

Candidate 571

Highlight of contributions to the game

I have been the leader of the team. I have been responsible for characters animations (Animation instance implementation), health bars, AI/NPC-s, combat and I have worked a little on the HUD.

I have been doing a udeMY course to help with programming this game. I have been working through *Unreal Engine 5 C++ The Ultimate Game Developer Course* by Stephen Ulibarri, to be exact. I have now completed 50 % of the course. The Ultimate Game Developer Course, see figure 1.

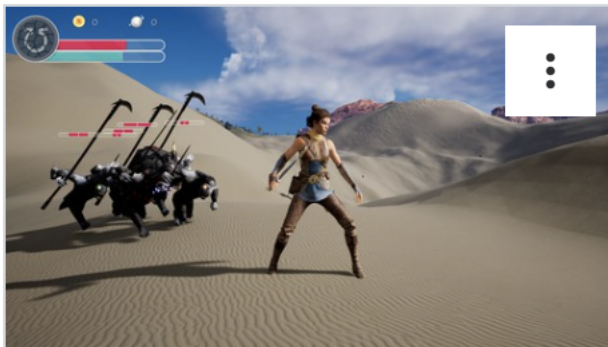
In Stephen's course, a lot of information about programming Unreal in C++ is covered, especially when it comes to animations. This is why it felt natural to apply myself in this way to this project. In Unreal, it helps to be able to program to get the most out of the animation blueprints system as you can create your own animation instance implementation, and expose aspects of the internals of the game to the animation system. See the uml, UAnimInstance.

I implemented how Harker, the player character, strafes, runs, and can switch to crossbow. I implemented animation montages to let him swing his crossbow and fight enemies. I also implemented the animations for the enemies, which was a lot simpler. They can't strafe and mainly run, idle, attack and die. Attacking and dying is done with animation montages. Without Stephen's course, it would have been impossible for me to figure out how to make the characters animate inside Unreal. It was a pleasure doing Programming II, especially with the structure and help from the online course I did.

I have tried to implement everything covered in class. Per-Kristian showed us interfaces, that is the only thing shown in class which I did not implement into the game. Also, I use Blueprints for saving and loading the high score in survival mode. Some things seem a lot simpler in Blueprints.

I have also implemented combat. It was at first done in Blueprints. See figure 2. This made it easy and fast to implement, but it was really janky. Enemies would only attack when the player went into their hitbox, which resulted in enemies sometimes standing right in front of the player doing nothing, other times doing too many attack in a row. The system was ported over to C++ and works now really well.

Almost all the code is done in C++. Combat, animation instances, all sorts of stuff is done in C++ and it has been great fun.



Unreal Engine 5 C++ The Ultimate Game Developer...

Stephen Ulibarri

50% complete



Your rating

Figure 1: The Ultimate Game Developer Course

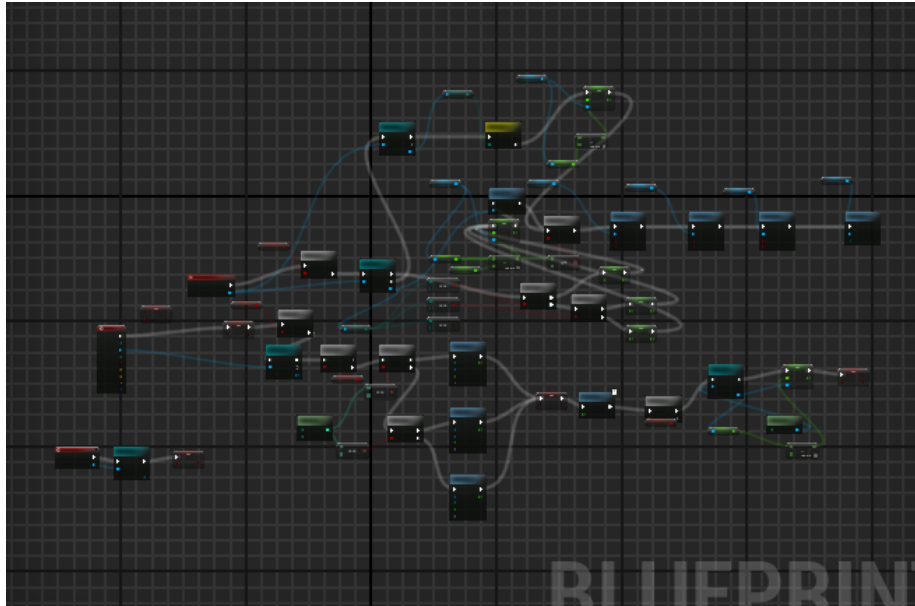


Figure 2: Combat blueprint

Self-reflection, what went well, what would you do differently.

I personally felt like this project went remarkably well without too much upset. There were many team members who were absent a lot, which is something I would like to somehow prevent in the future. I'm not sure what caused this. I was very stressed at the beginning of the project. I think the stress and worry propelled me into working quite hard and delivering something on par with the other groups.

You can find the Github repository for the game here: <https://github.com/alanhaugen/Programming-II>

We used a few third party assets. They are listed in README.md

Here is a copy:

Sources

Using Advanced CRT TV - VCR - VHS Effects (free pick of February 2024): <https://www.unrealengine.com/marketplace/en-US/product/animated-crt-tv-vcr-effects>

Using Madeleinone's Chainsaw butcher 3D Model (2022): <https://sketchfab.com/3d->

models/chainsaw-butcher-b38b2f65e0cc460a86a6c98dcae6c59c

Using Wersaus33's Pine Tree - PS1 Low Poly (2023): <https://sketchfab.com/3d-models/pine-tree-ps1-low-poly-d71ceeb303644e649d09fe8038aa5e47>

Using Wersaus33's Wood log pile - PS1 Low Poly (2023): <https://sketchfab.com/3d-models/wood-log-pile-ps1-low-poly-297af51362454833b93d70afb059d56a>

Using Wersaus33's Simple Rock - PS1 Low Poly (2023): <https://sketchfab.com/3d-models/simple-rock-ps1-low-poly-63872ba39caf4fa09d6c6bc2b05d8582>

Using Wersaus33's Dead Tree - PS1 Low Poly (2023): <https://sketchfab.com/3d-models/dead-tree-ps1-low-poly-de2611ba107f4c3c8c89bf516d5d9b6b>

Using kreyt8042's Items In PS1 Style (2024): <https://sketchfab.com/3d-models/items-in-ps1-style-6c8c44f10fd94ac2b0f9f3e47cf71001>

Using HenRi's PSX Stylized Couch (2024): <https://sketchfab.com/3d-models/psx-stylized-couch-eb5052ce14b1413084bf583c0ae9362d>

Using Moustache Cat's Armadura Medieval No Estilo De PS1 (2022): <https://sketchfab.com/3d-models/armadura-medieval-no-estilo-de-ps1-89e23ef8fc6047d3bfbb7bf15d48d02e>

Using crammyberry's Ps1/PsX House(2024): <https://sketchfab.com/3d-models/ps1psx-house-63dd16bf5586473094ddcc018071803f>

Using vinrax's Skeleton Character PSX (2024): <https://sketchfab.com/3d-models/skeleton-character-psx-ece576bbbed4b4364911c7596d828a558>

Using liltoba's Axe Psx | Low Poly (2022): <https://sketchfab.com/3d-models/axe-psx-low-poly-02cf57cb3fd248a69b71d2e6bbbed0f2>

Using SaukrDev's Low Poly Psx Hinged door (2023): <https://sketchfab.com/3d-models/low-poly-psx-hinged-door-4c195ed39f14418ba998eda8c3ce72a6>

Using zhya's Low Poly Wooden Table N64 PSX style (2023): <https://sketchfab.com/3d-models/low-poly-wooden-table-n64-psx-style-91d386962d9c404083500d7f2b056316>

Using Avatar of RBG illustrationsRBG illustration's First 3 Gravestones (2021): <https://sketchfab.com/3d-models/first-3-gravestones-ad7128e6c7d544cbae2af16ddec6951>

Using Macky's Low Poly PS1 Tombstone (2023): <https://sketchfab.com/3d-models/low-poly-ps1-tombstone-2e4ecda5e9df487099affe2a4d45eba0>

Using hamsterspit's Medieval asset 21 bat (2017): <https://sketchfab.com/3d-models/medieval-asset-21-bat-8c900496173b4b32b8f8990c2d97886b>

Using Lost Gecko's Fagnolle Church [Belgium] (2017) <https://sketchfab.com/3d-models/fagnolle-church-belgium-ae5bcac872ac47f9b644e08aeb19f936>

Using Teranox's House Asset (2022) <https://sketchfab.com/3d-models/house-asset-f4ee8bbe544c4a188ca74212a9ba8ab9>

Using interactive stylized Lowpoly Grass from Project Nature - Props (2018) Unreal Marketplace: <https://www.unrealengine.com/marketplace/en-US/product/dynamic-stylized-lowpoly-gras>

Using matisosanimation's Bat (2019) <https://sketchfab.com/3d-models/bat-28af38de4d2c401d809148c7f63a73f9>

Using MadGamesmith's Mad Zombie! (2020) <https://sketchfab.com/3d-models/mad-zombie-3ae800207d764fceb16db191ca35eca>

Using romullus's Wooden Ladder (2018) <https://sketchfab.com/3d-models/wooden-ladder-0ac651eb518a4bc69873b117cc7e3dd2>

Using lightguard's Wooden Sign - Low Poly (2020) <https://sketchfab.com/3d-models/wooden-sign-low-poly-923ce9265cf244558ffa3b8c127d8111>

Using Good Sky from Uneasy Game Dev - Blueprints (2018) Unreal Marketplace: <https://www.unrealengine.com/marketplace/en-US/product/good-sky>

Using Three Dog Night's Small Red Potion (Low poly) (2019): <https://sketchfab.com/3d-models/small-red-potion-low-poly-2744e118c83e4502a858ff2c1f961be7>

fire arrow by Aisyah from <https://thenounproject.com/browse/icons/term/fire-arrow/> (CC BY 3.0)

Hunting by Sahab Uddin from <https://thenounproject.com/browse/icons/term/hunting/> (CC BY 3.0)

alchemy symbol by David Alexander Slaager from <https://thenounproject.com/browse/icons/term/alchemy-symbol/> (CC BY 3.0)

The music was purchased for \$1 from Humble Bundle Store: Creator Boombox: Loopable Royalty-Free Songs for an Upgraded Experience - \$1 Tier Content (2024), we used the classical music in the bundle, specifically a track called Sly Fox Loop.

AI generated outro music has been added to the game. The music was generated by one of Suno's models: <https://suno.com/song/a7a0ffb6-12da-4126-985b-0e7efbace129>

Erik Haugen made the Dracula, Skeleton, Zombie and Harker models found in Assets/3DModels/3rdParty. He also made the re-rendered films in Content/Video

Resources

We have used the following resources:

How to change active camera on player character. (2023) Unreal Forum. <https://forums.unrealengine.com/t/how-to-change-active-camera-on-player-character/1332517/3>

Unreal Engine 5 C++ The Ultimate Game Developer Course. (2023) udeemy. <https://www.udemy.com/course/unreal-engine-5-the-ultimate-game-developer-course>

Behavior Tree Quick Start Guide. (2024) Epic Games. <https://dev.epicgames.com/documentation/en-us/unreal-engine/behavior-tree-in-unreal-engine—quick-start-guide>

AI Enemy not moving. (2019). Unreal Forum. <https://forums.unrealengine.com/t/ai-enemy-not-moving/458776/5>

Trace a line to where the character's camera is looking (2023) Unreal Forum. <https://forums.unrealengine.com/t/trace-a-line-to-where-the-characters-camera-is-looking/1445068>

Farris, J. (2024) Damage in UE4. Unreal blog. <https://www.unrealengine.com/en-US/blog/damage-in-ue4>

CL0UDRED. (2017) [QUESTION] How do stop my AI Move To node from executing when an AI has died? https://www.reddit.com/r/unrealengine/comments/6a8id9/question_how_do_stop_moving_when_an_ai_has_died/

dacanizares (2023) Sample AI Controller - GetRandomReachablePointInRadius - UE4 <https://gist.github.com/dacanizares/5db9c59281a9c9049bf819acce7e29bc>