primarily due to time restraints. They made it through the design and planning and underwent several changes, but never made it past those stages and into development.

Further changes between the design stage and the game development include mesh colliders not being used. Checkpoints were suggested and ultimately overlooked, as was the possibility of having multiple “game modes” allowing the player to play however they wish.

The graphics remained simple, making use of Unities inbuilt cubes and some external low poly asset packs.

Testing and Debugging

Issues with textures not displaying on WebGL builds. I ended up narrowing the issue down to the custom shaders from the asset pack. Ultimately, the shaders were targeting a different version of WebGL, so I had to sift through all the shader scripts to change the target version.

Errors with the scoring system lead to incorrect calculations or never reading the value. Debugging mainly consisted of locating errors with `Debug.Log()` to locate at what point things were failing. I ended up removing my method of finding the relevant script by using the line `“pc = FindObjectOfType<PlayerCollision>();”` on `Awake`.

Some known issues I couldn’t solve are scene transitions not working as intended when going backwards, despite having their own animations independently (fade in and fade out). Another is an uncommon bug where the player will suddenly stop at the seam of two prefabs as if hitting a wall. Increasing the distance (by even a minuscule amount) will always get the player stuck, while decreasing and overlapping will cause the player to jitter and/or be sent flying in a random direction (resulting in an untimely demise)

Feedback

(Present any feedback received and changes as a result.)

Feedback prior to presentation:

superblitz101 Yesterday at 21:18

"play endless" could probably be just "play" if that's the only mode.

the movement could do with being a little tighter but that can be part of the challenge.

idk how to pick up the flowers, seems like they should be able to be gathered. Is that what one of the other two trackers are for?

you've got a "sound" and "music" slider, but "sound" seems to only effect menu clicks. Maybe there needs to be a death sound? Perhaps a tune every time you reach an open area?

Feedback once complete:

Ryz Today at 14:30

Feedback: Rating Ten Proznia.

- UI is amazing.
- Overall graphics are amazing.
- Controls are difficult and non responsive, though realistic.
- There was a jitter whenever a new prefab would spawn.
- 9/10 overall.

“Overall it’s a great mobile game, just like any other. The controls are a bit hard and not too responsive, but it’s realistic for the bird and adds to the challenge. I like that the leaves don’t have collisions, you should add a death screen message though, make them think about what they’ve done. There should be some kind of boost or powerup, possibly a shop system through the orbs where if you collect enough, they can be used to provide advantages to seek better highscores.”

“Colours are awesome, I like the bird dying noise, it’s funny. Maybe have a powerup or extra life if you get enough orbs otherwise great!”

“The top score seems to occasionally go into the negatives, it’s also unclear exactly what it’s measuring. Just an observation that the death audio doesn’t play when falling out of bounds, only collisions. Out of Bounds probably shouldn’t be a thing, maybe decrease the distance until you die or fix the obstacles so they don’t poke through the ground?”

superblitz101 Today at 19:06

hitboxes are great. Obstacle generation is pretty fair for the most part. Its very pretty. Bird animation is great, especially with the tailwinds. Music is fitting.

the lag is fine but could be optimised. The top tracker doesn't add anything to the game that the distance tracker doesn't do better. I think its a good spot to store a high score.

Perhaps a sort of jump mechanic? Could make the out of bounds a deliberate part of the game allowing you to jump corners. A high score tracker would be nice.
oo, if we are talking commercial release i reckon the flowers could be currency for a shop. Buying skins or level themes
could add additional soundtracks to the shop

superblitz101 Today at 19:31

For sure. With some more polish and some sort of shop or other incentive to play longer. Give it mobile support and you'll have yourself a temple run contender
an additional, and ambitious direction to head in would be adding some verticality. could spice it up

“Really cute game, needs feathers instead of cubes when dying”

Provide a demonstration of the game on PC and Cross-Platform builds.

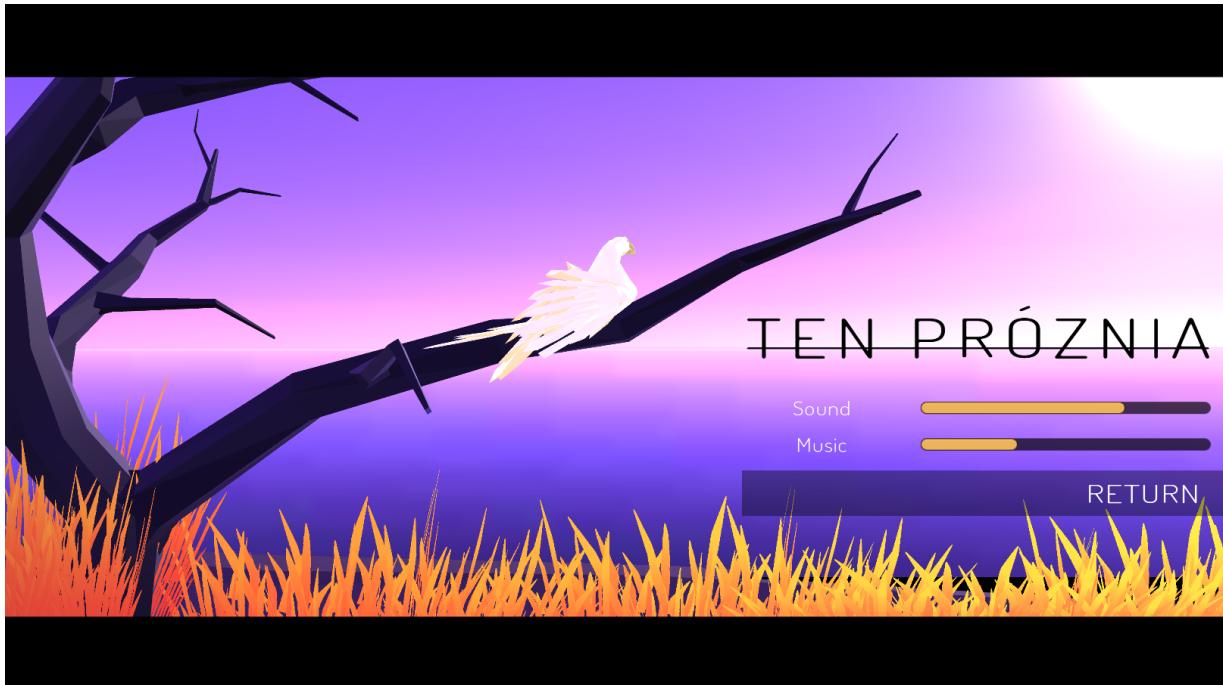
Below I have provided screenshots of my project to support this presentation report.

Main Menu - game view of the main menu at the time of presentation (feedback: Add options to control volume)

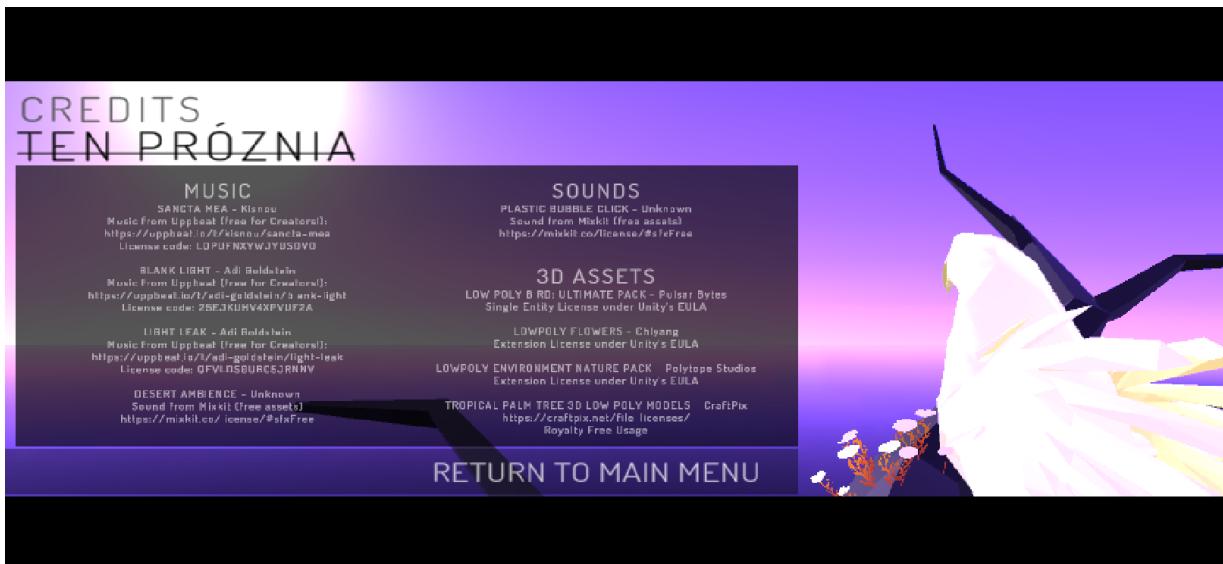


Main Menu - Game view of main menu after feedback changes. (Options button was added). The preceding image is the “options” menu, which currently only controls the volume.

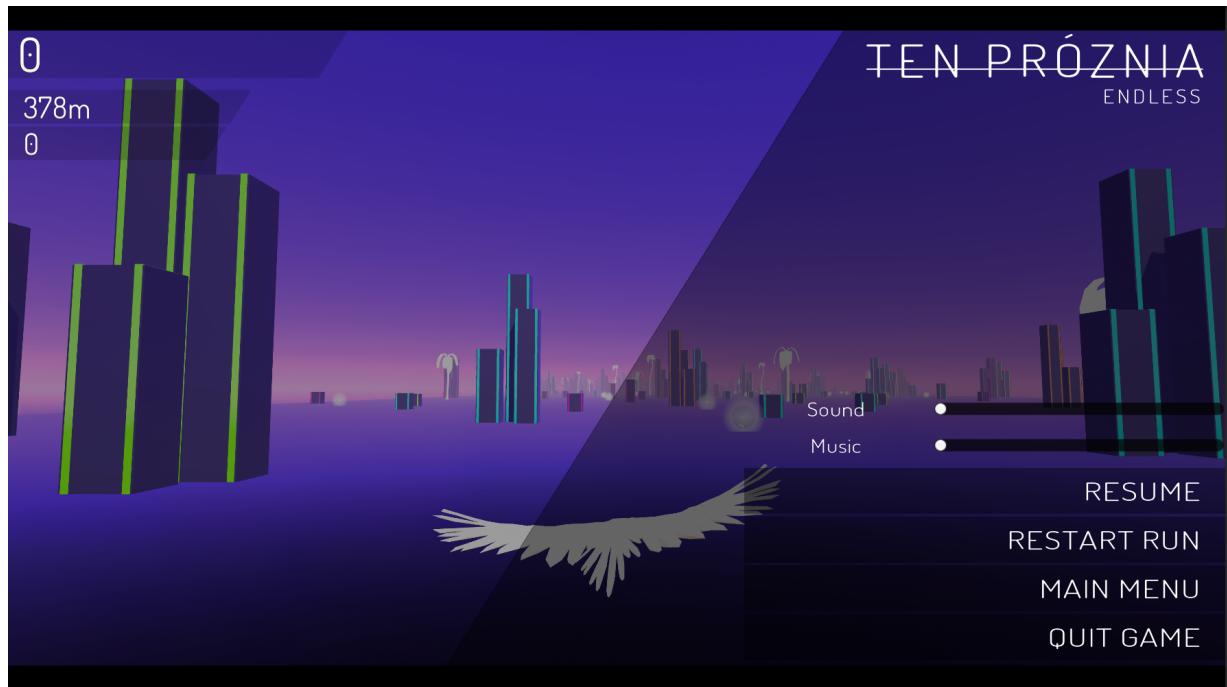




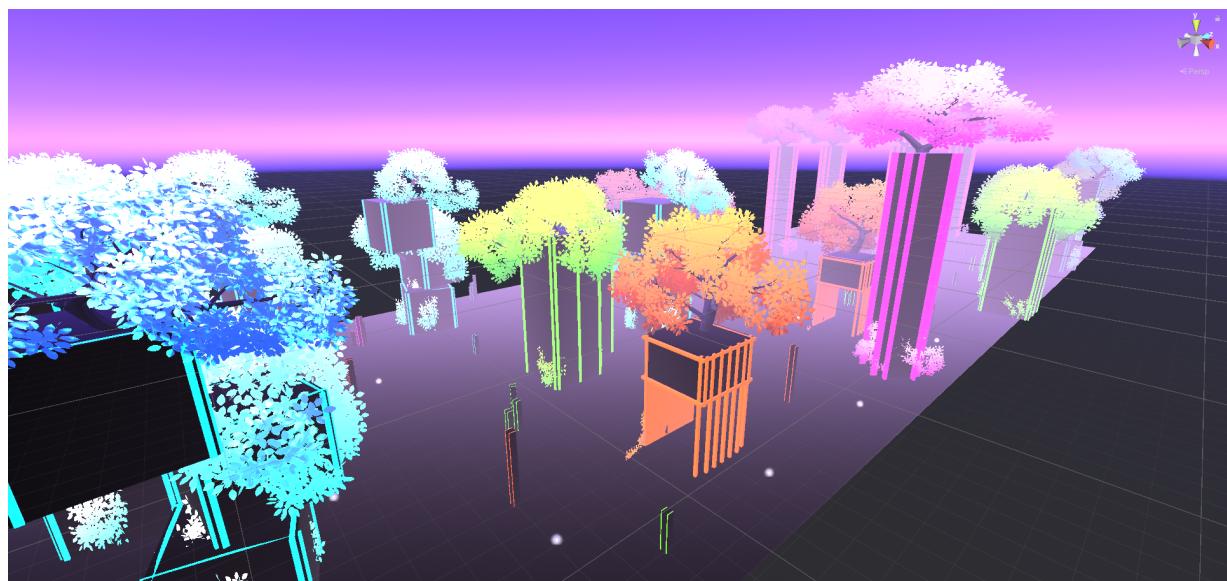
Credits Menu - Game view of the credits menu from the handheld view.



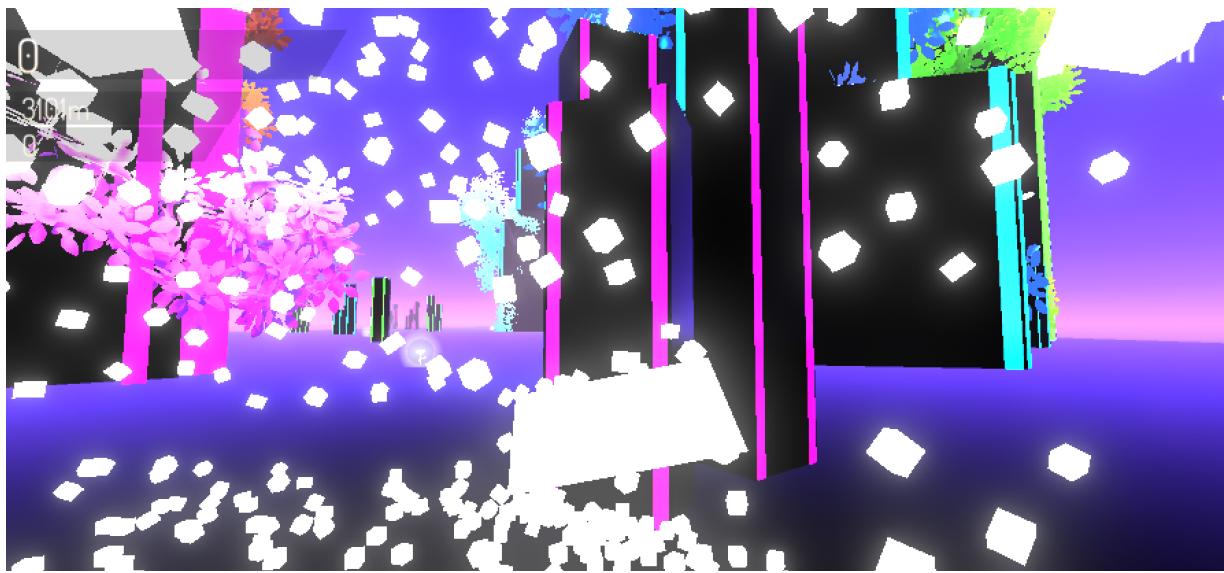
Pause Menu - Completed game view of the pause menu



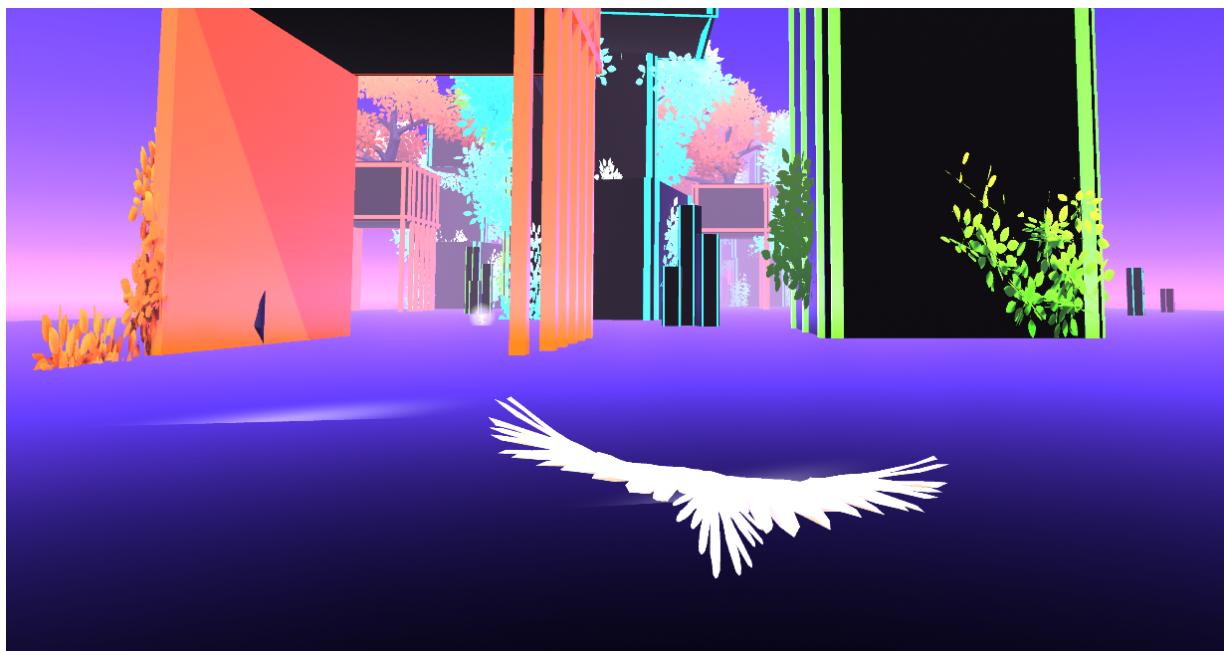
Scene View of the ground, obstacles, and collectibles being generated one chunk at a time.



Player Death - Game view of the player mid-shatter upon collision with an obstacle.



Game view of player banking a hard right. Note the animation switches to “soaring/gliding” instead of flapping.



Scoring - Game views displaying the scoring system.

