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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

Merit

TOTAL 06

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.

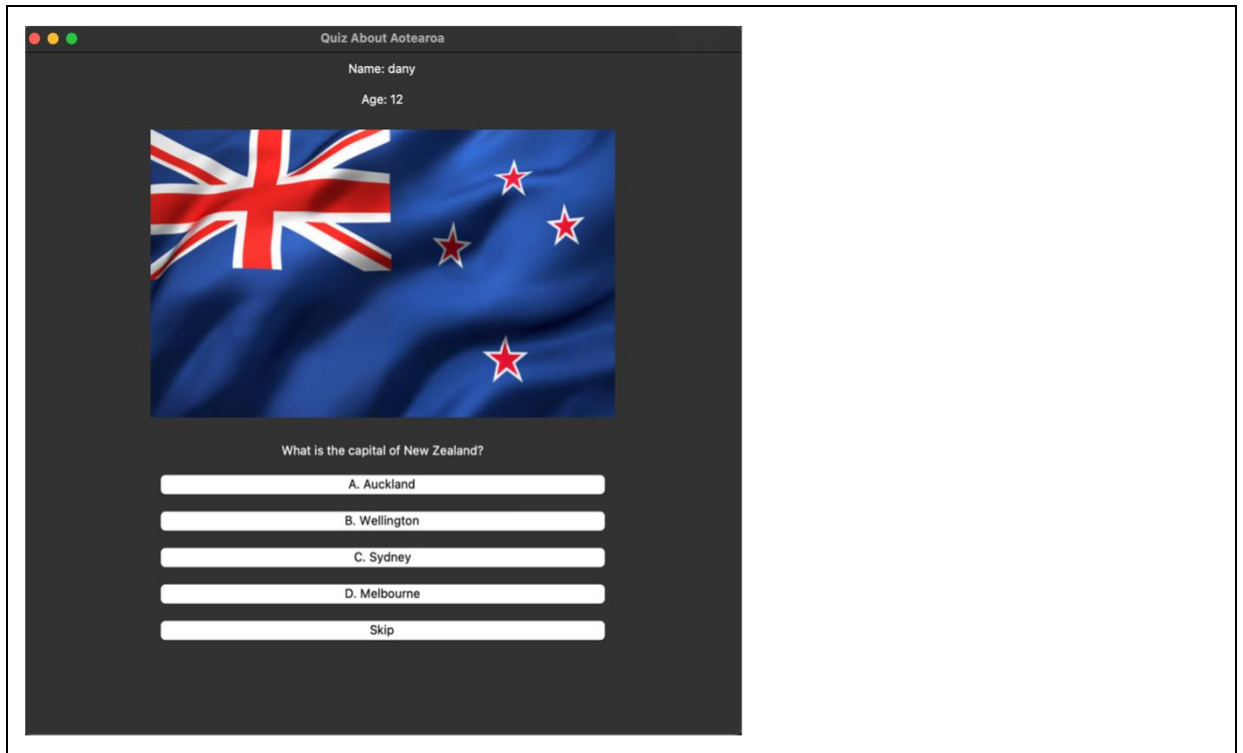
If you developed your digital outcome as part of a group, you must write about your role and specific contributions to the project.

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 outcome was to test students at [redacted] and see how much they really know about the country that they live in. this was done by creating a multiple-choice quiz that consisted of 10 multiple choice questions about New Zealand. The main purpose of my outcome was to create a fun and creative way to educate students about New Zealand at [redacted].

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

```
#defining show questions, enumerate function assigns numbers onto each answer and option, code will work regardless
def show_question():
    question_frame.pack()
    question_label.config(text=questions[current_question]["question"])
    for i, option in enumerate(questions[current_question]["options"]):
        option_buttons[i].config(text=option)

def check_answer(selected_option):
    global current_question, score
    selected_answer = selected_option[0]

    if selected_answer == questions[current_question]["answer"]:
        score += 1

    current_question += 1
    if current_question < len(questions):
        next_question()
    else:
        messagebox.showinfo("Quiz Finished", f"{name}, you scored {score} out of {len(questions)}. Well done!")
        play_again = messagebox.askquestion("Play Again", "Do you want to play again?")
        if play_again == "yes":
            reset_quiz()
        else:
            window.destroy()

def skip_question():
    global current_question
    current_question += 1
    if current_question < len(questions):
        next_question()
    else:
        messagebox.showinfo("Quiz Finished", f"{name}, you scored {score} out of {len(questions)}. Well done!")
        play_again = messagebox.askquestion("Play Again", "Do you want to play again?")
        if play_again == "yes":
            reset_quiz()
        else:
            window.destroy()

def next_question():
    question_frame.pack_forget()
    show_question()

def reset_quiz():
    global current_question, score
    current_question = 0
    score = 0
    start_frame.pack()
    show_question()
```

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

To create the digital component of my final outcome, I have utilised IDLE python to do most of the coding for my project.

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

When coding my digital outcome, I have used IDLE python. This software is an integrated software that comes with python. This software is very easy to use as it does not have very many complicated components. This software is a very basic software and is often used for beginners to code simple noncomplex projects. Since my project was a simple multiple-choice quiz and since I am quite new to coding, I have decided to use this software as I felt it would be easiest for me to code a simple multiple-choice quiz with it. I used IDLE python to code the components of my quiz such as entry boxes for user's name and age and all of the radio buttons which the user would press to input their answer. In the future If I wanted to produce more complicated outcomes, I should utilise Visual Studio Code instead. This is because visual studio code has much more advanced features and plug ins such as debug console, code autofill etc, which will help with the development of complex projects and is far more superior than the simple IDLE python.

(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: user friendliness

Response

The requirement of user friendliness is important as it promotes a fun and engaging experience. Entry boxes and buttons should be clearly labelled, and the layout should be simple and easy to follow. This will promote the ease of use of the outcome to the end user and allow them to have a very enjoyable experience when using the digital outcome. If this requirement was not met, then the users experience could be affected. Things such as unclear instructions and complex wording would hinder the experience of the user and in turn make their experience with the outcome not enjoyable which will make the user not want to use the outcome again. I have addressed user friendliness in my digital outcome as I have made my multiple-choice quiz as easy to follow and understand as possible. The layout of my quiz is very clear and all of the instructions guiding the user on what to input in each entry box is clearly labelled. I have also used very easy to understand and simple questions for my quiz so people of all ages can enjoy my digital outcome. Examples of this from my code are the Cleary labelled entry boxes and radio buttons with the possible answers to the questions being Cleary shown to the user and prompts will pop up so ask user if they want to replay the quiz or not.

(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: sleek aesthetics

Response

Sleek aesthetics is important in a digital outcome as it will boost the visual appeal of the digital outcome to its end users. Having a outcome that is aesthetically pleasing will engage the user more and make them have more trust in the outcome as it visually looks well made. This will boost the end user experience of the outcome and in turn the outcome will be more successful because of it. I have achieved this requirement in my final digital outcome as I have implemented the use of GUI into my digital outcome. By utilising GUI I have converted my text based quiz into a visually appealing outcome. Doing so will boost the sleek aesthetics of my outcome as instead of the user looking at just text based, the user is able to see a window with entry boxes and radio buttons for all the aspects of quiz. The radio buttons have the possible answers written on them and every entry box is clearly labelled to show the user what it is asking for. To further boost aesthetics of my outcome, I have also included pictures in my quiz which makes the quiz more interesting for the end user and in turn boost end user engagement.

(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.

The intellectual property that I have addressed in my digital outcome is copyrights. I have addressed this by ensuring that everything that I have used to develop my outcome was my own work and not stolen from anyone else. In areas where I have used the works of others, I have clearly stated their copyrights and have given credit to them. All of the code that I developed was my own code and all the photos that I have used in my outcome are copyright free. In doing this, it benefits my outcome in the future and it futures proofs my outcome from any copy right claims, Ensuring that my outcome is free from copyright I am able to meet the legal requirements and my outcome will not be harmful or show hate to anyone. By ensuring this intellectual property is met, it will also ensure that my outcome is protected from people who might want to steal my work and make it their own as I have added my own copyrights into my digital outcome.

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

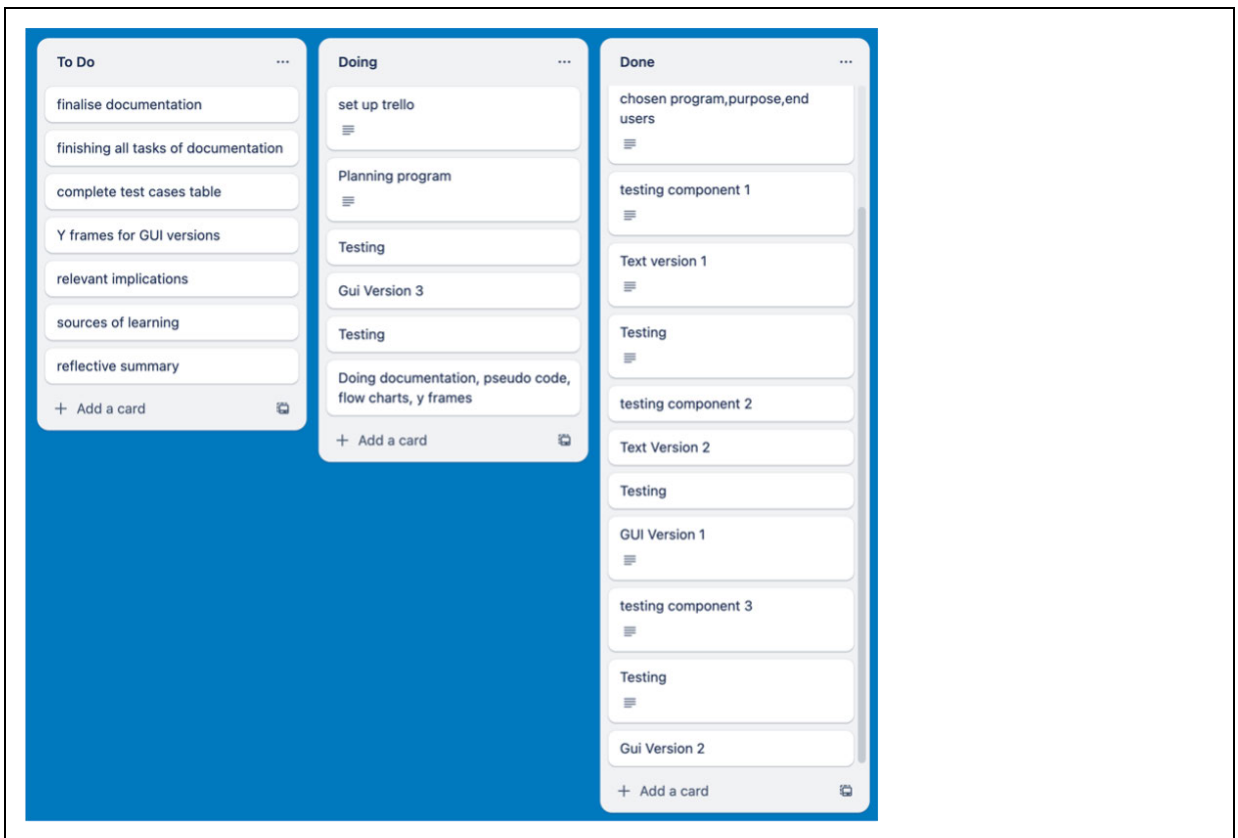
In your answer you should:

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

The end user that provided me with feedback for my outcome was K[redacted]. Since he is a student at [redacted], he classifies as my end users as my outcomes purpose was to test the knowledge of students at [redacted]. After letting him test every iteration of my quiz as I develop my outcome, he has provided me with very useful information on what I could improve to further maximise the success of my digital outcome. This feedback includes, adding the skip buttons feature, adding replay quiz feature, adding entry boxes to ask for users name and age, and the layout of my GUI. This feedback contributed to my digital outcome as after receiving it, I then went and added these new features into my code and made the changes that he has suggested. In doing this I will better cater my digital outcome to suit its end users and my outcome will be more engaging to its end users. Another person who provided me with useful feedback was my teacher, she helped me develop my main code as she has lots of experience with coding and I was able to ensure that my code runs smoothly and eliminate all errors that emerge.

Development process

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



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

- Planning/idea gathering/setup:

In this stage I have set up my Trello and GitHub pages which will aid me in my development process as it will help me with project management which will boost efficiency. In this stage I have also started to generate ideas on what my outcome could be and the purpose of my outcome.

- Initial coding:

In this stage I have started to code my digital outcome after finding out what I want my outcome to be and its end purpose. During this stage I roughly coded my outcome and started to develop iterations of my outcome. These iterations are very rough and have many errors which need to be refined.

- Code refinement / feedback:

In this stage of my development process, I have started to identify errors in my code and through feedback from my end user and my teacher I was able to eliminate these errors effectively to ensure that my outcome functions smoothly. In this stage I have also started to implement suggestions made by my end user in order to further improve my digital outcome.

- Testing and trailing:

In this stage of my development, I have started to test and trail every component of my digital outcome to ensure that everything works as intended and that there are not errors with the functionality of my outcome. Doing so will improve the quality of my digital outcome as I have thoroughly tested my outcome before using it for its end purpose.

- Testing with end users:

In this stage of my development process, I am testing my completed outcome with its end users, doing this will give me an idea of if my outcome met its end purpose or not and identify areas which need improvement from the feedback provided by the end users. In doing this it will maximise the success of my digital outcome and will perfectly meet its end purpose.

(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.

The most important decision that I have made during my development process was to make my outcome on the topic of New Zealand. Because I am living in New Zealand, it made sense for me to make the topic of my quiz about New Zealand. Since my end users are students at [REDACTED] which is a school in New Zealand, making my outcomes topic about it would boost the effectiveness of my outcome as its end user are able to relate to the quiz more effectively since its about the country that they live in. making my outcome more relatable to its end users will be very beneficial for my outcome and have a positive effect as the end users will be more interested in this topic rather than something which they have no passion in such as English or maths. Making my outcome on a fun topic will make my quiz more enjoyable by many end users and thus make my outcome more successful.

- (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).

Through testing and trialling I have made the decision to utilise GUI in my quiz's final outcome. This is because through my testing and trialling I have found that my end users did not enjoy the basic text-based quiz version as it was very plain and basic looking. When I tested and trailed my quiz after implementing GUI, I have found that the feedback from my end users was much more positive as they enjoyed the drastically improved aesthetics and layout of my quiz. After identifying that aesthetics was very important with my end user, I then started to test and trial different types of buttons, and layouts and have created a outcome that my end users enjoyed the most. Through the use of testing and trialling, it greatly benefitted the quality of my digital outcome as I was able to further refine my quiz into something that perfectly matches its end purpose.

- (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.

Through the decisions that I have made above, it has a greatly influence on my digital outcome. The first decision I carried out by generating all of my ideas into a brainstorm and then showing it to my end user, this helped me eliminate potential topics for my digital outcome and allowed me to narrow it down to the one topic that will be most fitting for its end purpose. The second decision I carried out by testing with my end users and identifying area of possible improvement to my digital outcome. These two decisions had a positive effect on my digital outcome as it helped me improve the quality of my digital outcome to ensure it fits the end purpose and is engaging to the end users, doing so maximises the success of my digital outcome. These two decisions had flow-on effects as I had to take more time and care in the development of my digital outcome and ensure that there was absolutely no errors with my digital outcome and it was the highest quality that I could produce before I publish it to my end users.

(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.

A change that I would make to my development process is to update my Trello page more regularly to match with the flow of my development process. I only updated my Trello page once every few days and my Trello page progress would not entirely match with the current progress of my project development. Because of this, I could've had a much more efficient development process if I had updated my Trello to fully match with what I am currently doing. In future projects I will ensure to update my Trello page as soon as I make any changes or developments to my outcome. Doing so will allow me to track my progress much better so that I don't get confused on what I need to do and what I need to do next. Doing so will further maximise the level of efficiency at which I develop my outcome at and result in a more streamlined development process. Another change I could make to my development process is to test with a wider range of end users. Instead of only testing with students at [REDACTED], I could've tested my outcome with all students in Auckland. Doing so will further improve my digital outcome as then I could gather feedback from a larger group and ensure that my digital outcome is not only catered towards the preferences of one end user group. Doing so allows my outcome to have a wider range of end users which will boost the number of end users who use my digital outcome and in turn make the outcome the most successful it can be.

Merit

Subject: Digital Technologies and Hangarau Matihiko

Standard: 91899

Overall grade: 06

Grade	Marker commentary
M6	<p>The candidate explains their responses, illustrating understanding of the key aspects of their outcome (program) and the development process by answering all parts with detail.</p> <p>It is noted that this is a programming outcome that has used a GUI, which is not expected at Level 7 of the New Zealand Curriculum. This was a deliberate decision made by the candidate which considered the end user for the outcome that was being developed (a quiz). This is an authentic use of programming, allowing the candidate to have success in the standard.</p> <p>At Merit level, the candidate understands the requirements and is able to provide specific details about how they addressed the program in regard to functionality and aesthetics. The candidate demonstrates understanding of intellectual property and explained how end user feedback was taken into consideration.</p> <p>Suggestions for how to improve the development process focused on planning and project management, which would have had a limited impact on the final outcome. Breaking the project into smaller tasks, or using a planning tool, would have been more effective recommendations. Testing with a wider group was a good suggestion, but lacked detail regarding what the preferences were.</p> <p>To move into the Excellence band, the response needed to expand more on the answers regarding decision-making by providing insightful conclusions and in-depth responses. Some of the answers given lacked detail.</p>