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Level 3 Digital Technologies 2024

91909 Present a reflective analysis of developing a digital outcome

EXEMPLAR

Excellence

TOTAL 07

Instructions

The task in this assessment requires you to discuss a digital outcome you have 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 magazine, 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 and/or planning process (e.g. agile development Or a planning chart).

During this assessment, you may only access the three .jpg or .png images you have prepared in advance. Access to your digital outcome, online or paper resources, other Word or PDF documents, and the Internet is not permitted.

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

Read all parts of the task before you begin. Do not repeat your response in different parts of the question.

Candidates must complete their assessments individually under teacher supervision, in accordance with the NCEA Assessment and Examination Rules and Procedures. The material submitted for assessment must be the candidate's own work.

Candidates are not permitted to access any resources (either in hard copy or online) other than those supplied in the assessment itself.

Schools, teachers, and candidates are not permitted to share or discuss the assessment or their assessment responses with any other schools, teachers, or candidates until after the final date for submission (30 October 2024).

The use of chatbots, generative AI, paraphrasing tools, or other tools that can automatically generate content is not permitted and material generated by these tools should not be submitted as part of the candidate's work.

(Assessment Specifications, NZQA 2024)

Assessment Task

Name the type of digital outcome you created, e.g. website, app, magazine, animation, etc.

Website.

Purpose and key characteristics

- (a) (i) Insert the image you prepared of your digital outcome.



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

I have created a website using mostly HTML and CSS as well as JavaScript for some of the more difficult features of my website. I have coded my website using Visual Studio code as I have previous experience coding on Visual Studio code and am comfortable using that platform. Also, I have put my website into neocities so it is available to my stakeholders also made a QR code for my website that users can scan directly reaching my website. My website also fits the requirements given: using complex skills such as JavaScript, making my website responsive to multiple screen sizes in order to make my website more user-friendly for my stakeholders, and using agile methodology to ensure my final website is created to the highest standard that fits the requirements of the stakeholders to help solve my issue. The purpose of my website is to solve the issue of lack of sleep in senior students at [redacted]. While doing research on what issue I wanted to do I sent out of survey to my stakeholders (senior students at [redacted]) asking them their concerns/opinions on sleep management and how they feel about this issue. My survey showed that 66% of Senior [redacted] students slept on average 6-4 hours of sleep per night throughout the week. Considering this is significantly less than the expected amount of sleep I decided that the issue I have chosen was serious enough and that my end users would benefit from my website. In my survey, the 91 respondents answered various questions to determine what they believed was the biggest problem they faced when getting a good night's sleep (which should be around 8 hours for teenagers). Through extensive research and feedback from my stakeholders, I learned that a major issue surrounding sleep was the lack of a sleep schedule which has been proven countless times will help aid in gaining a more restful and

longer sleep as well as students having poor habits before bed. Therefore my website I have created 3 pages. 1) Home Page: My home page discussed the importance of sleep teaching the readers why sleep is important and the benefits that can be seen by having more/deeper sleep. My home page also has an interactive feature using frame rate in CSS. This feature makes the cloud images seen on my homepage move inwards from outside the screen when the user first goes on to the page. I have made it so the clouds move smoothly. Making my website more aesthetically pleasing and more interactive for the user as there is an element of animation on the website. Which I learned is appealing to my end users while receiving feedback from stakeholders. 2) Second Page: My second web page teaches the users the importance of having a sleep schedule I learned through my survey that many of my respondents did not fully understand what a sleep schedule was and see the importance of fully implementing sleep schedules into their lives. My second page has an interactive feature which fits with the UX of interactive design as I have coded a spotlight effect using JavaScript. Making my website more appealing as users can read the text on my webpage in a more interactive way which will encourage them to actually read the webpage. 3) For The third webpage I used Glassmorphism - this technique is considered trendy and often seen on many websites today (e.g. Apple websites) so I implemented this design myself to make the text seem more appealing. This webpage discusses healthy habits that can be easily implemented into my stakeholder's daily life which can help them have better quality of sleep. For example, reducing screen time before bed as the harsh lights from online devices have been proven to reduce the production of melatonin - a hormone which tells the brain it is time for bed by registering that the sky is now dark. Through my survey, 59% of my respondents (stakeholders) claimed that directly before bed they scroll through social media with another 15% of respondents claiming that they did online-related activities: watching TV, texting/calling friends, etc. All pages on my website are responsive featuring a navigation bar which changed to a hamburger navigation when the screen width is reduced to a phone size. All the text boxes and images also change size/layout when screen size is reduced making my website more user-friendly for those on phones as my website can still be used easily on different screen sizes. I have used complex techniques such as using JavaScript and I have made sure to use agile methodology when designing and creating my website therefore fitting the requirements. All images I have used on my website were drawn by myself using Procreate (an online drawing app) therefore fitting the requirements of intellectual property and no copyright images were used.

Hence I made my website with these three webpage that help educate my end-users on ways they can improve their sleep. I believe learning the knowledge I put in my website can greatly improve my end user sleep quality therefore helping to solve the issue I have chosen: Lack of sleep of senior students at [REDACTED].

(iii)

What are **two key** characteristics of your digital outcome?

In order to make my website more user-friendly, I have ensured that my website is responsive. I have done this using JavaScript to create my hamburger navigation. My navigation bar as shown in my images is in the top right-hand corner but when the screen width decreases the navigation changes to hamburger navigation in the top right-hand corner this is cleaner as the navigation bar would be incredibly small and difficult to read if the navigation bar didn't change to Hamburger navigation. The hamburger navigation icon (three lines) when clicked a drop-down menu that displays the links to the other web pages. I have done this in my JavaScript which is linked to all my html pages using JavaScript tags. All my HTML pages "talk" to one CSS.


Another characteristic of my website is on my second webpage I have a spotlight effect. I wanted to make my website more interactive after receiving feedback from 5 members of my stakeholders saying that my original design for the webpage was plain and required something to make the webpage more visually interesting. I have created this effect using a combination of JavaScript and CSS. To create this I used the JavaScript "move mouse" event and e.clientY(vertical) and e.clientX(horizontal) to find the position of the user's mouse so a radius of transparent is around the mouse and the rest of the webpage is covered in a black colour making the mouse cursor seem like a spotlight shining light on the page. My JavaScript is linked to my HTML (2index) which is linked to my CSS ensuring the spotlight effect is active over the whole webpage (body) so the effect is more aesthetical, and gives the impression that the mouse really is a spotlight over the whole page. Having a spotlight effect links with my overall theme of nighttime as when you don't sleep at night generally you would have lights on making the effect coherent with the rest of my website as well as an interesting characteristic that makes my website more interactive and enjoyable to my end users. For users who find this effect distracting or would prefer not to have the spotlight effect on the web page I have created a bright yellow button underneath the text which can be easily spotted when going onto the webpage as the button is easily seen saying "Lumos" is the user clicks the button the effect goes away the spotlight effect toggle button making the whole page bright no longer having spotlight effect for users who would prefer not to have it.


(iv)

Explain how these characteristics helped to meet the purpose of your digital outcome.

Having my website responsive was a must when creating the website. I figured this because given my stakeholders are between Yr 11 and Yr 13 (16-18 years old) majority of them will be using phones over other online devices. Therefore I needed to make my website as responsive as possible to ensure my stakeholders will be able to comfortably use my website on different devices. By making the characteristic responsive Navigation I have met the purpose of my digital outcome which is to create a website that is fully responsive. By having my navigation responsive I have gained a larger audience for my website as users will be able to comfortably use my website on laptops, iPads, and phones. Therefore more of my stakeholders can benefit from learning about how to improve the quality of sleep matching my purpose which is to help solve the issue of lack of sleep in senior students.

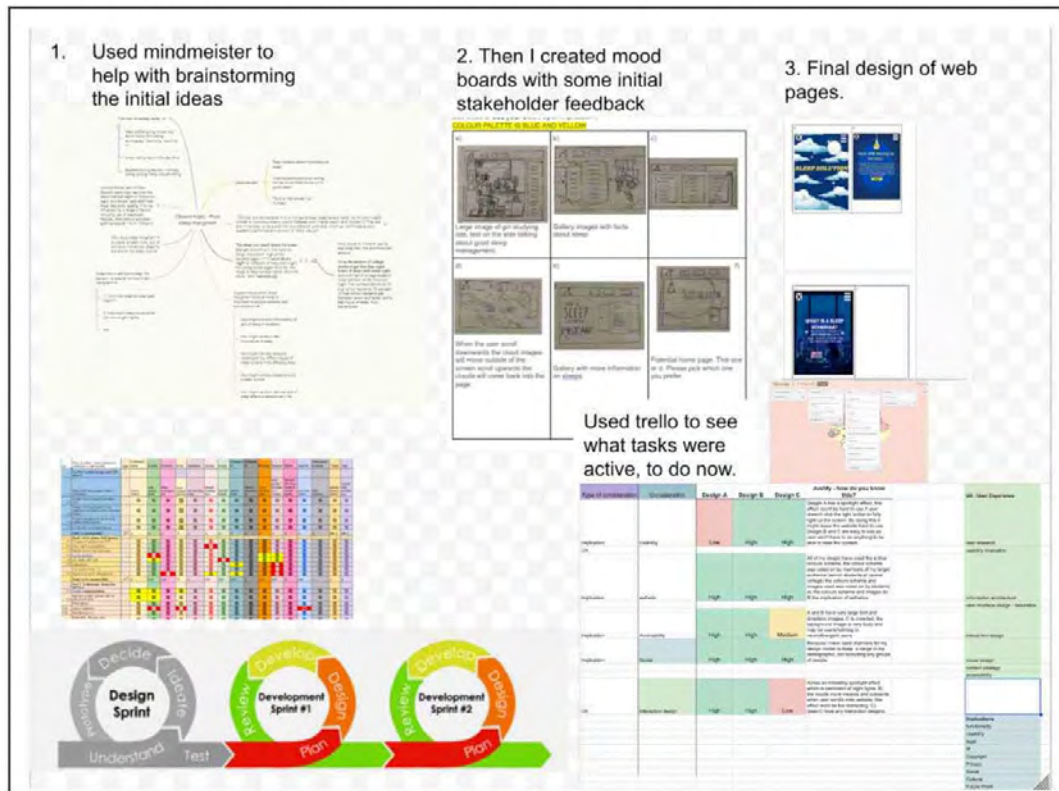
By having the spotlight effect this is an interactive design on my website my webpage is more aesthetically pleasing and creates a more enjoyable user experience as my users can interact with the webpage better making them more intrigued to read the text and hopefully promote them to learn from the information provided. Often people do not want to read a paragraph of text as it can feel like information overload but presenting the information in an interactive way could feel less interesting encouraging users to read the text and hopefully learn about the importance of a sleep schedule and how to build a sleep schedule that best fits the end users requirements. I created this feature with my stakeholder feedback in mind as I was advised that the original design for that web page was boring and not



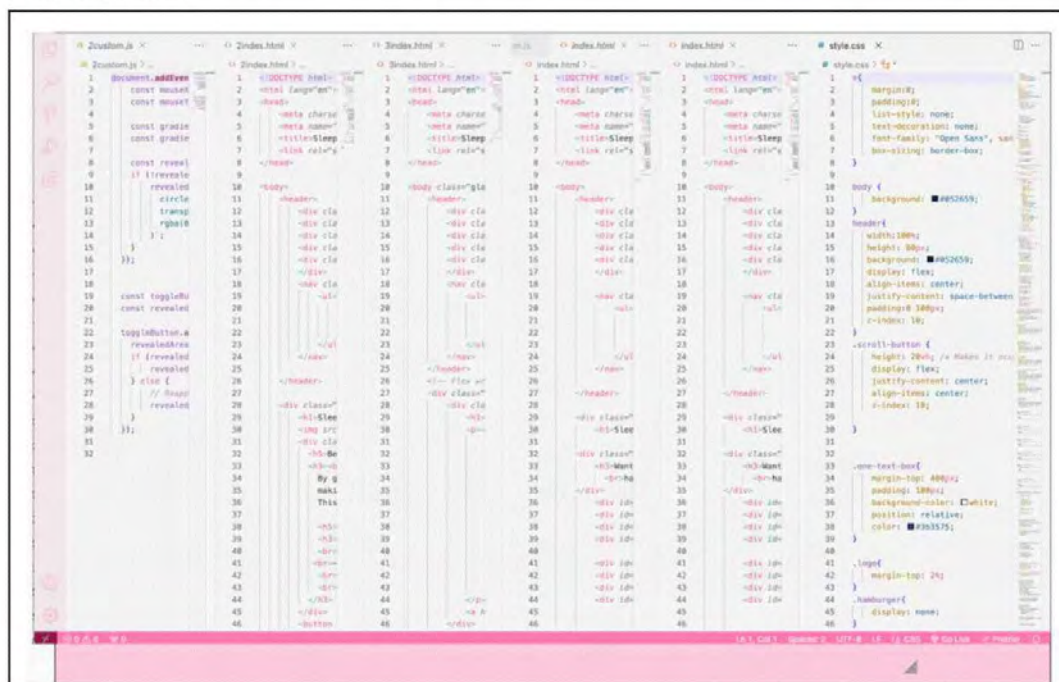
interesting to read. Therefore I created this effect to make my website more interactive and enjoyable. This has been seen after receiving more feedback after my second sprint (when I finished the second webpage spotlight effect) I only received positive feedback suggesting that the spotlight effect was fun and made reading the text more enjoyable. I have also made a toggle button to remove the spotlight effect from the webpage in case people find it distracting or would prefer not to have it. By adding this effect I have met the requirement of having a complex skill on my website as well as users being more likely to read the context on the web page which hopefully will help solve my issue of lack of sleep in senior students at  as they will be more informed about how to build a better sleep schedule after reading my webpage.

Planning and development process

- (b) (i) Insert an image from the planning/development process you followed.



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



Software application decisions

- (c) (i) What was one software application you chose to help you develop your digital outcome?

Visual Studio Code (VSC)

- (ii) Explain the importance of this application to your digital outcome.

I have created a website for the past three years on VSC, I am comfortable using the program and I am able to write code easily using VSC. I have also download extensions of VSC such as Emmet Live - which allows me to see changes on my website as code, therefore allowing me to see when I have broken something and allowing me to make small changes to help better make my layout more aesthetic. - VSC also indents my code as I write it making it easier to use as I can be sure no coding problem is caused by wrong indents. Therefore using VSC was optimal for me as I was comfortable with the program as well and it had features which helped ensure that my program was coded in a time-efficient manner.

- (iii) What was ONE key planning decision you made during the development of your digital outcome?

During the development of my website (both designing and building the website), I have used the Agile methodology. This methodology has allowed me to get constant feedback from stakeholders ensuring that my website is fit for purpose aiding them in learning about the importance of sleep and how to improve their sleep. The Agile methodology means each sprint I had to: plan, design, develop, and review.

- (iv) Explain the importance of this decision to your digital outcome.

This was incredibly important to the development process of my website. During each sprint, I would follow the agile methodology keeping track by using Trello a management tool which helped me keep on top of my tasks ensuring that I completed each task that was allocated for that sprint. Using the agile methodology after each sprint I asked 3 to 5 students (also stakeholders) to give detailed feedback on my website which allowed me to add to my next sprint changes I should make to ensure my website was fit for purpose. For example, during my 2nd sprint I was told that my hamburger navigation wasn't a good colour, the original colour I had chosen during my designing stage was black and even though I received no feedback surrounding this when creating my final design while building the website it becomes clear to my stakeholders that the dark blue background was too similar to the hamburger navigation icon colour (black) so I changed the colour to white in my third sprint. Another example is that during my first sprint, I had chosen a font with curly lettering to make my website more aesthetical, but after receiving feedback from my stakeholders one of them was diagnosed with dyslexia had told me that the font was very hard for her to read and that a bolder font with straight simple lines would be better. Therefore I made that change to ensure my website would be better accessible to my stakeholders.

End users

(d) (i) Who were your end users?

My end users are senior students at [REDACTED] - in year levels 11-13 - age range (16-18 years old).

(ii) What was an important requirement that your end users requested?

When surveying my end users which 91 people responded I learned that many students had bad habits they did before going to bed - mostly using online devices which as I previously said can affect the body's natural production of melatonin (sleepy hormone). When I asked in my survey ("What ways do you believe your sleep could be improved?") Majority of the respondents said building a sleep schedule and learning more about how habits that could be easily implemented into daily life set up my end users for optimal sleep towards the end of the day.

During my design process, I created a blander web page for my second web page which I was told to change to make it more interactive for the users and hence more appealing. I was told this during feedback I received after my first design sprint stakeholder feedback told me that my second page was plain and that I should add an interactive element to make it more visually interesting.

(iii) Explain how you implemented this requirement in your outcome.

I implemented this into my outcome by making my second and third web pages about sleep schedules - why it's important and how to build a sleep schedule - and my third webpage is about healthy sleep habits showing 5 habits that can be easily implemented in lives of teenagers as well as a link that goes to Healthline article a trusted site that shows all the studies the information presented is referencing to learn 12 more habits that could be introduced to my stakeholders daily life to improve quality of sleep, therefore, solving my issue of lack of sleep in senior students at [REDACTED].

After receiving feedback in my design sprint that my second webpage was plain I did more research on trendy designs seen in 2024/2023 and learned about the spotlight effect. After doing more research to ensure that I could accomplish this I decided to change my second web page design using the spotlight effect making my website more interactive and appealing to my end users. I can ensure that adding this feature has improved my website because during my final sprint when receiving feedback on things I should change to ensure my website was fit for purpose, I only received positive feedback saying that the spotlight effect has made my website more enjoyable.

Stakeholders

- (e) (i) Who was an influential stakeholder?

One of the stakeholders is diagnosed with dyslexia, as she is my friend I asked her to give me honest critiques on my website to ensure that the text was easily readable and that the majority of my end-users would be able to read my website.

- (ii) Explain how specific feedback from this stakeholder influenced your development process.

During the development process, I had planned to use cursive font for most of my headers on the different web pages. Though this design was positively received by other stakeholders my stakeholder with diagnosed dyslexia specifically told me to change the font to something with straighter lines/ simpler and make the font bolder. As that made it easier for her to read the website. By doing this I have made my website more accessible for my end users as those who have dyslexia or even poor eyesight benefit from the change I implemented. I have been certain of this because after making my changes I asked my stakeholder to give honest feedback if the change I made it easier for her to read the text and she could read it making it more user-friendly, hence ensuring that as many people as possible from my chosen end users will be able to read my website therefore making my website more fit for purpose as my website will be able to reach a wider audience helping them to improve their sleep as well.

New knowledge and skills

- (f) (i) What was new knowledge you needed to learn to develop your digital outcome?

While developing the website I had very little knowledge of JavaScript though I have used JavaScript in the past it was a very inconsiderable amount. To create my website a requirement was to have JavaScript as that was what I chose as my complex skill. In order to learn this skill my teacher brought in a web developer () who taught us JavaScript and advanced CSS skills we could implement into our website (rate frames, responsive navigation, animated background, etc). I have also learned JavaScript such as my spotlight effect using YouTube and the aid of my digital technology teacher ().

- (ii) Explain how this new knowledge influenced your development process.

I have implemented the knowledge I learnt in my website before learning this new knowledge on JavaScript and CSS I wouldn't have been able to create my website as I have used complex skills such as frame rate in CSS on the clouds. Before learning about frame rates with Maurice I had no idea I could have done that. Therefore the knowledge I learnt greatly impacted my web development as I could challenge myself to put more complex and advanced skills in my website that I previously didn't know how to. In my website the knowledge I learnt was used to make my interactive spotlight effect on the second webpage, frame rate where clouds move inwards on my homepage, responsive navigation using JavaScript where navigation can change better bar navigation and hamburger navigation depending on the screen width and I have used my new knowledge to create the glass morphism text box on my third home page. This has made my website more aesthetically pleasing and more interactive for my end users as well as more practical and accessible implication as users can use the website on different devices.

- (iii) What was a new skill you needed to learn to develop your digital outcome?

A new skill I learned was using Photoshop.

- (iv) Explain how this new skill improved your development process.

I used Photoshop on my hanging-light image to make the background of the image clear so the edges of the image wouldn't be seen only the hanging light lamp this made the image more cohesive with the webpage as there wasn't a large white box around the lamp which would have looked out of place taking away from the spotlight effect on the second webpage. In order to do this I exported the hanging light image I drew onto Adobe Photoshop and used the selection tool to select the hanging light image after doing that I made the image made the background of the image a PNG so the background colour (dark blue) of the website would be see through the image only having the hanging light making the website look more aesthetical and image is more cohesive with the rest of the webpage and fits with the minimalist aesthetic making the spotlight effect look better as it looked like the light was coming out of the hanging light image.

Reflective analysis

In this section you are required to write critical evaluations of both the positive aspects and potential issues with your development process and outcome.

In the development of your outcome, implications need to be considered. These included:

- cultural issues
- legal issues
- ethical issues
- issues relating to intellectual property
- issues relating to sustainability
- issues relating to privacy
- issues relating to accessibility
- issues relating to usability
- issues relating to functionality
- issues relating to aesthetics
- end-user requirements
- health and safety issues.

(g) (i) What were the most significant implications you addressed from the above list?

- issues relating to intellectual property
- issues relating to usability
- issues relating to aesthetics
- end-user requirements

(ii) Explain how you addressed these significant implications.

Intellectual property:

I have addressed the significant implication of intellectual property by ensuring that none of my images had copyright by drawing the images myself to ensure that all of my images are copyright-free.

Usability:

I have addressed the implication of usability by 1. To make my website fully responsive, I have tested the website on a phone, laptop and iPad to ensure that the website will appear neatly on all three devices. I have made my website responsive by using percentages on my images and text boxes so it will reduce and increase in size according to the webpage. I have also added responsive navigation so when users are on a phone the navigation changes from a navigation bar on the top right hand of the screen to a hamburger navigation with a hamburger navigation icon (three lines) in the top right-hand corner which when clicked presents the user with drop-down navigation where they can click the links to the page that which to go to. Having navigation at the top of my webpage and a logo that is a link to the homepage on the top left-hand side of my website fits with the consistency and standard as that is the norm for most websites so by having it there it makes the website more user friendly. I have placed my header in bold lettering at the top of each webpage making my webpage more user-friendly as users will be able to easily identify the contents of each of my webpages.

Aesthetics:

Considering my stakeholders are teenagers It was important that I make my website aesthetically pleasing placing information in an orderly way that is consistent throughout the website without being boring and keeping a consistent colour palette that reflected my topic chosen. The colour palette I chose for my website is dark blue, white and yellow. I have chosen these colours because, during my development stage, I had given my stakeholders 4 different mood boards with ideas for my original designs that were later refined after receiving feedback. These 4 mood boards were distinctly different to one another. The 4 mood boards had different colour palettes - 1. White and pink, softer colours with more


floral designs and a dreamy aesthetic, 2. Neon purple with a nighttime city aesthetic, 3. black and white for simplistic and minimalistic images, 4. Dark blue and yellow representing night time sky with bright light on. The 4th mood board was voted as the favourite by a landslide so I further refined the design with input from stakeholder feedback for example the original blue I picked was too light and did not contrast strongly enough with the yellow making the website feel flat so I changed my blue colour to be a darker shade of blue. This feedback I used affected the aesthetic of my website and I can ensure that the choice to use dark blue and yellow as the main colours on my final outcome is appealing to my stakeholders as it was specifically voted for by my stakeholders ensuring that they found it attractive therefore fitting the implication of aesthetics. I also used simplistic images that were clean and not too busy as it would distract from my website making it less suited to help educate the student on the importance of sleep.

End-user requirement:

After each sprint, because I followed the agile methodology I gained feedback during the reflection after each sprint. During this, I gained insightful feedback that helped improve the quality of my website as I was better able to make a website that was fit for my users. During this, I changed font type and sizes as well and edited my images to make them better suited for the website. I have met the end-user requirements by doing extensive research on trendy website designs as well as how to solve the issue of lack of sleep by learning what are the most effective ways that a teenager can improve their quality of sleep. By following stakeholder feedback and constantly evaluating my website to ensure the final outcome is to the highest standard. I also did Sprint retrospect after each sprint where I reflected on the outcome produced after that sprint and the process I followed to see if changes could be made to make the process more time efficient in order to make sure my final outcome was to the highest standard. Also, all the page I have chosen topics on each page based on a survey written so I am sure that my website will fit the end-user requirements and aid the user in learning how to improve their sleep solving the issue of lack of sleep in senior students at [REDACTED].

(iii) What did you learn from addressing these significant implications?

I learned a new skill of Photoshop while creating my own images as I had never made the background of an image I had drawn to a PNG before. By implementing the implication of usability I learned the importance of constantly testing the website after adding small features as often when I added more text or changed the layout of one of my pages it would break the other pages' responsivity making the text/image bunch up and cut off strangely, I learned the importance of making sure webpages are still looking good after making changes. Aesthetics I learned many new trends in websites I wasn't aware of before such as glassmorphism I had never done glass morphism on my website before and found learning about it interesting as well as making the spotlight effect I had never seen a website with the same effect as I had created so I interesting to learn how to create this feature. End-user requirements I learnt the importance of listening to stakeholder feedback and it greatly changed my design during the design phase of developing my website by changing the design in accordance to the end user I have made my website more appealing and has helped my website fit the requirements of the end user better ensuring that my website will solve my issue chosen: lack of sleep in senior students as [REDACTED]. Also I learned the importance of research while developing my website. To ensure the website fits the requirements of the end user as much as possible I need to do lot of refinement on my website. I wasn't able to do as much refinement on my final outcome as much as I wanted because I spent too much time learning about how to do the JavaScript on-scroll feature for my colour design which was part of my original final design that I later changed to be and frame rate using CSS because it created a similar effect. But a lot of time could have been saved if I had done more research on how to use on-scroll during my design stage. Which



would have given me more time to receive more feedback to make my website as fit to purpose as possible helping senior students better their sleep.

- (iv) What strategies did you use to check that your outcome addressed these implications?

I used agile methodology when developing my website because of the agile methodology I was required to constantly get feedback after each sprint. I got feedback from 3 to 5 students who fit my target end users to give honest criticism about my website highlighting what they thought needed to be improved and what could stay the same. This constant feedback was incredibly important as it ensured that my website addressed the important implications I had chosen above. Also after each sprint I completed a sprint retrospect. Saying what I thought I did good, and what could be improved. Because of this, I could reflect on whether my website was heading in the direction I wanted it to as I was able to reflect on whether my website did fit the implication and UX that I wanted it to.

- (v) Reflecting on your outcome and its development, what have you learned about developing a digital outcome that you did not know before?

During the development of my website, I used an online website called Trello to help sort my tasks. Trello was very important as it helped ensure that my task management was good. Though I wasn't using it constantly at the beginning of my development in the middle of my first sprint when building the website I understood the importance of using Trello as I was able to keep up with my tasks and wouldn't have tasks pretending that need to be pushed to the next sprint. Before creating this website I had never used Trello and while using it I found that it was easier to keep track of different tasks I needed to complete within my sprint (all of my sprints were 1-2 weeks long I did 2 sprints in designs and 3 sprints in developing my website /coding my website) also keeping track of tasks that had to be pushed to later because I didn't have the skill or knowledge yet to implement the design I wanted.

- (vi) How could you apply the learning from creating this digital outcome to future outcomes you may develop?

In the future, I will do more research on elements I which to add to my website during the design stage of my website. In the original final design of my website, I had planned to make a JS on scroll effect with the clouds so they move off the screen when the user scrolls down and on screen when the user scrolls upwards. I originally thought that this wouldn't be hard to implement into my website and I didn't do further research despite my lack of knowledge in JavaScript on how I could create the on-scroll effect I had wanted. This made finishing my home page a task I had planned to have finished after the 1st sprint in building my website ended up being pushed to my second sprint only being finished by the end of that sprint. This greatly ate away at the time allocated for perfecting my website. To save time I changed my original design to user frame rates which I learned through the web design expert my teacher brought, this gave a similar effect to the original design and I was able to implement this design. In future when I develop the website I will pay attention during my design stage to learn more in-depth about the characteristics I want to add to my website making sure that I can complete them in the time that has been allocated. Considering how much of an impact the JS on-scroll codes I had attempted to have an effect on the entire design process of my website I now understand the importance of doing initial research on adding elements/features that I don't have much knowledge on.

Excellence

Subject: Digital Technologies

Standard: 91909

Total score: 07

Task	Grade score	Marker commentary
	E7	<p>The candidate presented a detailed description of a suitable Level 3 digital technologies outcome. The outcome was a website addressing stakeholder (year 13 students) concerns around lack of sleep.</p> <p>The candidate identified a genuine need and used a stakeholder survey to clarify end user requirements. The need was addressed thoroughly in developing the website.</p> <p>Useful and pertinent feedback on the creative process for the website was presented and discussed. Decisions were justified.</p> <p>Overall, the report was an insightful, reflective analysis with conclusions about the outcome and development process.</p>