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Mana Tohu Mātauranga o Aotearoa  
New Zealand Qualifications Authority

## **Level 2 Digital Technologies and Hangarau Matihiko 2023**

**91899 Present a summary of developing  
a digital outcome**

# **EXEMPLAR**

**Excellence**

**TOTAL 08**

**Instructions**

The task in this assessment requires you to discuss a digital outcome you developed within the past 12 months.

You must illustrate your answers with three images you have prepared in advance:

- a single image of the digital outcome (e.g. a website, a poster, an electronic device)
- a single image of a digital component of the outcome in the software used to create it
- a single image of the development process.

During this assessment, you may access only the three images you have prepared in advance. You may not access your digital outcome, any other online or paper resources, or the internet.

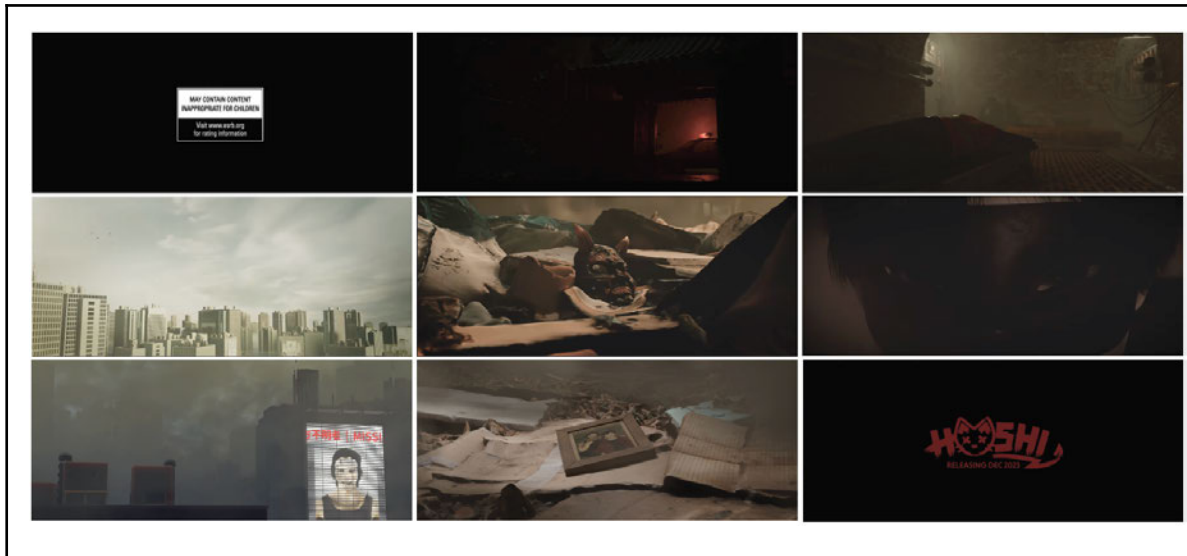
If you developed your digital outcome as part of a group, you must write about your role and specific contributions to the project.

Read all parts of the task before you begin.

## Assessment Task

### Your outcome

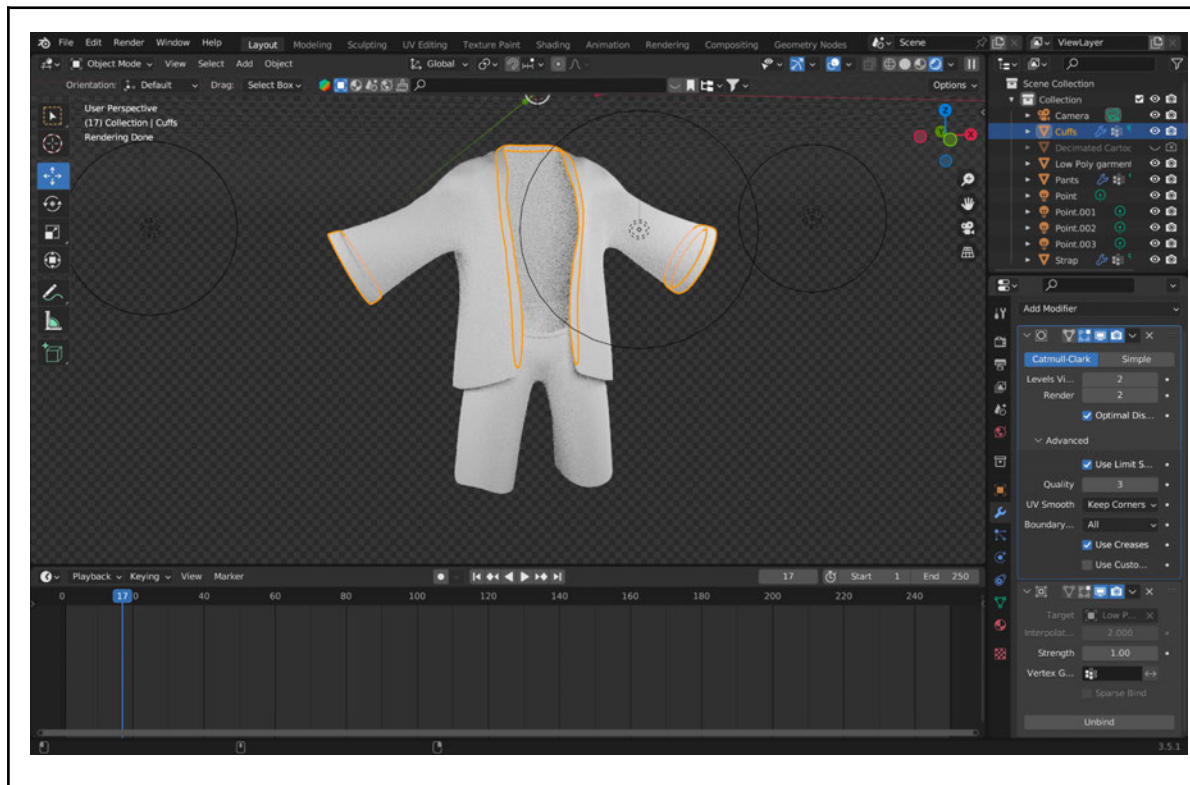
(a) (i) Insert the image you prepared of your finished outcome (what the end user sees).



(ii) Briefly describe the purpose of your digital outcome.

The purpose of my digital media outcome is to create a video game trailer that aims to captivate the interest of end users as a form of promotional material so that they end up **purchasing** the video game “**Hoshi:Tokyo Mystery**”. The trailer is titled Hoshi: Tokyo Mystery and is meant to convey the fictional, **dystopian, and poverty ridden** society of Tokyo. Through this medium end users should feel immersed in the environment and capture glimpses of the storyline and what the video game entails.

- (iii) Insert the image you prepared of a digital component of your outcome in the software used to create it.



- (iv) What software did you use to create the digital component of your outcome?

I used a free 3D modelling software called **Blender**, which features an extensive set of workspaces and tools for animation, 3D modelling, compositing, etc. Blender has **widespread compatibility** with different file formats and add-ons relevant to my use case, and is therefore my chosen software for creating the digital outcome.

How did you use your chosen software to create the digital outcome?

**Blender** was used to **create and render all the assets and footage** that is present in my 3D animation. Due to Blender's extensive range of tools, I was able to 3D model the character Hoshi and his father, UV unwrap each model, texture paint the characters and assets, bake the image textures into flat images, combine assets together to create the environments and render each scene using the realistic Cycles rendering engine, etc.

(v) What is a requirement you had that related to the **functionality** of your digital outcome?

In your answer you should:

- explain why the requirement was important
- explain how you addressed the requirement in your digital outcome
- provide specific examples.

Requirement: The video game trailer should be rendered/exported in an **MP4** final format using the **H.264 codec**.

Response

The **MP4 H.264 codec** file format is the most popular, compatible and widely used video format that creates a balance between the quality/resolution of the video, and the file size. Ensuring that I exported my video game animation using this final format setup, was crucial in allowing my digital outcome to function as intended for the purpose of the project. Due to the **compatibility** of this file format I would be able to upload my digital outcome to various platforms such as Youtube, Instagram, Tiktok, etc, to allow for widespread availability and accessibility of the video game trailer, so that more end-users purchase the video game.

The way I was able to address this requirement was during the rendering stages of my Blender animation. In the Blender render tab, I set my file format to MP4, and my video codec to h.264, and simply let the animation render frame by frame.

By doing so I believe I have appropriately addressed this requirement to improve the **functionality**, of my digital outcome, as any other file format may cause accessibility issues, or incompatibility on other devices or softwares.

(vi) What is a requirement you had that related to the **aesthetics** of your digital outcome?

In your answer you should:

- explain how you achieved the requirement when developing your digital outcome
- provide specific examples.

Requirement: The video game trailer should appropriately convey the dystopian, poverty ridden environment of the video game.

Response

It was extremely important that my video game trailer did as a trailer should do, which is to

showcase and exemplify the best aspects of the video game. For my concept video game, the theme of the environment was heavily based upon a fictional dystopian city of Tokyo where society was crumbling due to gang violence and poverty. For this reason the requirement I set for myself was that the video game trailer should effectively convey this **dystopian/poverty ridden environment**, or else how would end users know what the game is about and appeal to the actual game?

There were many aspects during the development of the digital outcome where I considered this requirement. For instance, whilst combining my assets together to model the environment of the animation, I decided to add in **volumetric fog**. This volumetric fog was made to look slightly yellow and tinted, which gave the environment a dystopian feel, as if the air was dirty and hard to breathe. On top of the fact that this example adheres to the objective of my requirement, I subjectively found that the volumetric fog, added a layer of realism and mystery to the trailer, that for my taste, was extremely appealing, and mimicked real life fog.

For this reason I believe I have appropriately shown evidence as to how I implemented this requirement in my project, allowing my digital outcome to be more **aesthetic**.

(vii) Discuss how you addressed **intellectual property** within your digital outcome.

In your answer you should:

- explain what you have done to address intellectual property within your outcome
- explain how this will benefit your outcome in the future.

Intellectual property is the rights and ownership of asses created by an indiivdual. If this relevant implication was not considered during the development my digital outcome and I chose to use another creator's assets in my project without their permission, then I could face legal issues, related to plagiarism and copyright.

However, during the development of my project I took extreme caution in using assets that were **royalty free, copyright free**, and had the **permissions of the creator** to be used publicly by anyone, other otherwise creating the assets myself, which was the case for most of my animation. For example, some aspects of the environment in my video game trailer contained premade assets that were found on a free assets library called **Sketchfab**. Sketchfab states that all assets that are publicly listed on the platform are free to use and are copyright free, which was one of the measures I took to ensure the authenticity of my digital outcome.

The reason addressing intellectual property is so important is because it allows my outcome to be used without legal restrictions. This means that for my trailer, I can showcase it publicly without **copyright strikes, or take downs**, that would be of detriment to the **purpose** of my project, which is to promote the video game trailer. This ensures the sustainability, and longevity of my outcome.

(viii) Explain how **end user feedback** contributed to your outcome.

In your answer you should:

- explain who your end user was
- discuss the feedback they provided
- explain how the feedback contributed to your outcome.

End users are any **individual or group** of people that will use/view my digital outcome. For my project, I outlined that my end users, included individuals, regardless of gender or ethnicity, ranging from **sixteen years old and above**, due to mature themes in my trailer. Due to my age being sixteen, I was able to gather feedback from peers within my digital technologies classroom so that I could improve upon and gain valuable insights into how I could change aspects of my trailer.

An example of feedback that impacted the development of my outcome, was that my character, did not look realistic enough. This was due to a **lack of fine details and textures** that would have added to the realism of the character Hoshi.

Due to this feedback I was able to improve upon the character's realism by changing my texture painting methods. For instance I decided to add patches of dirt and soot on the skin of my character, which gave the character personality, as if it he lived in dire poverty. Another way I added to the realism was by mixing an ambient occlusion node in the (shader editor), which gave crevices around the character an added bit of darkness and shading. This made feature of my character pop out more, **added to the human like qualities** of the character Hoshi.

## Development process

- (b) (i) Insert the image you prepared of your development process.





(ii) Describe 3–5 key stages in your development process.

### Trialing:

Trialing was a key stage during the development process, as it involved trying different methods, tools, assets, etc, and choosing one that made my digital outcome as **functional and/or aesthetic** as possible while adhering to the purpose of the digital outcome. In order to document all the trialing I did throughout the course of my project, I chose to do two week Sprints using the **Agile sprint method**, so that I could gain insight into the choices I had made previously.

### Decomposing:

Decomposing my project came after I had formed ideas as to how I wanted my digital outcome to look and what software I would use to create the animation. This stage in my development process involved breaking down generic objectives in my project into more manageable tasks. For instance 3D modelling the character was an objective of mine, but decomposing this objective looked like, **creating the low poly base of the character, then sculpting in finer details into the high poly mesh, retopologizing the character mesh, then UV unwrapping, etc.** The tools that allowed me to visualize and illustrate my decomposed steps, included using **Trello boards** via the To Do, Doing and Done, columns, as well as creating a **Gantt chart** using the **Waterfall method**.

### Testing:

Testing was a stage during my development process that involved testing the **functionality** of the digital outcome, so that it adhered to the purpose of the project, which was to create a functioning video game trailer. This meant looking out for any errors such as non-manifold edges in the character mesh, ensuring the the characters cloth simulation, and hair dynamics collided with the characters mesh. In order to document all the testing I did throughout the course of my project, I chose to do two week Sprints using the **Agile sprint method**, in order to know what issues had occurred previously so that I could look back at them if needed.

### Feedback:

Feedback was a stage in my development process that allowed me to gain new **perspectives** and **opinions** from the end users in my project. There opinions and criticisms allowed me to make changes to my digital outcome that **improved** it in the direction of the projects **purpose**. Without this crucial step, my outcome would not have been as effective at capturing the end-users attentions and prompting them to purchase the video game.

(iii) Explain one of the most important decisions you made during your development process and how it had a positive effect on your digital outcome.

One of the most important decisions that I made during the development process came from trialling.

The first form of trialling that I did for my project involved choosing what animation software

I would create the animation on. The three softwares I planned to trial were **Blender, After effects and Unreal Engine**.

Due to already having past experience in using Blender, and the fact the the software was free to use, and had an extensive set of tools and workspaces that catered to my 3D modelling, animation, texture painting, and rendering needs, etc, **I chose to use Blender** as the final animation software for my project.

After having chosen to create my entire animation on Blender, I can surely say that it had a positive impact on my digital outcome. Although the software was free to use, all of its tools and workspaces compare to those of paid industry grade animation softwares like Maya, and having hyper realistic capabilities. These benefits included the Cycles render engine, hair dynamics, cloth simulations, etc which have allowed my digital outcome to be extremely **realistic**, and true to the **purpose** of my digital outcome, elevating the **quality of my outcome**, and speeding up my **workflow**.

- (iv) Explain one of the decisions you made based on **testing and trialling** during your development process. This decision must be different from the one you discussed in part (b) (iii).

**Testing and trailing** allowed me to improve mulitple aspects in my digital outcome that allowed it to function as intended and to adhere to the purpose of the project. One of the decisions I made based on testing and trialling, was to **make my cloth simulations more realistic**.

In terms of **testing**, there were many instances where the cloth simulation for the characters clothing would not collide with the characters base mesh during animation. I later found out that this issue was due to the collision modifier being above the armature modifier in the modifier stack. What this meant is that Blender would calculator the character collision before the characters body even moved. Due to this cloth would pass right through the mesh. If I had not tested to the cloth simulation in the first place then the issue would not have been resolved, and the project would be **nonfunctional**. By learning from this cloth simulation mistake, I later made sure to move all my collison modifiers below the armature modifier in future cases, to avoid this issue happening again.

As for **trialling**, this involved trialling different cloth simulation settings in Blender to get the desired cloth feel and interaction. During this step I encountered many issues with the cloth being too stiff, and not bending around the character body as I would have liked. To solve this issue I cranked down the tension and stiffness of the cloth physics, and made sure to slightly increase the cloth simulation quality steps. Due to this use of trialling during the development process I was able to get a desired cloth interaction in the animation, that was **realistic and convincing**.

Due to testing and trialling the decision I made, was **making my cloth simulations in Blender more realistic**.

(v) Explain how the decisions discussed in parts (b) (iii) and (b) (iv) **influenced** your digital outcome.

In discussing the influences, you should:

- discuss how well these decisions were carried out
- explain how they affected or impacted your outcome
- discuss their flow-on effects.

The choice to use Blender as my animation software, as well as choosing make my cloth simulations more realistic were made for the betterment of the digital outcome, and were carried out as soon as I had made my decisions through testing and trialling.

I chose to use **Blender** simply for is easy to use workspace, and realistic rendering capability, which made my workflow more efficient whilst making the trailer itself extremely realistic, and mimicking of hyperrealistic animations/ the **quality of my outcome** was improved. In terms of the flow on effects related to this decision, I would say for sure that there was still a steep learning curve, especially in terms of baking my image textures and retopologizing, which was overcome through research and trial and error. However, the hard work was not unrewarded, as mastering Blender allowed me to produce an animation that surpassed my expectations. Whilst allowing me to make changes in the future due to constant software updates and file export options, meaning I could import my Blender assets into other softwares like Maya and Unreal Engine.

As for choosing to **make my cloth simulations more realistic**, through testing and trialling, I believe my final digital outcome was greatly improved and made more realistic due to this decision, which once again improved the **quality of my outcome**, whilst adhering to the **purpose** of the outcome/ is **convincing and aesthetic for end users**. The flow on effect of this important decision was that I was able to maintain a consistently realistic cloth simulation in my animation, and I learnt **valuable skills** that I can continue practicing and growing in later projects.

Both my choice of using Blender and choosing to make my cloth simulations more **realistic**, definitely improved the quality of my outcome, and allowed me to create an outcome that was representative of my digital outcomes purpose, which is to convince end users to purchase the video game, and to showcase the dystopian/poverty ridden environment in an effective way.

(vi) What changes would you make to improve your development process?

In your answer you should:

- explain how these changes could improve the quality of your outcome
- provide specific examples to support your answer.

In the future I believe I could improve my development process by using more **efficient tools for collecting feedback** on my project from end-users and peers. After having discovered **Trello's built in commenting feature** late in my development process, I believe that in the future I can use this tool as a way to gather more feedback that is more specific, and of a high quality.

Due to this feature my peers would be able to comment directly on the individual tasks I create on **Trello**, therefore narrowing down the **specific** things I could do better in my project without wasting time. This would certainly allow me to improve the quality of my outcome, as seeking feedback, especially from the **end-users** themselves, will allow for the **end-users** to enjoy the digital outcome more.

## Excellence

**Subject:** Digital Technologies and Hangarau Matihiko

**Standard:** 91899

**Overall grade:** 08

Grade	Marker commentary
E8	<p>The candidate explained their responses in detail and showed understanding of the key aspects of their outcome (a promotional video) and the development process of their project.</p> <p>They confidently demonstrated understanding of the outcome's requirements and implications, and provided some specific examples with justification to say why.</p> <p>At Excellence level, the candidate has evaluated and made judgements on the decisions they made in parts (b)(iii) and (iv). There is clear discussion around how well these decisions were carried out, how they impacted the outcome, and genuine flow-on effects.</p> <p>The candidate recommended the use of a project management tool to collect feedback as a way of improving the development process. This recommendation recognises the potential to use the tool for specific and high-quality feedback, and emphasises the importance of focused feedback to save time and provide clear insights.</p> <p>The response demonstrates a clear understanding of the value of seeking feedback, especially from end users, to improve and enhance the quality of the digital outcome to align with user preferences.</p>