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<u>Preface</u>

Hello Everyone,

      Thank you for your interest in *Devlogs*. When I first started this series, it was done with two primary thoughts. First, I wanted to capture a once-in-a-lifetime sequence of an audio student's first steps into video game production. Second, this series challenged my understanding of what I was learning by having me explain newly grasped concepts. Professionals, while having experienced troubles in the past like beginners do, can only <u>recall</u> those struggles and may struggle themselves to walk you through each wall you seek advice on overcoming.

      I want to narrate my learning and applicative journey in the heat of the moment. This way, I can share my thoughts throughout the process, the struggles I encountered, and how I overcame them. Listeners should not only be able to learn while following but also relate to instances where one may seem completely lost. Professionals can relate to such things but I also find that some problems are harder for them to decipher for beginners. The reason for this is that they become less aware of what is second nature to them that may need to be accounted for and broken down slowly.

      With this in mind, *Devlogs* is being done for my senior project and comes with a time constraint that initially affects the quality of my videos. I aim to release videos weekly, making sure I have planned out goals that I will write scripts for; my substitute for note-taking. These weekly releases are the start of a more fleshed-out series than I have ever done. Finding my narrative style, editing, and footage-gathering process, and refining it every week has been a fun but challenging process.

      In this document, each episode will be broken down with some added notes sharing insight into the production process for each video. I may also elaborate on problems I encountered, or share a fun fact. Feedback is greatly appreciated, for this has been an experimental journey. My hope is that anyone taking their first steps into video game production and searching for ways to fit in as an audio student will discover and benefit from this series.

Thank You,

Johnny

Episode 1

▶ Devlogs #1 (Intro & Summary)

Welcome! Who am I, what is my mission statement, what goals lead me towards achieving it, and what audience do I believe this series will most benefit from these episodes? All of that is covered in Episode 1.

- Recordings started in the Iso Booth in Shenandoah University's *SCiL Lab*. I recorded on **Reaper** using a **Scarlett Audio Interface**, and an **AT2020** condenser mic. Footage and clips were compiled onto an 'Unrendered Assets' folder and imported into Premiere Pro for post-production editing. This process worked relatively well. When I rendered and exported a video to publish, I deleted all assets in the folder and prepared for next week's video.

Episode 2

▶ Devlogs #2 (WWise 301 Chapter 1 & Game Jam)

An initial overview of how I plan to progress through Wwise 301 Lessons, inspired by my process for completing the 101 certification. Following this up, a breakdown of Lesson 1, which teaches about loading soundbanks into a Unity Scene, and Posting audio events with Ak Game Object Components. During this, I break down the connections being made between Wwise and Unity.

- In order to maintain the user's attention during my intro ramble, I chose to use B-roll video footage but found what I used/recycled didn't relate to the subject of the video. I later realized fading in and out screenshots the whole time wasn't the most effective method of creating an engaging video.
- Using Photoshop's timeline feature, I created an animation that pops up at the beginning of a background song, sharing the song name and composer. This gets redone later using AfterEffects.
- I discovered voice effects in Premiere and near the beginning of delving into Lesson 1, cheesily tried out a reverb effect while delivering a synopsis of the game created for the certification course. It seemed great upon making it but now it feels out of place, though you never know until you try!
- My personal opinion on this video is that it's a bit stretched out, which I believe is due to my uncertainty about how to provide my personal understanding of the content. I spent more time than necessary working towards points I wanted to make, occasionally making

interactive remarks with the audience that felt like a pull-away from the topic. What's good is I noticed this and kept that in mind for future videos!
- Around 9:20, a text notification on my phone goes off. Remember to silence devices when you're recording or just don't bring them into the booth/studio with you!
- I only use pictures, zoom-ins, and arrows for this episode, no videos. A big reason is that I forgot to get a license key for the Wwise project, which upgrades a Wwise project from Trial mode to an official license. The one for certifications allows you to download all sound assets for a Wwise project, which is way more than what the trial version allows (200 or fewer assets). Without those sounds, the fruits of my efforts were impossible to show. I addressed this during the video and continued through the lesson, due to time constraints and my inability to resolve the problem quickly enough. I ended up having to delete and download Wwise on a different computer next week, which solved the problem.
- The end of the video mentions the Global Game Jam, which felt worth mentioning because it demonstrates networking. Game Jams on Shenandoah's Campus are a 2-day event where you're given time to make a game, based on a theme given online. It's worldwide, great for networking, and a fun way to learn from others whilst offering your skills to a team. The song I made for a VR game plays through the montage.

Episode 3

▶ Devlogs #3 (WWise 301 Chapter 2 & Unreal VR Scene)

This video walks viewers through Lesson 2. I show off volume attenuation in a Unity scene, then switch to Wwise to show where these attenuation properties are created, as well as some other cool effects. I later proposed the thought, "What if we want to change the attenuation of an object?" Upon telling you the answer is ShareSets, I dive into what those are.
The next Wwise feature I cover is the AkAmbient component, which provides advanced and efficient ways of posting an audio event.
Finally, I talk about the Event Position Confiner Script, which creates a dead zone for attenuation ranges in a collider, leveling out the attenuation values at a certain point in the range to zero. I elaborate on why this is useful in the video.
The end of the video shares a song I made using Ableton in the Maclab for a VR scene made by Prof.Prestopnik on Unreal Engine. This led me to discover a release notes page on Audio Kinetic's website, which shares the versions of Wwise that are compatible with versions of a game engine (I discovered this because Unreal 5.1 was not compatible with Wwise at that time…)

- After the Global Game Jam, Prof.Spice left a mixer next to the iso booth to use in substitution of the audio interfaces. This was in anticipation of Prof.Prestopnik's desire

to get a Mackie Mixer at the iso booth. On top of having a mixer, I switched from the **AT2020** to the **WA45** Condenser Mic, which I liked the sound of better.
- My transitioning and narrating got noticeably cleaner in this video. I also began screen-recording parts of the Lesson I was going through, breaking down my actions. The only problem I had with screen recording was that the application I used to record with, was Xbox Game Bar. It did not show the drop-down menus to any interactable I clicked. I, later on, would realize that the solution to this would be using OBS Studio.
- There was a weird problem with Lesson 2 that other users shared troubles within a Q&A thread. It was during the part when I talked about creating multiple audio events that all post at once using Large Mode with the AkAmbient component.

Episode 4

▶ Devlogs #4 (WWise 301 Chapter 3 & WWise Demo Reels)

This video starts with my shared idea for creating a demo reel with Wwise. This was inspired by multiple demo reels from other Wwise users and looked like a great portfolio piece.
After stating that I've started looking into doing a Wwise demo reel, I start talking about Lesson 3. I talk about the importance of loading soundbanks intended for specific areas or levels into scenes, and then unloading them when they're not necessary. This leads to the importance of budgeting your assets and so I show ways of managing soundbanks using AkTrigger Enter and Exit Components.

- I went through this lesson on my Macbook, which was a bit challenging for the Apple M1 chip at times. I recommend going through these lessons on an efficient desktop computer. I strictly used the ones in Shenandoah University's SCiL lab later on and this made me more comfortable attempting to screen record while Unity and Wwise were running.
- My struggles with the demo reel were time-consuming, which I admitted to at the end. I later made the decision to ditch the demo reel and simply create a Unity scene of my own with Wwise integrated into it, demonstrating its many uses in a custom project. A good reason for doing this is that having made it myself and not using a completed game, I can set up the scene for presenting Wwise's features without too many distracting aesthetics, which is useful for showing a colleague who is new to Wwise. A drawback to this is creating all the assets unrelated to sound, which if you want to quickly create a portfolio piece of your Wwise project integrated into a game, using a premade game and ripping out its sound assets to replace with your own is a 'Wwise' choice.

Episode 5

▶ Devlogs #5 (WWise 301 Chapter 4 & Playtesters Reflection)

This video starts with the mention of my starting strides in C# programming, referencing a project I'm doing this for in an ARVR 420 class (Advanced Topics in Game Design). I follow up with an update on my struggles with the Wwise Demo Reel, speculating that the beginning of Lesson 3 is potentially giving an answer to my problems.

This leads to my first steps with Visual Studio, which is where C# programming takes place.
I make it a point to break down the beginning structure of a newly created C# script in Unity. I talk about the components making up a script, and each part's importance, then get into how we'll be referencing and utilizing Wwise through scripts using a property called Wwise Types.

This video is understandably long since we're diving into coding for the first time.
With a custom-made Wwise script, we use it to post audio events at certain points within an animation.

At the end of the video, I mention the possibility of triggering events with audio input using the AkMicrophone script. I reference where this is in the lesson for anyone interested.

- My voice is too loud in this video. The Mackie Mixer came in for the iso booth and I ended up with higher levels than I realized. Due to time constraints and the video already being rendered, I posted it and moved on.
- Any songs credited to 'Saros Embers' belong to one of my best friends. He is a Game Design Major at George Mason University!
- Talking about coding was a tricky and new process for me. I was careful about details and as a result, felt my voice become monotone at a point in the video.

Episode 6

▶ Devlogs #6 (WWise 301 Lesson 5 & Soundtrack Plans)

I dive straight into Lesson 5 in this video. It goes over controlling game mechanics using scripts and referencing game parameters. This correlates to Wwise States, Real-Time Parameter Control, and Switches.

These Wwise features are used for the following examples in this video: changing the sound of terrain being walked on with Wwise switches, changing the decibel levels of music based on the time of day with Real-Time Parameter Control, and applying a flanger effect to a collider using Wwise states tied the AkTrigger and Exit Components.

At the end of the video, I mention soundtrack plans for my senior project and decide on using the VRC6 chip on tracker software. This chip is used for other famous pixel titles, my favorite example being *Shovel Knight*, and I decided it would be cool to share this bit of information.

- My voice is still too loud in this video. It gets better by Episode 8, I am not sure why it took me so long to resolve this.

Episode 7

▶ Devlogs #7 (Wwise 301 Lesson 6 & Internships)

At the beginning of the video, I mention a discord server that shares small game company job postings. I re-mention this at the end of the video too and provide a link to the server in the description of the video. It's useful for networking and job searching!
I then cover Lesson 6, going over how to apply auxiliary sends to a region. This is good for applying effects to an area, like a cave. For example, if you walk into a cave region with an aux bus applied to it with a reverb effect, your actions in the region would better resemble the acoustics of a cave.
After some demonstration of applying aux buses to regions, I talk about areas within a region and how to tell an inner region to ignore an outer one, becoming its own unique region.
At the end of the video, I share some of my recent searches for internships and job opportunities. I point out which ones desire people qualified in Wwise and talk a little bit about resumes and portfolios. I also show the format of my portfolio site, as well as my resume in some B-roll footage.

- I began using sped-up footage and realized that I could do this more often with videos, in order to line up parts of a video more appropriately with parts in my narration. I also began to use frame holds in Premiere.
- When applying the reverb effect to a region with an aux bus, the effect was also being applied outside of the region I routed the aux bus to. This was a shared problem with other users that I didn't find a solution or reason for, but I nonetheless followed the directions correctly.

Episode 8

▶ Devlogs #8 (Wwise 301 Lesson 7)

Starting off, I briefly mention a chiptune compositional software called Furnace that I began using, then I move into Lesson 7 of Unity.

I break down the use of callbacks. These identify moments in music that you can pinpoint and instruct to have events posted during. You will get to see trees 'breathing' rhythmically to music!
After doing this for one tree, I go through creating a script that will apply this effect to multiple trees.

- At this point in the series, I began feeling pretty happy with the production process.

Episode 9

▶ Devlogs #9 (Wwise 301 Lesson 8)

I claim this video covers the final lesson of Wwise relevant to the certification, however, Lesson 9 contains a small amount of material referenced in the exam. I realized this after publishing the video and studying for the exam. Check over Lesson 9 if you're going for the certification!
This video shows how to trigger music themes depending on what region the player is in. After showing how to do this using States, I then show what to do if areas are overlapping and one needs to be given priority. This gets into coding and I explore how to create a 'list.'
Later in the lesson, I used an RTPC function to load in a sound that, as you get closer to an object, lowers the volume of a musical theme and focuses on that object's sound

- If you ever are making a video and are trying to line up videos with pre-recorded footage, consider speeding up parts of the footage, cutting out unnecessary buildup or hangtime, and using frame holds in Premiere when you want to freeze at a particular point in the video.
- By the end of these certification videos, I had implemented less comedic elements. I was unsure how to be comedic without it being distracting, so I instead focused on maintaining a comfortable tone and speed.

Episode 10

▶ Devlogs #10 (Wwise 301 Certification Results & Integrating A Wwise Project Into Unity)

After celebrating my success in the exam, I moved on to integrating a Wwise project into a fresh Unity project. This process is universal for any Wwise integration process into a game engine, covering the components that are needed in the Game Engine.
As an aside, it felt worth mentioning that projects like this are good for showing to colleagues, in order to demonstrate Wwise's capabilities.

As a bonus, I show off some configurations implemented into this project that allow the use of VR headsets and controllers. The procedure for configuring this is available on the SCiL Wiki page, which can be viewed and utilized within Shenandoah's campus. It is inaccessible outside of campus and without the school's WiFi.
By the end of the video, I show off a scene utilizing volume attenuation and 3D object orientation from Wwise. I show what was done in both Wwise and Unity to make this possible.

- The Unity Project I integrated Wwise into is a video game project in my ARVR 420 class, exploring many topics and concepts covered in research papers and class discussions.
- This video was pretty short because I spent a good while preparing for the exam.

Episode 11

▶ Devlogs #11 (Project Overview & Wwise and Unity Demonstration)

What is *Gamification*, and how am I using this to teach people about Acoustics with Wwise and Unity? My Wwise project has been integrated into Unity and in this video, you'll see me add a song to a gameObject as an emitter. This allows me to apply 3D orientation. I also use volume attenuation between the listener and gameObject. This leads to a script I'll walk through creating that changes the colors of the player's hands, based on the decibel levels of the song.
After the results are shared, problems are addressed and plans are established that will be covered in next week's episode.

- Older tutorials for script creation between Wwise and Unity are tailored towards specific versions of each software. While the script I created in this video worked, it also came with endless amounts of error messages in Unity's log. This problem is due to updates across Wwise and Unity, and some of what older videos instruct users to do is outdated. Keep the date of tutorial videos in mind and take note of what version is being used! Though you'll learn something, you may also find certain mechanics or features that have been removed or modified.

Episode 12

▶ Devlogs #12 (Wwise Profiler and Demo Scene)

Using the Wwise profiler, I troubleshoot a problem from a previous problem and uncover the solution. Next, I reveal a demo project for showcasing Wwise that I am preparing for a future collaborative project.

Episode 13

▶ Devlogs #13 (AkEmitterObstructionOcclusion & Troubleshooting)

Using a new component, AkEmitterObstructionOcclusion, I test if this works in conjunction with custom line attenuation curves in Wwise. Afterward, I show a reset scene function in my other project that unveils a Wwise-related problem. This is solved by going into Wwise's script for the AkInitializer component.

Episode 14

▶ Devlogs #14 (Wwise Occlusion Demonstration)

Since AkEmitterObstructionOcclusion did not Occlude sound in the way I hoped, I found a video by CujoSound that ended up solving the problem. I show off the results of creating the script he made.

Episode 15

▶ Devlogs #15 (Hook Model Discussion & Wwise Meter + RTPC Demonstration)

I provide a final demonstration of my *ClipMaster* project, going into detail about using RTPCs for volume sliders. Afterward, I talk about tying an RTPC to your master aux bus and referencing those values (the Vector3 values) to create a script that functions like an audio visualizer, reacting based on the levels of your master audio bus.

Episode 16

▶ Devlogs #16 (Aseprite Art and Senior Project Summer Breakdown)

Summer has started and I am working for SCiL at SU. I let viewers know that my focus for my senior project is on asset creation with Aseprite, and a bit of scripting on Unity. I also say that I plan to go through Wwise 201 over the Summer.

Episode 17

▶ Devlogs #17 (Wwise 201 Lesson 1 & Parallax Update)

I began going through the Wwise 201 certification, starting with Lesson 1. There is a lot to take in and break down for viewers, meaning the video consists of a lot of explanation and gameplay so that the viewer understands what to anticipate in future videos.

- Summer was so busy and full of opportunities, that I decided not to keep up with Devlogs during that time and instead do a recap at the beginning of the Fall semester of whatever work I was able to do, which was mostly art and scripts.

Episode 18

▶ Devlogs #18 (Wwise 201 Lesson 2 & Senior Project Deliverable)

My final semester has started and I resume Devlogs with a recap of what happened during the Summer, in relation to progress relevant to the series. I then state what my expectations are for this semester and go through Lesson 2 of the Wwise 201 certification.

- I was unsure about continuing the Devlogs series during my final semester, due to my workload feeling a bit overwhelming. As I type this, I am still unsure but also feel that documenting my journey has proven to be a great way of studying the material and applying myself in other projects that are using Wwise, making the continuation of this series relevant enough to keep up with.

Episode 19

▶ Devlogs #19 (Wwise 201 Lesson 3)

Bits of progress are made with my senior project, and I am continuing to go lesson by lesson through the 201 certification. This lesson fully unravels the possibilities behind Music Playlist Containers and ways to edit and sequence Music Tracks

Episode 20

▶ Devlogs #20 (Wwise 201 Lesson 4

I share a snippet of art and music for my senior project, then jump into Lesson 4 of the 201 certification.   This lesson goes in-depth about MIDIs and ways in which Wwise can work with them.

Episode 21

▶ Devlogs #21 (Wwise 201 Lesson 5)

Episode 22

▶ Devlogs #22 (Wwise 201 Lesson 6)

Episode 23

▶ Devlogs #23 (Wwise 201 Lesson 7)

Episode 24

▶ Devlogs #24 (Wwise 201 Lesson 8)

Episode 25

Episode 26

Episode 27

Episode 28