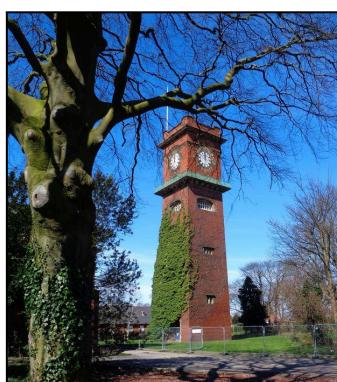


## Introduction and Background

The 3D virtual experience I created for this assessment is called ‘Siren Time’. It is a first-person horror game set in a dark forest, where the player encounters a clock tower and is set on a dangerous path. It is dominantly inspired by internet folklore and ‘creepypasta’ (horror-related legends that are shared around the Internet) Siren Head. According to the internet myth’s original account, made by Canadian artist Trevor Henderson in 2018, “Siren Head is primarily found in the woods... where it will release sounds out of the sirens atop its head in order to lure victims into its trap” (Monster Wiki, 2023). Siren Head has gained a large following since its creation and as a result, other creative individuals have used it as inspiration for different media types just as I have done for this project.

I chose to create this particular environment and user experience because I wanted to give the player an effective and almost instant emotional response. People play games because they want to experience something outside of their daily life, and I believe that one of the most stimulating ways to do this is by using the horror genre. I utilised Siren Head as a concept and catalyst for my project because of how adaptable its story is for a game. Firstly, Siren Head lurks in heavily wooded areas, which would be an immersive atmosphere for the player to walk around in at night. Secondly, Siren Head has a particular sound that is associated with his myth that would be highly stimulating in a game.

Furthermore, Siren Head wasn’t the only inspiration for my project as I had to create a suitable environment that would add to the horror genre. I wanted to focus on three things specifically when creating this experience: vision, sound and timing. Siren Head’s concept covered sound predominantly, so to improve the ‘vision’ for the player to experience, I took inspiration from an experience I had myself while in Leeds. Just outside of the city centre of Leeds, England, there is a semi-derelict site called Seacroft Hospital. It contains a large building and a lone clock tower in a courtyard. The first time I walked past this structure it had a strange and eerie feeling, so I decided to research the Seacroft estate and found that it had a rich and abundant history. The conclusion I got from this research was that the clock tower was a remnant of the wealth that this estate held and its heritage dates back to the late 1200s. I decided to use these two elements as the main inspiration for my project as together, the experience I could create from them would be encompassing.



As I mentioned previously, this horror game is played in first-person meaning it is a single-player game. This was chosen as the play format because horror can feel more overpowering when an individual is alone, enhancing the overall experience. The game is

not too complicated so that new players can easily enjoy it: this game is orientated toward horror lovers and Siren Head enthusiasts, many of which don't play games and enjoy other media formats like literature and cinema.

## Description of the Experience

### Title screen:

Upon opening the game file, the player is presented with an eerie title screen, showing the full name 'Siren Time' in a bold, graphic text that has been created to blend into the game shot background, designed to look like a CCTV camera. There are three options on the title screen: play, instructions and quit. If the player clicks 'quit', the application will be exited. If the player clicks 'instructions' they will be directed to a page of gameplay instructions; including how to move, sprint and what elements to avoid/approach. If the player clicks 'play' the game will start once the whole scene is loaded.

### Gameplay:

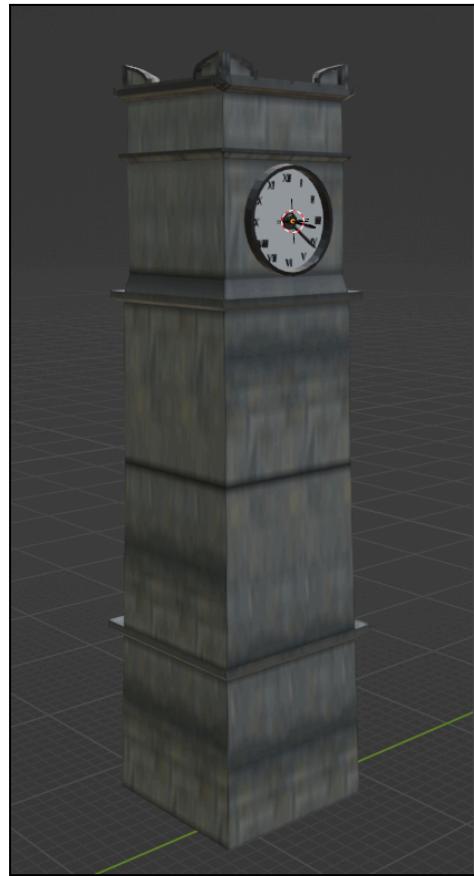
The player awakes in a dark evergreen forest, fireflies buzzing around near them, the sound of grasshoppers and a nightly breeze surrounding their ears. After a few seconds, some dialogue appears in the top left-hand corner of the screen reading: "Woken up in a strange forest?" and "How odd..." a few seconds later. Next, this dialogue continues to all parts of the screen, eventually telling the player to follow the clearing through the forest and approach the bell tower. The player walks slowly through the clearing and as the clock tower looms into view, the clearing opens to the edge of the river bank with the clock tower standing in the centre. As the player approaches, the active gameplay stops as a cutscene is triggered. The cutscene focuses on the clock face of the tower, as the hands start to move and the bell chimes. The view then pans to the grassy field below, where the Siren Head monster appears and its haunting siren sound echoes through the forest. Gameplay then resumes, and the player either sprints through the forest away from the monster, as game instructions tell them to survive and run away for three minutes, or they panic and do not react fast enough and get caught by the monster.

If they get caught by the monster before the three minutes are over, the failure end screen will load, telling the player "...What a grizzly death. Can you still hear the sirens..." and giving a button to return to the main menu screen. If the player survives for the whole three minutes, the survival end screen will load saying "There is hope yet. Stay safe traveller..." and the main menu button will also be given. Additionally, within the gameplay, the player can enter the river as well as run around the forest, however, if they do so the underwater environment will make it hard for the player to see, creating a dark and suffocating experience. When the player is finished playing the game, they can press the 'Quit' button on the main menu screen to exit the application.

## Analysis Of Key Technical Implementations

This analysis of technical implementation will be split into five different categories: Modelling, Environment, Sound, Coding and User Interface.

### Modelling:



One of the main components in this project that was 3D-modelled from scratch is the clock tower, inspired by the tower at Seacroft Hospital. This model took around 5 hours to model in total and was modelled in the software Blender. Photoshop was also used to create the skin and texture.

Seacroft Hospital Tower was used as inspiration, however, I wanted the tower to look menacing and simpler since not all details would be visible to the player. This is why I made the edges sharp and added more ledges to the build. The main structure of the tower was built first and extruded, the clock face being separately modelled to ensure accuracy. These two models were then joined together to create the full build. After the structure was modelled, I used the website polyhaven.com to test different materials that could be used as the tower's skin. After trying multiple I decided to use 'Sandstone Block 05' as it looked the eeriest and most effective while being stretched over the model.

I had several challenges when modelling the tower and one of the biggest challenges I had when 3D modelling was learning how to use specific tools in conjunction with the model, for example: adding vertices on an already complex shape and altering them individually without damaging a complete face. Furthermore, I had trouble adding materials to the model, as the Blender interface has separate channels for each element of creating a whole product render. This meant that I spent a lot of time researching how to add textures and how to fix certain issues such as scaling and ratios.

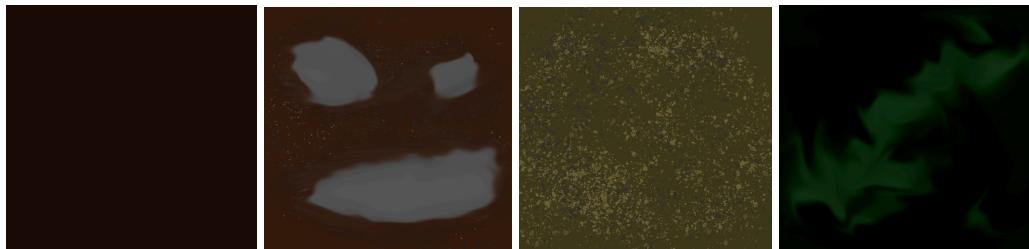
Despite these challenges, I managed to create a clock tower model that enabled me to execute a product which was very close to the desired output and vision. If I had to improve this model, I would choose to properly learn how to use PBR textures in order for the material to have a 3D effect which would add to the quality of the game visuals. I would also add some animated accessories such as plant life that wraps around the tower to make the model seem even more realistic and interesting.

Other 3D models featured in this game included: the Siren Head monster and the forest prefabs (grass billboards and different tree structures). I did not model the Siren Head

monster myself, as I believed it would be more time efficient to focus on wider game mechanics. The 3D model I used for the Siren Head monster was created by user 'wollabebes' on the website SketchFab (full reference can be found in the reference list). I chose to use this model as it had a similar geometry and style to how the rest of my game looks, allowing for the game visuals to have cohesiveness. I had a few issues with implementing this model in my project, as like the clocktower model, the material settings would not import properly into the Unity Game Engine. However, upon solving this issue once I was able to swiftly apply the problem-solving method to other game objects.

### **Environment:**

I predominantly used the Unity terrain editor to create the game environment. This included sculpting the landscape and painting each terrain with different materials. Initially, I used a material pack from the Unity Asset Store, however, after semi-completing the landscape I decided that I wanted to achieve a different aesthetic that matched the prefabs I had chosen. Instead of using an asset pack, I created my own material textures on Adobe Photoshop as displayed below. This allowed me to customise the landscape more to my own vision.



Furthermore, to enhance the game environment I used several asset packs from the Unity Asset Store as indicated earlier including: 'Hand Painted Nature Kit LITE' by Silver Cats which includes tree and plant prefabs as well as a grass billboard, '5 Rocks Package' by Armes, 'AQUAS LITE - Built-In Renders Pipeline' by Dogmatic which includes water prefabs and 'AllSky Free - 10 Sky / Skybox Set' by rpgwhitelock. Using these assets saved me time in building the world map and eased the workload so that I could later focus on core game mechanics such as coding and animation.

I also used Unity's post-processing feature within the underwater environment in my project to make the visuals seem like the character is actually underwater. The environment becomes much darker and clouded, with light sources blurring when the player looks upwards. This is one of my favourite features of my project as it is very effective in portraying a different environment space for the player to explore.

There were no outstanding challenges that I was faced with when creating the environment as all assets and custom materials were efficiently implemented. If I had to improve my environment further, I would add more physical detail to the mountainous terrain areas to make them seem more realistic and also add more detail to my own terrain materials to enhance the realism further. The reason I did not prioritise this is because the mountainous terrain resides at the edges of the world map which the player is unlikely to fully explore compared to the centre area.

## Coding:

In total, I used eight scripts within my project to achieve numerous animation sequences, element behaviours and UI controls. I will explain the scripts that had the most important effect on the game mechanics.

```
void OnTriggerEnter(Collider other)
{
    //on trigger the collider is disabled so cutscene only plays upon first entry
    this.gameObject.GetComponent<BoxCollider>().enabled = false;
    //activating camera
    clockCam.SetActive(true);
    //disabling player movement
    thePlayer.SetActive(false);
    //activating clock hand animation trigger
    myController.SetBool("handTrigger", true);
    //activating sirenhead component along with its animation
    sirenHead.SetActive(true);
    sirenSequence.SetBool("sirenstart", true);
    //activating the canvas with the timer on
    TimerCanvas.SetActive(true);
    //start coroutine sequence
    StartCoroutine(FinishCut());
}

IEnumerator FinishCut()
{
    // wait until animation is over then activate player movement and disable camera
    yield return new WaitForSeconds();
    thePlayer.SetActive(true);
    clockCam.SetActive(false);
}

public class FollowPlayer : MonoBehaviour
{
    //creating transform variable that uses the targets location
    public Transform target;
    //making navmesh variable
    NavMeshAgent nav;

    void Start()
    {
        //collecting the nav mesh data
        nav = GetComponent<NavMeshAgent>();
    }

    void Update()
    {
        //setting the nav mesh destination to target location
        nav.SetDestination(target.position);
        //if the distance is lower than 5f between sirenhead and target
        if (nav.remainingDistance < 5.0f)
        {
            GetComponent<Animator>().SetTrigger("Attack");
        }
    }
}

public class MainMenuTransfer : MonoBehaviour
{
    //function to locate scene based on its name
    public void GoToScene(string sceneName)
    {
        SceneManager.LoadScene(sceneName);
    }
}

void start()
{
    //starting the coroutine on wake
    StartCoroutine(StoryTimeline());
}

//coroutine function which controls the timeline
IEnumerator StoryTimeline()
{
    //first group of text
    yield return new WaitForSeconds(2);
    firstT.SetActive(true);
    yield return new WaitForSeconds(2);
    secondT.SetActive(true);
    yield return new WaitForSeconds(3);
    firstT.SetActive(false);
    secondT.SetActive(false);
    //second group of text
    yield return new WaitForSeconds(2);
    thirdT.SetActive(true);
    yield return new WaitForSeconds(3);
    fourthT.SetActive(true);
    yield return new WaitForSeconds(5);
    thirdT.SetActive(false);
    fourthT.SetActive(false);
    yield return new WaitForSeconds(3);
    //third group of text
    fifthT.SetActive(true);
    yield return new WaitForSeconds(2);
    sixthT.SetActive(true);
    yield return new WaitForSeconds(5);
    fifthT.SetActive(false);
    sixthT.SetActive(false);
}
```

One of the most influential scripts in my project controls the clock animation sequence. This moment in the game is a pivotal point where the player is immersed in the cut scene and sees the monster for the first time. In the screenshot to the left, you can see that I used a trigger function to control the cut scene animations, as well as set the monster's game object to visible. I also used an IEnumerator function to finish the sequence after waiting for the animation time length.

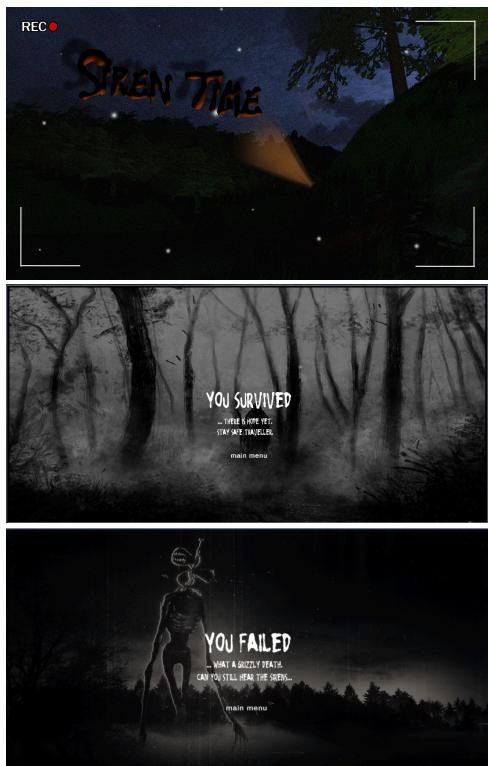
Another key script in my project connects the navigation mesh to a game object. This script is attached to the monster so that its target destination continually updates to be the player's position, creating a 'chase' element. Furthermore, I used an 'if' statement to set parameters for the 'attack' animation on the monster, which adds more dynamic movement to the game.

While the code for this next script is minimal, it was a key component for me to use throughout my project. This script is used for several scenes to add behaviour to buttons that take the player back to the main menu. This method was applied continuously and worked very well.

This script was used to implement the story text into the game. It uses a Coroutine function to set a timeline of appearance according to which game objects are set as active. I wrote this script without needing to research further and as a new game developer, I was pleasantly surprised with how much I had learnt from scripting this project.

The scripts shown and explained influence the key aspects of my project. Full learning references can be found within the code files in the Unity project folder.

## User Interface:



The Unity UI Engine was used to create and connect multiple scenes together through the use of button objects. In total, there are five different scenes within my unity project: The Start Screen, Instructions Screen, Game Scene, Fail Screen and Survive Screen. As previously explained, I used code to switch between scenes and define paths for the UI buttons to use. Furthermore, I used an FPS Controller from the Unity Asset Store called 'Mini First Person Controller' by Simon Pasi that enables the player to walk, run and look around the environment. I chose to use first person as the play style because it enables the player to be completely absorbed in what is in front of them, not being distracted by their own character or items within the screen. Additionally, I combined the use of the FPS and Unity's UI Engine to create game dialogue within the player's field of view upon awake, adding to the storytelling element of the game while also informing the player of what to do.

Learning how to use Unity's UI feature was challenging at first, but after repetitive work, it became easy to understand and implement with other game features. If I had to improve the game's UI, I would add fade transitions to the screens and dialogue in order to make the game experience sleeker, avoiding breaking the player's immersion and concentration when playing.

## Project Reflection

From a user's perspective, I believe that my game is effective in providing an atmospheric and emotionally, triggering experience. This is due to the genre of horror, as well as the visual and technical aspects of the game, which all holistically come together to create a dark scenery with ambient sound and striking graphics for the scenes that require the player's attention. From a technical perspective, I am pleased with the level of success that I have achieved with this game since it is the first one I have ever created. Throughout this project, I have learnt many concepts, methods and techniques of game development that have enabled my creative vision to come to light. This was both a very enjoyable and stressful experience for me, and I believe that without a time restriction, I would have taken this game further to a level similar to professional game development.

As stated within my Technical Implementation Analysis, there have been several challenges when creating this game; most deriving from lack of knowledge and experience as well as component compatibility, however, I am proud of the mental process I developed to overcome these issues, and how in some cases I learnt from these challenges and used the solution to rapidly improve specific technical elements. If I had to take this project further as a whole, I would like to add game elements such as using tools and carrying a flashlight to

the player controls, as well as more monster animations and behaviour so that the threat is even larger. I would also add a range of indoor and outdoor environments for the player to explore, and connect this with story dialogue so that the player can become immersed in a possible backstory surrounding the monster or area of gameplay.

**Word count: 2735**

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*All references are in alphabetical order.*

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