

NOTE: Customise this doc how you wish - change heading styles, colours, fonts to suit you and your project

L3 Digital Technologies Scholarship Project



My Top 5 Strengths from the VIA Character Strength Survey

1. Humor
2. Bravery
3. Teamwork
4. Kindness
5. Creativity

INQUIRY MILESTONES

What	Time spent	Milestone	Completed ✓
Establish focus & questions	30 mins	30 mins	
Undertake research		1 Hour	
Organise, refine & analysis research		2 Hours	
Write proposal		1 Hour	

Summarise my findings		2 Hours	
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INQUIRY

Inquiry Focus

Big Question

How can I provide a way for Mr Dunford to organise his large collection of vintage radio parts to save time and effort when he has to look for one of them?

What do you already know?

At this stage it will mostly be Problems and Users Needs. You will revisit this table at the end of research.

Problems	User Needs	Opportunities
Mostly used by older people	Add new items easily, simple user interface	
A lot of data to be entered at beginning of release	Easily find parts, categorised	
	Tie item in database to physical location	

Initial questions to help answer my big question?

- What can I learn from existing websites that do something similar to my stakeholder needs?
- What are some difficulties I might encounter when making this project?
- How can I make my website most accessible to my end users?

Inquiry Research

What can I learn from existing websites that do something similar to my stakeholder needs?

Source 1: <https://www.vintageradio.co.nz/>

- Made by Mr Dunford to keep a record of NZ vintage radios throughout history

- Many of the end users on my website will also be using this one, because they are part of the same organisation
- Currently holds data for 1488 models across 131 different brands
- Has information about each radio on their own page
- Shows valves and bands for each radio
- Has a page for all documented brands
- Each brand has a page showing information about them and all radios they made
- Has a clear, easily readable layout

Source 2: <https://www.toypro.com/nz/list/parts>

- A website that individually sells “20,000 different LEGO® replacement parts in stock and over 3,500 unique minifigures.”
- Similar to Mr Dunford’s need for a website with individual radio parts, except with legos
 - Category: Normal, Plate, 1x2
- Has keywords and tags, eg:
- Allows the user to search by name as well as filter by categories and colours
- Sold out parts are pushed to the back of the search results

Summary

Your thoughts based on what you have found out in researching this question/area. If you want Merit you can include your evaluation of the compare/contrast of different perspectives. If you want Excellence you need to critique any sources used and evaluate their potential for bias and inaccuracies. You need to make it clear that this is your own evaluation of your research and not someone else's opinion. To make it stand out from your research feel free to have your summaries highlighted like this example (just don't make it fluro).

When I was looking at what websites to research and learn from for my project, Mr Dunford’s website on vintage radios was the most obvious one to do first. It is the website for the NZ vintage radio project, designed to preserve information about as many old New Zealand radios as possible. It has many good methods for users to find a radio they’re searching for, including being able to input an image and have it find ones that look like it in the database.

The second website I looked at for my research was toypro.com, a website that sells lego products. Most notably they sell individual lego pieces, which is extremely similar to my database on radio parts. There are a lot of things I can use from this website in my own, such as listing dimensions and details about each part.

The main differences between these two websites are that only the lego one is created for different parts of something bigger. The radio website is intended to document the radios, not to sell to others. I chose it because it is part of the same organisation that my website will be, and most of my end users will have used the website before. The lego website is different from the radio one because it is more similar to my project in practice, selling individual parts that are mostly intended to act as replacements when one is lost or breaks from someone’s collection. The two websites are similar because they both hold a database of items, storing information about each. They also allow the users to search for specific items in the database, as well as filter by categories and tags.

What are some difficulties I might encounter when making this project?

Source 1: Need to include your source for each even if it is just the URL

- Summary of the research in bullet point form
- You need to pull out the key points

For MERIT - Need to have at least one more source that may include different perspectives so you can compare and contrast.

Source 2: Need to include your source for each even if it is just the URL

- Summary of the research in bullet point form
- You need to pull out the key points

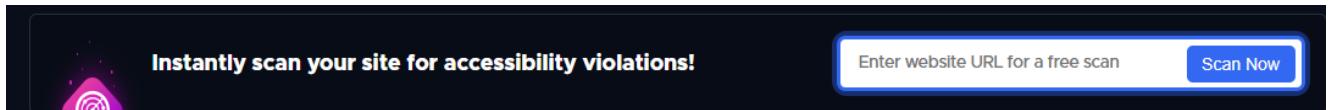
If you have third / fourth etc source just follow the same format as above

Summary

How can I make my website most accessible to my end users?

Source 1: <https://userway.org/blog/web-accessibility-for-the-elderly/>

- Provides information on how to make a website accessible for older people/people with limited tech experience - will be a majority of my end users
- Uses theoretical personas of users to allow thought on how to help with their difficulties
- Gives multiple ideas for settings and features to implement that increases overall accessibility for users
- Also has the side effect of helping users that have disabilities

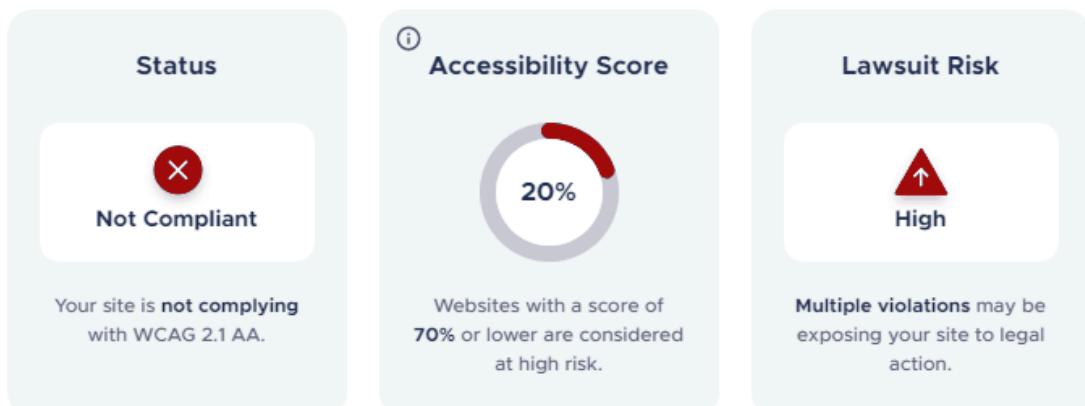


awjtowa.com

Free Scan

We can't access that URL

but here's an example of what you'll see before and after installing the UserWay Widget.

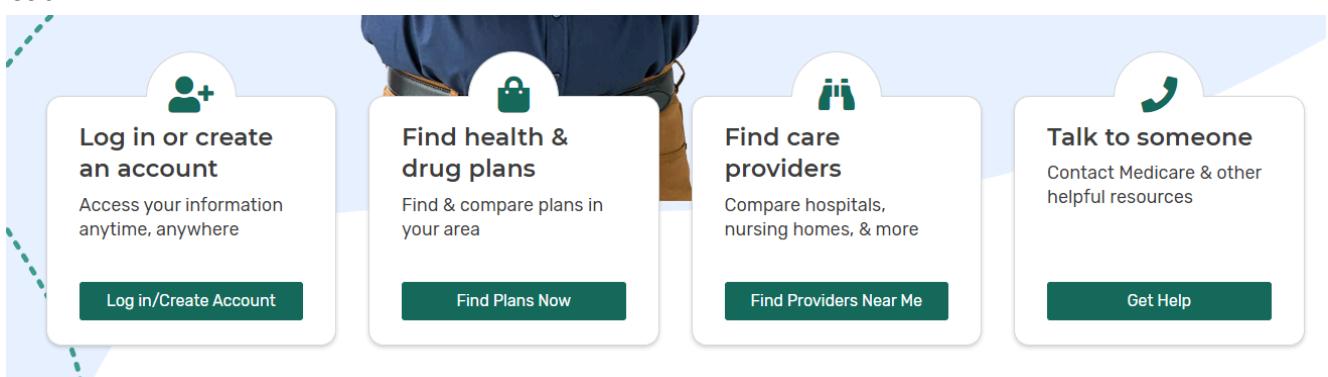


See UserWay's AI Widget's impact on your site



Source 2: <https://www.medicare.gov/>

- Is designed for seniors
- The colours are contrasting and all buttons are easy to see and read
- Site is not too cluttered, all links are clearly separated from each other and explain where they lead



- Has an option to switch to a spanish version of the site: [Cambiar a español](#) (Spanish is second most spoken language in the USA)
- Has an alert at the top of the page talking about a new law that could affect the users

Summary

The majority of my end users for this project will be members of the New Zealand vintage radio society. According to Mr Dunford, it is almost entirely made up of older people who don't have a very good grasp on today's technology and the internet. When researching ways to make my website more accessible for older users, I came across an article by userway.org talking about just that. Some of the difficulties that it listed were vision, physical difficulties or disabilities, hearing difficulties, and cognitive difficulties. It provided solutions for many obstacles that older internet users face, like larger text sizes, contrasting colours, simple navigation, and so on. It also has a program that lets the user input a link to another website, and it will scan it for any accessibility errors.

Medicare is an official government website of the USA that provides health insurance and is designed for older people. It has an accessibility page that allows the user to file a request for any information if they cannot access it for any reason on the website. It also follows multiple of the tips that userway mentioned like having clear colours, spaced out buttons, large font sizes, etc.

The differences between these sources is that one is an article talking about how to make a website more accessible, and the other is an example of it in practice. When comparing these two websites I found that the ways that a website can be improved to be more accessible for older people that the article listed, is shown in the medicare website. The website for the article itself also followed many of its own conventions. There is a potential for bias in userway.org, as the tool that it provides to test a website for accessibility operates on a paid premium system for the user to be able to see the errors in the website, and could purposefully be giving worse results to tempt them to buy it. As shown in the gif above, it does something similar when given a invalid url. Medicare is more reliable as a website that's accessible, as it is an official website of the United States government as shown with the .gov in the url.

From my research what I now know

Feel free to copy and paste from page 2. It would be great to see what you add, maybe shown by using a different colour. Any changes to what you had could be crossed out (Alt+Shift+5) rather than deleted.

Problems	User Needs	Opportunities
Mostly used by older people	Add new items easily, simple user interface	Mr Dunford is my client as well as my teacher so I can communicate easily
A lot of data to be entered at beginning of release	Easily find parts, categorised	Can use parts from Mr Dunford's collection to populate my database for testing, meaning the data will be a good representation of the data used in the final product.
	Tie item in database to physical location	
	Allow user to search by	

category/detail about object

Analysis

Intro

Para 1

Para 2

Para 3

Conclusion

Refined Focus

PROPOSAL

Context

Mr Dunford is part of the vintage radio project of New Zealand, and has a website documenting all currently known vintage radios of New Zealand. He also has roughly ten boxes of assorted spare parts, that he gives to other members of the organisation when they need a replacement.

Problem and/or Issue

Whenever somebody asks for a radio part in his collection, he has to manually look through all of his boxes. This consumes a lot of time, especially if he looks through everything he has to find out that he doesn't even have the part.

Scope

Purpose

To provide a clear and precise display of all of the radio parts Mr Dunford has, and allow users to search and find the parts they want before inquiring with him.

Requirements & Specifications

Requirement	Specifications	Relevant Implication
Needs to have a functional database	<ul style="list-style-type: none">• Items need to have tags/categories so users can narrow down their search• X• x	Usability

Needs to be easily readable and usable	<ul style="list-style-type: none">The UI must be suitable for older people to read easily, as they are a majority of my end usersXx	Aesthetics, end-user considerations
Needs to tie the items to a physical location in the collection	<ul style="list-style-type: none">Will have a tag on every item entry, maybe only viewable by an admin that shows what box/location that part is stored inXx	Functionality

End Users

Mr Dunford and other members of the vintage radio project.

Resources

-

RISKS

INQUIRY SUMMARY

PROJECT MANAGEMENT

[insert your freedcamp / trello setup for the following phases - Design, Sprint 1,2, 3, & 4]

DESIGN

Purpose

To provide a clear and precise display of all of the radio parts Mr Dunford has, and allow users to search and find the parts they want before inquiring with him.

End User Requirements

Add new items easily, simple user interface
Easily find parts, categorised
Tie item in database to physical location
[Allow user to search by category/detail about object](#)

Design Planning

[image of your planning tasks for this phase - the trello / freedcamp etc]

Relevant Implications

Relevant Implications - End user considerations: Accessibility, Aesthetics, Usability, Functionality, Health & Safety | Legal, Ethical, Intellectual Property, Privacy | Social | Cultural | Sustainability & Future Proofing

Implication	Explain the implication
Social	
Cultural	
Legal	
Ethical	
Intellectual Property	
Privacy	Privacy is an important relevant implication that relates to how well a system stores and keeps the data of the user safe. To address this, it's required to implement security measures and practices that safeguards the user's data and details. For example, if a platform stores a user's password but does not properly encrypt it, it is a massive privacy risk for the user and all others on the platform. By prioritising this, it ensures trust between the user and system, as well as providing users with control over their information.
Accessibility	Accessibility is a relevant implication that focuses on ensuring all users, including those with disabilities and other difficulties, can properly interact with the product and use it just as easily as anyone else would. Things like settings or appropriate design for colour blind users, easily readable text, and alternate text for images all contribute to accessibility. If accessibility is not addressed then it will restrict the use of the product to people who have no disabilities or impairments.
Usability	Usability is a relevant implication that involves how well the user can navigate a product and access its features. To effectively use this relevant implication you have to make

	the product easy to use and not confusing in its layout and delivery of features. For example, if a website has a feature in a page that is unrelated to it, it will be harder for the user to navigate to and access. By addressing this implication, the final product should be easy for the user to navigate and access everything without any difficulty.
Functionality	Functionality is a relevant implication that means every function that the product has should properly work and not break or do nothing. This involves proper testing and feedback to achieve, especially testing done by other people who are unfamiliar with the product. If a program is unable to properly execute something and crashes or doesn't do anything, there is a good chance that the user will be lost and not come back. By properly taking this implication into account it can ensure that not only your product works, but people will actually like it and it will be used more.
Aesthetics	Aesthetics is a relevant implication that refers to the overall visual appearance of the product. Using this relevant implication properly to give the user a good experience involves giving a clear, good looking display of everything the product has to offer. For instance, if a website has jarring or unclear visuals it is much more likely that the user will leave the site sooner and probably not come back. This is one of the most important implications to focus on as visuals are present in almost every digitech project, unless it is designed solely for fully blind people or something similar. Even then, it is still important for anyone else who may be using it for any reason.
Sustainability and Future Proofing	
End-user considerations	
Health and Safety	

Research

RELEVANT UX METHODOLOGIES

EXISTING OUTCOMES

Idea Generation

FEEDBACK

Refinement

FEEDBACK

FINAL DESIGN

Site Explanation

My website will be a library of vintage radio parts in Mr Dunford's collection. I am making it for Mr Dunford as a scholarship project. It will allow him and anyone else interested to see what parts he has in his physical collection. This will let him save a lot of time, as currently whenever somebody asks if he has something he has to look through multiple boxes of various parts to check. With this website, a client would be able to look at the website and see if he has a certain radio part, instead of asking blindly and making him search his collection for something he might not have. It is also intended for anyone that will do the data entry into the database for Mr Dunford.

Design Sketches/ER Diagram

Page Routes

"/", def homepage():

- The homepage of the website. It will provide a description on what the website does and how to get started with it. It will have links to the major features of the site such as searching for items, viewing item categories, and contact details for Mr Dunford so the user can enquire to him about an item.

/search", def search():

- When the user uses the search feature of the website which is probably in the header, it will go to this route and display everything relevant in a list. It will show important information about every item like the name, type of radio part, a picture, and so on. Will also have ways for the user to add filters to their search.

/item/<int:id>", def part(id):

- A page for a specific radio part. Each one in the database will have one and it will show details about it. The sizings, colour, shape, type, anything relevant or important for the user to know.

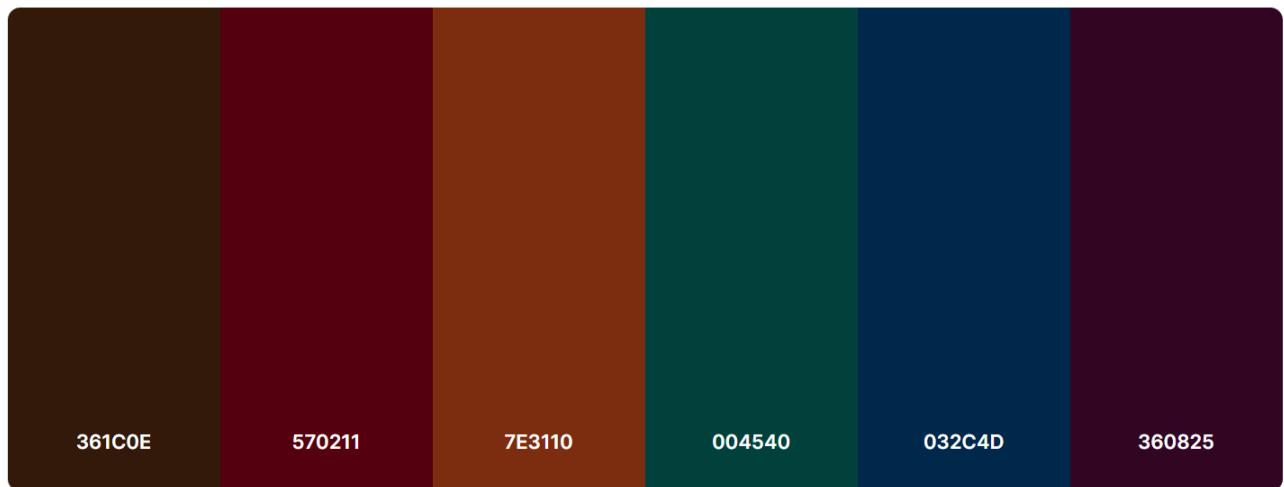
/about", def about():

- A page discussing the website itself and its purpose. Again will show contact details for Mr Dunford for any enquiries as well as any other important information.

/admin", def admin():

- A page that only is available when the user is logged in on an admin account. Allows the user to manage database items and such.

Visual Design Choices



Homepage:

A Web Page

https://

Radio Parts

Blah blah blah description
blah blah blah

Footer - Nobody reads this

Search Page:

A Web Page

search Filter 1 Filter 2 Filter 3 Filter 4 Filter 5

Radio part Radio part Radio part Radio part

Radio part Radio part Radio part Radio part

Footer - Nobody reads this

Individual Part Page:

A Web Page

Radio Parts

Part Name

Enter part name here

Tags:

Enter tags here

Footer - Nobody reads this

Database Design

	Name	Data type	Primary Key	Foreign Key	Unique	Check	Not NULL	Collate	Generated	Default value
1	<input type="text" value="id"/>	INTEGER								NULL
2	name	TEXT								NULL
3	company	TEXT								NULL
4	type	TEXT								NULL
5	size	TEXT								NULL
6	image	TEXT								NULL

radio_parts Table name: Company WITHOUT ROWID STRICT

	Name	Data type	Primary Key	Foreign Key	Unique	Check	Not NULL	Collate	Generated	Default value
1	id	INTEGER								NULL
2	name	TEXT								NULL
3	logo	TEXT								NULL

radio_parts Table name: PartTag WITHOUT ROWID STRICT

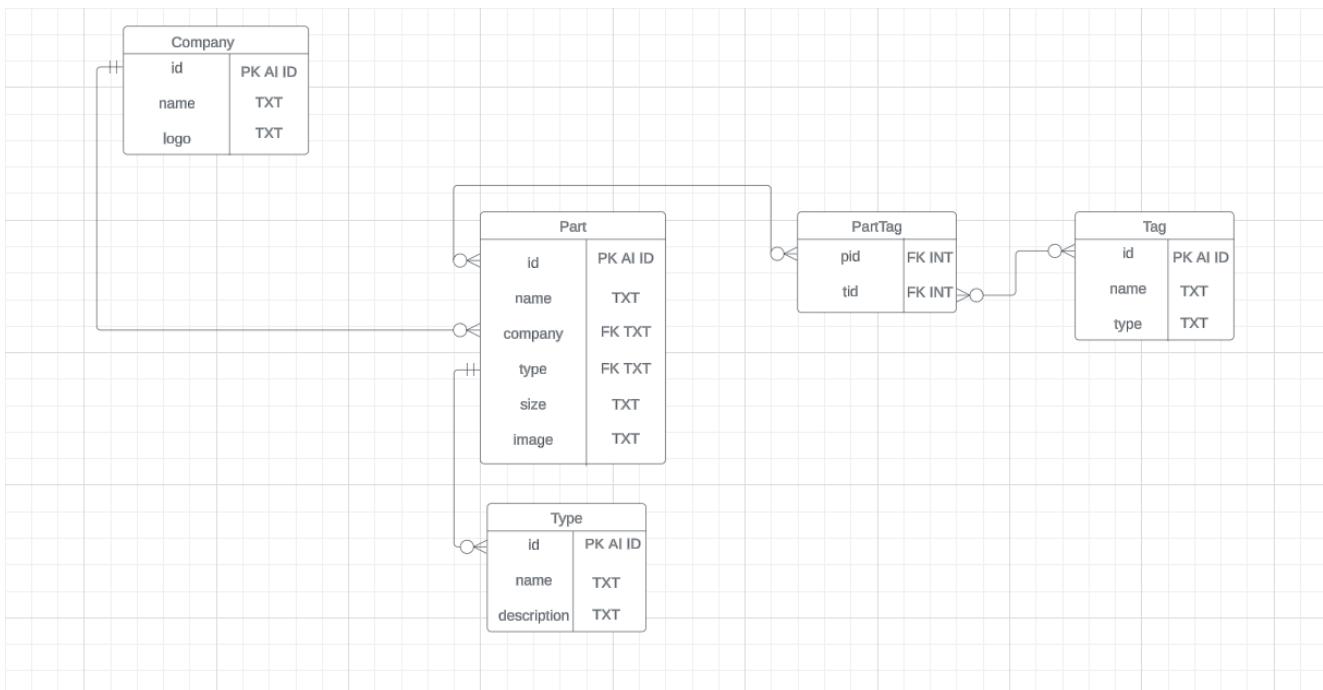
Name	Data type	Primary Key	Foreign Key	Unique	Check	Not NULL	Collate	Generated	Default value
1 pid	INTEGER								NULL
2 tid									NULL

radio_parts Table name: Tag WITHOUT ROWID STRICT

Name	Data type	Primary Key	Foreign Key	Unique	Check	Not NULL	Collate	Generated	Default value
1 id	INTEGER								NULL
2 name	TEXT								NULL
3 type	TEXT								NULL

radio_parts Table name: Type WITHOUT ROWID STRICT

Name	Data type	Primary Key	Foreign Key	Unique	Check	Not NULL	Collate	Generated	Default value
1 id	INTEGER								NULL
2 name	TEXT								NULL
3 description	TEXT								NULL



Queries For Each Page

Page:	Purpose:	Code:
"/search", def search():	Showing everything:	"SELECT * FROM Part"
"/search", def search():	Searching by a specific word or sentence:	"SELECT * FROM Part WHERE Name = ?," (search,)

"/admin", def admin():	Adding an item with admin permissions:	"INSERT INTO Part WHERE name, company, type, size, image = ?, ?, ?, ?, ?" (name, company, type, size, image,)
"/item/<int:id>", def part(id):	Getting information about an item:	SELECT * FROM Part

Nielsen's Heuristics

As part of this plan, I will take two of Nielsen's Heuristics into mind when designing my site, to give myself some guidelines when creating the user interface.

1. Aesthetic and Minimalist Design

I felt that this was an important Heuristic to follow when designing my site, as the majority of my end users will likely be older people who can be less familiar with complex technology and digital layouts. This is why I chose to keep a simple colour palette, as well as an easy to understand site layout as shown in the above design pictures.

2. Match Between the System and the Real World

As this website is designed to be a direct display of Mr Dunford's radio collection, I kept this heuristic in mind when designing things like my database plan. Some examples of this are calling items "parts" instead of a more general name like items, and linking parts to a company so the user can also use that to locate parts for certain brands of radio, or if they know what company made the part they want.

Appropriateness of Design

I designed my website in this way because it is similar to other websites that accomplish the same purpose of documenting a collection of items like the lego website in my research. I designed my database after discussing what tables I might need with Mr Dunford, and plan to introduce more tables if the need arises for it.

The important relevant implications for my website will be aesthetics, usability, and accessibility. The latter two are due to a majority of my end users being older people, and aesthetics is important because it is essential for users to engage in your website.

DEVELOPMENT

Each sprint you need to document your progress. This should be a range of screenshots including before and after, maybe video, and written.

You could show (you might find you do process a few times):

- Refinement or options for your outcome
 - Design Elements / Principles
 - HCI
 - Testing i.e. validation, previewing,
 - Usability testing - this could be completed by others and written up, talking about things you need to tweak/fix
 - Stakeholder/End user feedback
 - Relevant Implications - End user considerations: Accessibility, Aesthetics, Usability, Functionality, Health & Safety | Legal, Ethical, Intellectual Property, Privacy | Social | Cultural | Sustainability & Future Proofing
-

Development Stages Overview

Key Stage	Aim & Description	Due Date
Sprint 1 <i>minimum viable product</i>	The aim of this sprint is to create a minimum viable product that serves as a basic example of what the site will be like in the future.	T2 W? Fri ? June
Sprint 2 <i>minimum marketable product</i>	The aim of this sprint is to expand on the minimum viable product and add some of the other core features the site will have.	T3 W3 Fri ? July
Sprint 3 <i>minimum loveable/delightful/awesome product</i>	The aim of this sprint is to add any other final features needed, and to refine the site to the point where it can be used by the public.	T3 W? Fri ? August

Sprint 1 - MVP (minimum viable product)

Basic Framework / Functionality

I PLAN TO

I plan to create a minimum viable product for my website, with some flask routes and sample data to show the basic functions of the site. I want to be able to display all parts in the database, alongside some smaller lists like all the brands in the database.

WHAT I HAVE DEVELOPED DURING THIS SPRINT (the trialling)

[evidence of what you are making including options & choices being made, images/gifs/screencasts and notations]

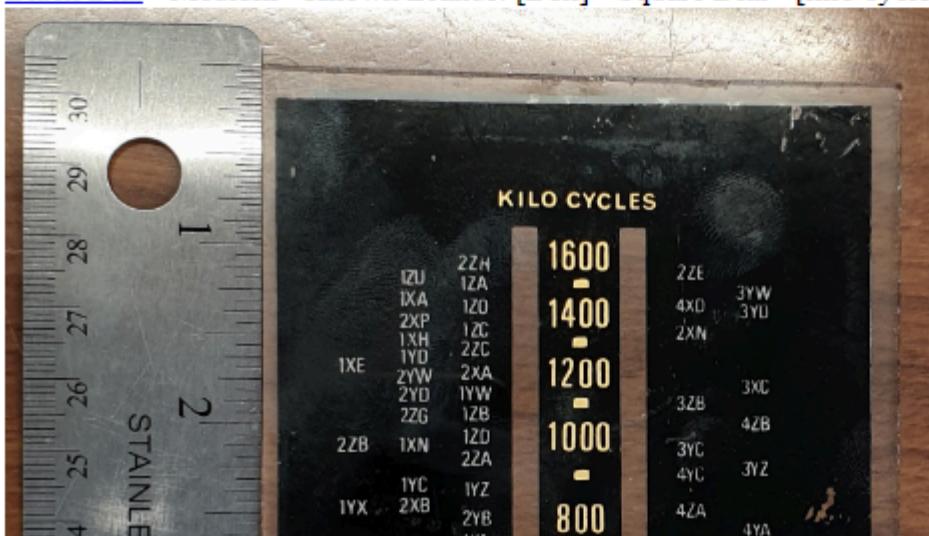
A page that shows all the radio parts in the database:

All Parts Here

[Green Dial](#) - Small - Known Brands: [Unknown, Ace] - Dial - [green, shortwave, broadcast]



[Black Dial](#) - Medium - Known Brands: [Bell] - Square Dial - [kilo cycles, black]



A page each for all brands and all manufacturers:

[HOME](#) - [MANUFACTURERS](#) - [BRANDS](#) - [ALL PARTS](#)

unknown

Akrad Radio Corporation Ltd

Pye (N.Z.) Ltd

Allied Industries Ltd (Fisher & Paykel)

Ambassador Radio Co.

Antone Ltd

Atlanta Radio Co.

Autocrat Radio Ltd

Bell Radio-Television Corporation Ltd

Preston Billing Ltd

Challenge Radio Co.

R. Chaston

Catline & Daxla Ltd

[HOME](#) - [MANUFACTURERS](#) - [BRANDS](#) - [ALL PARTS](#)

Unknown - (by unknown)

Ace - (by Wellmade Ltd)

Ace (Post-WWII) - (by T. Megann)

Acme - (by W. Marks Ltd)

Aerola - (by unknown)

Airflow - (by Ellis & Co. Ltd)

Air King - (by Imperial Radio Manufacturing Co. Ltd)

Airmaster - (by unknown)

Air Ranger - (by Akrad Radio Corporation Ltd)

Alsec - (by Alan Seccome)

Altona - (by Wellmade Ltd)

Ambassador - (by Ambassador Radio Co.)

Anchoradio - (by G. S. Anchor)

Antone - (by Antone Ltd)

Ariel - (by Imperial Radio Manufacturing Co. Ltd)

Ariel (Post-1940) - (by Webbs Radios Ltd)

ARC-Victor - (by Collier & Beale Ltd)

Aristocrat - (by Collier & Beale Ltd)

Arnrite - (by R. Chaston)

Argosy - (by Probert & Hunt)

Atlas - (by unknown)

Atomic - (by Sheffield Radio Ltd)

Atwater-Kent (T. Megann) - (by T. Megann)

Atwater-Kent (Akrad) - (by Akrad Radio Corporation Ltd)

END OF SPRINT - WHAT I AM TESTING

[images / or Video of what the outcome looks like at the end of this sprint]

Nav Bar

Test	Expected	Actual	Pass/Fail	Comments
Nav bar is shown on every route	Every route that I want to have the	Expected	Pass	

desired	nav bar, has the nav bar			
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All Parts

Test	Expected	Actual	Pass/Fail	Comments
All parts in the database are shown	Every part is displayed with a name, picture, and details	Expected	Pass	
Each part can be clicked on to take them to an individual page about it	Clicking on the part's name leads to a page about it	Expected	Pass	

Brands

Test	Expected	Actual	Pass/Fail	Comments
All the brands are listed	Each brand is displayed in a list, along with the manufacturer associated with them	Expected	Pass	

Manufacturers

Test	Expected	Actual	Pass/Fail	Comments
Each manufacturer is listed	Each manufacturer is displayed in a list	Expected	Pass	

Search

Test	Expected	Actual	Pass/Fail	Comments
The search form is on the page	The form for the search is displayed, including an selection field and submit button	Expected	Pass	
The search form	The search form	Expected	Pass	

displays results	can be submitted and shows the selection the user made. No results are shown yet, just as a proof of concept			
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Home

Test	Expected	Actual	Pass/Fail	Comments
Some test text is displayed	“Welcome to my website” is shown on the page	Expected	Pass	

Layout

Test	Expected	Actual	Pass/Fail	Comments
Header and footer are shown	The header and footer are displayed on every desired page	Expected	Pass	

CLIENT / STAKEHOLDER / EXPERT TESTING & FEEDBACK

[evidence of testing with any of these people]

END USER TESTING & FEEDBACK

[evidence of testing with end users]

NEXT STEPS

Sprint 2 - MMP (minimum marketable product)

Adding Content / Aesthetics

I PLAN TO

I plan to add a lot of the main features to my website during this sprint, as well as improve the look of it and get some feedback. I want the user to be able to add parts to the site, including uploading images to go with it.

WHAT I HAVE DEVELOPED DURING THIS SPRINT (the trialling)

In this sprint I made the choice to have the colours be what they are shown in the pictures. This is likely going to be changed in the future, but I wanted to have an early version of what the layout will be, as well as the contrast between areas.

The screenshot shows a website with a light purple header bar. At the top center, the text "Radio Parts Prototype" is displayed in bold black font. Below the header, there is a horizontal navigation bar with links: "HOME", "MANUFACTURERS", "BRANDS", "ALL PARTS", "SEARCH", and "ADD PART". The main content area has a white background and a central blue rectangular box. Inside this box, the text "Radio Parts - Prototype" is centered. Below this, a smaller text block reads: "Welcome to the demo version of this website. This is an online database that will include all of the vintage radio parts in a collection. This is intended to make it easier to organise collections, as well as letting other members of the vintage radio society check if it has any parts they may be looking for." At the bottom left of the page, there is a copyright notice: "©2024 Max C Corp".

As a part of this sprint, I changed the layout and style of this website from simple black text on white background, to the content being centred inside a box, which contrasts the lighter background to show the user exactly where the content is.

All Parts						
Image	Name	Size	Brand	Type	Tags	
	Green Dial	200 mm	[Ae]	Dial	green shortwave broadcast	
	Black Dial	110 mm	[Bell]	Dial	kilo cycles black	
	Square Lens	130 mm	[N/A]	Lens	clear lens	
	Aristocrat Dial	80 mm	[Radion]	Dial	round radion	
						

In this sprint I refined the all parts page by having the data all display in a neat, clear table in the centre of the screen. Not only are the images size limited, but I also added a specification of the size of the part, as well as tags that are keywords the user might search by. For instance, if they were to search the word “black”, it would come up with any items that have that tag, as well as any with it in the main name.

Name <input type="text"/>	Brand <input type="text"/> None	<input type="button" value="Search"/>			
Image	Name	Size	Brand	Type	Tags

The search page was added as a part of this sprint, allowing the user to search the database for a desired part. It is currently a prototype due to its lack of fields, but I plan to basically have a filter type search system where the user can fill out any of the fields, and any left blank will not be considered in their search. This lets them be as specific or broad as they like, depending on their requirements.

Name: 0

Brand: Unknown 0

Tags: 0

Size: mm

Type: Dial 0

Image: Choose File No file chosen 0

The add part page is one of the largest things that came out of this sprint. It allows the user to fill out this form, which includes all of the necessary elements of the database. It also supports image uploading, which is assigned to the part. After the part is added, the user is automatically redirected to the page for the part they just created, so they can see what they entered as well as reducing the likelihood of errors created by trying to submit the form multiple times.

END OF SPRINT - WHAT I AM TESTING

[images / or Video of what the outcome looks like at the end of this sprint]

CLIENT / STAKEHOLDER / EXPERT TESTING & FEEDBACK

John Creighton - Digital technologies expert: Suggested overall progression and was happy with the project so far, advised to consult Mrs Maddaford for design feedback.

Toni Maddaford - Design expert: Gave me advice on what colours and elements to change for my CSS, thought that the simple layout was good for the target audience.

END USER TESTING & FEEDBACK

[evidence of testing with end users]

NEXT STEPS

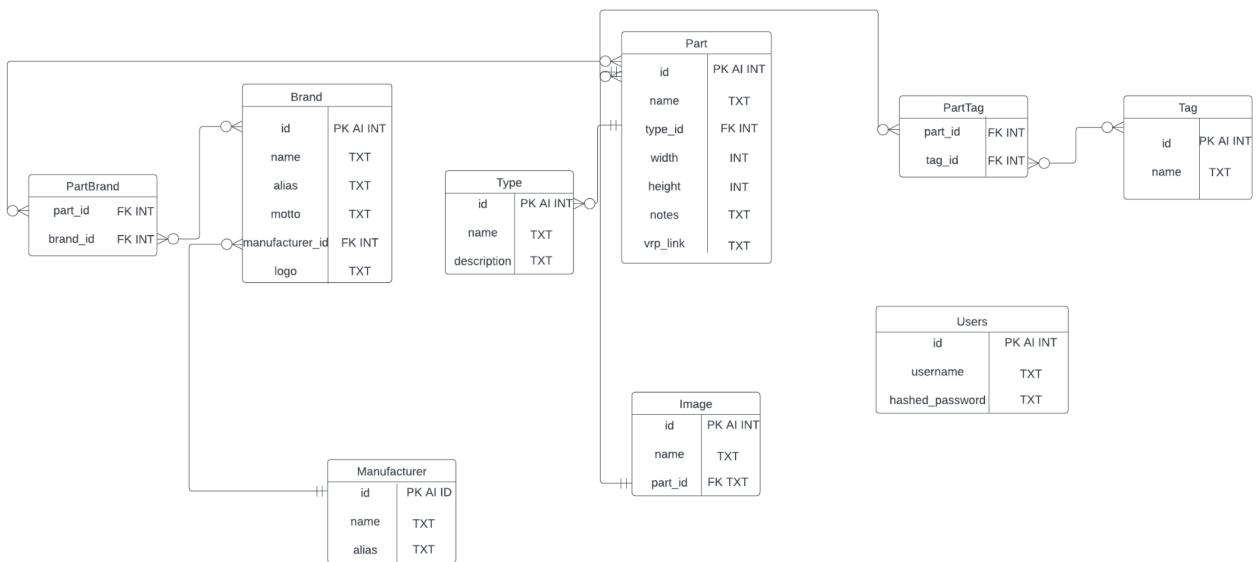
Sprint 3 - MLP / MDP / MAP (minimum loveable/delightful/awesome product) Extras & Polishing

I PLAN TO

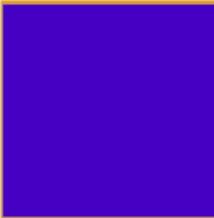
I plan to finish and polish my website to the point where it reaches the stage where it can be a suitable product to put up online and use. This includes having properly working code, css, and documentation along with testing and feedback.

WHAT I HAVE DEVELOPED IN THIS SPRINT (the trialling)

[evidence of what you are making including options & choices being made, images/gifs/screencasts and notations]



The database was expanded on a lot over the course of development, with many notable changes including adding new tables, rows, and such. One notable thing I did was change the “Company” table to the name “Brand”. This was under advice from Mr Dunford, who the site is for, as that is a better name to use in this context. I also added a joining table between parts and brands, as I was informed that each part could have multiple brands, as well as each brand having multiple parts. I also had the images stored on a separate table, added a table for manufacturers connected to brands, and a table for user logins that include a username and an encrypted password.

	<u>Networked fresh-thinking paradigm</u>	Width - 76 mm	Everest	Dial	property position glass weight feeling
	<u>Synchronized radical array</u>	Width - 57 mm	Ace (Post-WWII)	Lens	almost appear last understand run
	<u>Extended zero tolerance workforce</u>	Width - 50 mm	Lyric	Lens	teach smile past
	<u>Centralized heuristic workforce</u>	Width - 65 mm	Pacific (Post-WWII)	Escutcheon	claim word worker write
	<u>Quality-focused intangible alliance</u>	Width - 6 mm	Well-Mayde	Lens	sound
	<u>Versatile foreground middleware</u>	Width - 78 mm	Majestic	Escutcheon	guess
	<u>Grass-roots 3rdgeneration software</u>	Width - 47 mm	Oxford	Light Diffuser	ask oil reason
	<u>Programmable intangible synergy</u>	Width - 100 mm	Fideles	Escutcheon	service story kid PM

One major thing I did at the end of this sprint was generate a huge amount of test data to get a feel for what the site would be like when proper data was in it. I used faker to generate parts with random names, tags, and the like, and made each image a randomly generated colour. One problem that

quickly came up when accessing this data was the increase in time it took to load the page. I fixed this by using SQLAlchemy's selectinload function to optimise the query. I also added caching to the route so that the results can be stored and instantly delivered after it is loaded for the first time. When this site is on the web, the caching will work for all users, after anyone loads it the first time.

Another way that I optimised data loading on my site was by thumbnailing images. When an image from a display table is loaded, Pillow is used to scale down the image before delivering it to the user. While this reduces the size of the image at the end of the process, it still needs to be loaded by the user to be sent to compression, therefore overall using even more processing power than if I wasn't to compress it at all. I fixed this by caching the route, saving the images to disk and having them be instantly delivered to the user after they are loaded for the first time. This makes the overall load on the system much smaller, as once the thumbnails are cached it takes almost no processing power to load.

The screenshot shows a web interface for selecting a brand. At the top left is a dropdown menu labeled "Select Brand: None" with a small arrow indicating it's a dropdown. Below the dropdown is a "Submit" button. To the right of the dropdown, the text "Or select from one of NZ's major brands:" is displayed. Below this text is a 3x3 grid of brand logos. The logos are arranged as follows:

- Row 1: Bell (radio logo), COURIER RADIO (radio logo), COLUMBUS RADIO (radio logo)
- Row 2: COURTEAU (radio logo), Cromwell (radio logo), Gulbransen (radio logo)
- Row 3: La Gloria (cigar logo), Majestic (radio logo), Mullard (radio logo)
- Row 4: AX (radio logo), PACIFIC (radio logo), Murphy (radio logo)

Another feature that was implemented during this sprint was that on the brands page, the user can choose a specific brand that they want to see the parts from. There is a dropdown form with every brand in the database, as well as a selection of logo images from some major brands. Whether it's through the form or by clicking an image, the user is brought to the search page, with the brand loaded and results showing. Not only does this make it easy to find parts from a certain brand, since they end up on the search page they can refine their search further to add more details. The page uses CSS Grid to display all the logos in a consistent fashion, and also makes it so if new pictures are added they can seamlessly become part of the page.

Name

Brand

Tag

During this sprint I didn't do a whole lot with the search page, as I felt it was suitable for the current prototype and my time could be spent on new features like the ones above. What I did include though, was a field in the form to select a tag to search by. This was done because now the tags on any search results are clickable, taking them through the same process as the brands page to go to the search page with that tag loaded and results displayed.

END OF SPRINT - WHAT I AM TESTING

[images / or Video of what the outcome looks like at the end of this sprint]

CLIENT / STAKEHOLDER / EXPERT TESTING & FEEDBACK

Father - Programming expert: Advised that I test my website, add a lot of placeholder data, and cache thumbnails.

Grandmother - Non-programmer: Found the simple layout easy to navigate, had no issues using the website

Friend - Non-programmer: Used the site easily, liked how tags could be clicked to show parts with them. Thought the test data helped to see what the site will be like when used properly

Friend - Programmer: Used inspect element to try and get around the character limit and data type on my forms, failed to do so.

END USER TESTING & FEEDBACK

[evidence of testing with end users]

Home Page

Test	Expected	Actual	Pass/Fail	Comments
Logged out only elements displayed	Displays "You are not logged in" when logged out	Expected	Pass	
Logged in only elements displayed	Displays "You are logged in" and log out option when logged in	Expected	Pass	
Main text and title	A small summary	Expected	Pass	

displayed	of the website and the title are shown			
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Manufacturers

Test	Expected	Actual	Pass/Fail	Comments
Each manufacturer is listed	Each manufacturer is displayed in a list	Expected	Pass	

Brands

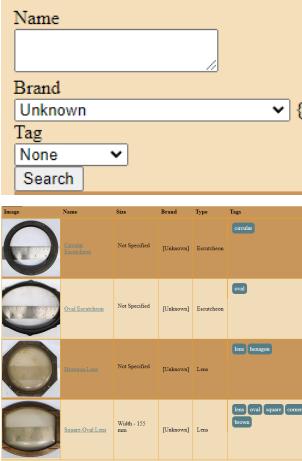
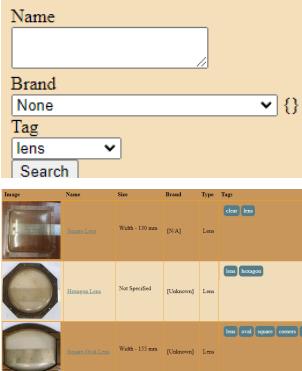
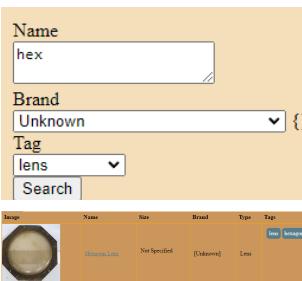
Test	Expected	Actual	Pass/Fail	Comments
Brand pictures can be selected	Clicking a brand picture leads to the search page, with that brand already queried and executed	Expected	Pass	
Search isn't locked	Other search queries can be used afterwards without the selected brand affecting it	Expected	Pass	

All Parts

Test	Expected	Actual	Pass/Fail	Comments
All parts in the database are shown	Every part is displayed with a name, picture, size, tags, and brand	Expected	Pass	
Each part can be clicked on to take them to an individual page about it	Clicking on the part's name leads to a page about it	Expected	Pass	

Search

Test	Expected	Actual	Pass/Fail	Comments
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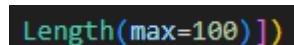
Searching by name	Parts are shown when name searched	<p>Expected</p>  <p>The search interface shows a search bar with 'Green Dial' entered, a dropdown for 'Brand' set to 'None', and a dropdown for 'Tag' set to 'None'. Below the search bar is a table with an image of a green dial and the text 'Green Dial'.</p>	Pass	Partial names also return results
Searching by brand	All parts with searched brand are shown	 <p>The search interface shows a search bar empty, a dropdown for 'Brand' set to 'Unknown', and a dropdown for 'Tag' set to 'None'. Below the search bar is a table showing four parts from an unknown brand: 'Circular Lens', 'Oval Lens', 'Hexagonal Lens', and 'Square Oval Lens'.</p>	Pass	
Searching by tag	All parts with searched tag are shown	 <p>The search interface shows a search bar empty, a dropdown for 'Brand' set to 'None', and a dropdown for 'Tag' set to 'lens'. Below the search bar is a table showing three parts with the tag 'lens': 'Square Lens', 'Hexagonal Lens', and 'Square Oval Lens'.</p>	Pass	
Search with combination of queries		 <p>The search interface shows a search bar with 'hex' entered, a dropdown for 'Brand' set to 'Unknown', and a dropdown for 'Tag' set to 'lens'. Below the search bar is a table showing one part with both 'hex' and 'lens' tags: 'Hexagonal Lens'.</p>	Pass	
Character limit functions	The user is unable to put any characters in above a certain limit	Expected	Pass	

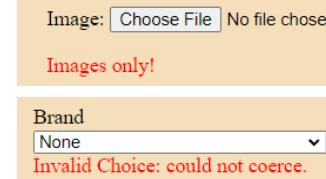
Character limit cannot be worked around	Removing the max limit of the form in the inspect element doesn't unlimit the form		Pass	
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Log in/out

Test	Expected	Actual	Pass/Fail	Comments
Logging in works	Entering valid username and password logs user in	Expected	Pass	
Logging out works	Pressing the log out button logs out the user	Expected	Pass	
Secure password storage	All passwords are encoded with flask_bcrypt	Expected	Pass	
Account creation works	Account can be created with a custom username and password, with password securely stored	Expected	Pass	

Add Part

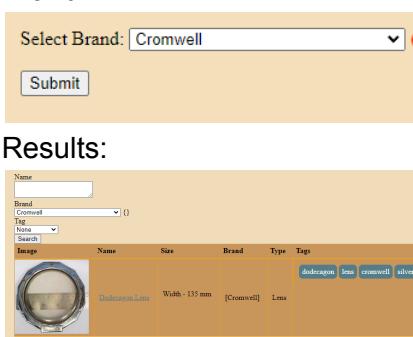
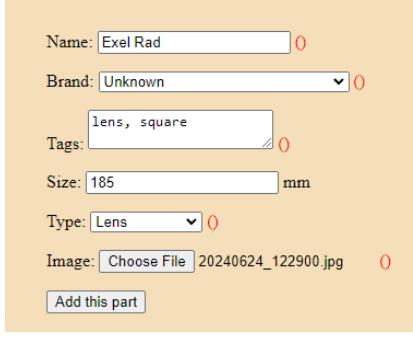
Test	Expected	Actual	Pass/Fail	Comments
Restricted to logged in users	The option only appears when user is logged in	Expected	Pass	
Parts successfully add	The adding part form works properly	Expected	Pass	
Character limit functions	The user is unable to put any characters in above a certain limit	Expected 	Pass	
Integer limit functions	The size field in the form will not accept any	 Value must be less than or equal to 400.	Pass	

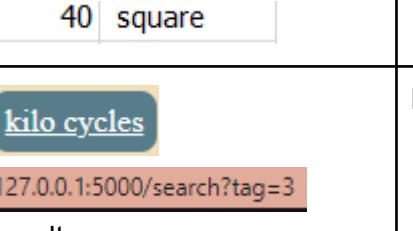
	integers above 400	<pre>min=8, message="Number must be less than or equal to 400", max=400])</pre>		
Fields only accept correct data types	Integer fields only take numbers, etc	<p>Expected</p>  <p>etc.</p>	Pass	<p>When using inspect element to change a select field to text area, this error is given: Invalid Choice: could not coerce.</p> <p>Unsure if it is a good error to show the user or if it should be changed, but the important thing is that the data doesn't go through</p>

Data integrity

Test	Expected	Actual	Pass/Fail	Comments
The link the user clicks on takes them to the correct part in the database	The user will be taken to the page for the item they clicked on	<p>The link the user clicks on, with the link they should be taken to displayed in the bottom left:</p>  <p>127.0.0.1:5000/part/21</p> <p>The link they end up at:</p> 	Pass	

		<p>127.0.0.1:5000/part/21</p> <p>Db snippet:</p> <table border="1"> <tr><td>21</td><td>Aristocrat Dial</td><td> </td><td>1</td><td> </td><td>80</td><td> </td><td>NULL</td><td> </td><td>NULL</td><td> </td><td>NULL</td></tr> </table>	21	Aristocrat Dial		1		80		NULL		NULL		NULL		
21	Aristocrat Dial		1		80		NULL		NULL		NULL					
The same as above, but with a second set of links	The user will be taken to the page for the item they clicked on	<p>The link the user clicks on, with the link they should be taken to displayed in the bottom left:</p>  <p>Green Dial</p> <p>127.0.0.1:5000/part/1</p> <p>The link they end up at:</p>  <p>127.0.0.1:5000/part/1</p> <p>Db snippet:</p> <table border="1"> <tr><td>1</td><td>Green Dial</td><td> </td><td>1</td><td> </td><td>200</td><td> </td><td>200</td><td> </td><td>NULL</td><td> </td><td>NULL</td></tr> </table>	1	Green Dial		1		200		200		NULL		NULL	Pass	
1	Green Dial		1		200		200		NULL		NULL					
Brand form in brands page links to correct brand	When the user selects a brand image, they are taken to the search page with that brand loaded	<p>Brand picture:</p>  <p>Results:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Brand</th> <th>Type</th> <th>Tags</th> </tr> </thead> <tbody> <tr> <td>Rock Dial</td> <td>Bell</td> <td>Dial</td> <td>radio cycles black</td> </tr> </tbody> </table> <p>127.0.0.1:5000/search?brand=30</p> <p>Brand in database - id matches one in url:</p>	Name	Brand	Type	Tags	Rock Dial	Bell	Dial	radio cycles black	Pass					
Name	Brand	Type	Tags													
Rock Dial	Bell	Dial	radio cycles black													

		30 Bell									
Brands page works with brands selected via the form with every brand	When the user selects a brand from the form, they are taken to the search page with that brand loaded	<p>Brand:</p>  <p>Results:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Brand</th> <th>Type</th> <th>Tags</th> </tr> </thead> <tbody> <tr> <td>Dodecagon Lens</td> <td>Cromwell</td> <td>Width - 135 mm</td> <td>dodecagon lens cromwell silver</td> </tr> </tbody> </table> <p>127.0.0.1:5000/search?brand=57</p> <p>Brand in database - id matches one in url:</p> <p>57 Cromwell</p>	Name	Brand	Type	Tags	Dodecagon Lens	Cromwell	Width - 135 mm	dodecagon lens cromwell silver	Pass
Name	Brand	Type	Tags								
Dodecagon Lens	Cromwell	Width - 135 mm	dodecagon lens cromwell silver								
Add part function inputs all the data correctly	When a user adds a part to the database, all the data inputted is stored correctly	<p>Data to input:</p>  <p>Resulting part:</p>  <p>127.0.0.1:5000/part/31</p> <p>PartBrand joining table:</p> <table border="1"> <tr> <td>31</td> <td>1</td> </tr> </table> <p>Brand:</p> <table border="1"> <tr> <td>1</td> <td>Unknown</td> </tr> </table> <p>PartTag joining table:</p> <table border="1"> <tr> <td>31</td> <td>7</td> </tr> <tr> <td>31</td> <td>40</td> </tr> </table> <p>Tags:</p>	31	1	1	Unknown	31	7	31	40	Pass
31	1										
1	Unknown										
31	7										
31	40										

		<p>7 lens</p> <p>40 square</p>									
Clicking on tags links to correct tag	When the user selects a tag, they are taken to the search page with that tag loaded	 <p>kilo cycles</p> <p>127.0.0.1:5000/search?tag=3</p> <p>Results:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Brand</th> <th>Type</th> <th>Tags</th> </tr> </thead> <tbody> <tr> <td>Black Dial</td> <td>None</td> <td>Dial</td> <td>kilo cycles, Black</td> </tr> </tbody> </table> <p>127.0.0.1:5000/search?tag=3</p> <p>3 kilo cycles</p>	Name	Brand	Type	Tags	Black Dial	None	Dial	kilo cycles, Black	Pass
Name	Brand	Type	Tags								
Black Dial	None	Dial	kilo cycles, Black								

FINAL DIGITAL TECHNOLOGIES OUTCOME

The screenshot shows a code editor interface with a sidebar containing project files and a main area displaying code from `routes.py`. The code handles search functionality, including form validation and redirection. Below the code is a terminal window showing a series of requests to the application.

```
app > routes.py > search
189     return render_template("manufacturers.html", manufacturers=manufacturers)
190
191
192     @app.route("/all_parts", methods=['GET', 'POST'])
193     @cache.cached(timeout=50)
194     def all_parts():
195         all_parts = (
196             models.Part.query.options(
197                 selectinload(models.Part.brands),
198                 selectinload(models.Part.tags),
199                 selectinload(models.Part.type)
200             )
201             .all()
202         )
203         form = Search_Tag()
204         tags = models.Tag.query.all()
205         form.tag.choices = [(0, 'None')]
206         form.tag.choices.extend([(t.id, t.name) for t in tags])
207
208         if request.method == 'POST' and form.validate_on_submit():
209             tag = form.tag.data
210             return (redirect(url_for('search', tag=tag)))
211         else:
```

PROBLEMS	OUTPUT	DEBUG CONSOLE	TERMINAL	PORTS
8				

```
227.0.0.1 - - [28/Sep/2024 09:19:05] "GET /static/css/style.css HTTP/1.1" 304 -
227.0.0.1 - - [28/Sep/2024 09:19:28] "GET /search HTTP/1.1" 200 -
227.0.0.1 - - [28/Sep/2024 09:19:28] "GET /static/css/style.css HTTP/1.1" 304 -
227.0.0.1 - - [28/Sep/2024 09:20:05] "GET /static/css/style.css HTTP/1.1" 304 -
227.0.0.1 - - [28/Sep/2024 09:20:27] "POST /search HTTP/1.1" 200 -
227.0.0.1 - - [28/Sep/2024 09:20:29] "GET /static/css/style.css HTTP/1.1" 304 -
227.0.0.1 - - [28/Sep/2024 11:58:26] "GET /static/css/style.css HTTP/1.1" 304 -
227.0.0.1 - - [28/Sep/2024 11:59:14] "POST /search HTTP/1.1" 200 -
227.0.0.1 - - [28/Sep/2024 11:59:16] "GET /static/css/style.css HTTP/1.1" 304 -
```

Python + v M

Radio Parts Prototype

HOME - MANUFACTURERS - BRANDS - ALL PARTS - SEARCH - ADD PART - LOG OUT

Radio Parts - Prototype

Welcome to the demo version of this website. This is an online database that will include all of the vintage radio parts in a collection. This is intended to make it easier to organise collections, as well as letting other members of the vintage radio society check if it has any parts they may be looking for.

You are logged in

[Logout](#)

Select Brand:

Or select from one of NZ's major brands:



COMPANION



Name

Brand

Tag

Image	Name	Size	Brand	Type	Tags
	Profit-focused radical approach	Width - 83 mm	Ambassador	Escutcheon	<input type="button" value="remember"/>
	Pre-emptive multi-tasking complexity	Width - 98 mm	Ambassador	Lens	<input type="button" value="day"/> <input type="button" value="short"/> <input type="button" value="study"/> <input type="button" value="majority"/> <input type="button" value="serve"/>
	Enhanced leading-edge middleware	Width - 74 mm	Ambassador	Lens	<input type="button" value="have"/>

EVALUATION

Relevant implications addressed

Website

Aesthetics:

- I addressed this relevant implication by keeping the colours and layout of my site simple. After consulting Mrs Maddaford, a design expert, she recommended that I use colours like a vintage brown, and contrast in brightness between the main content and the site background. I drew inspiration from the vintage radio society website, which most of my end users will be familiar with, to make the layout of the main content centred in a box with a background behind it. This design is good aesthetically because it lays out the data in a clear, readable manner, and the contrast between the main content and the background makes it easy to read and process.

Usability:

- I addressed usability in my website in multiple ways. For instance, I implemented thumbnailing on the images of the parts in places where multiple at once would be displayed. This means that when a lot of parts at once are being shown, they will load a lot faster and not cause the user to experience lag. On its own, this would usually only decrease performance, as the full image will need to be loaded, decompressed into pixels, then scaled down and turned back into a png/jpeg and delivered to the user. However, I made it so the thumbnail images are cached to the disk, which means they only need to go through that process once, before being stored and delivered quickly afterwards. Another way I increased usability was by having the site detect when a url was invalid, and sending the user to an error page instead of fully crashing. This means that the user knows that something went wrong, and can easily go back instead of potentially having trouble getting back to the site otherwise.

Database:

Sustainability and Future Proofing:

- I address this relevant implication on my database by making it manageable and editable by anyone who has been given access by the owner of the website. When more radio parts need to be added, the form on the add part page can be used to submit them, eliminating the need to have access to the database files. This means that even if I stop having access to the database files, the end user who owns the website, as well as any designated admins, can keep it up to date.

Social:

- The use of this database will have a positive social impact, in particular for members of the New Zealand Vintage Radio Society. The current process for them inquiring about a radio part in this collection, would be to call or email the owner of the collection, then the owner would

have to search through every box of parts they have until the part was found, even if they had it. With the inclusion of this database, it will be much easier to see if the part even exists in the collection, as well as identify the brand, size, name, and any other notable bits of information.

Nielsen's Heuristics during development

During the development process of the project, I kept in mind two more of Nielsen's Heuristics as I made my website. This helped me to shape the final outcome while keeping the end users in mind.

1. Recognition Rather than Recall

By paying attention to this heuristic, I made information recognizable for the user as they navigated my website. One example of this is that when they are searching for a part in the database, each entry has a small image for them to see and recognise if it is the part they are looking for. This means that they don't have to click on every part with a name that they recognise to find out if it matches their search criteria.

Another way I increased recognisable information is on the page where the user can pick a brand to search by. There is a drop down menu with every brand in the database on it, but that means the user will have to search through every name until they reach their desired brand.

By selecting a brand, the database automatically searches for every brand with that part. I offset the need for searching through the menu by providing pictures of some of the popular radio brands, and clicking on them automatically searches the database for parts with that brand.

2. Help Users Recognize, Diagnose, and Recover from Errors

I addressed this heuristic by creating a custom error page for the website. It not only matches the colours and layout of the rest of the site to avoid a sense of detachment, but it also provides instructions and a link to return to the home page. By doing this, the user can quickly get back on track, without getting confused on what they have to do to resume.

Project Management Reflection