# Digital Technologies & Hangarau Matihiko 3.8

## Level Three, Credits 6, Assessment Internal

## Introduction/Kupu Arataki

This assessment activity requires you to plan, develop and create a complex computer program.

You will be assessed on

- how effectively you use project management tools and techniques to plan and manage the development of a digital outcome
- how effectively you decompose the problem into smaller components, and test and refine your media outcome so that it is a high-quality response to the task
- how well you have addressed relevant implications
- how well you synthesise information from the planning, testing and trialling of components to develop a high-quality response to the task (e.g. well-structured, logical, flexible, robust and comprehensively tested program)
- discuss how this information assisted in the development of a high-quality outcome.

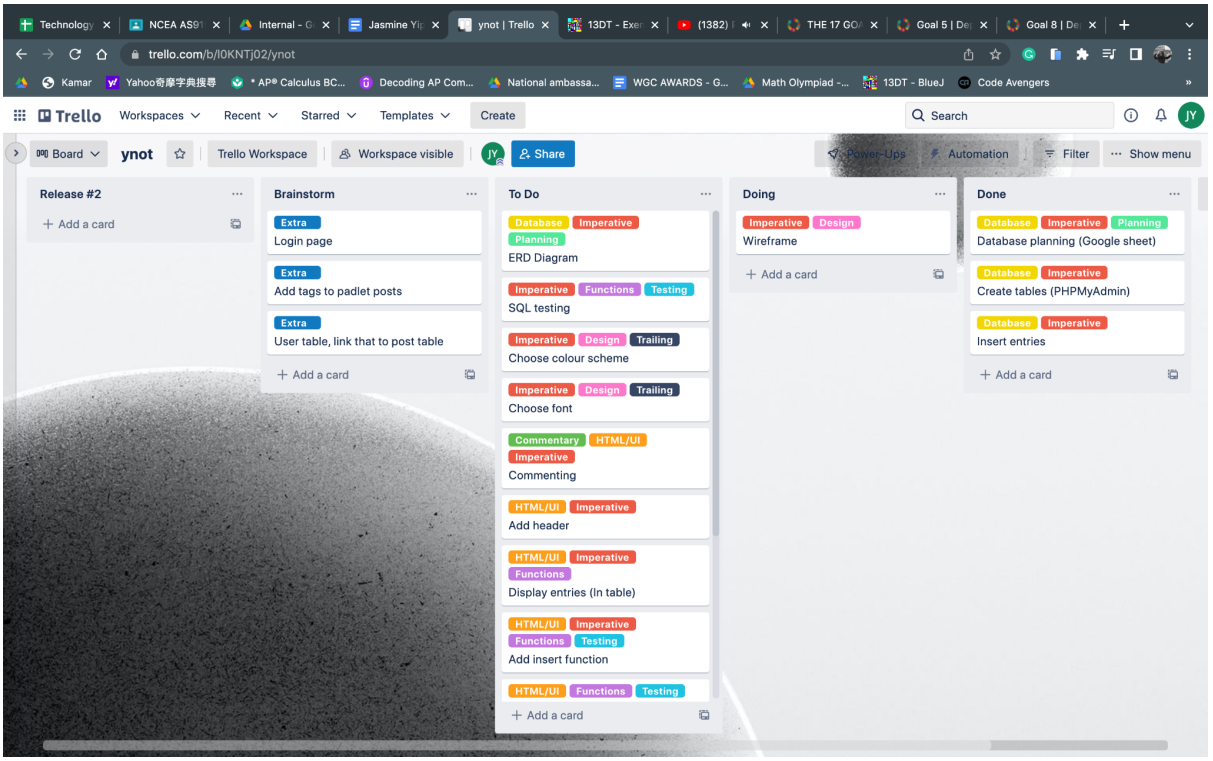
## Problem Statement

*I found that teenagers are often expected to work low-skill, low-income jobs that are unrelated to their career aspirations. Through YNot, I aimed to inspire them to explore entrepreneurship, leadership and career opportunities at a young age.*

# Planning the development and Decomposing the outcome

- **using appropriate project management tools and techniques to plan the development of a digital technologies outcome**
- **decomposing the digital technologies outcome into smaller components**

I used the Agile Methodology and Kanban board to plan and decompose the outcome. I aimed to complete a **Minimum Viable Product (MVP)** in the first iteration, for which I would improve and build upon in each of the following iterations.




Column *Brainstorm* is the **commitment point**, where I put ideas (or stakeholders' suggestions) that could potentially be implemented. Column *Done* is the **delivery point**. When all the cards are moved to *Done*, the iteration is done and can be delivered. The **Work In Progress (WIP) limit** for *Doing* is one, as focusing on one task at a time ensures higher quality and better workflow.

I label my cards with the following **coloured tags** which increase visual scannability, allowing effective filtering and prioritization.

- Database (creating, constructing, and inserting entries)
- Planning (database planning on scrap paper/Google sheet)

- Design (prototyping, aesthetic aspects)
- Functions (SQL performing the expected task)
- Testing (ensure functionality)
- Trailing (elements need to be trailed with stakeholders e.g. colour)
- Commentary/Documentation (pseudocoding, comments in HTML/CSS/PHP code)
- HTML/Front-end (GUI and structure of the website e.g. buttons, navigation)

To ensure releasing sprints before deadlines and **even distribution of tasks** for each iteration, I have assigned a to-do column for each sprint. Tasks are also labeled with their **priorities**. Those labelled **'imperative'** are urgent and important features to be able to deliver a MVP, whereas those labelled **'extra'** are additional features that can be pushed to future sprints or even not implemented due to time constraints.

# Considering Relevant Implications

- ***addressing relevant implications.***
- *social*
- *issues relating to privacy*
- *issues relating to accessibility*
- *issues relating to aesthetics*

**Social**

A digital product should create positive social impacts. YNot aims to create an online community where share opportunities and access resources regarding careers. YNot creates positive social impacts by meeting the **SDG (Sustainable Development Goals)** target 8.5 (‘achieve full and productive employment and decent work for all, including for young people and equal pay for work of equal value’) YNot aims to defy stereotypes – stereotypes of high school students or graduates are expected to work low-skill, low-paying jobs; stereotypes of females don't belong in traditionally male-dominated industries. YNot hopes to create an employment culture that hires people based on skills instead of age or gender and fight against work exploitation.

**Privacy**

The target audience are also underage students (under 18 years old) therefore their privacy needs to be taken extra care of. Because the website functions like a padlet/forum, It is important that users have the option to remain **anonymous** to avoid doxxing. I will also make sure the data I collect from users are **general** and are **not identifiable**. It is up to users to decide in what depth they want to share their personal stories, however a **reminder** will be given to warn them of the potential danger of sharing too many details. It is important that stakeholders who provide **feedback remain anonymous** as well (i.e. Teacher A). The personal data of the users also needs to be kept private, this particularly applies to **login details**, as hackers could post content that to slanger another person. A **privacy statement** will also be displayed informing the users on what type of data I collect from them, and what I do with that data. *Legal vision* states that under New Zealand law, a privacy statement must be included in a website for any public or private sector organisation.

**Accessibility**

Website accessibility refers to the features that ensure all the potential users, including those with **disabilities** and those using different **devices/system**s, can easily **navigate** the website and have a pleasant experience. By practising accessibility, the **usability** of my product will be increased. In New Zealand, 15% of the population has **dyslexia** and 4.5% has **colour blindness**. In order to ensure they can access the website with ease, I will take into account the choice of **font, spacing, and colour scheme** and carry out **extensive testing** with people with special needs. I will implement **RWD (Responsive web design)** to my project, allowing websites to display on a range of devices and screen sizes by adapting to the screen by default, so users on different devices can see the website content clearly. To reach my target audience on the web, I will apply **SEO (Search engine optimization)** where my website would be searchable on the internet.

**Aesthetic**

Aesthetics is about making my outcome pleasing to look at or use. The database, website interface, and the code should all follow conventions and be well structured. I will maximise the use of **structured data** that is "alphanumeric, easy to categorise based on shared traits of data points" as defined by *TechTarget*[1]. For my database, this can be achieved by **predefining options** and allowing users to choose from a drop down list. It allows easy manipulation and querying of that data and makes the database entries to be well organised and coherent. I will also use **conventional naming** for my columns and ID. I will follow the **web design conventions** by establishing design norms that internet users have become accustomed to expect websites to follow (e.g.button design), as stated by *Conversation Uplift*[2]. It allows users to be **familiarised** with the web environment, which **conforms to their expectations** and **decreases cognitive load**, hence allowing more pleasant browsing experiences. Code aesthetics include using sensible **names for variables**, maintaining a **consistent coding style**, and using correct **indentation**. I will also write comments while coding, which ensures the code is structured and dispel confusions. **Code conventions** allow higher **readability** of the program, enhancing **sustainability** as other developers can adapt to the code quickly, and allowing easier **debugging** and **code maintenance**.

[1] https://www.techtarget.com/whatis/feature/Structured-vs-unstructured-data-The-key-differences
[2] https://www.conversion-uplift.co.uk/glossary-of-conversion-marketing/web-conventions/

# Sprint Tracking

| Sprint Number | Start Date | End Date |
|---|---|---|
| 1 | 01/08/22 | 16/08/22 |

- **using recognised and appropriate project management tools and techniques to plan the development of a digital technologies outcome**

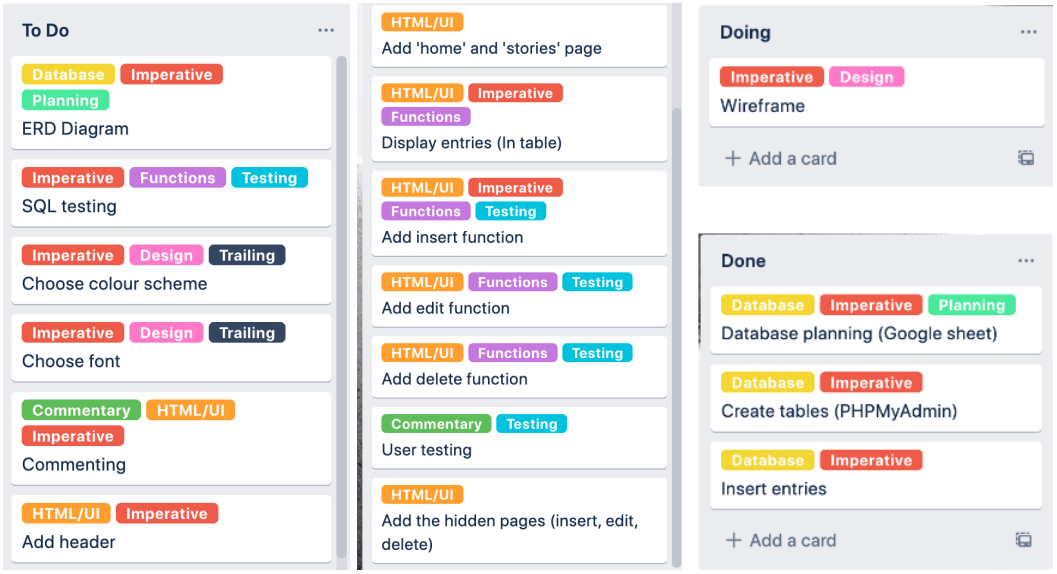
## Planning

*What are you going to work on in this sprint?*

01/08/22- For this iteration, I will develop a simple padlet website where users can sign up, log in, and log out. I will create a user table in the database to achieve this. When users are registering themselves, they will be able to fill out information such as their country and year group. Users can also create, edit, or delete a post. Users can create a post by filling out information via dropdown lists and text fields. These posts will be displayed in a table. Users can also sort the tables by tags or search by author name.

*Provide evidence (screenshot / photo) of your project management tool(s) being used to plan the development of your outcome at the beginning of your sprint here*

For the first sprint, I want to focus on delivering an MVP (minimum viable product) and prioritize the major functions of the website: displaying, creating, editing, and deleting posts. I will also implement a search and sort function to filter specific and relevant posts. I will start with querying the data from the database and print them out in a table format. I will then add a 'create post' page where users can enter their details, title, and caption which will create a new row of entries to the database. After that, I will add an 'edit/delete post' page where users can make an alteration to their post and update the database, or take it out from the database. I will write query code to filter out posts with specific classification and also for a search function.



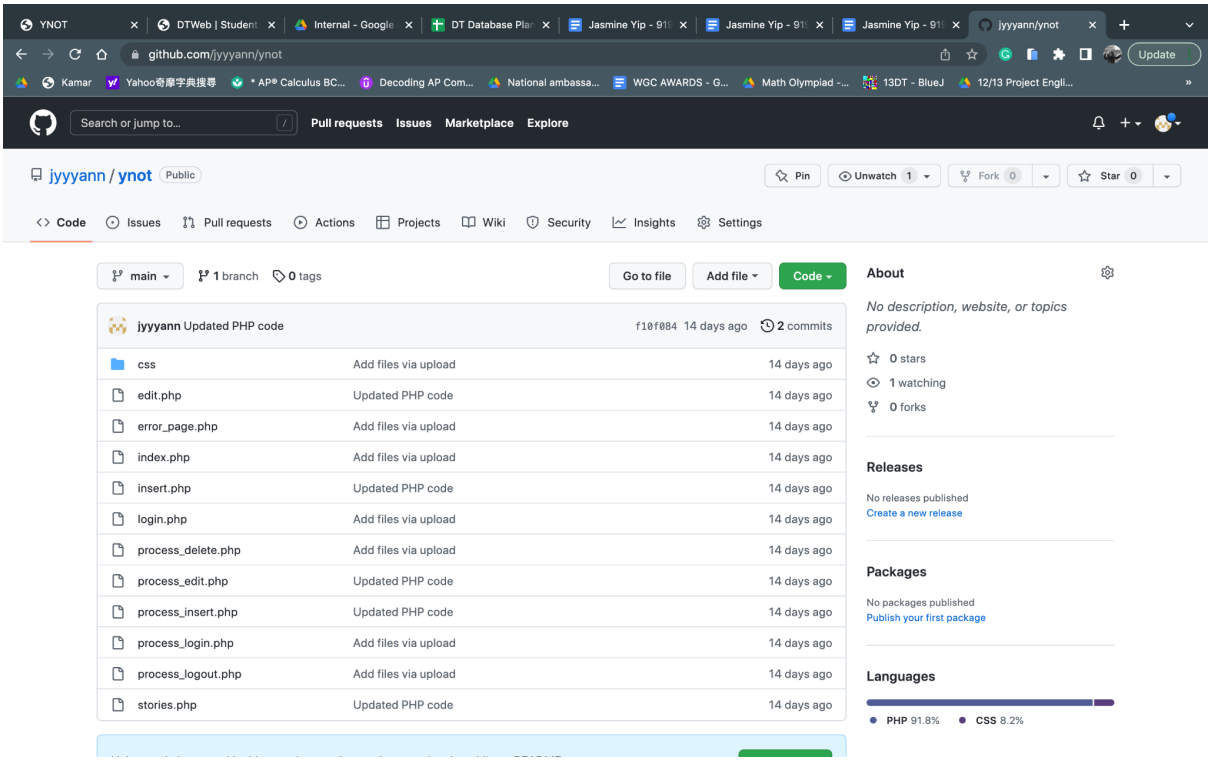

# Development

- **trialling the components of the digital technologies outcome**

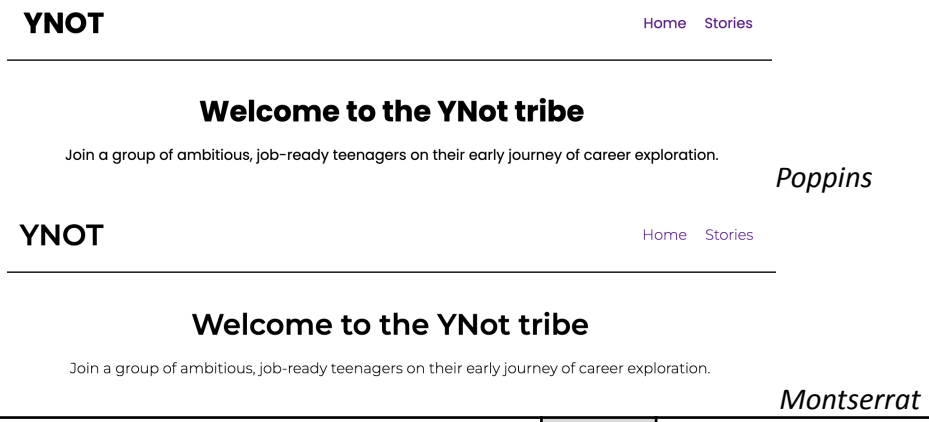
*What components are you going to trial?*

I am trialing choices of font and button styling in this sprint.

*Provide evidence (screenshots of your version control)*



*Provide evidence of the options you are going to trial.*

| | | | |
|---|---|---|---|
| **Component** | Font | | |
| **Options** |  *Poppins* *Montserrat* | | |
| **Name** | Student A, B | | 10/08/2022 |
| **Preference** | Student A- I prefer poppins. It is more readable and aesthetic.<br><br>Student B- I also prefer poppins over montserrat. The font weight is too low making it hard to read. Poppins looks more modern.<br><br>I chose poppins, because it appears to be more popular and simplistic, which aligns with my overall design. | | |

| | | | |
|---|---|---|---|
| **Component** | Button styling | | |
| **Options** | *style #1* *style #2* *style #3* | | |
| **Name** | Student A, B | | 15/08/2022 |
| **Preference** | Student A- I prefer style #3. The black button contrasts with the white background and makes it stand out.<br><br>Student B- I prefer style #3 or style #1, style #2 is just too plain. You could add a hovering effect so we know it is clickable.<br><br>I chose style #3, it contrasts more with the white background so users will know its clickable. | | |

## Feedback

| **Component** | Creating a post | | |
|---|---|---|---|
| **Name** | Student A | **Date** | 10/08/2022 |
| **Feedback** | The instructions are generally easy to follow. Your website should check that all required text fields have been filled in before allowing them to be inserted. The drop down list of tag options is comprehensive, however, you can consider adding a 'other' option for the classification types as some jobs might not fall under those categories.<br><br>Also, there should be more flexibility to these details. For example, if a counsellor wishes to post a new opportunity, they won't fit into any categories between Y11 to University second year. | | |

| **Component** | Editing/deleting a post | | |
|---|---|---|---|
| **Name** | Student A | **Date** | 10/08/2022 |
| **Feedback** | It is straightforward as to editing the content and deleting a post. And I like how login is required before editing/deleting a post. However, after logging in, it should only be the user's post showing, instead of all the posts in existence. Otherwise they would be able to change the content of other users' posts. Maybe a warning window can pop up to ask if the user is sure that they want to remove the post to prevent accidents. | | |

| **Component** | Searching/filtering a post | | |
|---|---|---|---|
| **Name** | Student A | **Date** | 10/08/2022 |
| **Feedback** | The searching and filtering functions are functional. It is convenient that users don't have to enter their full name to search (e.g. 'jasmine yip' will pop up even if just 'yip' is searched). You can consider letting users sort by title/content too. More filtering options could be added, for example, country of origin and their year level. That would help users to sort out the posts that are most relevant to them. | | |

| **Component** | Website Interface & layout | | |
|---|---|---|---|
| **Name** | Student A | | 10/08/2022 |

| | |
|---|---|
| **Feedback** | The interface is clean, however, it lacks styling. The table layout of showing the stories is good, however, it could look more well-structured if they are displayed like cards on the Padlet or Instagram posts. There could be more formatting for the 'add a post' page, for example, aligning the content to the left instead of centre, and allow more spacing in the text field. |

| | | | |
|---|---|---|---|
| **Component** | Sign up, log in, and log out | | |
| **Name** | Student A | | 10/08/2022 |
| **Feedback** | Sign up page is easy-to-follow. Login page is functional using the information I typed in during the sign up process. Maybe you can consider letting the user change their information. Because information like location and year level will change. Maybe a personalised 'profile' page? | | |

*What is the outcome of this feedback?*

Student A's feedback has given me ideas on improving the usability of my website. In general, more communication with the users (e.g. warning before irreversible actions). I could also create more personalised filtering options. Student A pointed out an important loophole that needs to be addressed, which is the privacy issues with the editing/deleting function. I could add a login page to verify the user's identity before allowing such actions. Student A has also reminded of implementing error checking to ensure all fields have been filled before allowing a post to be created. I should also add a range of error checking code to catch errors (e.g wrong data type, out of expected ranges.)

*How will I address this feedback in my next sprint?*

- Login page and only show that user's post on the edit page
- Warning messages before irreversible actions
- Error checking for post creation
- Restructure 'stories' page

# Testing

● **testing that the digital technologies outcome functions as intended**

- What user testing did I do on my completed outcome? (Insert results and mention any changes I made as a result)
- What code validation (if relevant) did I do on my completed outcome? (Insert results)
- What functional testing did I do on my completed outcome? (Insert a testing table or link to a video)

## Link to Loom Video:https://www.loom.com/share/ede4797bf1994735b94c327dbf15cf29

0:37-1:23 Sign up, Expected

1:23-2:24 Sign up, Invalid (Duplicated username + Special characters in First/Last name)

2:30-3:27 Sign up, Invalid (Blank input)

3:30-3:50 Log in, Invalid (Wrong password)

3:50-3:50 Log in, Invalid (Non-existent username)

4:06-4:22 Log in, Invalid (Blank input)

4:25-4:40 Log in, Expected

4:50-5:03 Search post, Expected

5:04-5:33 Search post, Boundary (Partial name search)

5:35-5:45 Search post, Boundary (Non-existent username)

5:48-6:10 Search post, Boundary (Existing username without post)

6:11-6:20 Search post, Invalid (Blank input)

6:20-6:46 Sort by location, Expected

6:46-6:56 Sort by location, Boundary (Location with no post)

7:02-7:36 Add a post, username security issue

7:38-8:34 Add a post, Expected

8:35-9:05 Add a post, Invalid (Blank input)

9:08 Edit a post

9:20-9:42 Edit a post, Expected

9:43-10:06 Edit a post, Invalid (Blank content)

10:02-10:50 Edit a post, Invalid (Edit someone else's post)

10:53-11:00 Delete a post, Expected

11:00-11:23 Delete a post, security issue

11:23 Logging out

12:09-12:33 Add a post, Expected (Title 99 characters)

12:33-12:33 Add a post, Boundary (Title 100 characters)

13:04-13:51 Add a post, Invalid (Title 101 characters)

# Evaluation

*Sprint reflection and summary*

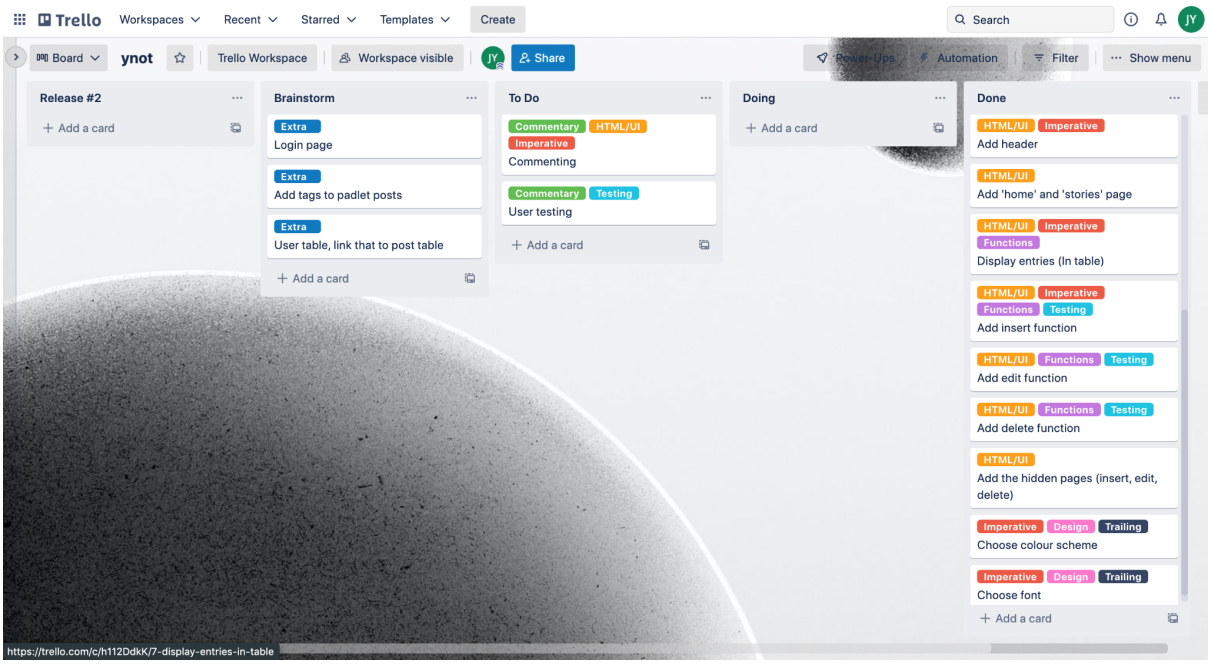
- *What major changes and achievements did you complete in this sprint?*
- *What are you going to do in your next iteration?*

In this sprint, I completed the basic function of my website, which includes signing up, logging in, logging out, and displaying , searching, sorting, inserting, editing, and deleting posts.

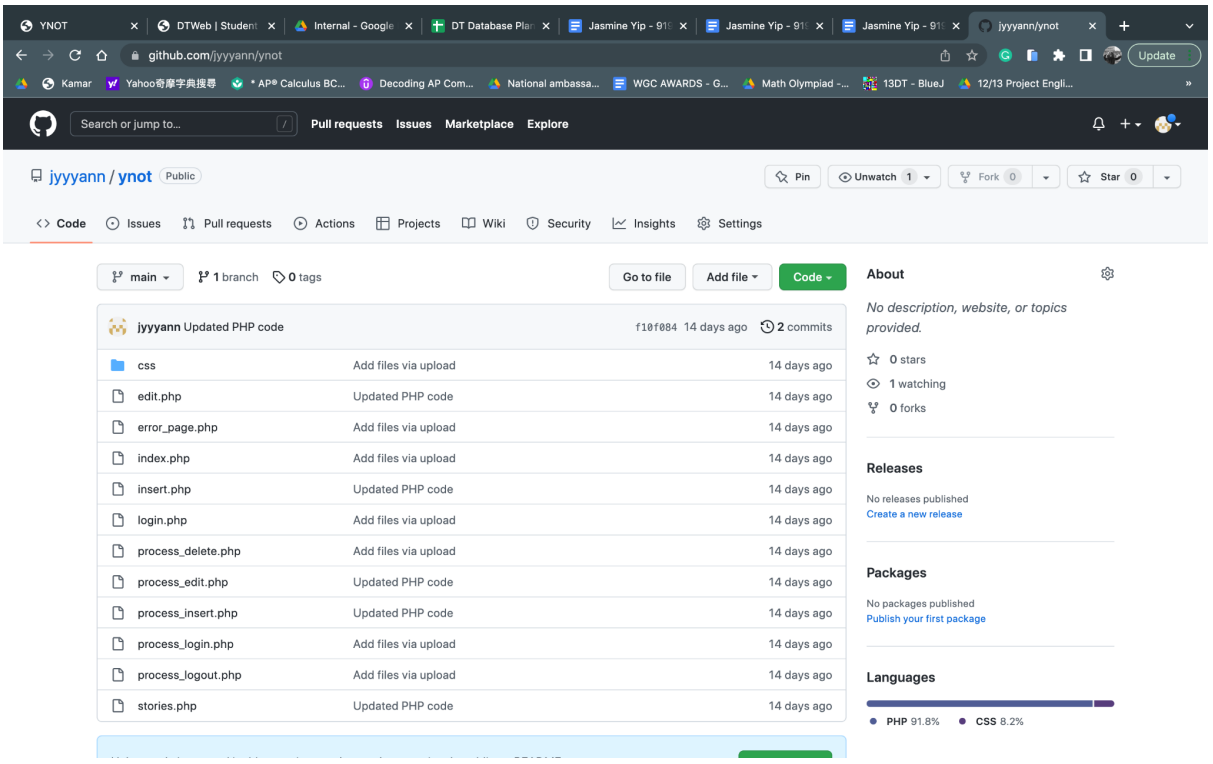
I asked my main audience (students) to test the different functions and give me feedback. From the feedback I received, I found several issues and potential improvements that can be made. The main problem is with the **identity verification** before allowing users to edit or delete a post. Because if we don't verify, all users can make any changes they want in these posts. To address this issue, I will modify the **log in/sign up** function so that only the user of the specific post has the authority to edit it. The other issue is with respect to the **error checking for creating posts**. It was discovered that users can leave every text field blank and create an empty post, which shouldn't happen. I can solve this problem by disabling users to submit the form until every field required has been filled. I can also make a **'profile' page** for each user so that they can update their personal information anytime.

As this is a MVP, the next sprint will be more sophisticated and will take more time for refinement and debugging. I have scheduled two weeks for the next iteration. More trialing with the functionality will also be carried out, for example, the different ways of sorting the posts. I will continue using the **Trello Kanban Board** as it helped me keep track of the task and features I am working on. It helped me stay on schedule and publish the sprint in time on this sprint. I will also continue using **GitHub** as a version control tool. I will upload any changes I have made to the website so when there is a bug, I can also refer back to the old functional version.

*Provide evidence (screenshot / photo) of your project management tool(s) being used to manage the development of your outcome at the end of your sprint here*




*Provide evidence (screenshot) of your version control*



# Sprint Tracking

| Sprint Number | Start Date | End Date |
|---|---|---|
| 2 | 16/08/22 | 08/09/22 |

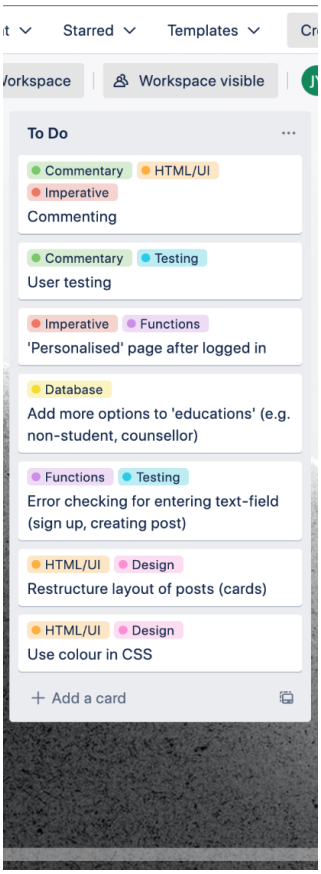
- **using recognised and appropriate project management tools and techniques to plan the development of a digital technologies outcome**

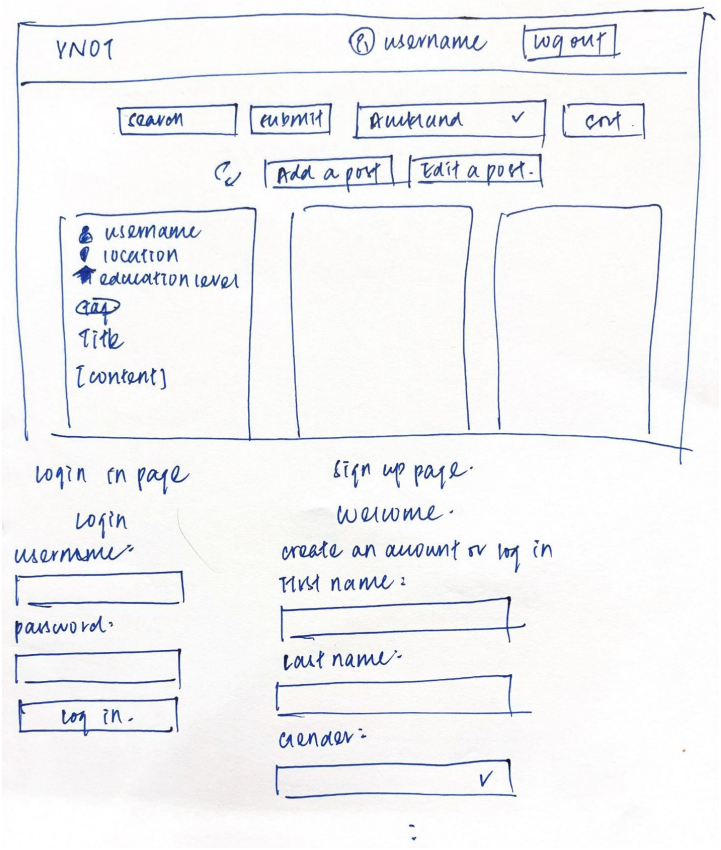
## Planning

*What are you going to work on in this sprint?*

16/08/22- For this iteration, I will focus on developing a 'personalised session' for each user, that is, they can only edit their own post but not all the post. I will also implement error checking to all the text fields to prevent invalid inputs. I will change the layout of the page with the posts to grid. I will also add more styling to buttons and links.

*Provide evidence (screenshot / photo) of your project management tool(s) being used to plan the development of your outcome at the beginning of your sprint here*



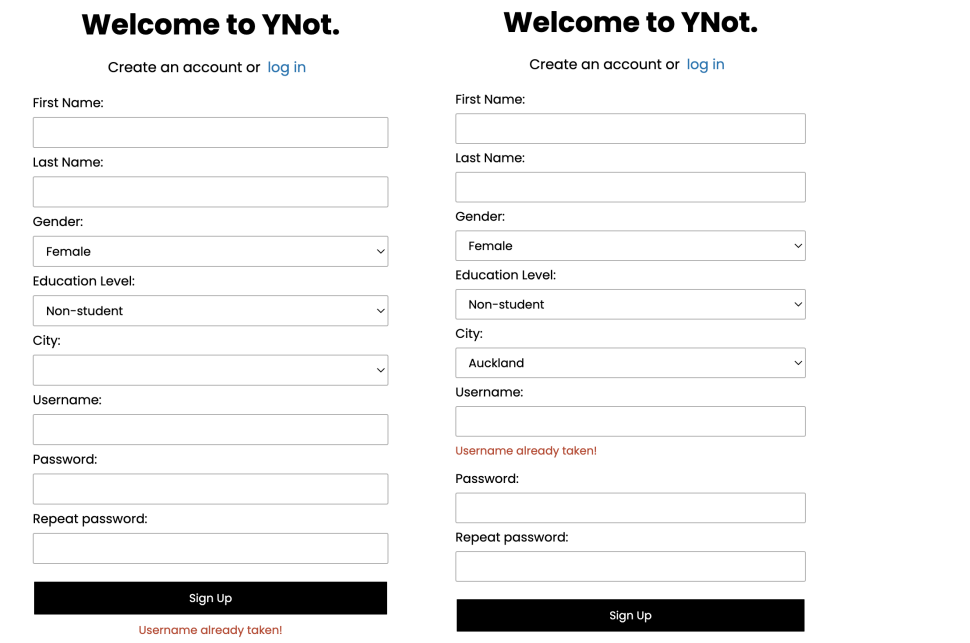
# Development

- **trialling the components of the digital technologies outcome**

*What components are you going to trial?*

*Display of error messages, display of posts, box-shadow of posts.*

*Provide evidence of the options you are going to trial.*

<table>
<tr><td>Component</td><td colspan="3">Printing out error messages</td></tr>
<tr><td>Options</td><td colspan="3"> 

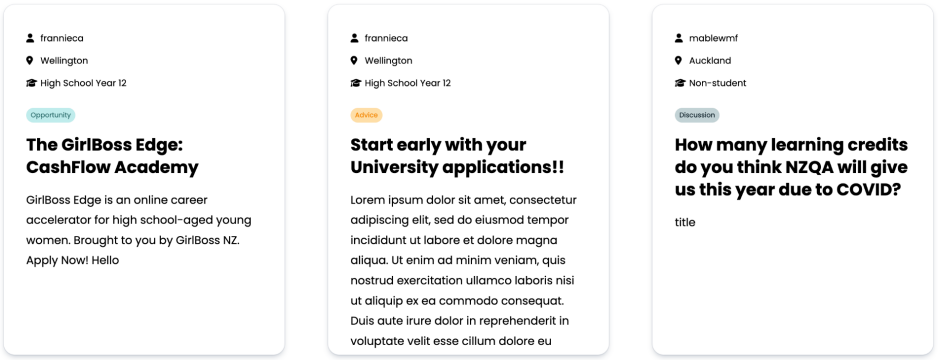
on the very bottom below the text field where the error occurs</td></tr>
<tr><td>Name</td><td>Student A</td><td></td><td>04/09</td></tr>
<tr><td>Preference</td><td colspan="3">A: I prefer having the error message printed directly beneath the text field where the error occurs. Because that way we will know exactly where the error occurred and can fix it easily.<br><br>I agreed with A and chose the second option. It is more user friendly.</td></tr>
</table>

| **Component** | Display of posts |
|---|---|

| | | | | | |
|---|---|---|---|---|---|
| ***Options*** | | | | | |

| Username | City | Education | Tag | Title | Content |
|---|---|---|---|---|---|
| frannieca | Wellington | High School Year 12 | Opportunity | The GirlBoss Edge: CashFlow Academy | GirlBoss Edge is an online career accelerator for high school-aged young women. Brought to you by GirlBoss NZ. Apply Now! |
| frannieca | Wellington | High School Year 12 | Advice | nnn | Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. |
| mablewmf | Auckland | Non-student | Discussion | How many learning credits do you think NZQA will give us this year due to COVID? | title BSKDJBCSBICI |
| yellowperil | Wellington | High School Year 13 | Question | What subjects should I take in NCEA Level 3 if I want to enter Marketing at University? | I am interested in entering the marketing industry. What subjects would be best to take as a Year 13? |
| chinnerz_madhu | Christchurch | High School Year 11 | Opportunity | Looking for bright people to join an education NGO! | I just found an NGO to bridge the education divide last month. If you are interested, please DM @chinnerz on Instagram for the deets! |

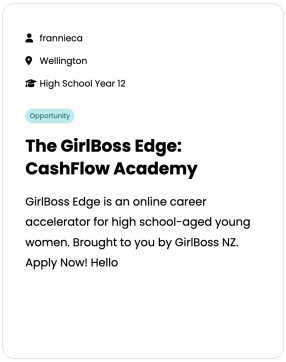
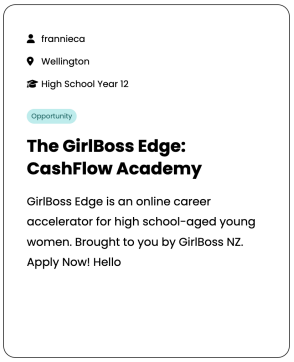
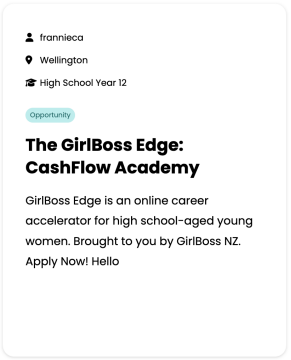
*table form*




*grid form*

| | | | |
|---|---|---|---|
| **Name** | Student A, B | | 09/09 |
| **Preference** | Student A: I prefer the post form. All the information looks more gathered on one spot instead of spanning across the whole screen. I also like the coloured tag feature as it allows users to visually interpret the content of the post quickly.<br><br>Student B: I like the post form way better. I feel like the font size/weight correspond with the importance of the text (e.g. title is biggest and username is smaller) and makes it easier to consume the information.<br><br>I agree with both testers and chose the grid form. It is so much easier to read and it follows a content hierarchy so it is more user friendly too. | | |

| | |
|---|---|
| **Component** | Box-shadow of the posts |

| | | | |
|---|---|---|---|
| **Options** |  <br>*Style #1*<br>  <br>*Style #2*<br>  <br>*Style #3* | |
| **Name** | Student A | | 09/09 |
| **Preference** | I prefer style #1 before it looks the most minimalistic, consistent with the overall style of the website. The border is too strong for #2 and shadow doesn't align with minimalism.<br><br>I agreed with A about the consistent minimalism so I chose 3. | | |

| | | | |
|---|---|---|---|
| **Component** | Colour palette for tags | | |
| **Options** | <br>*Palette #1*<br> <br>*Palette #2*<br> <br>*Palette #3* | | |
| **Name** | Student A | | 08/09 |
| **Preference** | Student A: I like #1 the best. The tone is quite youthful, modern and sophisticated. Palette two is a bit too dull and melancholic and leans towards the feminine side. Palette #3 looks quite childish.<br><br>I agreed with A and I think #1 is youthful with a tint of maturity, perfect description for youth. | | |

## Feedback

| **Component** | Signing up/Logging in | | |
|---|---|---|---|
| **Name** | Student C | **Date** | 11/09 |
| **Feedback** | The layout is clean and instructions are clear. Error checking is thorough and messages are clear about what mistakes were made exactly. I like that the dull red colour makes it less triggering. I also like the confirm password as well as the 'view password' function to make sure the user didn't make a typo.<br><br>I would consider making the password requirements less strict, so it is easier for the user to come up with one. Also, right after signing up, the website could direct the user to the login page. Maybe you can also retain the input even when an error is made, so we don't have to enter everything again.<br><br>Login page is simple and functional. It can catch errors like not filling in the fields or wrong password. | | |

| **Component** | Searching/sorting & browsing posts | | |
|---|---|---|---|
| **Name** | Student C | **Date** | 11/09 |
| **Feedback** | I like the search by title function because it allows me to search for posts relevant to me. For the sorting function, more advanced sorting filters like year level and tag can be used.<br><br>I like the new layout of the page. It is very simplistic and easy-to-read. The colour tags make it easier to visually interpret the post too. You could maybe detect the date posted of these posts and allow sorting from oldest to latest as well. Another idea is to add a comment section so users can interact. | | |

| **Component** | Adding/editing/deleting a post | | |
|---|---|---|---|
| **Name** | Student C | **Date** | 11/09 |
| **Feedback** | Adding: Layout is clear. Catch blank input successfully. Maybe add an asteroid telling users title and content are required. Could have more variety of tags e.g. 'STEM-related' or 'Rant'. Also, perhaps add a return to stories page button just in case users change their mind.<br><br>Editing/deleting: East to follow. I like how the delete button is in red warning the users it's irreversible. However, the pop-up warning window when clicked 'delete' should have the option to cancel in case they change their mind. | | |

*What is the outcome of this feedback?*

The feedback is generally positive. There are a few suggestions on making the website more user friendly, for example directing users to certain pages after certains actions, and retaining previously entered input even when error is catched. I like the feedback on detecting date posting and arranging posts from oldest to newest, this way users can see what's the most up to date. A slightly bigger issue the tester found is the delete warning pop up window doesn't have a cancellation button, so they must refresh the website if they change their mind. I will fix it in the next sprint.

## Testing

● **testing that the digital technologies outcome functions as intended**

- What user testing did I do on my completed outcome? (Insert results and mention any changes I made as a result)
- What code validation (if relevant) did I do on my completed outcome? (Insert results)
- What functional testing did I do on my completed outcome? (Insert a testing table or link to a video)

## Link to Loom Video:

https://www.loom.com/share/df851e7b68ac4c3bb77a618062365f17

0:33-1:17 Signing up, Expected

1:42-1:50 Signing up, Invalid (Blank input)

1:57-2:25 Signing up, Invalid (Name; special characters)

2:25-2:44 Signing up, Invalid (Username; special characters)

2:45-3:02 Signing up, Boundary (Username; username taken)

3:04-3:34 Signing up, Boundary (Password; 8 characters)

3:34-3:51 Signing up, Invalid (Password; 7 characters)

3:51-4:39 Signing up, Invalid (Doesn't contain special characters/numbers/upper case)

4:39-5:05 Signing up, Invalid (Password and Repeat password not matching)

5:25-5:39 Log in, Expected

5:44-5:52 Log in, Invalid (Blank input)

5:53-6:11 Log in, Invalid (Wrong password)

6:58-7:07 Search, Expected

7:13-7:23 Search, Boundary

7:25-7:35 Search, Boundary

7:41-7:57 Sort, Expected

7:58-8:08 Sort, Boundary

8:16-9:03 Add a post, Expected

9:04-9:26 Add a post, Invalid (Blank input)

9:40-10:00 Edit a post, Invalid (Blank input)

10:00-10:24 Edit a post, Expected

10:34-11:01 Delete a post, Expected

11:04-11:19 Log out, Expected

11:20-12:08 About maximum character limits

12:10-12:40 Add post, Expected (Title; 99 characters)

12:40-13:16 Add post, Boundary (Title; 100 characters)

13:17-13:40 Add post, Invalid (Title; 101 characters)

13:40-14:11 The issues with no error handling for upper limit

# Evaluation

*Sprint reflection and summary. What major changes and achievements did you complete in this sprint?*

In this sprint, I implemented several features to address relevant implications.

For privacy, I successfully fixed the loophole of being able to access every other users' post and edit their content. In this sprint, I implemented a fully functional login system, where once a user is logged in, a session will start for the user and they can only carry out actions like 'add', 'edit', and 'delete' using that identity.

Also, to prevent hackers from hacking the database and accessing the password through manipulation of SQL code, I ran an algorithm in my PHP code to hash the input password as an unreadable password. Below is a screenshot of the PHPMyAdmin users table.

| | | |
|---|---|---|
| 77 | johnnysm1th | $2y$10$MQKbGGM5zJKoZohLZwRuY.p18zfJaUF6JthK21HY95A... |

For aesthetics and accessibility, I follow the 7 web conventions to make sure it follows the pattern to meet users' expectations. I achieve it by placing the logo on the left of the navigation bar and link it back to the homepage. I placed the main navigation (i.e. 'Stories', 'Log in) on the right of the logo so users can find what they are looking for quickly. I followed the content hierarchy, that is, the font size corresponds to the importance of the text (e.g <h1> for headers and <p> for paragraphs.) I restructured the stories page from table to grid layout, making the posts much easier to read and navigate. I used a different bright colour for link styling distinguishing it from the plain text so the users know it is clickable. I added hovering effects to the buttons. Lastly, I have a consistent colour scheme, black and white for the majority and a fixed colour scheme for the buttons, tags, and links. The black and white colour also has maximum contrast, making it highly readable and accessible.

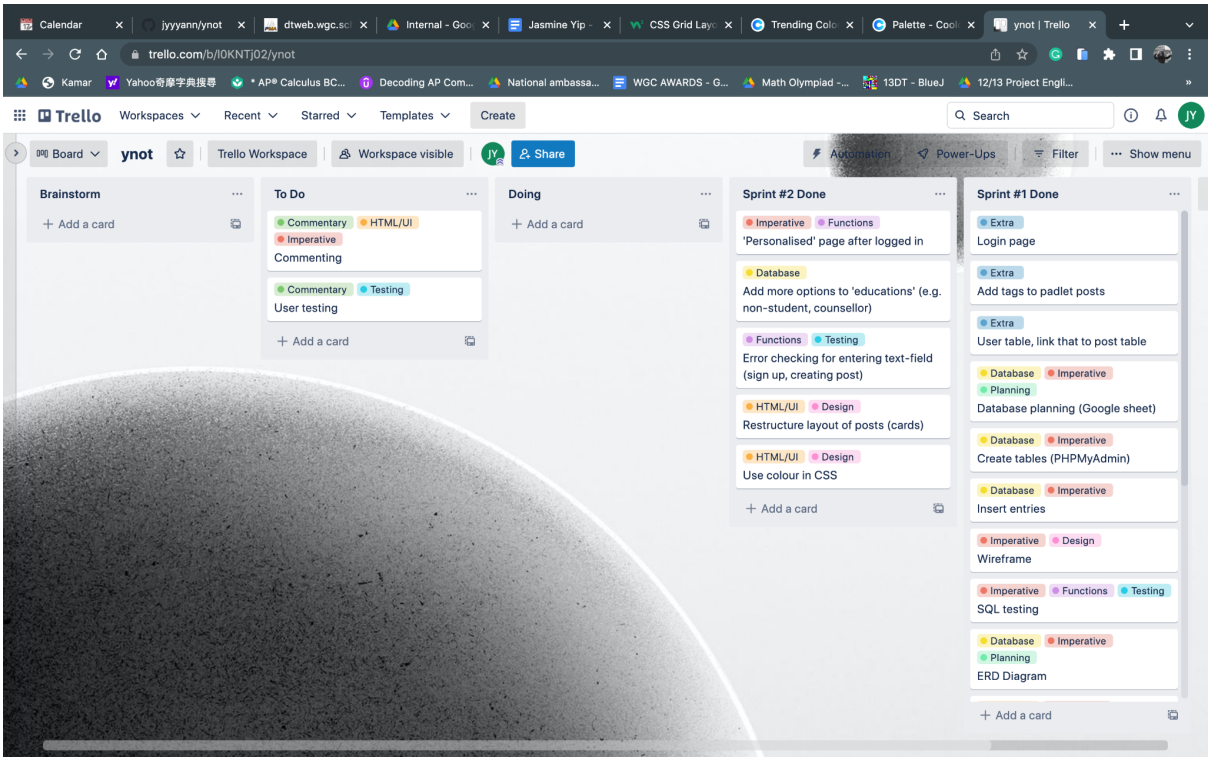
The font choice Poppins is aesthetic and consistent due to each geometric shape of letterform being nearly monolinear. It is also readable for visually impaired users. The website is however not responsive at the moment. The content will be pushed out of place if the window is squeezed or if it is on a mobile device. So it has low accessibility for users who are browsing on tablets or mobile phones.

In terms of the social aspect, I could emphasise more on branding the website. This could include a more thorough 'about us' page and a 'message from the founder'. In order to strengthen the community aspect, in future sprints, I will try to add a comment section to these posts where people can leave their thoughts or answers to a particular post.

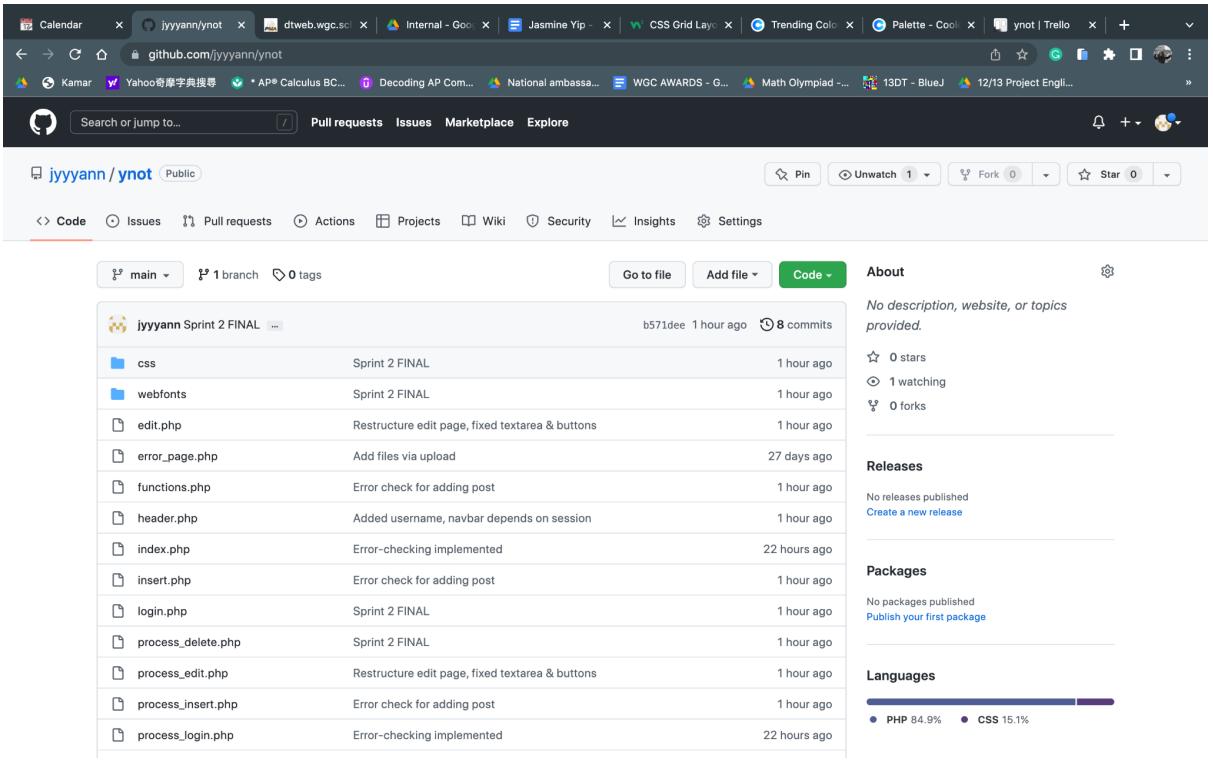
*What are you going to do in your next iteration?*

- error handling on maximum character limits
- a profile page for the user so they could change personal information like year level.
- detect the date of posting and sort the posts from oldest to newest
- make website responsive (CSS)

*Provide evidence (screenshot / photo) of your project management tool(s) being used to manage the development of your outcome at the end of your sprint here*



*Provide evidence (screenshot) of your version control*



# Sprint Tracking

| Sprint Number | Start Date | End Date |
|---|---|---|
| 3 | 08/09/22 | 06/10/22 |

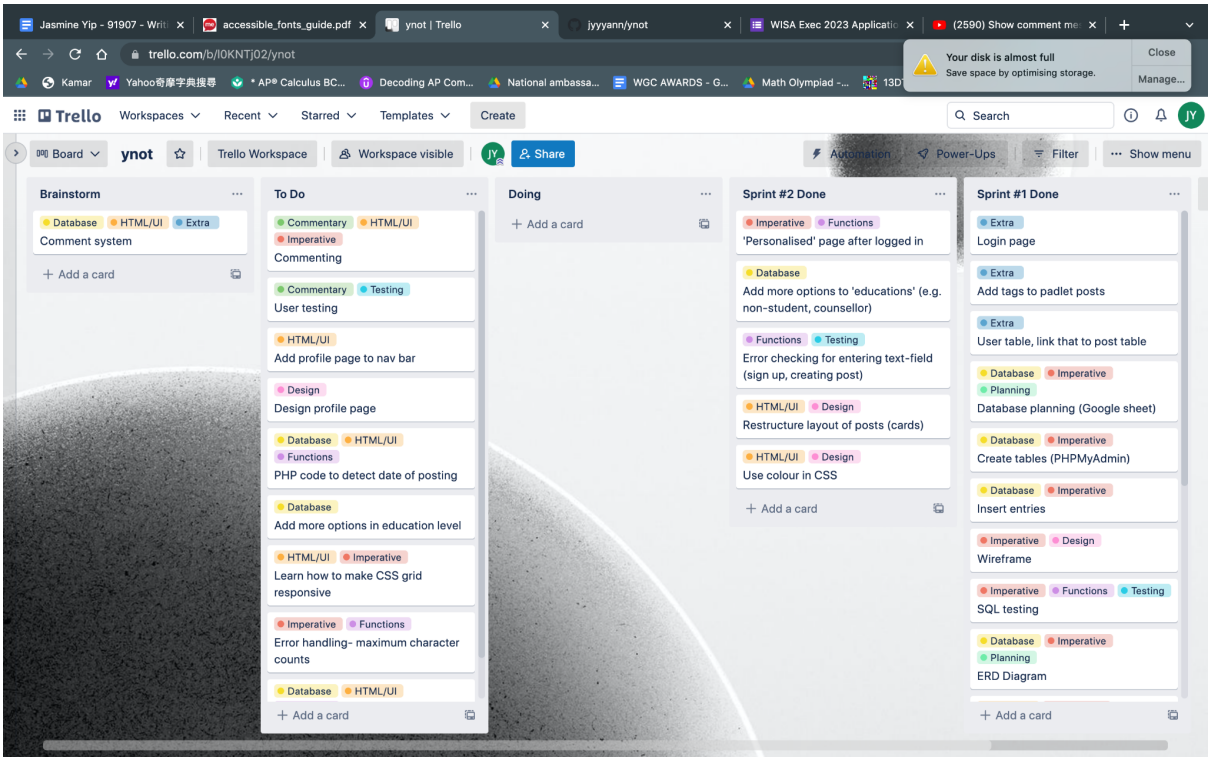
- **using recognised and appropriate project management tools and techniques to plan the development of a digital technologies outcome**

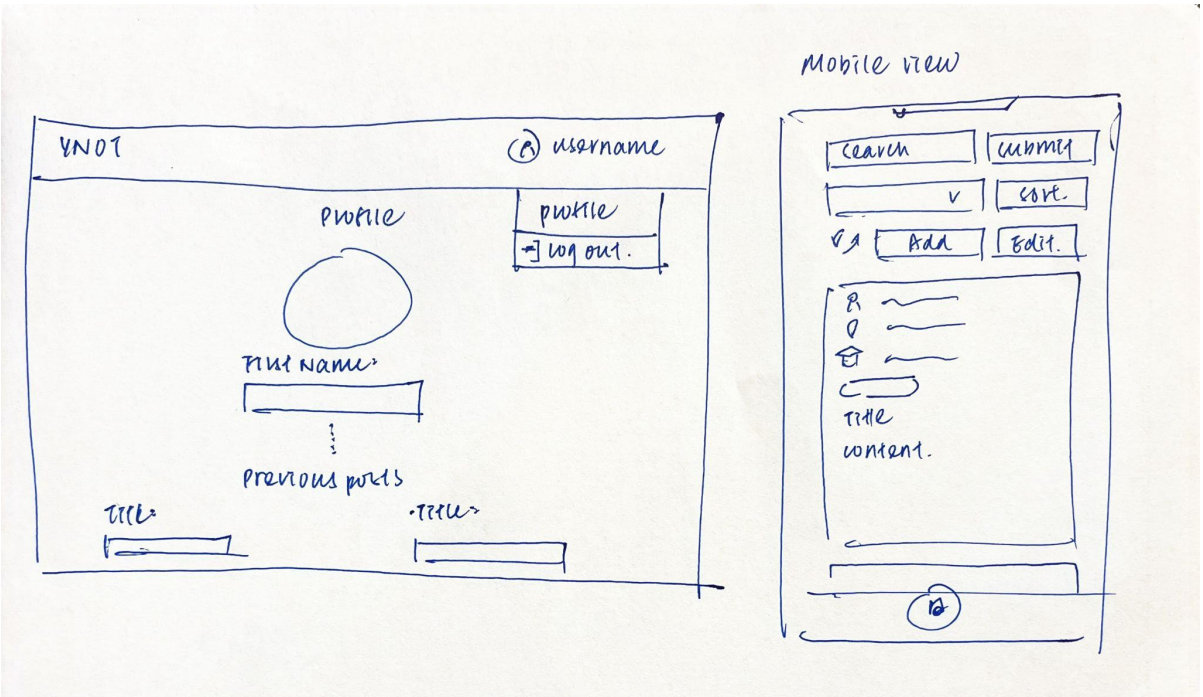
## Planning

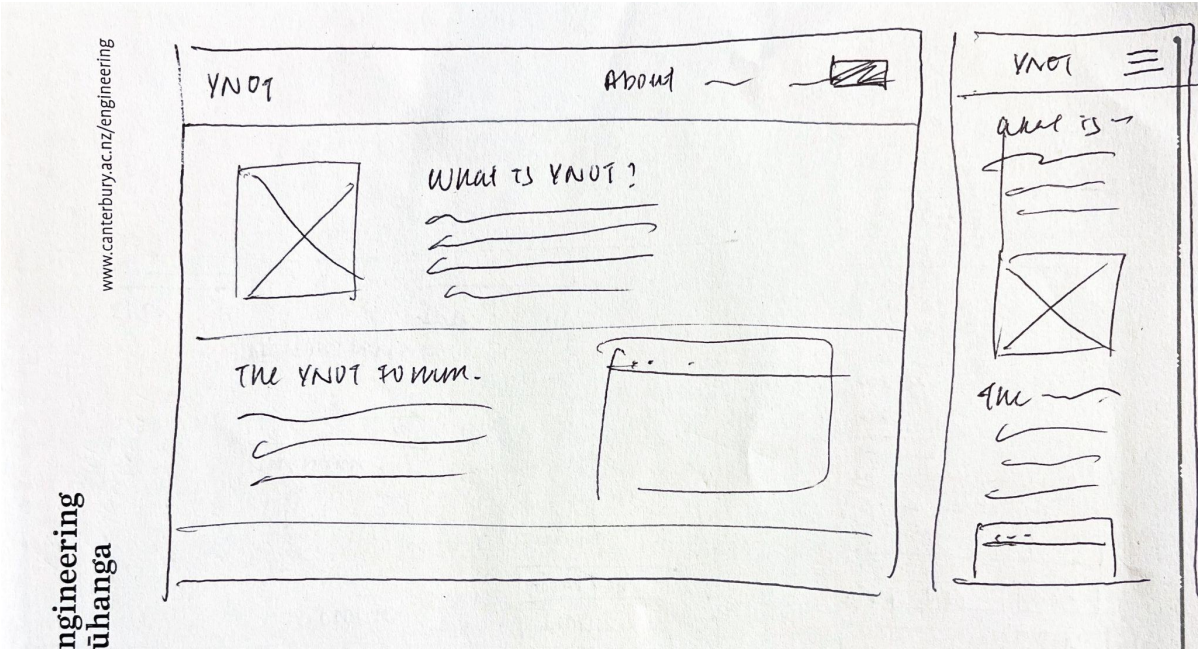
*What are you going to work on in this sprint?*

I will focus on polishing the website and launching it. I will ensure all errors are being handled correctly, including maximum character limits. I will develop a profile page for each user, where they can update their details. I am also going to implement code to detect the date of posting and sort the posts from oldest to newest. I will do the same for the date of registration. Finally, I will make the website responsive so it will be displayed in the correct layout on different devices.

*Provide evidence (screenshot / photo) of your project management tool(s) being used to plan the development of your outcome at the beginning of your sprint here*




YNOT
username
profile
profile
log out.
First Name:
Previous posts
Title
Title
Mobile view
Search
submit
sort.
Add
Edit.
Title
content.

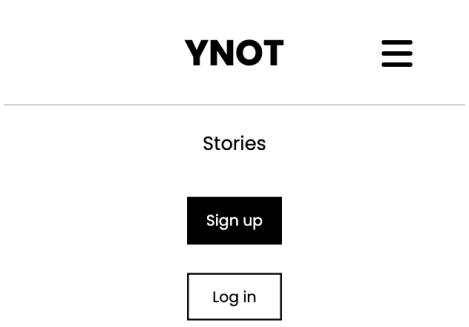

www.canterbury.ac.nz/engineering
ngineering
ūhanga
YNOT
About
What is YNOT?
The YNOT forum.
YNOT
about is
the

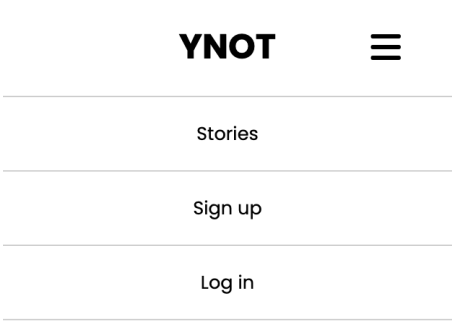
## Development

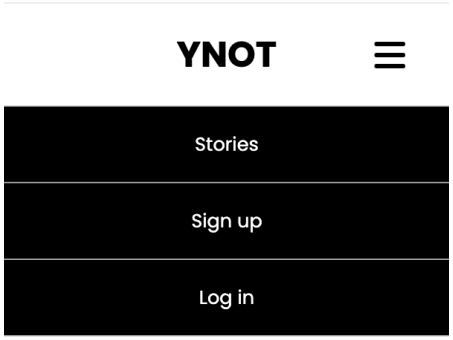
- **trialling the components of the digital technologies outcome**

*What components are you going to trial?*

*Provide evidence of the options you are going to trial.*

<table>
<tr><td>Options</td><td colspan="3"> 

view #1<br> 

view #2<br> 

view #3</td></tr>
<tr><td>Name</td><td>Student A, B</td><td></td><td>09/09</td></tr>
<tr><td>Preference</td><td colspan="3">Student A:I like the second option the most. It looks strange having buttons in the hamburger view. The black background of option three is also too much of a contrast to the white spaces.<br><br>Student B: I like the second option too. The light grey lines separating the nav links make it very clean and minimalistic.<br><br>I have decided on view #2. It has the most white space which align with the majority of the site.</td></tr>
</table>

| | | | |
|---|---|---|---|
| ***Options*** | First Name *<br><br>Please enter fewer than 30 characters.<br>*#1*<br>First Name *<br><br>Character limit: 30<br>*#2*<br>First Name *<br><br>Character limit: 30<br>*#3*<br>First Name *<br><br>Character limit: 30<br>*#4* | | |
| **Name** | Student D | | 16/09 |
| **Preference** | I think keeping the reminder precise and clear is best, so I prefer “Character limit: 30”. And I like it grey because if it's less important, the grey distinguishes it from the label well. I think the asteroid being red is good because it is more obvious that it is required. But having all of them red in a long form can be overwhelming. I think it is pretty straightforward that all fields are required, plus there is already an error message that pops up when anything is missing.<br><br>I agreed with D. I have chosen #2. | | |

| | |
|---|---|
| ***Options*** | <br>**What is YNot?**<br>The ideation of YNot was inspired by the mathematical symbol $y_0$ (pronounced y naught). 'Y' also stands for youth, as YNot targets teenagers from 14-22 who are expected by the society to work low-skills, low-income jobs that are likely unrelated to their career.<br><br>Asking the question "Why not?" allows us to think outside of the box. Founding a youth magazine at the age of thirteen? Why Not? Getting involved in politics and petitioning for legal captioning standards as an 18-year-old? Why Not? These examples are true stories of inspiring teens in Aotearoa.<br>*#1* |

<table>
<tr><td></td><td colspan="3">

What is YNot?

The ideation of YNot was inspired by the mathematical symbol $y_0$ (pronounced y naught). 'Y' also stands for youth, as YNot targets teenagers from 14-22 who are expected by the society to work low-skills, low-income jobs that are likely unrelated to their career.

Asking the question "Why not?" allows us to think outside of the box. Founding a youth magazine at the age of thirteen? Why Not? Getting involved in politics and petitioning for legal captioning standards as an 18-year-old? Why Not? These examples are true stories of inspiring teens in Aotearoa.

#2

What is YNot?

The ideation of YNot was inspired by the mathematical symbol $y_0$ (pronounced y naught). 'Y' also stands for youth, as YNot targets teenagers from 14-22 who are expected by the society to work low-skills, low-income jobs that are likely unrelated to their career.

Asking the question "Why not?" allows us to think outside of the box. Founding a youth magazine at the age of thirteen? Why Not? Getting involved in politics and petitioning for legal captioning standards as an 18-year-old? Why Not? These examples are true stories of inspiring teens in Aotearoa.

#3</td></tr>
<tr><td>Name</td><td>Student D</td><td></td><td>01/10</td></tr>
<tr><td>Preference</td><td colspan="3">I think all of these convey the right idea of youthfulness and energy. I think the first or second would be the most suitable because the animation is more consistent with the minimalistic, 2d vibe of the site compared to photos. Furthermore, I like the first one better because it aligns with the colour scheme of the website more.<br><br>I agreed with D on this as well. Graphics work best with the simplicity of the site and the colour tone matches too. I have chosen #1.</td></tr>
</table>

## Feedback

| **Component** | About us page | | |
|---|---|---|---|
| **Name** | Student D | **Date** | 02/10 |
| **Feedback** | The introduction is engaging and in the perfect length. I like how each section has an image and text description, making it easier to read. The change in background colour (white to light grey) also makes it easier to follow through. Also I like the mobile and computer screen animation demonstrating the website in use and highlighting the main features. I am very convinced to sign up after reading it through! | | |

| **Component** | Stories page | | |
|---|---|---|---|
| **Name** | Student D | **Date** | 02/10 |
| **Feedback** | I like the layout of the stories page, it is very clean and well structured. I really like the automatically arranged from latest to oldest feature as it allows us to see the most updated post. I also like the new sort by tag feature because I am particularly interested in leadership opportunities and I can access those quickly via that. I have also visited the website on my mobile phone and the layout still looks orderly. Would be great to see the comment section though so the users can interact with each other. | | |

| **Component** | Sign up page | | |
|---|---|---|---|
| **Name** | Student D | **Date** | 02/10 |
| **Feedback** | I like the small grey text under each field to remind us to meet certain requirements that we wouldn't otherwise know (e.g. no special letters in username). Also, I like how the 'posted' line is now in green, instead of red like before, because the green colour is associated with some working well. In the future, though, it would be great to see the entered value being retained when an error occurs, so we don't have to enter everything all over again. | | |

*What is the outcome of this feedback?*

The feedback is very positive. The user did raise some constructive feedback on additional features to make the website more user friendly (e.g. comment section and retain information when error occurs.) These changes are harder to implement but I will definitely look into them in future development.

## Testing

● **testing that the digital technologies outcome functions as intended**

- What user testing did I do on my completed outcome? (Insert results and mention any changes I made as a result)
- What code validation (if relevant) did I do on my completed outcome? (Insert results)
- What functional testing did I do on my completed outcome? (Insert a testing table or link to a video)

## Link to Loom Video (Functionality Testing):

https://www.loom.com/share/e6346c1d3b42401eafa380a4b4fd5d77

1:56-2:16 Live character counter

2:17-2:55 Content, Expected (1999 characters)

2:55-5:09 fatal error occurred, fixed

5:14-6:00 Content, Expected cont. (1999 characters)

6:00-6:53 Content, Boundary (2000 characters)

6:54-7:54 Content, Invalid (2001 characters)

8:52-9:16 First name, Expected (29 characters)

9:16-9:23 First name, Boundary (30 characters)

9:24-9:43 First name, Invalid (31 characters)

9:43-9:54 Username, Expected (63 characters)

9:54-9:58 Username, Boundary (64 characters)

9:58-10:16 Username, Invalid (65 characters)

## Link to Google Doc (Accessibility Testing & Code Validation):

https://docs.google.com/document/d/1SsgOrjGfhX0Gn0Jz3oXNPLIwzyofv9iUkrzarcxyuVs/edit?usp=sharing

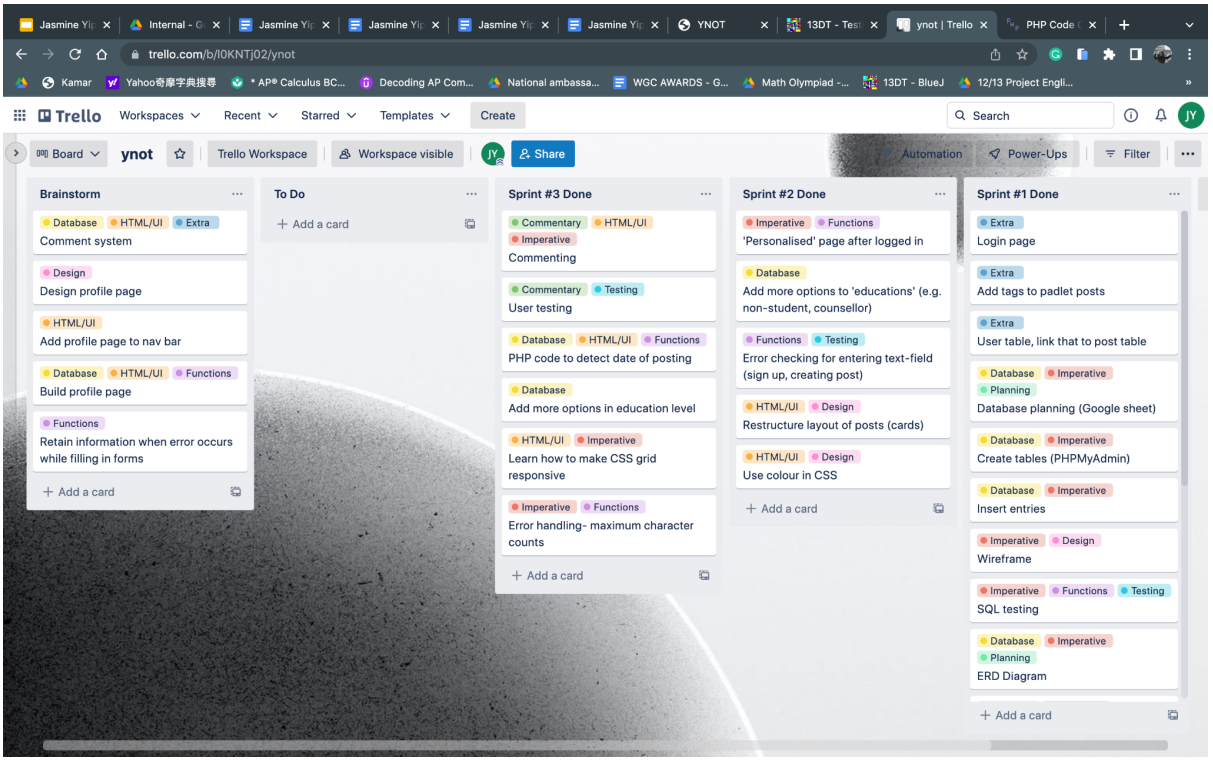
# Evaluation

*Sprint reflection and summary*

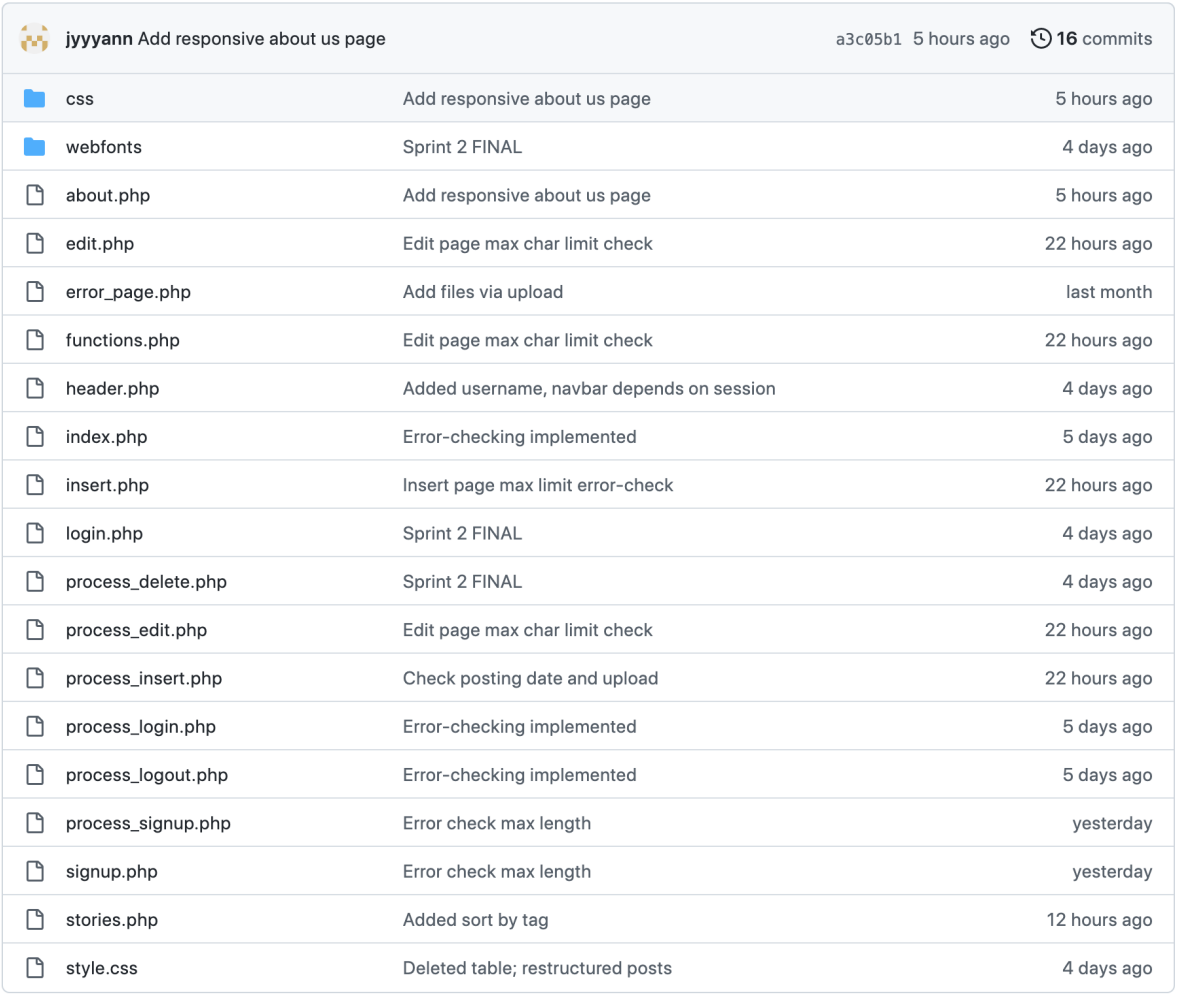
*What major changes and achievements did you complete in this sprint?*

I implemented an about us page to give the users a better idea of the organisation YNot and the social issues we are trying to tackle. I also implemented error checking for the text input to ensure they don't exceed the upper limit defined in the database. I made the website responsive, so it is accessible on a range of devices with different screen sizes.

*Provide evidence (screenshot / photo) of your project management tool(s) being used to manage the development of your outcome at the end of your sprint here*




*Provide evidence (screenshot) of your version control*



jyyyann Add responsive about us page — a3c05b1 5 hours ago — 16 commits

| | | |
|---|---|---|
| css | Add responsive about us page | 5 hours ago |
| webfonts | Sprint 2 FINAL | 4 days ago |
| about.php | Add responsive about us page | 5 hours ago |
| edit.php | Edit page max char limit check | 22 hours ago |
| error_page.php | Add files via upload | last month |
| functions.php | Edit page max char limit check | 22 hours ago |
| header.php | Added username, navbar depends on session | 4 days ago |
| index.php | Error-checking implemented | 5 days ago |
| insert.php | Insert page max limit error-check | 22 hours ago |
| login.php | Sprint 2 FINAL | 4 days ago |
| process_delete.php | Sprint 2 FINAL | 4 days ago |
| process_edit.php | Edit page max char limit check | 22 hours ago |
| process_insert.php | Check posting date and upload | 22 hours ago |
| process_login.php | Error-checking implemented | 5 days ago |
| process_logout.php | Error-checking implemented | 5 days ago |
| process_signup.php | Error check max length | yesterday |
| signup.php | Error check max length | yesterday |
| stories.php | Added sort by tag | 12 hours ago |
| style.css | Deleted table; restructured posts | 4 days ago |

# Project Summary

- ***addressing relevant implications.***

*How did you address the relevant implications in the development of this outcome?*

**Privacy**

I implemented a fully functional login system. This is adapted from a tutorial video made by Dani Krossing (https://youtu.be/gCo6JqGMi30). Once the user is logged in, the website starts a session for them. So they can only edit/delete their own posts. They can also only add posts

under the username they logged in as. This prevents other users from pretending to be a certain user to post content on their behalf or edit their posts.

Also, to prevent hackers from hacking the database and accessing the password through manipulation of SQL code, I ran an algorithm in my PHP code to hash the input password as an unreadable password. Below is a screenshot of the PHPMyAdmin users table.

| | | |
|---|---|---|
| 77 | johnnysm1th | $2y$10$MQKbGGM5zJKoZohLZwRuY.p18zfJaUF6JthK21HY95A... |

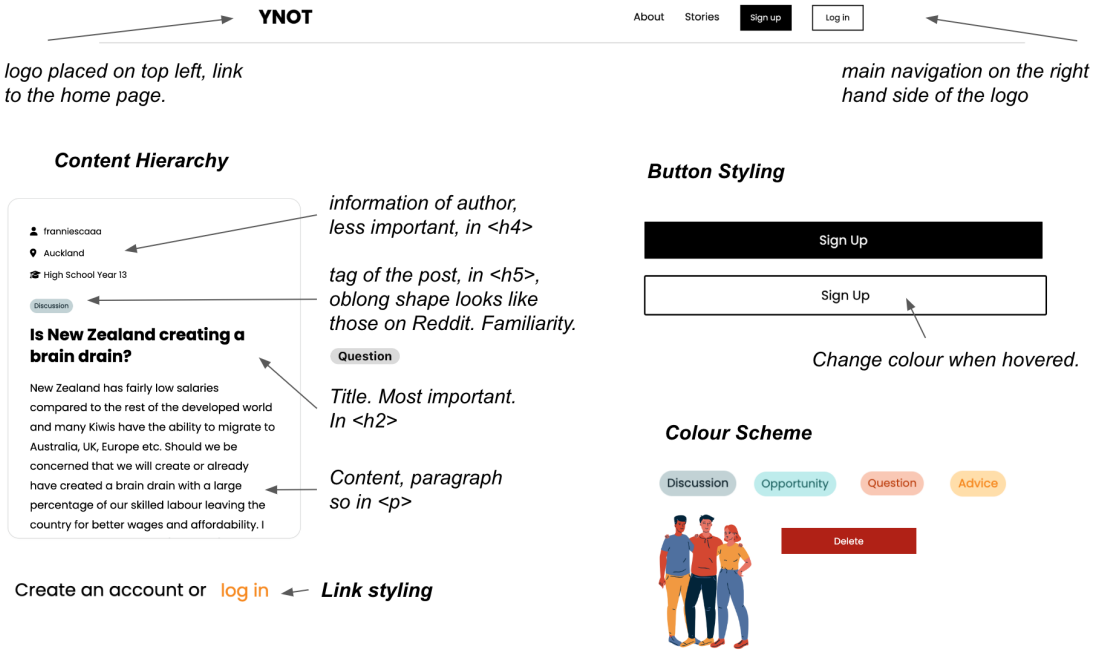
To prevent SQL injection attacks, which is when hackers exploit websites that use user-supplied data in SQL statements, I used prepared statements for data insertion.

```php
$stmt = mysqli_stmt_init($con); // initialise prepare statement

// catch backend/sql error
if (!mysqli_stmt_prepare($stmt, $sql)) {
    header( header: "location: edit.php?error=stmtfailed");
    exit();
}
```

**Aesthetics**

For aesthetics, I follow the 7 web conventions to make sure the layout and styling are conventional and meet users' expectations. I achieve it by placing the logo on the left of the navigation bar and link it back to the homepage. I placed the main navigation (i.e. 'Stories', 'Log in) on the right of the logo so users can find what they are looking for quickly. I followed the content hierarchy, that is, the font size corresponds to the importance of the text (e.g <h1> for headers and <p> for paragraphs.) I restructured the stories page from table to grid layout, making the posts much easier to read and navigate. I used a different bright colour for link styling distinguishing it from the plain text so the users know it is clickable. I added hovering effects to the buttons. Lastly, I have a consistent colour scheme, black and white for the majority and a fixed colour scheme for the buttons, tags, and links. The black and white colour also has maximum contrast, making it highly readable and accessible.




The font choice Poppins is aesthetic and consistent due to each geometric shape of letterform being nearly monolinear. It is also readable for visually impaired users.

## Accessibility

The website is fully responsive. It is able to have its content intact and displayed in a well structured manner no matter which device is viewed on. I used the @media tag in the style.css file to achieve this and adjust the styling accordingly to the screen width. I have also added alt text to images and used ChromeVox Screen Reader to simulate the browsing experience of users with disabilities.

## Social

I have added an about us page to explain the cause and the impact we hope to create on young people. I used some ‘sample posts’ to brand the forum so users will know what kind of content is expected to be seen or posted. I believe this will have a positive impact on the society, especially the youth community, because as found by Arataiohi, only 20% of young people in Aotearoa know how to make a change in their communities. Hopefully, this forum will create a sense of community around the future leaders and a culture of helping each other.

- ***synthesising information gained from the planning, testing and trialling of components***

*How did you use the tools, techniques and process of each sprint to inform the development of this outcome?*

Planning: I drew rough sketches to prototype the interface of the website before each sprint, so I have an idea of an ideal product to develop. I also sketched out the view on mobile devices and tablets to get an idea of how to structure the media queries when a certain screen width is reached. I do planning for the database as well. I did it through an Entity Relationship (ER) Diagram on LucidChart. It allows me to visualize the relationship between each table.

Testing: I carried out SQL testing before putting them into my PHP code because it is the foundation of a functioning website. I tested out all the required queries (i.e. a query that retrieves users from auckland), which is related to a certain feature of the website (i.e. the sort by location filter). I carried out functional testing for each sprint. I check all functions (e.g. adding posts, sign up) thoroughly with a range of expected, boundary, and invalid cases. This is to ensure that my website is robust and will not break down when an unexpected input is entered. It is also to ensure that my website can detect different type errors correctly and print out the corresponding error message. I chose to screen record and narrate it as it is more easy-to-follow than a testing table.

Trialling: I carried out trialling on a range of features, aesthetics and functionality. I do this by taking screenshots of the different options and showing them to the testers. I will ask for their preference and feedback and decide on the most suitable one to implement on my website.

I used GitHub to consistently upload and track changes in my website. When I implement a new feature, for example, a searching engine on the ‘stories’ page, I will commit the relevant pages to GitHub and state the changes that occurred (e.g. ‘added searching function’). It is like a milestone for web development. It allows me to trace back to the previously fully functional

code when an error occurs as well so I can debug accordingly. It also allows me to store my files and progress somewhere save in case the school network breaks down. I have also used the Trello Kanban board to display different tasks and distribute them into several columns (e.g. to do, doing, and done). I also use colour tags to label these tasks, for example, red for imperative, yellow for database, purple for functions. Because I am a visual learner, associating the type of task with colour helps greatly with prioritising them and allocating time to each. Using trello and moving cards to the 'done' side allows me to remember all the checkpoints I set to complete for each sprint. Having only one card in the 'doing' column at a time allows me to focus on one task at a time, so I can concentrate on it without being distracted, hence producing high quality work.

- ***discussing how this information led to the development of a high-quality digital technologies outcome.***

*How did the process help to shape the development of your outcome? Provide evidence.*

Planning: Having the prototype of the website gives me a blueprint to follow when I am developing it. Drawing out different sections in boxes also gave me insight on how to use  to manipulate the overall layout of the website, or use CSS grid to structure it. These well structured  and grid ensure the final outcome is clean and orderly, the principle to an aesthetic, high quality website. For example, when I am working on making the site responsive in Sprint #3, sketching out the mobile view really helped me plan the media query. Having a well structured framework also allows me to pinpoint errors with styling quickly, so I don't need to make small adjustments here and there or use a new styling to override the old one. Despite the final product differs from the original prototype, having the foundation to build upon is still helpful as I would otherwise easily lose track of the overall picture.

Testing: In my first sprint, I found a major loophole where a blank username and blank password passes the 'verify password' check and allows log in. I wouldn't have discovered these issues if I didn't test out all (invalid, boundary, expected) cases. I then fixed it by implementing some back-end error-handling function and ensuring no blank input is allowed. I also used sql to retrieve the corresponding password of a user and check that against the one they entered. After several more testing I can ensure that the login function is fully functional now. In my third

sprint, a fatal error occurred when I was testing out the different test cases for the content field in the insert page. I traced back to the file and discovered a typo. This again exemplifies the importance of using a range of test cases to test the website, because a high quality website responds in an expected manner no matter what the user enters.

Trialling: Users feedback is an extremely important component of the agile process. Despite the fact that I could follow the theory and convention of design, these change constantly. With the direct feedback from the users, especially those with the demographic that matches the one for the website, allows me to learn what works for them and what does not. This allows my website to fulfill the user's needs and provide a positive browsing experience. This will ensure the users return and continue to grow the user base, hence creating a larger impact on the society. An example of a successful trialling is on the view of the stories page, the testers gave more positive feedback for the grid view than the table view. Another example is when a testor suggested that I put the error messages right beneath the field where the error occurred, instead of being on the bottom of the page. These features allow my website to be more user friendly and accessible, hence a higher quality product.

I followed Agile methodology, where I repeat the process stated above in every iteration. The benefit is that it allows more user reaction and contribution throughout the process, in turn making the product more user friendly, higher customer satisfaction, and hence higher number of visitors and member registrations. Agile methodology also allows continuous improvement. Laying these tasks out in sprints also allowed me to set achievable goals for each time interval and ensure I can deliver the product on time. By summarising the achievements of each sprint and listing out the things to work on in the next allowed me to be clear about the errors me/testers discovered or features to be implemented. Reflecting upon completion of each sprint also allowed me to contemplate the things I could improve in my next iteration, for example, better time management and more consistent commenting practices, hence making me a better web developer in general.

Trello: https://trello.com/b/l0KNTj02/ynot

Github: https://github.com/jyyyann/ynot

In hindsight, I did achieve the majority of the milestones in my sprints. However, I had to leave some of them out due to time constraints. For example, the comment section, upvote/downvote feature, and a profile page for each user. These are quite advanced functions as well so it might take quite a lot of time for me to learn, and the time taken might not be worth it compared to the impact it is. However, due to agile methodology I will be able to add new features and improvements any time. So, I might consider developing those features in the future.