MERIT EXEMPLAR 2022

3

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

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COMMON ASSESSMENT TASK

Level 3 Digital Technologies and Hangarau Matihiko 2022

91909 Present a reflective analysis of developing a digital outcome

Credits: Three

Achievement Criteria		
Achievement	**Achievement with Merit**	**Achievement with Excellence**
Present a reflective analysis of developing a digital outcome.	Present an in-depth reflective analysis of developing a digital outcome.	Present an insightful reflective analysis 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 "123-123456789-91909".

[redacted]-91909

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-91909.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 have developed within the past 12 months. If you have developed an outcome as part of a team, you must only present aspects of the development process and outcome which you directly contributed to.

You must illustrate your answers with three images:

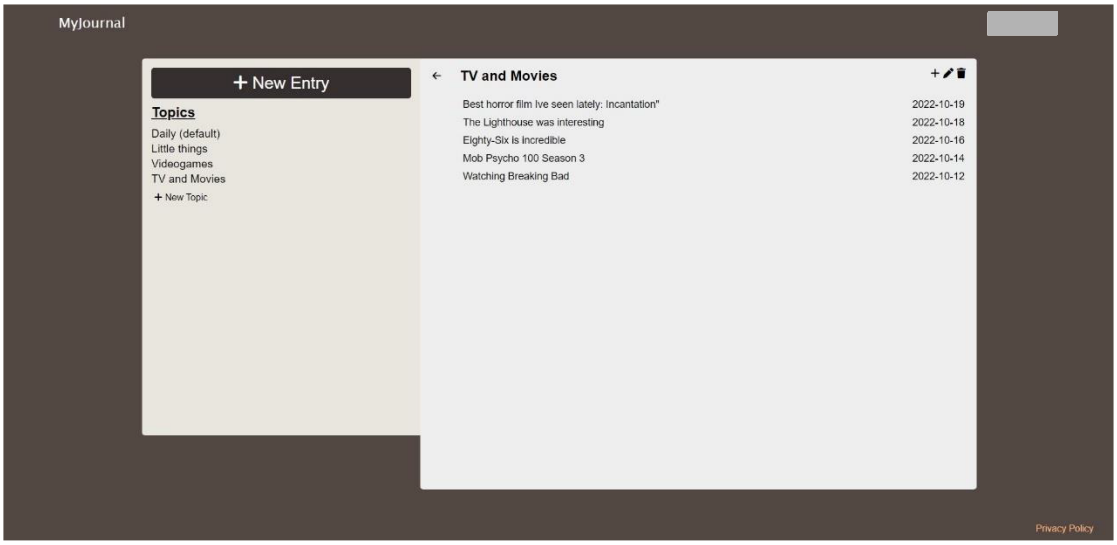
- a single image of the digital outcome
- a single image from your planning / development process
- a single image showing a relevant digital component of the outcome in the software you used.

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. Do not repeat information in different parts of the task.

ASSESSMENT TASK

(a) (i) Insert an image of your digital outcome.



(ii) Describe your digital outcome and explain its main characteristics.

This is an image of the main journal page which the user will be interacting with the most. At the top we have the navigation bar which consists of the logo of the website "MyJournal" on the left and the username of the user currently signed in on the right. Clicking the logo will take you to the landing page of the site while clicking the username will show a dropdown menu which shows the buttons for taking the user to their account settings and logging out.

On the main content of the page, we have the journal interface itself. It is composed of two sections, the topics panel on the left and the main journal on the right. The main interface is comprised of vertical lists for the most part. My site sorts all entries into topics so that the user can easily organize their thoughts and daily journal entries.

The left panel is sort of a second navigation bar. To create a topic, you press the '+ New Topic' button at the bottom of the list of topics which displays the new topic form on the right panel. To create an entry, the user presses the '+ New Entry' button which is big because making journal entries is the main purpose of the site. Once they click the button, a form page displays on the right journal page which the user fills out to create their entry. The user chooses which topic they sort the entry in. Once they create the entry, the user is brought to the page like the one shown above which shows the topic the entry was added to as well as all the other entries belonging to that topic.

The user can also get to that page by clicking on the topic from the list on the left panel. When you click on a particular topic, it also displays that topic's entries on the right panel.

The topic page, which is the one I've chosen as my image above, displays all the entries belonging to that topic in an ascending list based on what was the most recently created entry. The list shows the title of the entry and the date it was created.

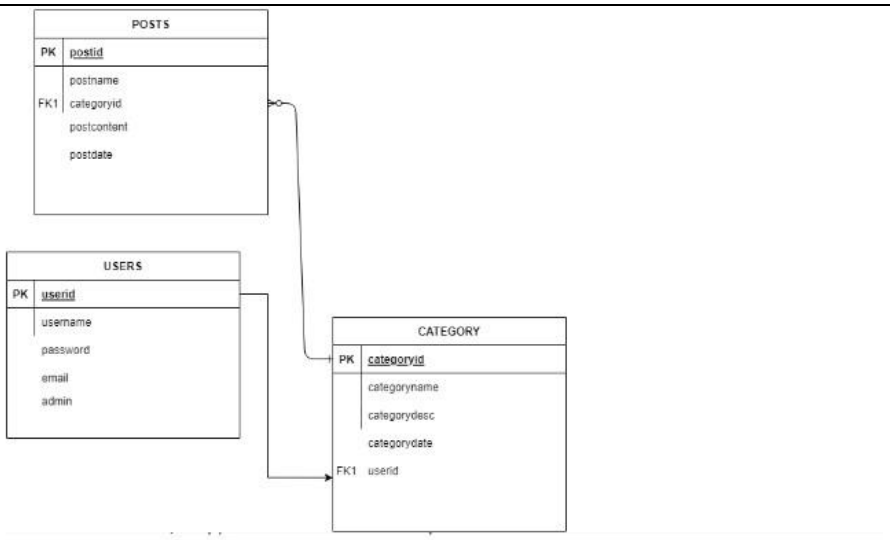
The list of entries shown on the right panel display its title and the date it was made. When a user clicks one of the entries, the panel displays that full journal entry.

Every topic page has options on the top-right which allows you to edit the topic details (pen

icon) or delete the topic entirely (trash can icon). It is also possible to add an entry to that topic from the topic page (plus icon).

When you display an entry, it also shows icons which allow you to edit the entry or delete it.

(b) (i) Insert an image from your planning / development process.



Categories

Field	categoryid (pk)	categoryname	categorydesc	categorydate	Userid (fk)
Type	Int(6)	Varchar(50)	Varchar(256)	Date yyyy/mm/dd	Int(4)
Null	no	no	yes	no	no
Default	none	none	none	Current date	none
Extra	Auto_increment				

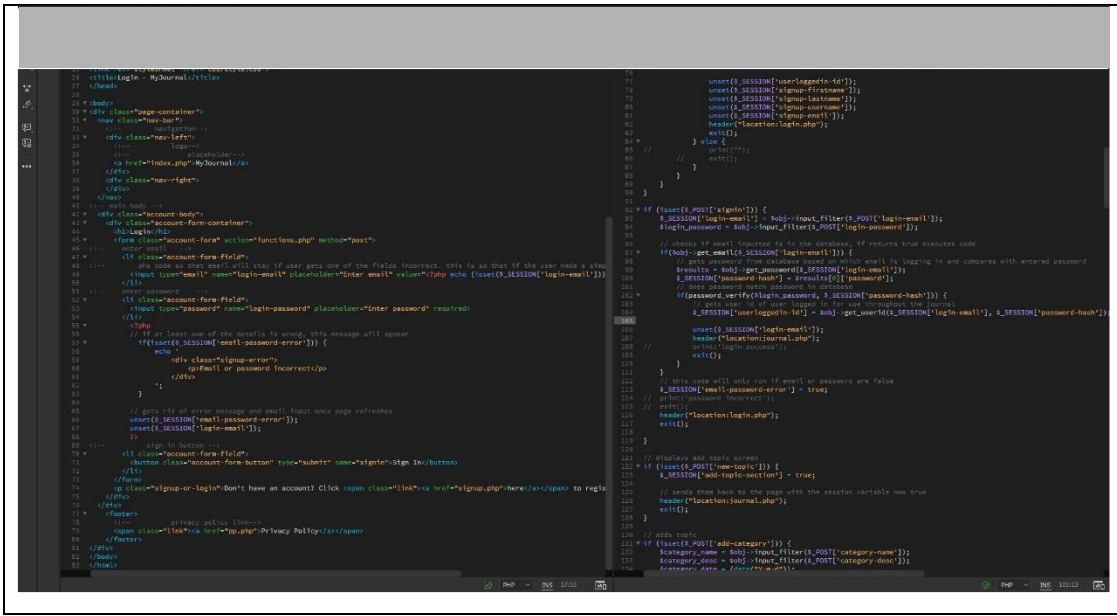
Posts

Field	postid(pk)	postname	categoryid (fk)	postcontent	postdate
Type	Int(8)	Varchar(50)	Int(6)	Varchar(10000)	Date yyyy/mm/dd
Null	No	No	No	no	no
Default	None	None	None	None	Current date
Extra	Auto_increment				

Users

Field	Userid (pk)	Firstname	lastname	Username	Password	Email	Admin
Type	Int(4)	Varchar(100)	Varchar(100)	varchar(50)	Varchar(256)	Varchar(100)	TINYINT (boolean)
Null	No	No	No	No	No	No	No
Default	None	None	None	None	None	None	0 (false)
Extra	Auto_increment						

(ii) Insert an image showing a relevant digital component of the outcome in the software you used.



(iii) During your development process, what decisions did you make about tools and techniques, and what aspects of the digital outcome did they influence?

I used XAMPP as a tool because it is able to create a live and local server and a database which can store data for my journal website. I used Dreamweaver for the creation of my website as it can easily connect to the server created by XAMPP. Since the html was interacting with a database, php had to be involved in the development of the website digital outcome.

During my development process of creating the database, I decided to utilize the technique of Normalization which involves using multiple tables and linking them with primary and foreign keys. This technique simplifies the data storing process as information isn't repeated across one table. For example, if multiple entries belonged to the topic "animals", all those topics would have the same field data of "animals" in their row in the database. But if topic data was in a separate table, instead of the entries using the name of the topic, they can just use the id (primary key) of that topic as declared in the topic table. The planning for this is shown in my development image.

(iv) Explain specific instances of how your selection of tools and techniques influenced or guided your development process.

Because of I used the technique of Normalization, every topic had to have a foreign key attaching it to a user and every entry had to have a foreign key attaching it to a topic. This means I had to incorporate hidden inputs in the forms for creating a new topic or creating a new entry. So for example, the form for creating a new topic has a hidden input which gets the id of the user logged in and assigns it to the topic created once the user submits the new topic form and the php goes through.

Because XAMPP provided a live and local server that Dreamweaver could connect to, I was able to work on the coding and programming while having a Chrome window up and be able to see the changes live. This heavily influenced my development process as I could see what code worked and what didn't work all in real time which heavily improved the efficiency of the development process.

(c) (i) What decisions did you make about end-user considerations, and what aspects of the digital outcome did they influence?

When considering the end-users, they would want an interface that is easy to learn and use. This influenced my decision making when it came to the design of the website.

Since my aimed demographic of end-users are those of Western countries who read left to right, top to bottom, most of the interface adheres to those conventions. For example, the big '+ Add Entry' button is at the top-left of the journal interface. The top-left is where the user's eye is led to first and the purpose of the site is to make journal entries so that makes the primary function of the site easy to find for the end-user.

The design of the website adheres to modern website design conventions like having the top-left of the site be the logo since that is the standard across many sites, or having buttons change color or background color when the mouse hovers over it. This is so that the end-user immediately feels that the interface is familiar which means they don't have to

completely relearn an interface.

When it comes to the journal entries, a lot of people like to write a lot, especially those who make a habit of writing journal entries. Those people are my end-users and so in the database, I set it so that the character limit for entries is 2000. But then I realized, if an end-user writes about 1500-2000 words with an average word length of 5 characters and including spaces, that would be way too large for 2000 characters. That made me increase the character limit of the entries to be 10000.

I also made sure when it came to the front-end of the website, that the user's entry is able to display properly if it's contents is large. I responded to that by styling it so that the journal interface has its own scroll bar for when an entry is large. This way, the words don't overflow out of the interface and onto the page or even outside the page which would be inconvenient for the end-users.

(ii) Analyse how your decisions about end-user considerations influenced or guided your development process. Use specific examples to support your answer.

My development process was influenced by considering the end-users. I know that the front-end of the website had to be completely functional, easy to look at and simple to learn. Therefore, my development process was filled with a lot of testing.

For the creation of an entry, I wrote temporary code which would print out whatever the user inputted into the entry form to make sure that the php was receiving it correctly. If it didn't work, I would edit the code and try again. If it did work, I would insert more data again and then would check that database to see if that inputted data was inserted into the database with no corruption or hiccups. If it didn't work then I would edit the php code. I did this same development process for the adding topic functions and the adding user functions. This process allowed me to ensure that the site's most basic features were functional so that the end-user can use it properly.

(d) (i) Explain specific instances in which stakeholder feedback influenced aspects of the digital outcome.

There was an instance where a stakeholder gave me feedback about the interface itself during its development. They noted that there was no way for a user to go back to a page within the journal interface. Like for example, there was no way to go back to the topics page after clicking the 'edit topic' icon. The only way to go back to the topics page was to click the topic itself on the left panel. They suggested putting a back arrow at the top of the right journal panel which would take users to the previous page if they clicked on it. This was a good suggestion since that follows a common website convention of being able to step back to a previously visited page via a simple arrow icon. Therefore I added it into my design which improved the usability of the website since it was applying familiar concepts.

There was another instance where a stakeholder noted that they were confused on how to get back to the journal page if they went to the landing page still signed in. The way to do it is to click the login button which would take any already logged in user to their journal page. They noted that that was a confusing way and that the login button shouldn't be there or at least be renamed to make it obvious that that is the way back to the journal page. I

agreed with this suggestion and so I made it so that if a user is logged in, they wont be able to see the login button but instead a button with ‘Journal’ on it takes its place. This makes navigation and ease of use much better for the user.

(ii) Analyse how specific instances of decisions you made in response to stakeholder feedback influenced or guided your development process.

A stakeholder is anyone who uses the website’s services. Their feedback is important since they are the ones who will be using it and relying on it to work and be the best service it can be.

Stakeholder feedback made the development process more practical and more efficient. If I had created the whole website without feedback, I would be hit with tons of feedback at the end and would probably have to uproot a lot of my website. This would be inefficient and instead it is better to take feedback as the site develops which would mean that issues or mistakes would be spotted early into development and would be easier to fix.

(e) (i) Explain in detail some things you learnt, and / or skills you acquired, during the development of the outcome.

I learnt skills like:

- the php coding language and all of its useful features
- how to connect a website to a database using php. Connecting a database to a website requires you to attach those site files to a 'site' on Dreamweaver. The site also has to declare what server it is linking to (XAMPP), the credentials needed and the name of the database.
- how to retrieve, insert, edit and delete data into a database with an html front-end and php. A lot of it involves SQL which allows for data to be accessed via php.
- how to sanitize inputted data to prevent sql injections and malware attacks. If user data is not sanitized before it enters the database proper, it could lead to major data leaks and an insecure database. Code can be inserted into forms which could tell the program to do malicious things which is why data has to be sanitized beforehand.

(ii) Explain in detail how these specifically impacted upon the development process.

By learning all of these new skills, I was able to do certain actions that I was not able to do before. For example, saving and editing account information and attaching data to those accounts was not something that was possible without learning PHP. The way the journal interface works with how it can all be on one page while having multiple pages within it was made much easier and more efficient using php, as it could've also been done by Javascript but that would have taken much more time and effort. The development process was made much smoother and more efficient using these new skills.

Reflective analyses

In this section you are required to write critical evaluations of both the positive aspects and potential issues with your development process and your outcome. Expanding on these critiques, you will provide clear suggestions as to how you might improve both.

(f) (i) Explain both positive aspects and potential issues caused by specific decisions you made in your development process.

Positive aspects of decisions made in development process:

- I took feedback at every stage of the development process. This means I was able to realize and improve on mistakes efficiently.
- I tested frequently to make sure there were no outstanding issues with my website or the database.

Potential Issues:

- When it came to the visual layout and design of my site, I hardly looked at my planned wireframe mockups of my site and instead opted to design it from memory for the most part. This lead to instances where I would forget to add an element on a page and not realize until I luckily look back on my mockups. This made my development process less efficient than it could've been.
- When I would class elements, I would give them all different class names even if

they were similar, just in case they all had unique stylings. But eventually, a lot of the styling was the same which means I could've given them all the same class names. This made my styling very inefficient and unnecessarily long.

(ii) Explain both positive aspects and potential issues of your outcome which were caused by specific decisions you made.

A positive aspect caused by my decisions during development was that my website was very intuitive and easy to use since I had taken a lot of feedback from various people to ensure it had very widespread appeal and most people would find it very pleasurable to use.

A potential issue of my outcome is that since my styling has an unnecessary amount of different styling names for elements that have the same styling. It has made my code a bit difficult to navigate and understand in case another programmer has a look at my code. It is important to make sure that your code is not only functional but flexible and easy to make changes to but here, I failed at that when it came to styling.

(iii) What relevant and important changes could have been made to improve your development process? You must justify your response.

(iv) What relevant and important changes could have been made to improve your outcome? You must justify your response.

Merit Exemplar 2022

Subject	Digital Technologies and Hangarau Matihiko Level 3	Standard	91909	Total score	06

Q	Grade score	Annotation
1	M6	The candidate has presented a thorough description of a suitable Level 3 digital technologies outcome in a (ii). Pertinent, non-trivial explanations of end-user considerations can be found in c (i) and c (ii), as well as genuine stakeholder feedback in c (ii) and d (i). The tools and techniques described in b (iii) are suitable for a level 3 student as explained in b (iii) and e (i). To move to an Excellence, the candidate would need to have made a number of significant insightful reflections about how their practice and their outcome improved (and could further improve) end-user experience.