EXCELLENCE EXEMPLAR 2022

3

NZQA

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

**QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!**

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`".

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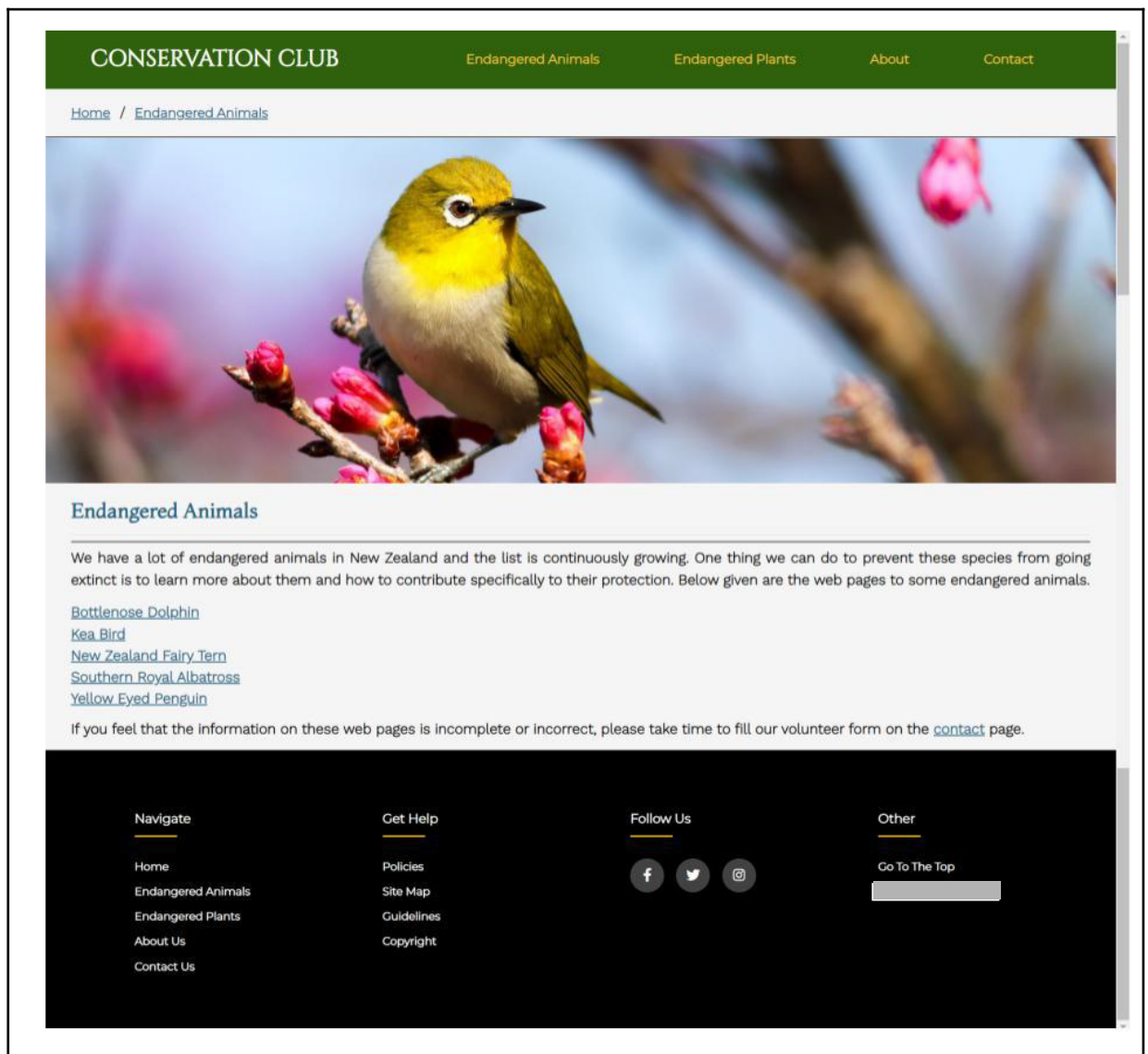
(ii)   Describe your digital outcome and explain its main characteristics.

My digital outcome is a website highlighting the 10 most endangered plants and animals species in New Zealand. It was made for the Conservation Club at my school to spread awareness about these species, preventing students from disregarding rules while visiting their habitats. Its digital functions include responsive elements such as a navigation bar, footer, images and main content for web pages such as home, about, contact, etc.

(b) (i) Insert an image from your planning / development process.
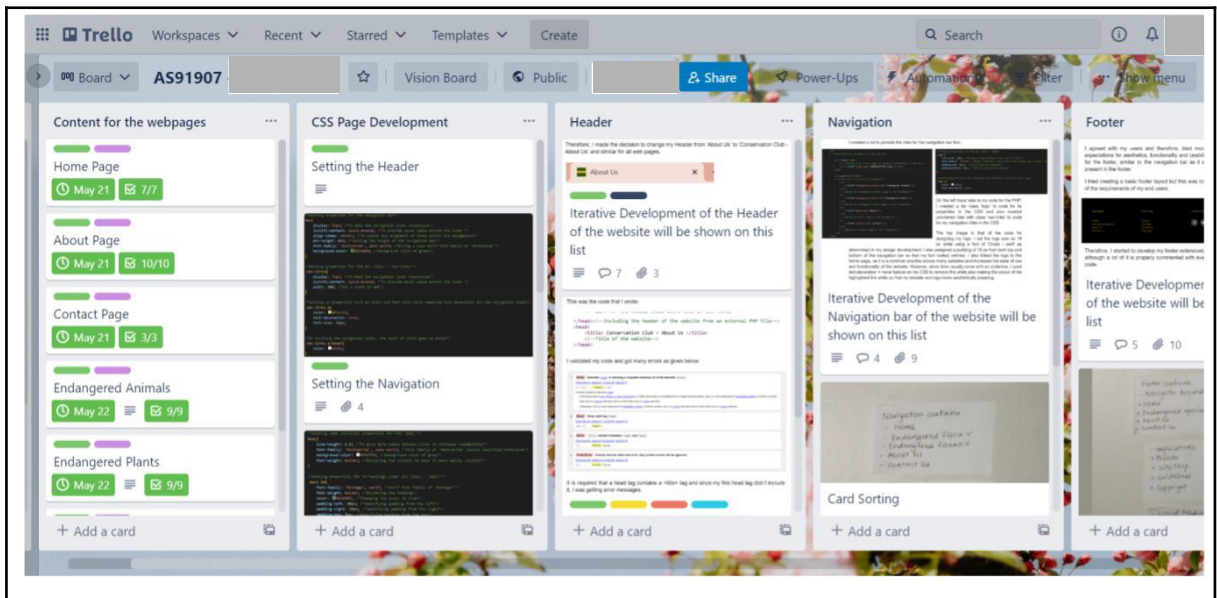
(ii) Insert an image showing a relevant digital component of the outcome in the software you used.
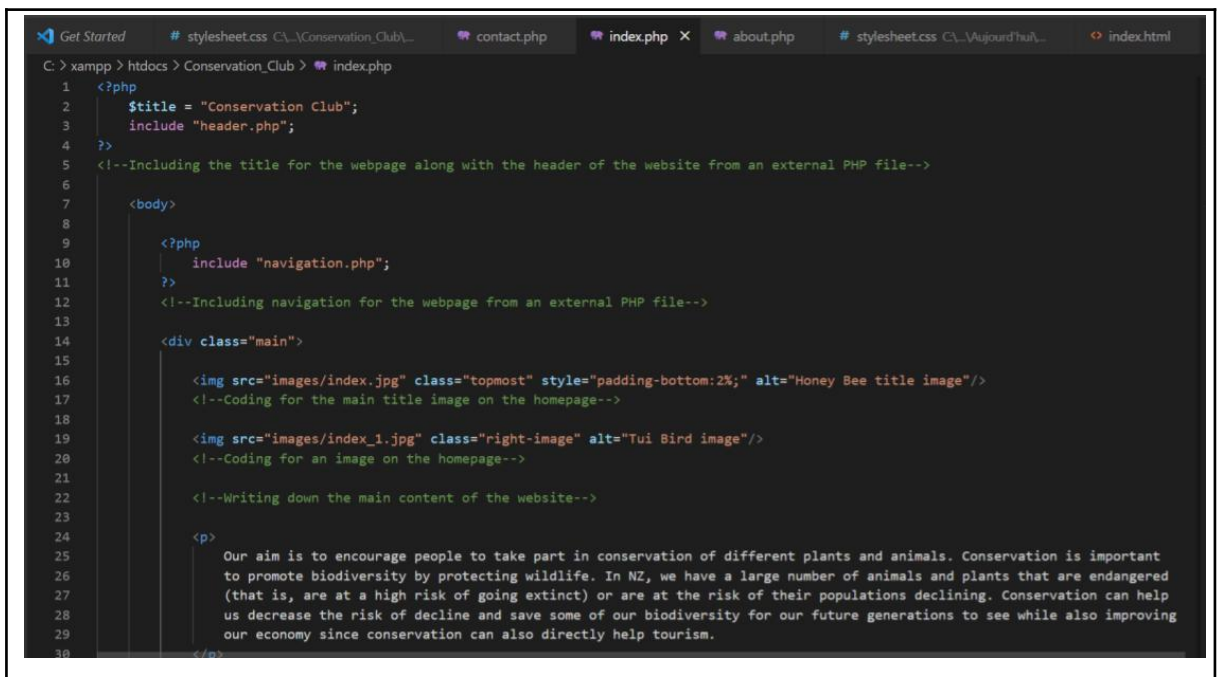
(iii) During your development process, what decisions did you make about tools and techniques, and what aspects of the digital outcome did they influence?

I decided to use PHP during my developmental process for responsiveness on different screen sizes and browsers. CSS and JavaScript were also used. I could specify certain properties such as fonts, colours in CSS. Animations were also possible. For example, using JavaScript allowed me to create a cross button from the toggle 'burger' button when the navigation is displayed on smaller screen sizes. Trello (Agile technique) allowed me to manage the development of my outcome.

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

Using PHP instead of HTML allowed me to split the code for different elements into different files. These were then included in the code for web pages using the <include> feature in PHP, preventing copying and pasting of entire HTML code. This saved my time, allowing me to code more efficiently for the main content of the website. I could also gather more feedback from the end users and stakeholders, making my website aesthetically pleasing and functional.

Trello/Agile allowed for successfully categorized ideas and managed tasks. I could create cards indicating specific tasks (such as 'HTML/CSS Validation') while labelling them through time (such as 'Done', 'Urgent' or by adding deadlines). This saved my time as it sequentially ordered tasks. I could also gather more feedback, through the comment feature on Trello, allowing for iterative improvements throughout the developmental process.

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

I provided an 'About' page informing users about the Conservation Club and a further research section. I followed techniques like industrial guidelines (seen in the contrast, repetition, alignment and proximity of different elements such as navigation bar, footer). I used tools such as colour 'Palette Generator' and Google Fonts which allowed me to improve the aesthetics, legibility and usability of the website. Accessibility was addressed by using a colour blindness simulator (Colbis) and using @media in CSS and <meta> tags in HTML for responsiveness on different screen sizes and browsers.

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

My website is heavily based on end-user considerations and implications. This is possible as my developmental process was guided by end user feedback and this makes it easier for novice users to navigate around and understand the purpose of the website. For example, sitemap and navigation links in the footer were implemented, improving usability and functionality since clear exits were easily available. Following industrial guidelines also meant that I was able to design the website quickly and efficiently while still delivering high aesthetics and functionality. Such principles (and aforementioned tools) allowed me to understand the common opinions of end users and designers, improving implications and end user considerations. For example, following common conventions regarding testing for colour blindness and myopia (using Colbis and decreasing contrast between <body> background and text respectively), allowed increased accessibility, meaning that my website is available to a larger target audience.

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

I decided to involve my school's conservation club as my stakeholders. I incorporated different endangered species on the request of my stakeholders. 'Feedback' and 'Volunteer' sections under the 'Contact' page were also included. Stakeholders could directly see the comments of end users on these forms. Social media icons were included in the footer on the request of my end users, allowing improved communication. I also compressed images on stakeholder requests, so that my website loads quickly i.e. is functional.

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

I gained extensive stakeholder feedback throughout the design process (eg: end user requirements, end user interviews for wireframes, colours and fonts) to improve the aesthetics and usability of my website. Regular feedback via Google Docs and Trello allowed for user-oriented modifications. For example, breadcrumbs were included on stakeholder/end-user feedback, allowing the end users to know their location on the webpage. Tools such as code valiators, plagiarism checkers and proofreading techniques minimized errors (coupled with proofreading and cross-checking facts by stakeholders), improving website reliability and sustainability. Continuous feedback allowed me to quickly and efficiently code for my website as I was able to map out end user expectations (synthesis of wireframes, colours and fonts that my end users liked). This prevented me from assuming information and then finding out that it was not what my end users wanted. saving my time, preventing the trialling of too many components, while still delivering a high quality outcome.

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

> An important skill that I learnt was making smooth animations using CSS. For example, 'transition' property allowed me to smoothen the animation for footer links while hovering, improving aesthetics and usability. 'Transform' property allowed me to create a cross button from the toggle 'burger' button when navigation is displayed on smaller screen sizes, providing clear exits. Animations improved website interactivity, improving user experience.
>
> I learnt that future-proofing is a core aspect of web development. If my website is to be inspected by other developers, they need to be able to understand my code.
>
> Learning UX methodologies such as Information Architecture (IA) allowed me to improve the website's design process. Gestalt principles (similarity, continuity, proximity and symmetry) and Industrial guidelines (eg: placement of logo on the left side of the navigation bar) facilitated by activities like card-sorting improved the website's usability and aesthetics as I could map out Mental Models of end users.
>
> I learnt that my end user opinions are continually changing, and therefore, regular feedback is important. This allowed me to adjust the outcome more to end user needs.

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

> It was time consuming to animate for certain links (toggle/cross button) as it required new knowledge of different properties in CSS and application of these on smaller screen sizes. Eg: I had to take into account burger lines overlapping, rotation angles, X/Y coordinates on the navigation, which made it harder to code for during the developmental process.
>
> In regard to future proofing, I commented and documented any changes made during the developmental process. This benefitted me later on when I looked back to edit components later on.
>
> UX methodologies allowed me to synthesize wireframes, colour and font palettes (during User Interface) that my end users liked. This saved my time and effort on testing too many components, and provided a sustainable and aesthetically pleasing design that my end users liked. For example, the similarity principle is addressed as I used specific fonts for certain content, improving aesthetics.
>
> Continuous feedback helped me make several changes to the website's design even after the high-fidelity prototype was created. For example, my end users thought that white (instead of yellow) colour links would look better on the black background of the footer. Some end users also thought that the colours of the social media links were not in sync with the website's colour palette. Therefore, I adjusted these colours while also adding in new features such as appropriate spacing between footer links and introduction of heading, grouping the links, allowing for improved usability and accessibility.

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.

I decided to use Version Control by saving my website files on the local Windows Folder Management system. This allowed access to files even when there was an unstable internet connection, allowing continual work on my website. However, this also meant that it was extremely time-consuming and frustrating to share these files with other developers to gain feedback on my code. It was also hard to remind myself to consistently upload file versions.

I decided to take end user feedback using the comment feature on Trello, verbally and on Google Docs. Varied mediums of feedback allowed for regular, continuous feedback. However, this also meant that feedback was not systematically organized and that it was easier to miss out on any information that I couldn't recall. I was also overwhelmed at times with the influx of comments that end users had.

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

I currently host my website on infinityfree. This is a free website hosting platform, allowing me to edit the code whenever I want. This is beneficial as it can help me make minor tweaks if some invalid information is spotted in the website. However, it also means that my website does not have protection against any attackers that might hack the website (HTTP website), which might affect the health and safety of my end users.

During my website's coding process, I also made the decision to not construct the drop-down button as it was time-consuming to create one (and my stakeholders didn't like it). However, this also meant that it would be harder for novice end users to navigate the website.

Although I tested my website on a lot of different screen sizes, ranging from desktops to tablets, and making improvements to adjust the website to those sizes, using @media tags in CSS and <meta> tags in HTML, I didn't adjust my website to smaller screen sizes (such as foldable phones), since it was extremely time consuming and difficult to do so. However, this means that my website might be frustrating to end users using such screen devices, making my website less accessible.

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

I could improve version control habits, such as uploading documents on a regular basis. This would also strengthen the future proofing of my website. If versions of my website were available on a public repository (eg: Github), this would improve the developmental process and the outcome as I could receive professional feedback from developers (and incorporate ideas from discussions so that information is accurate and fresh).

To improve feedback taking process, I could have made use of online softwares, or created a shared Google Document highlighting the time of the feedback, specific areas of the website there might be concerns about (eg: navigation, footer), and what could have been done to improve the issue. Using comment features would increase discussion on aspects of the website that need iterations, improving feedback collection and implementation.

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

Although I mention on Home and About pages that my website is for the conservation club, I could have incorporated the school logo on the website, making it more accessible and safer for school members. I could have hosted the website on the school server instead of infinityfree. Doing so would have improved the health and safety of the students as it would have protected them from any inappropriate or harmful content.

By allowing end users to drill for information using keywords, a search bar improves the functionality, accessibility and navigation of the website. I could implement this instead of a drop-down menu. Making one however, requires the knowledge of databases which is why it was not technically feasible given the time constraints of the developmental process.

In regards to responsivity, I could have implemented bootstrapping techniques for responsivity on smaller screen sizes (or learning skills required from online courses), improving accessibility.

Innovative improvements in the form of new web pages can also be made. A 'Reminders' page updating users of conservation projects around Auckland can be made, encouraging donation and volunteering. A 'Frequently Asked Questions' page can be created as the website gains attraction, answering common questions. Health and safety of users should be protected, however, which is why I might refrain from adding internal school projects (linking to a private social media account for school students).

Excellence Exemplar 2022

Subject	Digital Technologies and Hangarau Matihiko Level 3	Standard	91909	Total score	08

Q	Grade score	Annotation
1	E8	The candidate presented a detailed description of a suitable Level 3 digital technologies outcome. Using authentic stakeholders and end-users made it easier for the candidate to meet the requirements for excellence. Feedback from these groups created opportunities for the candidate to explain and justify their decision-making around their development work and the outcome. This meant their reflections tended to be genuine and insightful. The reflection section includes pertinent observations and relevant end-user influenced commentary.