

12DTP Project:

Plan:

What could I do my project on? (BrainStorm):

- Splatoon
- Aikido
- Nintendo Hardware
- Pikmin

Project Intro:

Project's Main Concept: Nintendo Hardware

Why?:

Nintendo is a large company based in Kyōto Japan, which manufactures video game software and hardware. It is one of the biggest companies in the industry, and has a long history starting from September 1889.

I love their work, development and effort throughout the years and I would like more people to learn and know about it. So I have decided to make a website where people will be able to learn about this using a database to store data.

Project Outline:

What it does-

This project is a website/database which displays information about Nintendo's hardware. This should be able to display the time it was made/sold, the most popular games that were sold with that hardware, how popular it was, descriptions, significance about it, etc.

Stakeholders-

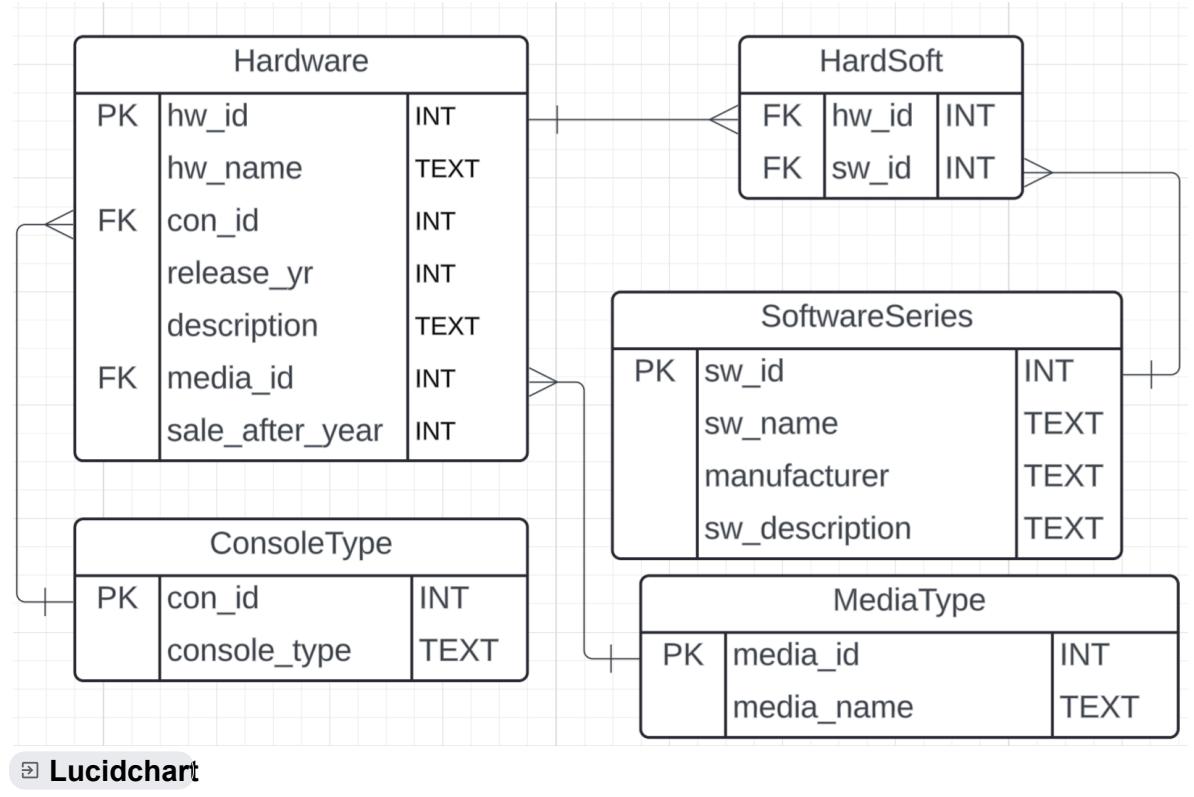
The primary stakeholders for this website are people who are passionate about this topic, and secondary stakeholders would be people who have an interest in the history of video games or Nintendo hardware in general. This will help them to achieve their purpose as it will have all the important details about each console summarised.

DATABASE:

Database Outline:

This is a database storing data on information about Nintendo hardware from the past and information around them.

ERD (first design):



Database Tables (example with two types of hardware):

DATABASE NAME: HARDWARE.db

Hardware:

hw_id	name	console_	release_yr	Description	me	sale_afte
-------	------	----------	------------	-------------	----	-----------

		type		(should be more detailed in the actual design)	dia_id	r_year
1	Nintendo Switch	3	2017	Nintendo Switch is a console that can transform to suit your situation. Its biggest feature is being able to switch from handheld to home consoles.	4	1500000
2	Family Computer	1	1983	The Nintendo Family Computer (Famicom), released in 1983 in Japan, was Nintendo's first major home video game console. It featured 8-bit hardware, cartridge-based games, and introduced iconic titles like <i>Super Mario Bros.</i> , <i>The Legend of Zelda</i> , and <i>Metroid</i> .	3	250000

HardSoft:

hw_id	sw_id
1	1
1	2
2	1

SoftwareSeries:

sw_id	sw_name	manufacturer	sw_description
1	Super Mario Brothers	Nintendo	Story: Mario and Luigi rescue Princess Peach from Bowser. Game Content: A 2D side scrolling platformer game.
2	Splatoon	Nintendo	Story: Creatures called "Inklings" live in a world where the sport called "turf war" is popular. Game Content: 3D Third Person Shooting game

ConsoleType:

con_id	console_type
1	Home

2	Hand Held
3	Hand Held/Home

MediaType:

media_id	media_name
1	Game Card
2	Digital Download
3	Cartridge
4	Game Card, Digital Download

Also using temporary data from before.

Query	Expected output							
SELECT hw_id, hw_name FROM Hardware	<table border="1"> <thead> <tr> <th>hw_id</th> <th>name</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Nintendo Switch</td> </tr> <tr> <td>2</td> <td>Family Computer</td> </tr> </tbody> </table>	hw_id	name	1	Nintendo Switch	2	Family Computer	
hw_id	name							
1	Nintendo Switch							
2	Family Computer							
SELECT h.hw_id, h.hw_name, h.release_yr, h.description, h.sale_after_yr, c.console_type, m.media_name FROM Hardware h LEFT JOIN ConsoleType c ON h.con_id = c.con_id LEFT JOIN MediaType m ON h.media_id = m.media_id WHERE h.hw_id = 1;	<table border="1"> <tr> <td>1</td> <td>Nintendo Switch</td> <td>Hand Held/ Home</td> <td>2017</td> <td>Nintendo Switch is a console that can transform to suit your situation. Its biggest feature is being able to switch from handheld to home consoles.</td> <td>Game Card, Digital Download</td> <td>150000</td> </tr> </table>	1	Nintendo Switch	Hand Held/ Home	2017	Nintendo Switch is a console that can transform to suit your situation. Its biggest feature is being able to switch from handheld to home consoles.	Game Card, Digital Download	150000
1	Nintendo Switch	Hand Held/ Home	2017	Nintendo Switch is a console that can transform to suit your situation. Its biggest feature is being able to switch from handheld to home consoles.	Game Card, Digital Download	150000		
SELECT name FROM Software WHERE id IN (SELECT sw_id FROM	<table border="1"> <tr> <td>sw_name</td> </tr> </table>	sw_name						
sw_name								

HardSoft WHERE hw_id = (SELECT hw_id FROM Hardware WHERE hw_name = Nintendo Switch));	Super Mario Brothers Splatoon	
SELECT * FROM Software	Super Mario Brothers Splatoon	Nintendo Story: Mario and Luigi rescue Princess Peach from Bowser. Game Content: A 2D side scrolling platformer game. Story: Creatures called "Inklings" live in a world where the sport called "turf war" is popular. Game Content: 3D Third Person Shooting game

WEBSITE:

Website Content:

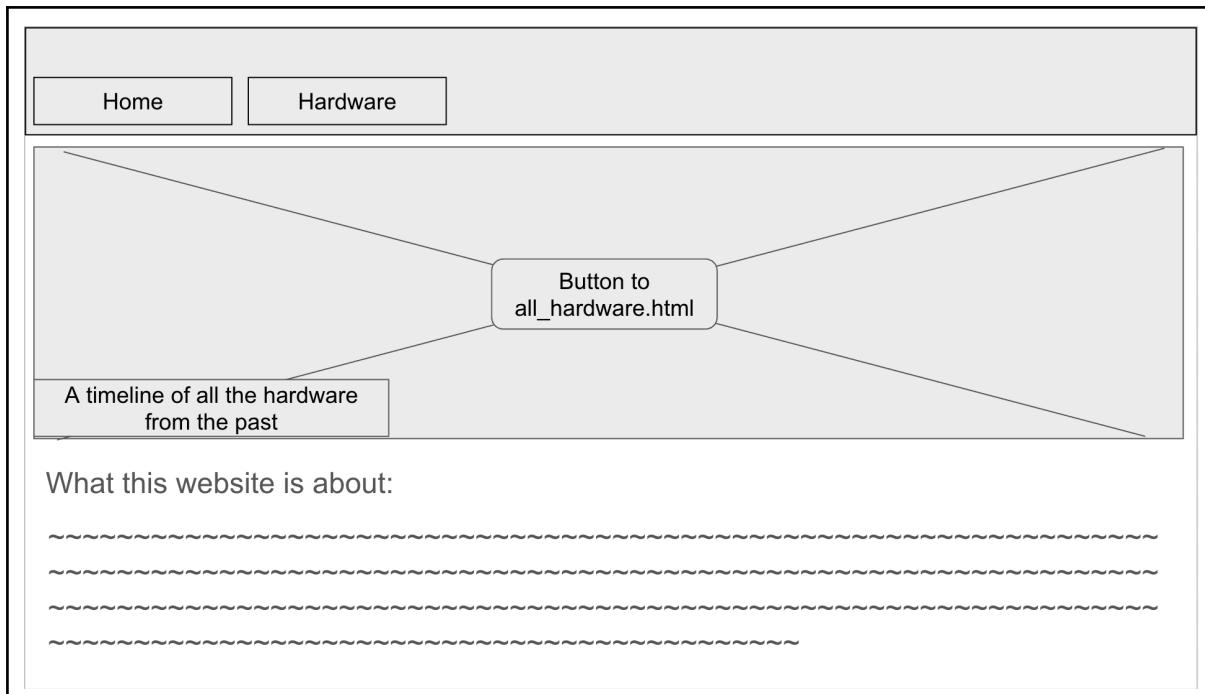
- A page that Introduces the website. → explain what it is, what it does, etc.
- A page that has a list of all the different types of hardware.
- A page that shows and explains specific details about each of the different types of hardware → a new page for each different type of hardware.
- A page that shows and explains specific details about each of the different software series → a new page for each different type of series.

Templates:

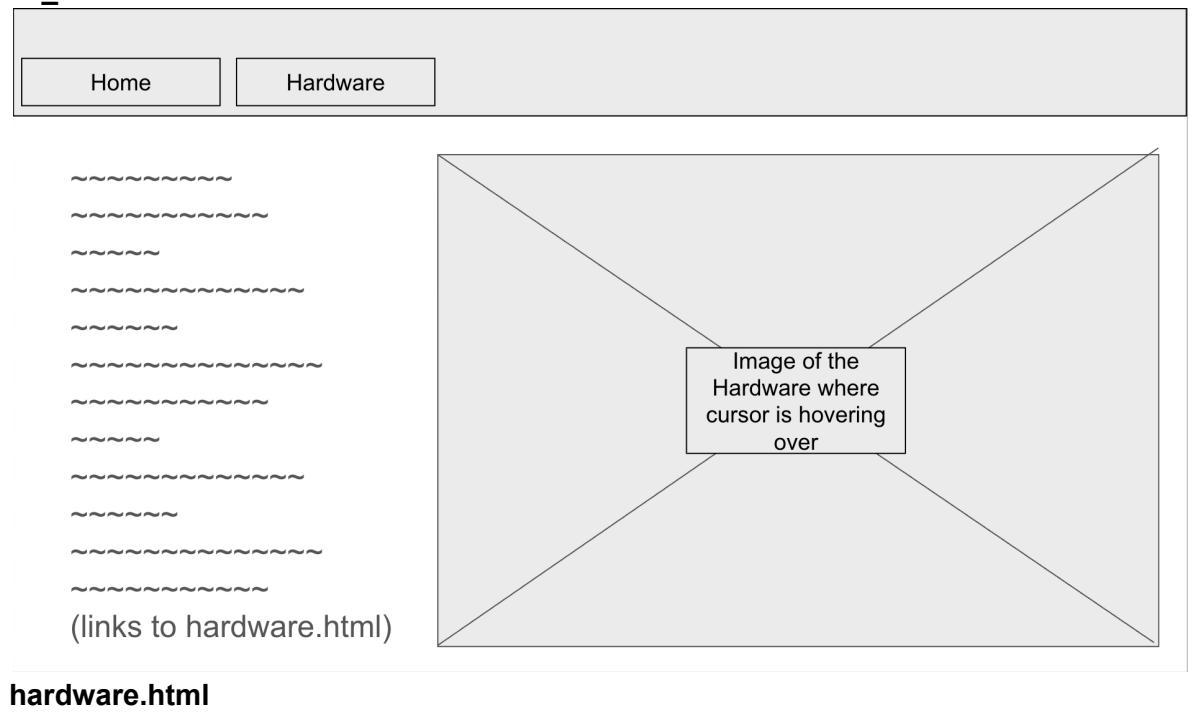
- layout.html
- home.html
- all_hardware.html
- hardware.html
- software.html

Website Layout:

home.html



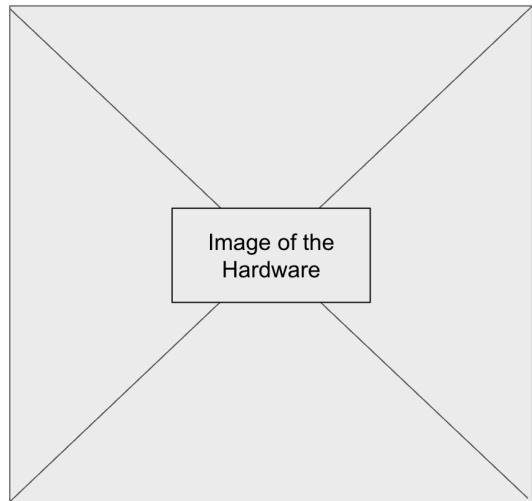
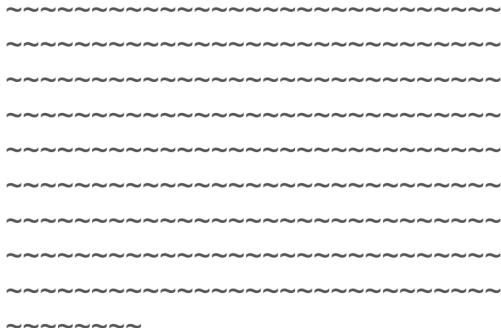
all_hardware.html



Home

Hardware

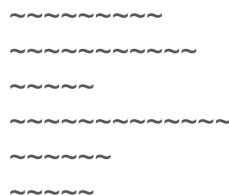
Name Of Console



Home

Hardware

Popular Software Series Available



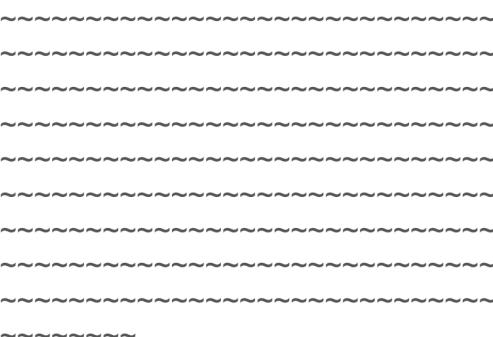
(links to the software.html)

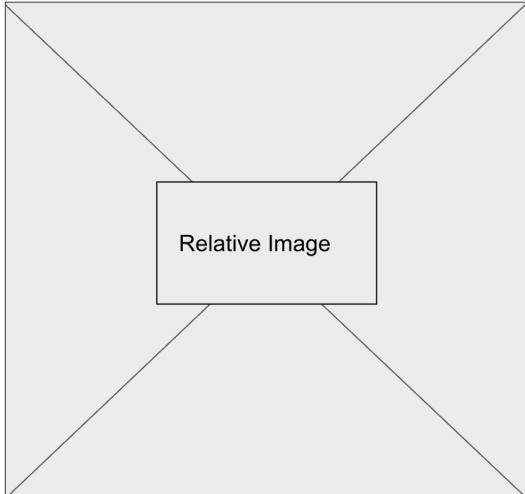
Image relevant to
the hardware
(visual image of
key feature)

software.html

Home
Hardware

Name Of Software Series





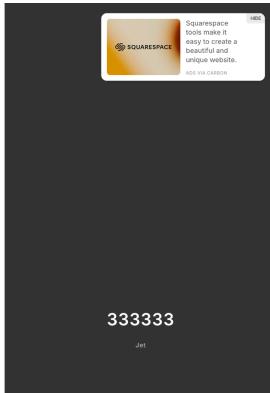
Relative Image

Colour Scheme:



EE4949
Imperial red

FFFFFF



White

333333

Jet

Why this colour scheme?:

Having a colour scheme similar to the theme is important when making websites. The colour that Nintendo uses for commercials and their official website is red. White will be for the background and text where the red is used. Dark grey will be used for normal text. It could have been black, but this will make it stand out too much and also be too common. I also looked at a tutorial by Kevin Powell (<https://www.youtube.com/watch?v=mq8LYj6kRyE>)

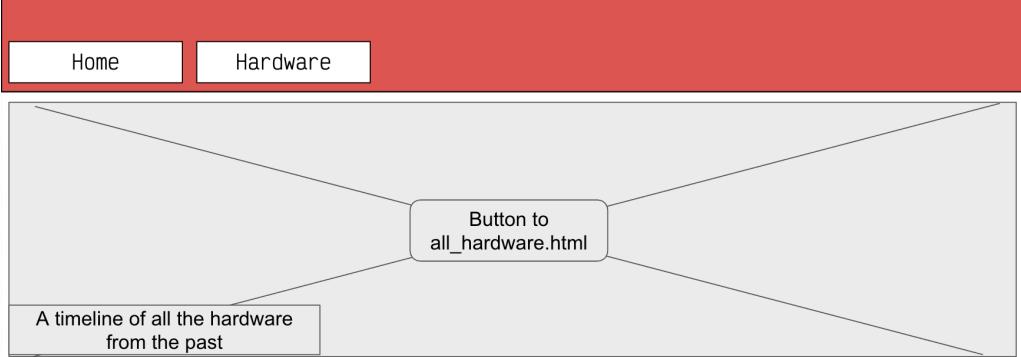
Fonts:

The font needs to be something that is formal but isn't boring and common. I used google fonts to search for something that will meet the theme of the website.

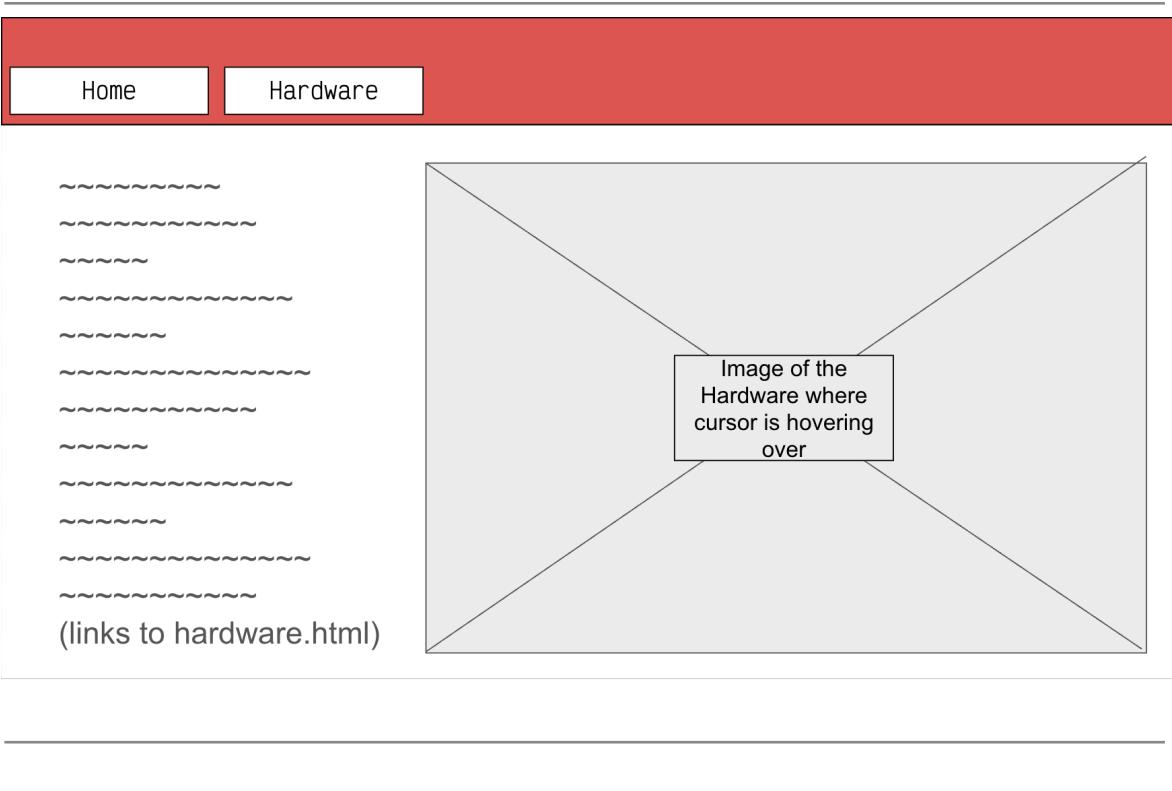
I found a font called Victor Mono. This is a really nice font because it seems formal but something that I don't see everyday. I decided to use this for titles and buttons.

The fonts for normal text must be something along the same lines but shouldn't stand out as much. Space Mono fits these requirements

Final Web Design:



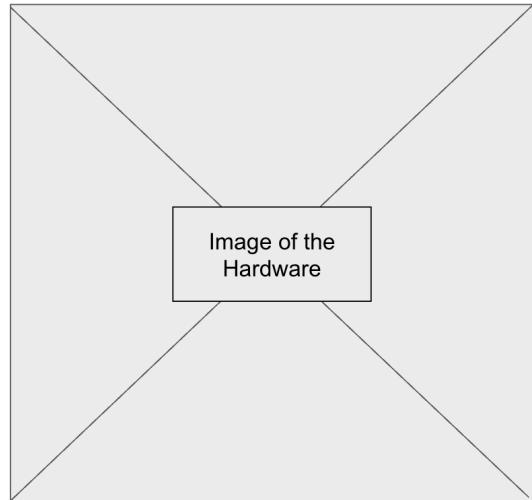
What this website is about:



Home

Hardware

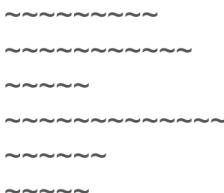
Name Of Console



Home

Hardware

Popular Software Series Available



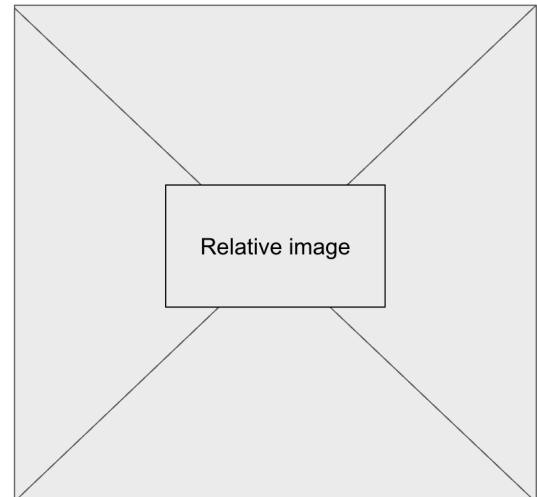
(links to the software.html)

Image relevant to
the hardware
(visual image of
key feature)

Home

Hardware

Name Of Software Series



ROUTES:

Route Outline:

These are the code (routes) for exporting the database data to the html to create the webpage.

Routes:

Name	Explain Route	Function
/all_hardware	A page to show a list of all of the hardware.	<pre>def all.hardware(): conn = sqlite3.connect("HARDWARE.db") cur = conn.cursor() cur.execute('SELECT hw_id, hw_name FROM Hardware') hardware = cur.fetchall() conn.close() return render_template("/all.hardware.html", hardware=hardware)</pre>
/hardware/<int:id>	A page to show more specific data on the each type of hardware	<pre>def hardware(id): conn = sqlite3.connect("HARDWARE.db") cur = conn.cursor() cur.execute(' SELECT h.hw_id, h.hw_name, h.release_yr, h.description, h.sale_after_year, c.console_type, m.media_name FROM Hardware LEFT JOIN ConsoleType c ON h.console_id = c.con_id LEFT JOIN MediaType m ON h.media_id = m.media_id; WHERE hw_id IS id=?', (id,)) hardware = cur.fetchall() conn.close() hardware1 = hardware[id-1] return render_template("/hardware.html", id=id, hardware1=hardware1, hardware=hardware)</pre>
/home	A page that introduces the website and explains	<pre>def home(): return render_template("home.html", title= "HOME")</pre>

	the purpose.	
/software/<int:id>		<pre>def hardware(id): conn = sqlite3.connect("HARDWARE.db") cur = conn.cursor() cur.execute('SELECT * FROM Software') software = cur.fetchall() conn.close() software1 = software[id-1] return render_template("/software.html", id=id, software1=software1, software=software)</pre>

Development Log:

Header:



What	How	Expected	Got	Notes
Do the Links/Buttons take you to the wanted page	Press the Links	Button "home" Renders "home.html", Button "Hardware" Renders "all _hardware.html"	Button "home" Renders "home.html", Button "Hardware" Renders "all _hardware.html"	The buttons are working as expected,
Do the animations work	Hover mouse over the links/buttons	The background gets lighter	The background gets lighter	Animation work and planned header is finished.

Who	Feedback
Andrew Wu	Change design/Layout to make it more tidy Have something else other than just 2 buttons. A logo and a Search bar? The font is cool but a bit more bold to stand out.

Alex Yao	<ul style="list-style-type: none"> • Good hover animation • Clean aesthetic • Button works

What could I do?:

- Change the colour scheme to make it look more modern.
- Add in a logo
- Search bar for people to find hardware they want

Home:



This Website:

Nintendo is a large company based in Kyōto Japan, which manufactures video game software and hardware. It is one of the biggest companies in the industry, and has a long history starting from September 1889.

This website is a collection of information about Nintendo's hardware, including the consoles and handhelds they have released over the years. It is designed to be a resource for fans and enthusiasts who want to learn more about Nintendo's hardware history.



Nintendo's office in Kyōto Japan

What	How	Expected	Got	Notes
Does the Link/button carry to the correct page	Press "get started!" button	Renders all.hardware.html	Renders all.hardware.html	The button is working as expected,

Who	Feedback
Andrew	<ul style="list-style-type: none"> - “NAV” - what is this doing here? - I like the split layout with the introduction paragraph and the image - The “get started” button appears to be too big for its border. You could consider making the text larger or shrinking the border or adding more high contrast colours on the button.
Alex Yao	<ul style="list-style-type: none"> • Clean aesthetic • Make it so you can click the box for the link instead of just the text • Excellent dynamic navigation
Matthew	Have more space between the image section and the button

Analyse feed back:

- “NAV” - what is this doing here?
 - > Don’t need it. Will get rid of it.
- I like the split layout with the introduction paragraph and the image
 - > Would like to keep. I personally like it too.
- The “get started” button appears to be too big for its border. You could consider making the text larger or shrinking the border or adding more high contrast colours on the button.
 - > In tending to have an image inside the border, so will probably keep



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Who	Feedback

Mr Dunford	<ul style="list-style-type: none"> - The colour of the Button is weird. Really weird. It's like you don't want me to press it - Users will be confused after reading the description. - Instead of this being the home page, this could be the about page. All.hardware could be the home.

Analyse feed back:

- The colour of the Button is weird. Really weird. It's like you don't want me to press it.
 - >I also didn't like the button. change
- Users will be confused after reading the description.
 - > move the "get started" button under the description text.
- Instead of this being the home page, this could be the about page. All.hardware could be the home.
 - > Not sure. It may be good for the user, but kind of reluctant because the home is the page I would want the user to see first. **Think About It**



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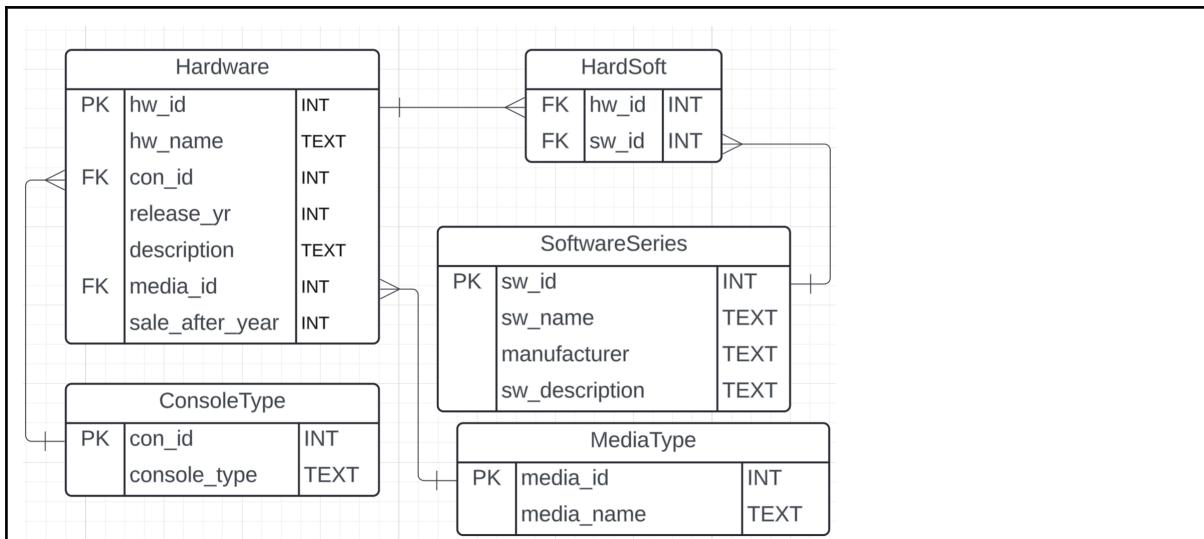
This website is a collection of information about Nintendo's hardware, including the consoles and handhelds they have released over the years. It is designed to be a resource for fans and enthusiasts who want to learn more about Nintendo's hardware history.

[Get Started!](#)



Nintendo's office in Kyōto Japan

Database:



What	How	Expected	Got	Notes
Does the database function as it needs to	Test queries that were in the plan			
SELECT hw_id, hw_name FROM Hardware		All data from columns hw_id and hw_name	All data from columns hw_id and hw_name	The items from the table Hardware can be accessed.
<pre>SELECT h.hw_id, h.hw_name, h.release_yr, h.description, h.sale_after_yr, c.console_type, m.media_name FROM Hardware h LEFT JOIN ConsoleType c ON h.con_id = c.con_id LEFT JOIN MediaType m ON h.media_id = m.media_id WHERE h.hw_id = 1;</pre>		All data from tables Hardware, ConsoleType and Media type For the id = 1	All data from tables Hardware, ConsoleType and Media type	Able to present all data from Hardware in a natural form.
<pre>SELECT sw_name FROM SoftwareSeries WHERE sw_id IN (SELECT sw_id FROM HardSoft WHERE hw_id = (SELECT hw_id FROM Hardware WHERE hw_name = "Nintendo Switch"));</pre>		All software series names which are popular in Nintendo Switch	All software series names which are popular in Nintendo Switch	Able to present software series data needed for hardware.html Change the last bit in the query {hw_name = "Nintendo Switch"} To be hw_id = id (the id for the page)

To Improve:

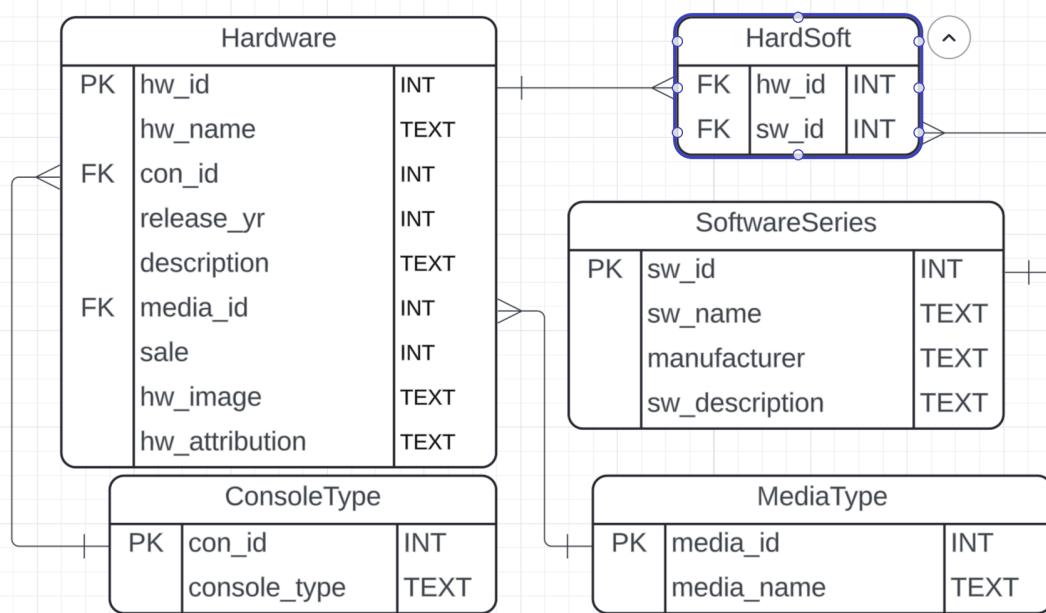
I realised here that the initial design of the database did not have a column for images even though it will be needed in the website.

I made a new column in hardware to store the image files for each specific hardware that it associates with.

Also change "sales_after_year" to "sale" since the data for sales after a year was very hard to find.

New ERD

→



Also need to edit the route (hardware, all.hardware)

What	How	Expected	Got	Notes
Test new queries that are needed	Write queries in SQLite studio. Check wanted tables can be accessed.			
SELECT h.hw_id, h.hw_name, h.release_yr, h.description, h.sale, h.hw_image c.console_type,		All data from tables Hardware, ConsoleType	All data from tables Hardware, ConsoleType	

m.media_name FROM Hardware h LEFT JOIN ConsoleType c ON h.con_id = c.con_id LEFT JOIN MediaType m ON h.media_id = m.media_id WHERE h.hw_id = 1;		and Media type For the id = 1	and Media type For the id = 1	
Select hw_id, hw_name, hw_image FROM Hardware		Get hw_id, name and image	Got hw_id, name and image	
Select hw_id, hw_name, hw_image FROM Hardware WHERE hw_name LIKE ##### (##### = user input)		Get the hw_id, name and image where the user input is similar to the user input	Got the hw_id, name and image where the user input is similar to the user input	
SELECT hw_id, hw_name, hw_image FROM Hardware WHERE hw_id IN (SELECT hw_id FROM HardSoft WHERE sw_id IN (SELECT sw_id FROM SoftwareSeries WHERE sw_name LIKE #####));		Get the hw_id, name and image based on the image where the user input (Software).	Get the hw_id, name and image based on the image where the user input (Software).	All the queries needed are working fine!

Notes to Remember “Attributions”:

Format: "Image title" by "Author", licensed under "licence"

["Nintendo Headquarters in Kyoto, Japan \(Feb. 2006\)" by Moja~commonswiki, licensed under CC BY-SA 3.0 and the GFDL 1.2. No changes made.](#)

→ Hardware

["Nintendo Hanafuda" by fuzzcat Public domain \(CC 0\)](#)

["Color TV-Game 15" \(cut-out\) by Greg Dunlap \(HeyRocker\), licensed under \[CC BY 2.0\]](#)

["Game & Watch Ball" by masatsu, licensed under CC BY-SA 2.0.](#)

["Nintendo Famicom console", photographed by Evan-Amos \(Vanamo Media\), released into the public domain.](#)

["Nintendo-Entertainment-System-NES-Console-FL", photographed by Evan-Amos \(Vanamo Media\), released into the public domain](#)

["Game Boy" by Evan-Amos \(Vanamo Media\), released into the public domain.](#)

["Nintendo Super Famicom" by Evan Amos \(Vanamo Media\), released into the public domain.](#)

["SNES" by Evan Amos \(Vanamo Media\), released into the public domain.](#)

["Virtual Boy" by Evan Amos \(Vanamo Media\), released into the public domain.](#)

["Nintendo 64" by Evan Amos \(Vanamo Media\), released into the public domain.](#)

["Game Boy Color" by Evan Amos \(Vanamo Media\), released into the public domain.](#)

["GameCube" by Evan Amos \(Vanamo Media\), released into the public domain.](#)

["Game Boy Advance Purple" by Evan Amos \(Vanamo Media\), licensed under Creative Commons CC0 1.0 Universal Public Domain Dedication.](#)

["Black Nintendo DS" by Evan Amos \(Vanamo Media\), licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license](#)

["Wii Console" by Evan Amos \(Vanamo Media\), released into the public domain.](#)

["Nintendo 3DS XL" by Evan Amos \(Vanamo Media\), released into the public domain.](#)

["Wii U and GamePad" by Evan Amos \(Vanamo Media\), licensed under the Creative Commons Attribution-Share Alike 1.0 Generic](#)

["Nintendo Switch" by Evan Amos \(Vanamo Media\), released into the public domain.](#)

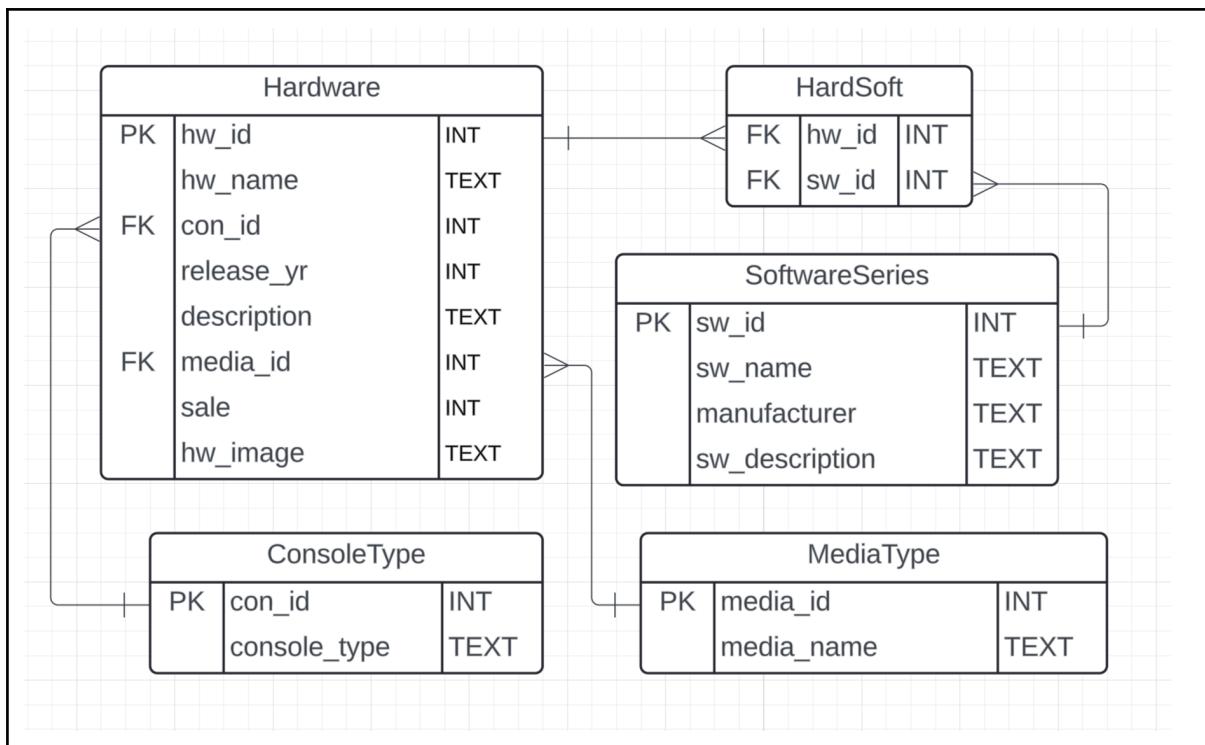
["Nintendo Switch2 in docking" by Crisco 1492, licensed under the Creative Commons Attribution-Share Alike 4.0 International license](#)

I have a column in the database called hw_attribution. This has the attributions for each of the images and was intended to be displayed under the images.

When attributing, I will need links to the images and the licences. This means I will need to make another column.

I decided to get rid of this column, and instead make another page attributing all of the images and presenting links. This will be in the footer that was made earlier.

New ERD →



All Hardware:

What	How	Expected	Got	Notes
Does the data from the Hardware table get transferred to the page properly	Open all.hardware page	Shows all the hardware from database	all the hardware from database	Data being transferred properly!
Do the links to the hardware.html work?	Click links	Open hardware.html for each individual link	Open hardware.html for each individual link	Can start working on hardware.html
Since there is now images in the database, present image (JAVA Script work?)	Hover mouse over each link	Image changes accordingly to the link	Image changes accordingly to the link	JAVA script worked! Happy :D

Who	Feedback
-----	----------

Alex	Make images stay still so users can see them when they scroll. (;

What to do now:

Agree with the feedback that the image should scroll with the user. Search how to do it.

→ able to keep image stay still while scrolling

Hardware:



The NES is the Western version of the Famicom, launched in North America in 1985. It helped revive the video game market after a crash in the early 1980s. With iconic games and reliable hardware, it became a classic. The NES turned Nintendo into a household name around the world.

Popular series available:

[Super Mario Bros](#)
[The Legend of Zelda](#)
[Dragon Quest](#)
[Tetris](#)
[Final Fantasy](#)
[Duck Hunt](#)
[Golf](#)

Console Type: Home

Media Type: Cartridge

Release Year: 1985

Sales: None

*Sales may be blank due to no data

What	How	Expected	Got	Notes
Does the data from the database to show the	Compare database data with page data			The data is being transferred properly
	Compare "Color TV"	All the data relevant to "Color TV" show	All the data relevant to "Color TV" show	
	Compare "Nintendo Switch"	All the data relevant to "Nintendo	All the data relevant to "Nintendo	

		Switch" show	Switch" show	
Do the links to software.html work?	Click links	Open software.html for each individual link	software.html for each individual link open	

Who	Feedback
Mr Dunford	<ul style="list-style-type: none"> “Sales: none” As a programming nerd it looks normal, but from a normal person it’s really unnatural. Also save you from having “*sales may be blank due to no data” →use if statement in jinja
Andrew	<ul style="list-style-type: none"> Make “*sales may be blank due to no data” smaller Maybe could make bits such as “Console Type: ” to be bold

- I agree with Mr Dunford's feedback. I never noticed myself, but it is definitely weird saying "none". Fix
- Also agree with Andrew that it may look better with the letters being bold.



[Home](#)

[Hardware](#)

[Search](#)

Color TV



The Color TV-Game series was Nintendo's first step into home video games in 1977. These were simple consoles that played built-in games like tennis or racing. The graphics were basic and displayed on your home TV. They were popular in Japan and gave Nintendo early experience in video game hardware design.

Popular series available:

[Block Kuzushi](#)
[TV-GAME 15](#)
[Racing 112](#)

Console Type: Home

Media Type: Built In

Release Year: 1977

Sales: Unknown

What could I do now?:

Also could add a “detailed” footer:

Basic design of the website is now complete apart from improving what I have, what could I do?

Right now, my footer is looking very boring and also I need a way to give attribution to the people I have borrowed sources from.

Right Now:

(c)2025

→ Could do more...

Mini Plan:

1. Make another template (call it “_footer.html”)
2. Extend to layout.html
3. What could be in the footer
 - Attribution → Attributions page
 - Contacts
 - Link to Nintendo Official Website

Also could add a search bar in the header:

Received feedback that it would be nice to have a search bar.

If I want to add a search bar, I would also need a page that shows the results of searching something.

search_results page

→ Render whenever words are in the search bar and click.

Mini Plan:

1. Make a search bar in header, and create search_results.html
2. Write a route which shows the search results in order in search results.html.



Other Things That could be Added:

If the items on the list can't be found, I would want to render a 404 error page. I

could also use it when there is an error rendering the other pages.

404 error page

→ In case my page can't be shown. Better to have a page to show the error than just leave the user uninformed.

Footer:

Links	Contacts	This is NOT an official website.
Nintendo Official Website Image Attributions	Email	
Who Andrew	Feedback - Do you really need the "This is NOT an official website."	

→ Want to keep because I don't want people to misunderstand (unlikely, but to be sure.)

CODE:

```
1 from flask import Flask, render_template, request
2 import sqlite3
3
4
5 app = Flask(__name__)
6
7 #route for home
8 @app.route('/')
9 def home():
10     return render_template("home.html", title="HOME")
11
12 #route for all hardware
13 @app.route('/allhardware')
14 def all_hardware():
15     conn = sqlite3.connect('HARDWARE.db')
16     cur = conn.cursor()
17     cur.execute('SELECT hw_id, hw_name, hw_image FROM Hardware')
18     hardware = cur.fetchall()
19     conn.close()
20     return render_template("all_hardware.html", title="all_hardware", hardware=hardware)
21
22 #route for specific hardware
23 @app.route('/hardware<int:id>')
24 def hardware(id):
25     conn = sqlite3.connect('HARDWARE.db')
26     cur = conn.cursor()
27     query = "SELECT * FROM Hardware WHERE hw_id = ?"
28     cur.execute(query, (id,))
29     hardware = cur.fetchone()
30     conn.close()
31
32     return render_template("specific_hardware.html", hardware=hardware, id=id)
```

Who	Feedback
Alex K	Put a header doc string u donkey! I also recommend to separate different functions of the app into separate .py files and not just clump everything into one file.

Put a header doc string u donkey! → Agree

I also recommend to separate different functions of the app into separate .py files and not just clump everything into one file. → don't think it is needed for my code.

```

1  """Python Flask application routes for 12DB_WBPROJECT."""
2  # routes.py
3  from flask import Flask, render_template, request
4  import sqlite3
5
6
7  app = Flask(__name__)
8
9
10 # route for home
11 @app.route('/')
12 def home():
13     # Render the home page.
14     # Needed so the user doesn't get confused when they first open the website
15     return render_template("home.html", title="HOME")
16
17
18 # route for all hardware
19 @app.route('/allhardware', methods=['GET'])
20 def all.hardware():
21     # Render the all hardware page.
22     # Needed so user can see all hardware in database, choose one
23     conn = sqlite3.connect('HARDWARE.db')
24     cur = conn.cursor()
25     # Query --> get items needed from table Hardware
26     cur.execute('SELECT hw_id, hw_name, hw_image FROM Hardware')
27     hardwares = cur.fetchall()
28     conn.close()
29     return render_template('all_hardware.html', title="all_hardware",
30                           hardwares=hardwares)
31
32
33 # route for specific hardware
34 @app.route('/hardware</int:id>')
35 def hardware(id):
36     # render the hardware details page.
37     # Shows details about a specific hardware item
38     if id < 1 or id > 19: # about 404 if id not in range of hw_id
39         return render_template('404.html'), 404
40     conn = sqlite3.connect('HARDWARE.db')
41     cur = conn.cursor()
42     # Query --> get hardware details in a readable format
43     # finding one row in Hardware with hw_id in the url
44     cur.execute("""SELECT
45                 h.hw_id,
46                 h.hw_name,
47                 h.release_yr,
48                 h.description,
49                 h.sale,
50                 c.console_type,
51                 m.media_name,
52                 h.hw_image
53             FROM Hardware h
54             LEFT JOIN ConsoleType c ON h.con_id = c.con_id
55             LEFT JOIN MediaType m ON h.media_id = m.media_id
56             WHERE h.hw_id = ?
57             ... , (id,)])
58
59     hardware = cur.fetchone()
60     # Query --> get all softwareseries related to hw_id in the url
61     # To present with the hardware details
62     cur.execute("""SELECT sw_id, sw_name FROM SoftwareSeries WHERE sw_id IN (
63                     SELECT sw_id FROM HardSoft WHERE hw_id = (
64                         SELECT hw_id FROM Hardware WHERE hw_id = ?));""", (id,))
65     softwareseries = cur.fetchall() # creating a list of tuples
66     conn.close()
67     return render_template(
68         "hardware.html",
69         title="hardware",
70         id=id,
71         hardware=hardware,
72         softwareseries=softwareseries
73     )
74
75
76 # route for specific hardware
77 ...

```

Search Bar:

I received feedback that I should have a search bar. I think that this is a good idea, and will be helpful for the users.

I initially planned after receiving feedback to make a search bar in the header that opens another page that displays results.

But with the time I have left, I think that this is not realistic. So I have decided to make a separate page that allows people to search for items and also displays results.

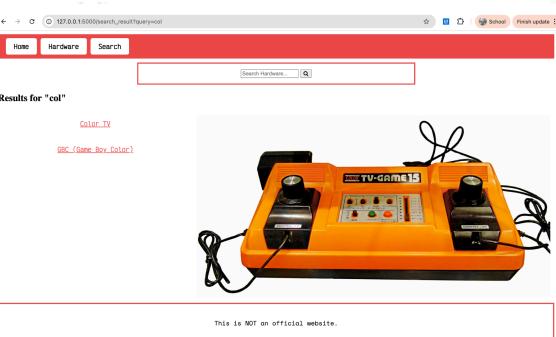
The link/ button will be in the header like the other ones.

BEFORE:



AFTER:





Results for "col"

Color_TV
GBC (Game Boy Color)

This is NOT on official website.

Nintendo Official Website

Home Hardware Search

Search... Hardware Name

Results for ""



Playing_Cards (Hanafuda)
Color_TV
Game_Watch
Famicom (Family Computer)
NES (Nintendo Entertainment System)
Gameboy
Super_Famicom
SNES (Super Nintendo Entertainment System)
Virtual_Boy

What	How	Expected	Got	Notes
Does the search bar work?				
Does it show the hardware searched?	Type in "color"	Shows the hardware, "Color TV" and "GBC (Game Boy Color)"	Shows the hardware, "Color TV" and "GBC (Game Boy Color)"	YAY!
Does it show the hardware searched?	Type in "color "	Shows the hardware, "Color TV" and	Shows the hardware, "Color TV"	Since GBC says "Color)" did not get

query to delete tables		because the query won't work.		destroyed by the user.
------------------------	--	-------------------------------	--	------------------------

Feed Back:

Who	Feedback
Andrew	If for example, the user is searching under 'Hardware' and there are no results, could the website possibly then search in 'Software' and if there is a result, prompt the user "No results for [query] in Hardware, search in Software instead?"
Mr Dunford	<ul style="list-style-type: none"> - It's kind of weird that all the results are presented before searching. Also be really slow when there is more data added later on. - Make it so that there is a maximum length

If for example, the user is searching under 'Hardware' and there are no results, could the website possibly then search in 'Software' and if there is a result, prompt the user "No results for [query] in Hardware, search in Software instead?"

→ a good idea, but may be hard for "normal users to understand"

It's kind of weird that all the results are presented before searching. Also be really slow when there is more data added later on. → Don't find it weird, but agree it might make it slow.

Make it so that there is a maximum length → I broke it myself, so I will need to add. Also want to prevent the back end.

Search for Hardware!

What	How	Expected	Got	Notes
Boundary case	Initial	Search for hardware	Search for hardware	
	50 letters	Takes in the 50 word input. Works fine but there will be no results since there is no hardware over	Searches	Max length of word works

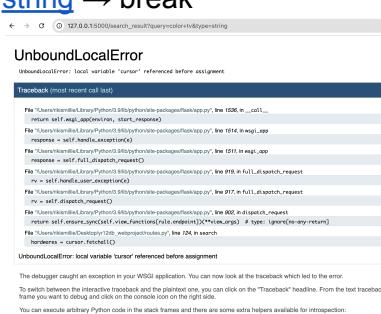


URL:

Some people may decide to play with the URL and try to break the website (Like some of my friends did). So to make my website robust, I have built code so it can cope with these errors.

What	How	Expected	Got	Notes
Test boundary cases for URL for hardware	http://127.0.0.1:5000/hardware/0	Render 404	Render 404	URL for hardware page works even on boundary cases
	http://127.0.0.1:5000/hardware/1	Show hanafuda page	Show hanafuda page	
	http://127.0.0.1:5000/hardware/19	Show Nintendo switch 2 page	Show Nintendo switch 2 page	
	http://127.0.0.1:5000/hardware/20	Render 404	Render 404	
Test boundary cases for URL for software	http://127.0.0.1:5000/softwareseries/0	Render 404	Render 404	URL for software series page works even on boundary cases
	http://127.0.0.1:5000/softwareseries/1	Show Block kuzushi page	Show Block Kuzushi page	
	http://127.0.0.1:5000/softwareseries/21	Show Splatoon page	Show Splatoon page	
	http://127.0.0.1:5000/softwareseries/22	Render 404	Render 404	

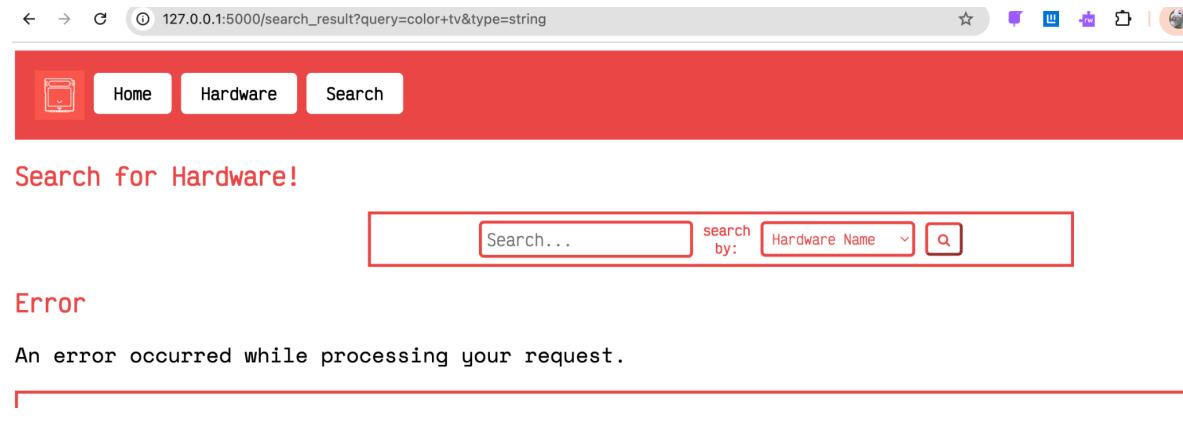
Feed Back:

Who	Feedback
Andrew	<p>http://127.0.0.1:5000/search_result?query=color+tv&type=string → break</p> 
Alex Yao	<p>Custom 404 page works as intended. Having an extremely long URL does not break the website. Very solid system.</p>

Even people who know how to program found it hard to break → good!

Make a quick fix using try and except for the error found

→ fixed



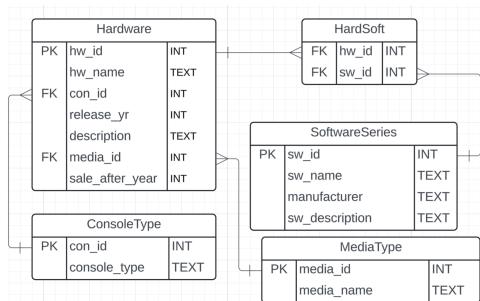
Iterations:

Iterative development is needed when developing software and I am going to be paid. This is because if it were a 2-year project, the employer might go bankrupt within that time and I wouldn't be paid for the work I had already done. Having iterations that show the project's progress means I can be paid for each stage. Even if the employer does go bankrupt, I will still have been paid for the completed iterations. Therefore, the loss I would experience is much smaller.

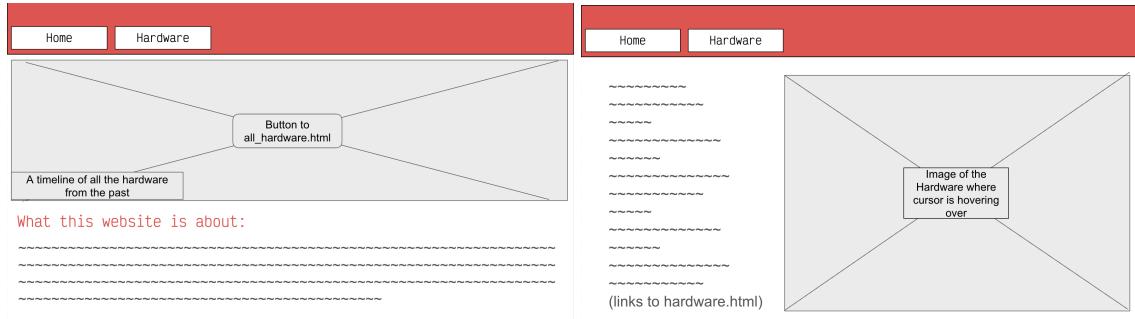
First Iteration:

Planning →

→ Database:



→ Website

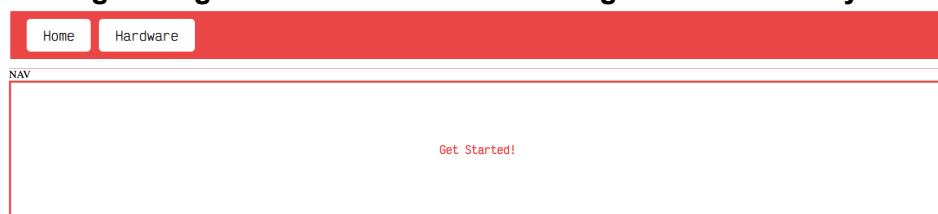


Second Iteration:

Header → links to home and all.hardware

Build the flex_layout of home → also contents and link

→ image in big box not there since the image was not made yet



This Website:

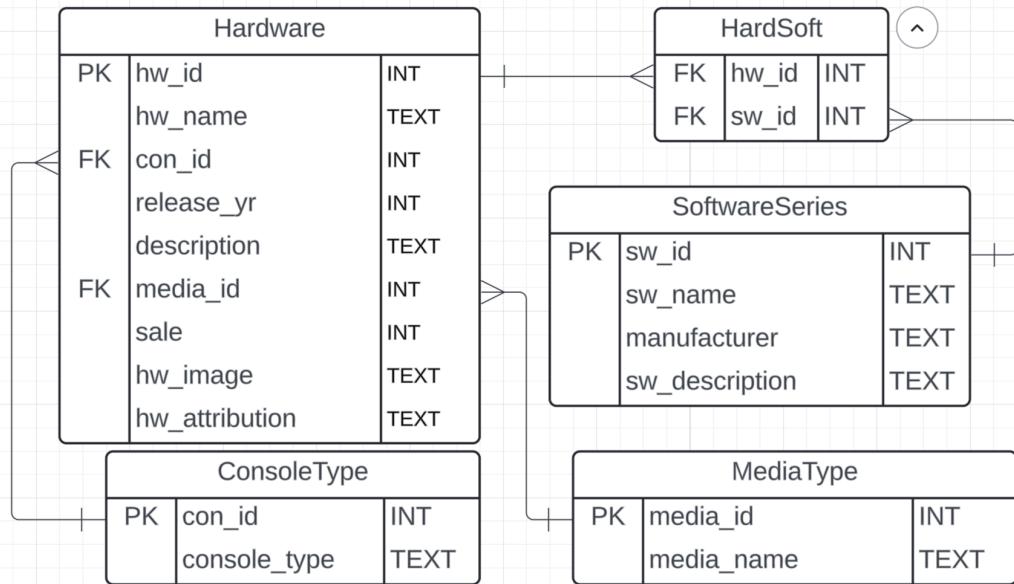
Nintendo is a large company based in Kyōto Japan, which manufactures video game software and hardware. It is one of the biggest companies in the industry, and has a long history starting from September 1889. This website is a collection of information about Nintendo's hardware, including the consoles and handhelds they have released over the years. It is designed to be a resource for fans and enthusiasts who want to learn more about Nintendo's hardware history.



Nintendo's office in Kyōto Japan

Third Iteration:

database → fix design, fill with content



all.hardware → make it show all the hardware as a link to hardware
 → also make it show images beside
 → hardware.html made

[Playing_Cards_\(Hanafuda\)](#)
[Color_TV](#)
[Game & Watch](#)
[Famicom_\(Family_Computer\)](#)
[NES_\(Nintendo_Entertainment_System\)](#)
[Gameboy](#)
[Super_Famicom](#)
[SNES_\(Super_Nintendo_Entertainment_System\)](#)
[Virtual_Boy](#)
[N64_\(Nintendo_64\)](#)
[GBC_\(Game_Boy_Color\)](#)
[Game_Cube](#)



Fourth Iteration:

Hardware → basic layout and content transfer done
 → links to software
Software → similar layout as hardware



The NES is the Western version of the Famicom, launched in North America in 1985. It helped revive the video game market after a crash in the early 1980s. With iconic games and reliable hardware, it became a classic. The NES turned Nintendo into a household name around the world.

Popular series available:

[Super Mario Bros](#)
[The Legend of Zelda](#)
[Dragon Quest](#)
[Tetris](#)
[Final Fantasy](#)
[Duck Hunt](#)
[Golf](#)

Console Type: Home

Media Type: Cartridge

Release Year: 1985

Sales: None

*Sales may be blank due to no data

Fifth Iteration:

Review feed back and Things that I noticed → Search Bar, Logo, attributions, footer

Searchbar→ noticed when start coding hard to make in header, so make a page specific to search

Logo→Add into header. Link to home.

Search for Hardware!

Footer→ needed a nicer looking footer. Add links and say that it isn't an official website (Ethical)

Attributions→decide would be much easier to make a page with all the links. Also change database structure

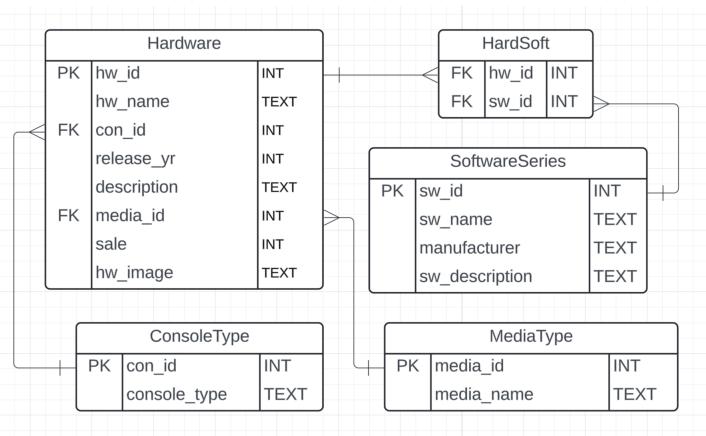
Links

Nintendo Official Website
Image Attributions

Contacts

Email

This is NOT an official website.



Received feedback from Mr Dunford:
 He said that it took him back to some childhood memories.
 → The goal of the website.

Sixth Iteration:

Go over website and make fixes based on feed back and what I have noticed
 Home → Move position of button
 Search → Make so doesn't show when nothing is searched,
 404 → Open when the URL is not found

Overall Feedback:

*respond to feed back in red

Who	What
Alex Y	<p>Your website is very clean and aesthetically pleasing. I like the interactive images upon hovering over the links in the menu. Attempting to break the website via hacking the HTML failed. Your website is very robust and intuitive to use. Excellent job.</p> <p>Great!</p>
Andrew	<p>Your website is not flexible and robust because I was able to trigger an UnboundLocalError 😊 → Able to fix after a day of hardwork</p> <p>Having witnessed the iterative development of this project at every stage, I can confidently say that this project has grown from a great idea into a truly magnificent outcome. Congratulations!</p> <p>Fix this: http://127.0.0.1:5000/softwareseries/4 (it says hi)</p> <ul style="list-style-type: none"> - Maybe the nav bar should have a link to “software” → Good idea, but with time I have left. I can’t do that. Something for next time. - Maybe the search function should work straight from the nav bar → initial plan but changed to plan now
Ben Wray	<ul style="list-style-type: none"> - Home page image very cool 😊 - Border around header image goes out of line on the right → never noticed, want to fix - Great font, fits the context well → Part I was committed to - Home page get started button could have an on hover animation → agree → fixed

	<ul style="list-style-type: none"> - Open an on site email in footer is very cool - Could be more padding between links on the footer - Hardware slideshow is very cool - Image in the hardware section isn't fully aligned to the left. - Hardware section text sections feel a little all over the place → agree → but is mostly because of resolution difference in images. Next time I would like to make the images into the same size and shape before storing them in the database. - Search bar too many boxes → agree, but is necessary - The search for hardware title is below the page content → agree fixed - Maybe instead of a search bar could be a dropdown - hard to tell what to type in, and could make spelling mistake etc → If it were a dropdown, It would be a worse version of the all_hardware page. - Could maybe put the search bar just in the nav instead of a separate page → really would like to do but a little bit hard. Next time!
Mother “NonProgrammer”	<ul style="list-style-type: none"> - Photo of “Virtual boy too big” - Was able to explore the history of nintendo hardware - Nice font - Cute illustration - The resolution of some images are weird. Tried to fix, but could not find a solution. - 404 never thought there would be a 404 error page. cool!
Jayden W & Dean Qu “NonProgrammer” (Gave feed back together)	<ul style="list-style-type: none"> - Has a wide range of detailed information that gives one insight to the history and works of Nintendo. It's fascinating to see how Nintendo went from playing cards to a highly advanced console sold successfully all around the world in just 136 years. → great! The goal of the website is being accomplished - As someone who goes on his device in the dark, the white background frightens me. → It would be nice to make a dark mode in the future. Will be too complex at this stage. - There was a lack of photos in the game's pages so I couldn't really get a grasp on what it was meant to be like. → Would have done if I had more time

Going Over Finished Project:

Relevant Implications:

Some relevant implications in my project are "Future-proofing", "Intellectual Property", "Ethical" and "Social".

Database:

"Intellectual Property" is about protecting other people's work. In my database, I have images which are owned by others that are stored in the website. I have made sure that all the property that I have borrowed are images released into the public domain. I have also used images that were under a Creative Commons licence. Whenever I used these, I followed the requirements such as attributing to avoid unauthorised use. This shows that I'm respecting the properties and rights of the owners.

"Ethical" means that a project is morally right. It isn't always about the law, but about doing the right thing, such as treating content with respect and being honest. In my website and database, I have made sure to credit the image owners even when it's not required, to acknowledge the work of the photographers. I have also written in the footer that the website is unofficial and that all rights belong to Nintendo and the original owners. Finally, I ensured the content does not insult Nintendo or users in any way. I also prevent misinformation by researching thoroughly. If there does happen to be incorrect information, my email is in the footer so the user can let me notice. This is showing respect to the owners and the users which is ethical. This shows that it meets this relevant implication.

Website:

Future-proofing means that a project is able to be easily adapted when there are future updates. For example in my website/database, it uses flask so it automatically makes a new page for each hardware in the database. This means that if a new Nintendo hardware is released in the future, all I would need to do is enter the information for the new hardware into the database and make a few other changes. Then it would automatically make a new page for the hardware.

If a new hardware called "A" was released in the future, all I would need to do is make and fill a new row in the database for "A" and add a link in the image attributions page. This makes my project future-proof, and meets this relevant implication.

Social is about how this website affects society and the community. My project contains content about Nintendo's consoles, which have played a big role in the gaming industry. Many people have had some experience with these consoles, and learning about them can help connect people across different generations. It may also strengthen bonds between users who share similar memories. At the same time, it gives people who don't know much about Nintendo a chance to learn and become part of the community. Some feedback shows that it accomplished the goal of educating people about the history of the hardware (Jayden W). I also received feedback saying that "it took me back to childhood memories of me and my sister playing Donkey Kong." which also shows the connections between the people (Mr Dunford).

This shows that my project socially connects people and that it meets this relevant implication.

Data Integrity:

127.0.0.1:5000/allhardware

[SNES \(Super Nintendo Entertainment System\)](#)

[Virtual Boy](#)

[N64 \(Nintendo 64\)](#)

[GBC \(Game Boy Color\)](#)

[Game Cube](#)

[GBA \(Game Boy Advance\)](#)

[Nintendo DS](#)

[Wii](#)

[Nintendo 3DS](#)

[Wii U](#)

[Nintendo Switch](#)

[Nintendo Switch2](#)



Nintendo Switch



The Switch was released in 2017 and can be played as both a home console and a handheld. It became a huge success thanks to its flexibility and strong game lineup. Games like The Legend of Zelda: Breath of the Wild, Animal Crossing: New Horizons, and Mario Kart 8 Deluxe helped it sell over 100 million units. It brought Nintendo back to the top of the gaming market.

Popular series available:

[The Legend of Zelda](#)
[Mario series \(other\)](#)
[Mario Kart](#)
[Super Smash Bros](#)
[Animal Crossing](#)
[Splatoon](#)

Console Type: Handheld & Home

Media Type: Gamecard & Digital Download

Release Year: 2017

Sales: 153100000

ID	Name	Year	Description	Column: description	Value
15	Wii	2006	The Wii came out in 2006 and changed gaming by using motion controls. It was ...	7	116300000
16	Nintendo 3DS	2011	Released in 2011, the 3DS offered glasses-free 3D effects on the top screen. It built ...	3	75940000
17	Wii U	2012	The Wii U launched in 2012 with a new controller that had a touchscreen. It was ...	7	135600000
18	Nintendo Switch	2017	The Switch was released in 2017 and can be played as both a home console and a ...	4	153100000
19	Nintendo Switch2	2025	Released on June 5, 2025, the Nintendo Switch 2 is the successor to the hugely ...	4	5820000
20	2011	2011	Released in 2011, the 3DS offered glasses-free 3D effects	3	75940000
21	2012	2012	The Wii U launched in 2012 with a new controller that had a touchscreen.	7	135600000
22	2017	2017	The Switch was released in 2017 and can be played as both a home console and a ...	4	153100000
23	2025	2025	Released on June 5, 2025, the Nintendo Switch 2 is the successor to the hugely ...	4	5820000

The data presented is the same as the database

List of best-selling Nintendo Switch video games							
	Title	Copies sold	As of	Release date ^[a]	Genre(s)	Developer(s)	Publisher(s)
1	<i>Mario Kart 8 Deluxe</i>	68.86 million ^[4]	June 30, 2025	April 28, 2017	Kart racing	Nintendo EPD	Nintendo
2	<i>Animal Crossing: New Horizons</i>	48.19 million ^[4]	June 30, 2025	March 20, 2020	Social simulation	Nintendo EPD	Nintendo
3	<i>Super Smash Bros. Ultimate</i>	36.55 million ^[4]	June 30, 2025	December 7, 2018	Fighting	Bandai Namco Studios · Sora Ltd.	Nintendo
4	<i>The Legend of Zelda: Breath of the Wild</i>	33.04 million ^[4]	June 30, 2025	March 3, 2017	Action-adventure	Nintendo EPD	Nintendo
5	<i>Super Mario Odyssey</i>	29.50 million ^[4]	June 30, 2025	October 27, 2017	Platformer	Nintendo EPD	Nintendo
6	<i>Pokémon Scarlet and Violet</i>	27.15 million ^[4]	June 30, 2025	November 18, 2022	Role-playing	Game Freak	The Pokémon Company · Nintendo
7	<i>Pokémon Sword and Shield</i>	26.84 million ^[4]	June 30, 2025	November 15, 2019	Role-playing	Game Freak	The Pokémon Company · Nintendo
8	<i>The Legend of Zelda:</i>	21.93 million ^[4]	June 30, 2025	May 12, 2023	Action-	Nintendo EPD	Nintendo

Best selling software (not exactly the same with database because “software series” in database)

Japanese: ハード : 1億5,310万台
Software: 14億1,563万本

English: Hardware: 153.1 million units

Console Type: Handheld & Home

Media Type: Gamecard & Digital Download

Release Year: 2017

Sales: 153100000

Total sales from the official website.

Tools That were used:

SQLite Studio → Database

Lucid Chart → ER Diagram

Visual Studio Code → HTML, CSS, Python

Google Chrome → Testing and Research

Heuristics:

I used Nielsen's Heuristics to improve my website and make it more accessible.

Some Heuristics that you can see in my website are “Aesthetics and Minimalist design”, “Error Prevention” and “Help Users Recognise, Diagnose, and Recover from Errors”.

“Aesthetics and Minimalist design” is about having a simple design to make the website look good as well as making it readable. You can see this in my website in places such as,

only 3 colours used for the colour scheme (black, white and red). I also made sure to lay out the information logically.

“Error Prevention” is about making sure that the website does not break when something unexpected happens. In my website I have made sure to code the website so that all possible ways of misusing/breaking the website can be dealt with. I have also made sure that an error message is shown when something that was not intended happened. For example when the user searches for something that doesn’t exist in the database, it will say “no results found for your search.” This also shows “Help Users Recognise, Diagnose, and Recover from Errors” which is about helping the users get back on track when an error occurs.

Github:

Repository: https://github.com/22197/yr12db_webproject

Commit history: https://github.com/22197/yr12db_webproject/commits/main/