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MERIT EXEMPLAR 2022



NEW ZEALAND QUALIFICATIONS AUTHORITY
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2

COMMON ASSESSMENT TASK

Level 2 Digital Technologies and Hangarau Matihiko 2022

91899 Present a summary of developing a digital outcome

Credits: Three

Achievement Criteria		
Achievement	Achievement with Merit	Achievement with Excellence
Present a summary of developing a digital outcome.	Present an in-depth summary of developing a digital outcome.	Present a comprehensive summary of developing a digital outcome.

Type your School Code and 9-digit National Student Number (NSN) into the space below. (If your NSN has 10 digits, omit the leading zero.) It should look like “123-123456789-91899”.

-91899

Answer ALL parts of the assessment task in this document.

You should aim to write **800–1500 words** in total.

Your answers should be presented in 12pt Times New Roman font within the expanding text boxes.

The only resource you may access during this assessment is your digital outcome for reference only. The three images you prepared in advance are the only information you may copy and paste into this assessment. No other internet access is permitted.

Save your finished work as a PDF file with the file name used in the header at the top of this page (“SchoolCode-YourNSN-91899.pdf”).

By saving your work at the end of the examination, you are declaring that this work is your own. NZQA may sample your work to ensure that this is the case.

INSTRUCTIONS

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

You should 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 showing a relevant digital component of the outcome in the software used to create it (e.g. the HTML / CSS for a website, the “layers” view of a poster, source code, a CAD / CAM file)
- a single image of the planning / development process (e.g. agile development, a planning chart).

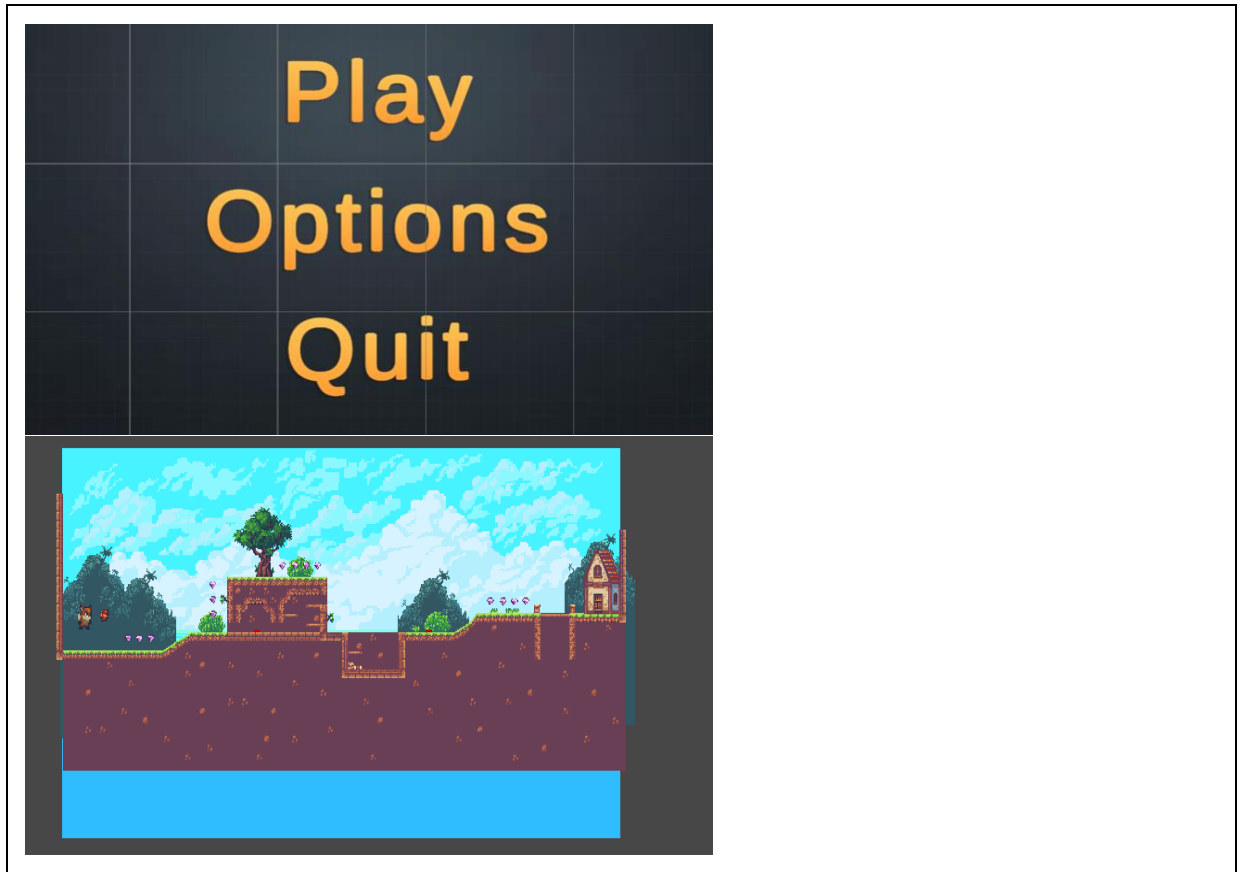
During this assessment, you may access your digital outcome for reference only. The three images you prepared in advance are the only information you may copy and paste into this assessment. No other internet access is permitted.

Read all parts of the task before you begin.

ASSESSMENT TASK

Your outcome

- (a) (i) Insert the image you prepared of the digital outcome (e.g. a website, a poster, an electronic device).



- (ii) Explain the purpose of your digital outcome.

My purpose from the beginning of my project was to create a software that provides enjoyment in a relaxing and entertaining way for a semi-large age range. My project is aimed to help those that come home after work/school when they are stressed. The concept aims at de-stressing and de-compressing at the end of a long day, de-compressing and de-stressing are large parts of maintaining strong mental health. Mental health is not just a problem in New Zealand but a problem all over the world and my project aims at helping people strengthen and maintain their mental health.

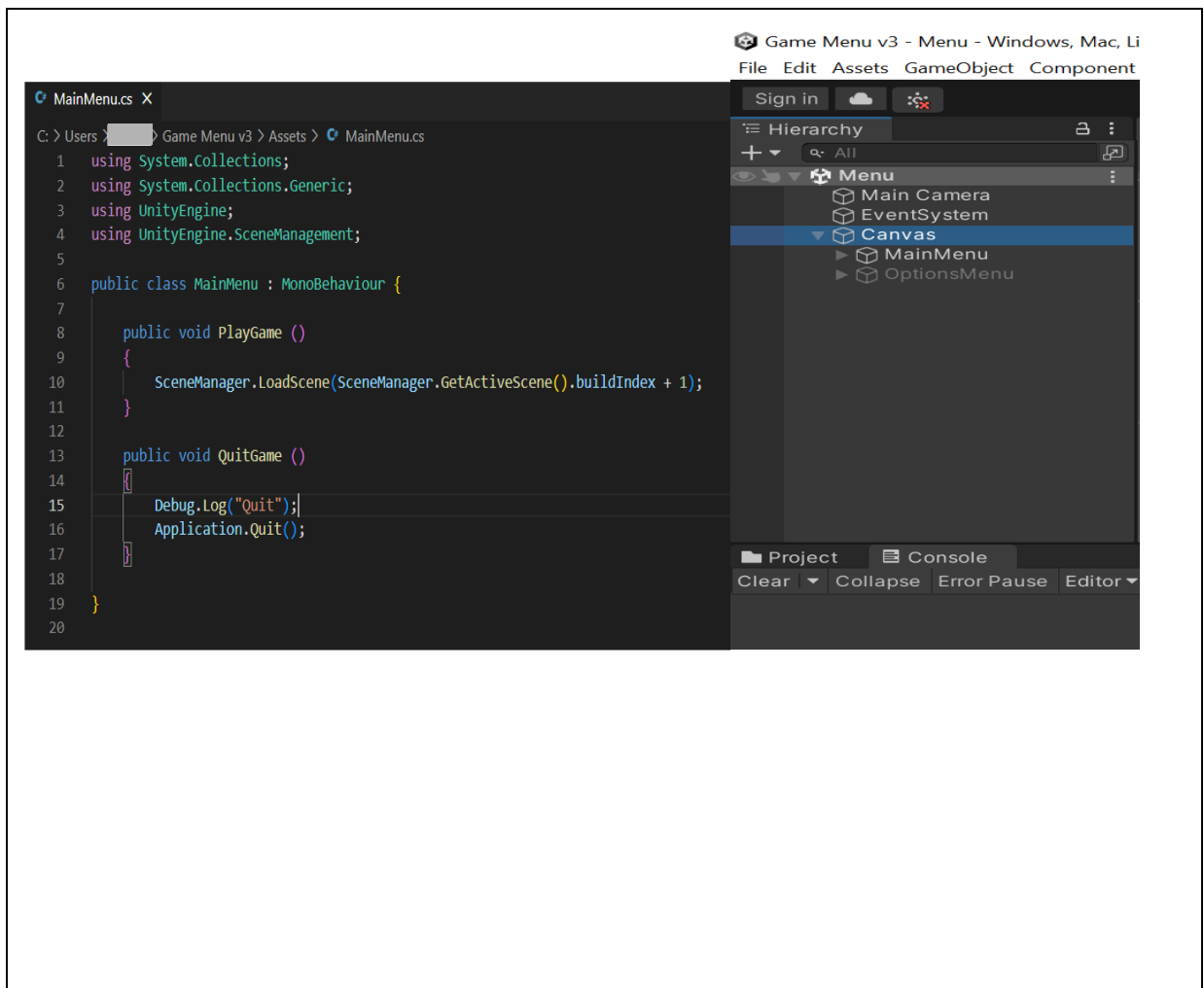
- (iii) Describe what your digital outcome looks like and how it works.

My digital outcome is presented in the form of a game, this game uses appealing colours as well as puzzles and teamwork. The game goes by the name **BigSmall**, this is because it contains two characters: one large and one small. The large character is taller and can jump further than the other character, this is used to overcome obstacles by jumping over them. The small character isn't as tall and can't jump as far, however, it can fit through small crawl spaces which help it unlock areas for the large character to pass through.

The game's main feature is the two different sized characters that work together to solve puzzles like getting over a pit of spikes or jumping over obstacles. Additional features that this game uses are objects like levers (used to activate specific objects), elevators (activated by the levers allowing players to unlock new areas of the levels), gems (adding to the score that is reviewed after each level) and like previously mentioned spikes (kills the player on death and respawns them back at the start of the level). The game also uses a simplistic art-style which is easy to follow as it helps the game feel more relaxing and enjoyable to the player. This is a specific choice because the game is made to be an escape from stress and to overall help you decompress after a long day.

The game is made in Unity which allowed me to directly edit objects and level sprites. I used Unity because it is a simple software which is useful for making starter games and it is helpful with identifying mistakes. The game also uses C#, which is a complex, object orientated programming language. I used C# along with Unity to create things like controls, jump physics, movement and score counting. C# was a reliable software which uses object orientated aspects which work well when creating character movement or gem collecting

- (iv) Insert the image you prepared of a relevant digital component of the outcome in the software used to create it (e.g. the HTML / CSS for a website, the “layers” view of a poster, source code, a CAD / CAM file).



- (v) What software did you use to create the digital components of your outcome? How suitable was this software? You may include more than one software in your answer.

The first software that I used was unity (image on the right), I used unity because it suits the style of my game perfectly. Unity is a platform to design games in a 2D or 3D space, my game was a 2D game, so Unity fitted the criteria of my game perfectly. Unity also has built in components that make it so you can edit objects and sprites individually, this was especially helpful when creating the menu for the game. The image on the right shows the canvas tab which you can use when creating a menu, through this canvas tab I was able to design my menu by choosing the button feature which allowed me to use buttons to navigate through the menus.

I also used C# and the image on the left shows the code that was used for the menu. C# was a very suitable software as it enabled me to use the buttons in the Unity menu and give them functions. The 'PlayGame ()' function was used to change scene to the game scene which would initiate the scene holding the level selector where the player would be able to select the level that they wanted to play. C# was very useful in this regard as it gave me the opportunity to create an options menu with more specific buttons and it let me make a quit button which is the second function in the image on the left, this function was there so that the player could close the game through the play window itself.

(vi) What were the TWO most important requirements of your digital outcome?

In your answers you should:

- explain what the requirements were
- explain why they were important
- explain how you implemented these requirements
- give specific examples of how these link to the digital components.

Requirement 1:

That the game was complex yet relaxing and easy to understand.

Response

In the aim to let people de-stress and de-compress after a long day I did not want the game to be boring and a breeze to complete, this would just put peoples mind off it. I wanted the game to be engaging through puzzles and teamwork, so taking this into account when designing the game, I implemented semi-complex puzzles that made the players think before solving. These puzzles included input from both players, this also encourages constant communication between players to let them know. This implementation made the game relaxing and fun for both players as they must solve the puzzles together to progress through the levels.

Requirement 2:

The game needed to be artistic while being simple to make.

Response

Our game used a specific cartoon-like art style to make the game interesting for players playing the game. The art that I used for the game was made by the artist Luis Zuno, I didn't have time to develop my own art, so I used this free art to the community. The art style I chose used a lot of vibrant colours, these types of colours tend to engage the players because they pop-out more and make the game interesting. For the game I used a consistent art style for the levels. For level one it was set in an outside scenery which is shows by the grass blocks and the house in the background, the first level was made as a mini tutorial level, so the art choice stayed simple and compact. The second level took place in an underground mine, for this level I used vibrant browns and yellows to signify being underground. This choice kept the game consistent throughout the levels making the player feel like they were travelling through a new world.

- (vii) What were TWO relevant implications you chose from legal, future-proofing, or end-user considerations?

In your answers you should include:

- why the implication could impact your outcome
- what you included in your outcome to address the implication.

Relevant implication 1:

Legal

Response

I chose the legal implication for one of my implications because legality is very important for developers making their own product for others to play. For my game I created everything aside for the artwork which I implemented into my game from an online website. This implication could impact my outcome because if I were to distribute my game claiming all the content was mine, I could get into trouble with the developer of the art software. Because of this I addressed the developer in my planning and written work, also making sure that in my work I never claimed that any of the art was mine. This is sure to satisfy the art developer because his art is being used for a game that helps people and distracts people through the work of his art. The creator of the artwork is called Luis Zuno.

Relevant implication 2:

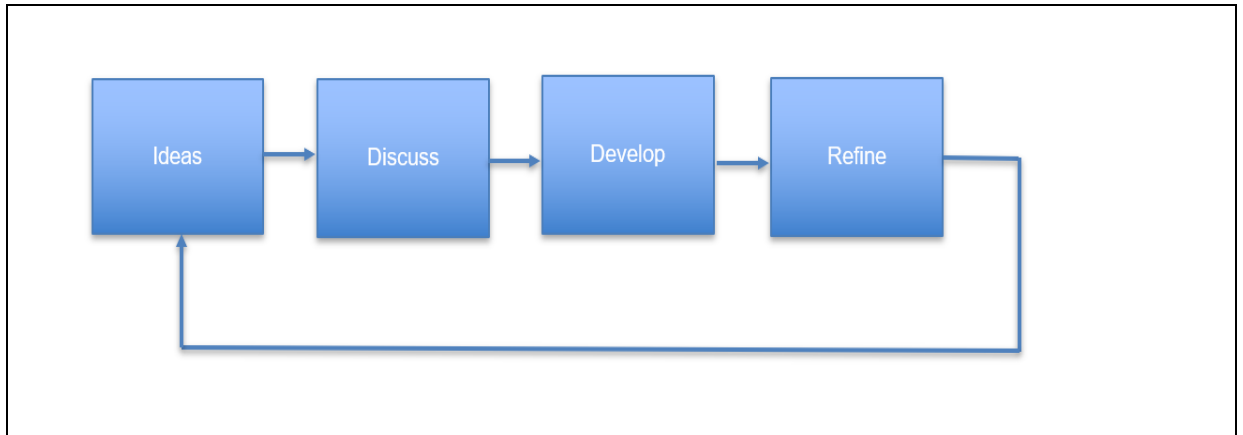
End-User Considerations

Response

End-user considerations for my game are very important because my game is based around de-stressing and distracting the player to help them relax and decompress from daily life. The target age group is between 12 and 28 so my game must consider a wide range of age groups that will be able to play the game. For the younger audience, I need the game to be simple and easy to learn because if the game is not simple enough, they will struggle to understand and have enjoyment while playing. My game is also targeted toward late teens and late twenty-year-olds which means it must be complex enough to be interesting. I am going to combat this by having the characters methodically make their way through the levels with tips along the way to help them get through each level. This will ensure that the players will enjoy the game because it will be a challenge to complete each of the levels.

Development process

- (b) (i) Insert the image you prepared of your planning / development process (e.g. agile development, a planning chart).



- (ii) Briefly explain each stage of your development process.

The first stage is Ideas:

- In this stage my intention was to have an idea of mine put through to hopefully be put forward into the game.

The second stage is the Discuss Stage:

- This stage focused on discussing the ideas with my work partner and others to find out what suited the game and what didn't

The third stage was the Develop Stage:

- The Develop Stage brought the good ideas from the Discuss Stage and started to flesh them out to get ready to implement them into the final development stage.

The last stage was the Refine Stage:

- This stage made slight adjustments to my ideas which refined them into being able to be implemented into the game. This stage linked back to the first stage, this was so that I could rethink the ideas and add more after discovering problems along the way.

- (iii) Explain TWO decisions you made during your development process and judge how well each decision was carried out. Explain how they affected / impacted your outcome.

Choose your TWO decisions from the list below:

- which experts to work with (when and why)
- how you project-managed your project
- the design process you followed
- the testing and trialling you did with certain people or groups
- specific tools and techniques used within the software chosen to develop the digital component.

Decision 1:

Testing and trialling

Response

The testing and trialling used people from the target age range and myself to find inconsistencies in my development and features for the game. I used a trial table in my work document to record parts of the game that I was testing and improving, this helped in the development process because it made me step back and look at the game from a different angle which ultimately led me to improving the game substantially. Using people from the targeted age range also helped tremendously as I gained feedback from people outside the game which, in turn gave me more ideas and helped me decide where next to lead the project.

Decision 2:

Following the design process

Response

The design process was a key part of developing my project as it made me put lots of ideas in one place and take out particularly good and particularly bad ones. This then led to me discussing and refining my ideas with others meaning I was able to produce a project that appealed to more people. Being able to go back and rethink the ideas made developing the project easier because it sorted the ideas that sounded good from the ideas that were good, this is because after rethinking an idea I was able to look at it from a different scope making my final decision on the idea different from the first decision. This made the project a lot more fluid and easy to create because it helped me find the right ideas that suited the game properly.

- (iv) Based on what you learnt through the decisions discussed above, explain and justify what changes you would make to your development process, and how these changes could further improve the quality of your outcome.

My development process focused on creating the game rather than distributing it. So one thing I would change in my development would be the accessibility of the game.

My game was made through unity and the only way to get a copy of the game would be to download it or install it through a USB. With more time I would have combatted this by linking the game through a website making the players able to play online through a website rather than buying the game or downloading it online. This would make the game easy to access and faster to play as all the players would need to do is locate the game through a browser then they would be able to play the game both for free and easier. This would grow the player base of the game and reach more people as it would provide a way for even people who don't know to be able to play it for themselves if they were to stumble across it.

Another thing I would have added to the development process would be an online leaderboard system. This would allow players to compare scores and times for their completions of the levels. A leaderboard system would also make the game enjoyable for people who like the competitive side of games this would increase popularity for the game which would make people more inclined to play when they have had a long day. Something to play for is also a very compelling way to get players to play a game because when people set their minds on something it is very difficult to stop them, this is very true to my game as you need to think outside the box and work together with others to progress through the game.

Merit Exemplar 2022

Subject	Digital Technologies Level 2		Standard	91899	Total score	05
Q	Grade score	Annotation				
(a) & (b)	M5	At Achieved level the candidate is able to briefly explain their responses, showing they understand the key aspects of their outcome (a game) and the development process within their project by answering all components with a good amount of clarity.				
		At Merit the candidate elaborates further on aspects of the game they have already mentioned, but were unable to demonstrate any real depth and specific detail. For example, they <i>“implemented semi-complex puzzles that made the players think before solving. These puzzles included input from both players, this also encourages constant communication between players to let them know. This implementation made the game relaxing and fun for both players as they must solve the puzzles together to progress through the levels.”</i> To move this to a solid Merit, giving detail on one of the games would make it clear how the requirement was met. For example; what the game was, how the players communicate to solve the puzzle, and what is implemented to make it fun and relaxing (e.g. not timed, background music). This may also include examples of how it was coded.				
		The candidate did not expand their ‘decision answers’ to show any real depth of response or insightful conclusions for the Excellence level step-up. General answers were given, for example, <i>‘trialed with people and that helped me improve the game.’</i> Specifics about who (more than from target audience range) and when it happened in their development process is required.				