

ACCA5033 Assignment 1: Innovation & Project Management

Wednesday, February 04, 2026 10:37 AM

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'DrawSite'- Producing a Web based art skills development game application where users draw under a timer

Task 1: Idea & Innovation

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Q.1: Innovation

Unit 1 Topic 1 – How Innovation Shapes the world [1] introduces many concepts related to the power of innovation. A key aspect highlighted early on is how people's quality of life, as can be seen by decrease in deaths due to natural disasters, higher rates of education and improvements in lifespan due to medical innovations [2], has increased over time.

Section 2 outlines that there have been four industrial revolutions in recent history that have allowed significant societal changes, beginning with the development of machines to aid agriculture to the 4th one which we are currently experiencing, wherein the development of "cyber physical systems" is allowing companies, governments and individuals to greatly change how they work.

Russian economist Nikola Kondratieff described these cycles of change as Kondratieff Waves/Cycles [1]. The concept behind this is that a significant enough innovation or invention may cause "spikes of prosperity" where several more innovations and long-term economic improvements occur as a direct result.

Section 3 focuses on creativity and challenges the common misconception that creativity is limited to artistic fields or to a small group of people. Instead, it argues that creativity is a universal human capability that can be developed and strengthened through practice and experience. Authors such as Tom and David Kelley describe this misconception as the "creativity myth," suggesting that many people underestimate their own creative potential due to societal and educational influences that discourage risk-taking and making mistakes.

Q.2 Ideation

There are many potential avenues I could pursue for my project. Among the initial ideas I came up with were:

1. A Globe-based implementation of Conway's Game of Life, where users around the globe can place 'cells' which display behaviour based on their surroundings. This could be implemented as a mobile application or website.
2. A Web and mobile application/game which prompts the user with a daily art prompt which they can draw on an online canvas site and share with others, possibly with a room based multiplayer mode. PSI(positive social impact) – helps people have fun and develop their art skills.
3. An AR fishing game. This could be a mobile game which combines the user's location data (via GPS) and AR to fish at bodies of water. PSI limited to just having fun.

Eventually, I decided to go ahead with idea number 2.

Project Title: Producing a Web based art skills development game application where users

draw under a timer

Project aim: To research, design and develop a web-based art application that gives users the opportunity to compete with others and improve their skills

Project Description:

Web and application/game where the user draws on a canvas to meet randomly selected challenges, could potentially have online play to compete with other users (e.g. similar sites such as draw.io & gartic phone). This site could also have an art training mode with timed pose drawing built in to help users improve their skills. PSI(positive social impact) – helps people have fun and develop their art skills.

Objectives:

- conduct necessary research to identify what is needed to implement the application
Within:1 week
- identify all desired features and a full plan for the project Within: 1 week
- develop a simple prototype of the application Within:4 weeks
- Implement a server to enable net play and expand on other features beyond the scope of the demo Within: 5 weeks
- conduct thorough testing throughout development and conduct user testing once there is a workable demo: Within: 5 weeks

Q.3 Research

In order to equip myself with the skills necessary to complete this project, I have identified several potentially useful sources of information.

1. https://www.linkedin.com/learning/javascript-essential-training?trk=learning-topics_trending-courses_related-content-card&upsellOrderOrigin=default_guest_learning

A potential source for learning about writing JavaScript.

2. <https://www.netacad.com/courses/javascript-essentials-1?courseLang=en-US>

An alternate source of learning about JavaScript.

3. [Testing to make sure your website is safe | LinkedIn Learning](#)

If the website is to be implemented online, then it is important that its done so without compromising the user's security, therefore it may be important to learn about and incorporate security practises.

4. [What is the best way to use AWS? | LinkedIn Learning](#)

Amazon Web Services may be worth considering for future development of the website beyond the scope of this project.

5. [Why should you learn CSS? | LinkedIn Learning](#)

Learning about CSS (Cascading Style Sheets) is essential in order to make the website visually appealing and palatable to a modern audience.

The JavaScript course may be the most important for my project's needs as it is essential for the completion of the task and is comparatively the weakest of my skills when it comes to the main 3 components, HTML, CSS and JavaScript.

Task 2: Project management

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Q1. Project Scope

The due date for this project is in the first week of May meaning there will be approximately 8 weeks for development. With proper time management this should be more than enough time to complete the planned project.

Proposed solution: develop the web application using HTML, JavaScript and CSS – hosting a website indefinitely may be beyond the scope of the project and unviable, but a simple demo can be tested using a smaller network. The main layout and appearance of the website will be defined by HTML and CSS, whereas JavaScript will be needed to handle the canvas and score tracking implementation. This can easily be implemented using any computer and the necessary sources to learn how to produce JavaScript.

The stages of this project can be divided into 3 main stages: Planning and Preliminary Research, Implementation and QA (Quality Assurance).

Project Start	11th Feb
Project Planning & Design	4 th Feb – 25 th Feb
Research JavaScript	23 rd Feb – 8 th March
Research HTML & CSS	23 rd Feb – 8 th March
Research General Webapp Dev	27 th Feb – 8 th March
Design website layout	6 th – 10 th March
Implement Website layout using HTML and CSS	10 th March – 5 th April
Implement main Canvas system using JS	12 th March – 16 th April
Implement prompt construction system using JS	19 th March – 13 th April
Implement score tracking using JS	25 th March – 16 th April
Make the website look good (more CSS)	16 th April – 20 th April
Implement Demo Server	1 st April – 20 th April
Solo testing + first bug fixing pass	16 th April – 23 rd April
More testing + more bug fixing	23 rd April – 30 th April
Polish up the rough edges, fix bugs and make miscellaneous improvements	30 th April – 7 th May
Project End	8th May

Fig.1 Above is a simple timeline scheduling start and end dates for important components of the project. Tasks are colour coded based on their nature.

Q2.Gantt Chart

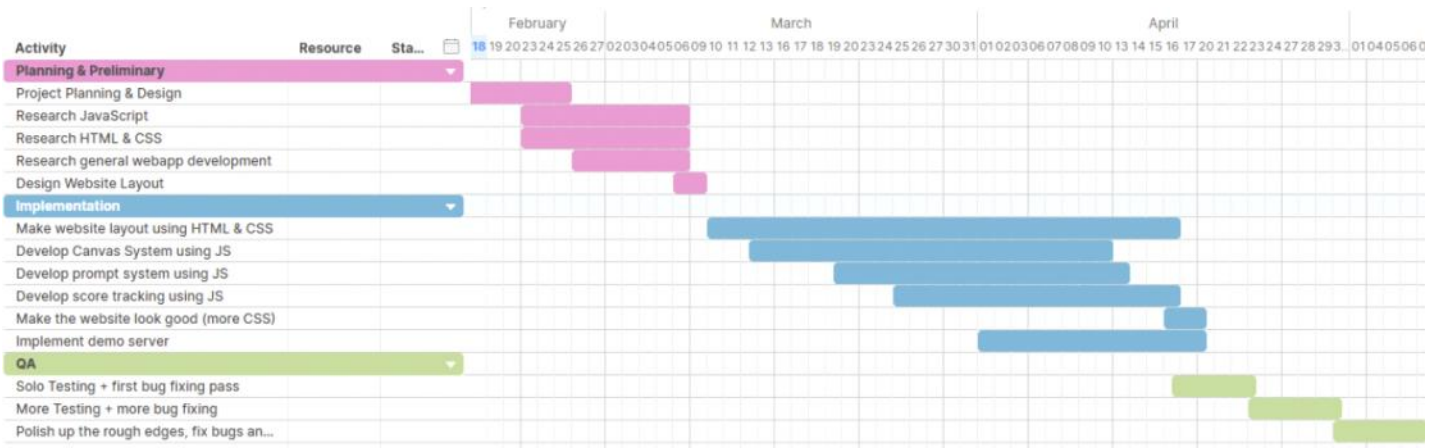


Fig 2. Above is a Gantt Chart version of the timeline showing how tasks overlap as they approach completion made using <https://plan.tomsplanner.com/> [6]

Q3. Risks and Challenges

When the development of this project begins in full, there may be a number of challenges and risks that need to be accounted for in order to minimize their impact.

Running out of time	Medium	Assignment date imposes a time limit - Create a schedule and timeline that is flexible (wide ranges) and allows the project to be completed before the due date.
Hard to diagnose bug	Medium	During QA bugs may arise that are difficult to discern the origin of. As a precaution include lots of commenting and test variables to help track what is going on in each part of the script.
Forgetting the programming	Low	Due to the long development time, it may be easy to forget what part of the program is for when returning to it during QA. Include plenty of explanatory comments to prevent this.
Loss of Data	Severe	Should a loss of important data occur e.g. loss of html pages or JS scripts due to accidental deletion, or loss assignment reports due to device damage. Make regular cloud backups to minimize this issue.
JavaScript Difficulties	Medium	Due to my lack of experience with JavaScript and making web applications, I may encounter difficulties. This can be countered by placing extra emphasis on it during the allotted research time.
Browser conflicts/limitations	Severe	Due to the program being web-based, people may want to play from different browsers. Testing should be done on multiple popular browsers (Google Chrome, Firefox, Edge). Adjustments may need to be made to ensure that the experience is the same regardless of browser choice.
Poor performance/latency	Low	Stick to using well established HTML canvas features, latency isn't too important even for multiplayer as there wouldn't be any comparison until the end.

Fig 3. A risk table assessing the threat level of various risks to the project and suggesting potential contingencies.

Task 3: Project Development Method & Design Work

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Q1. Describe a Suitable Development Method

For this project, a Feature Driven Development (FDD) agile approach may be the most suitable development methodology. Agile development methodologies are a more modern approach to software development where progress is iterative and driven by cycles of prototyping and user feedback. In an agile project, the overall implementation is allowed to differ from initial plans as the ideas are refined by feedback and the development process. There are many different types of agile development methodologies.

FDD in particular entails identifying the necessary features of a product and assigning different teams to focus on different features at different times[3], this method allows for the development of a high-quality product with end users in mind. As this is a solo project, simply segmenting the project into feature-based development timeslots would be suitable. The FDD approach is suitable for this project because it can easily be split into different features (HTML page, CSS, the main JavaScript canvas, its scoring system, the prompt generation system) that act independently of each other and can be developed without significantly interfering with the progress of another task.

Q2. Document and Describe some Design Work

REQ1	Drawing Canvas	The application must have a canvas that users can draw on under a timer.	High
REQ2	Prompt Generation	The application must have a routine for prompting the user on what to draw, both as a daily 'main' prompt and on user demand.	High
REQ3	Challenges	More restrictive modes such as giving the user a randomized palette of colours to choose from.	Medium
REQ4	Share Button	There should be a simple one click button to copy the image along with the challenge info to the user's clipboard for easy sharing.	Low
REQ5	Multiplayer	The application should include online multiplayer with random users.	Medium
REQ6	Scoring System	Design a scoring system to determine who 'wins'.	Low
REQ7	Web hosting	May not be needed for the prototype but finding a reasonable and affordable way to host the project for future development would be essential for it to be a usable website.	High
REQ8	Mobile Version	Mobile browser interfaces are significantly different from desktop browsers, in order to support mobile users, it may be worth making a mobile version of the page.	Medium

Fig4. A simple requirement specification table showing the level of priority for various required

features of the project. Each feature is categorised based on the priority of its implementation.

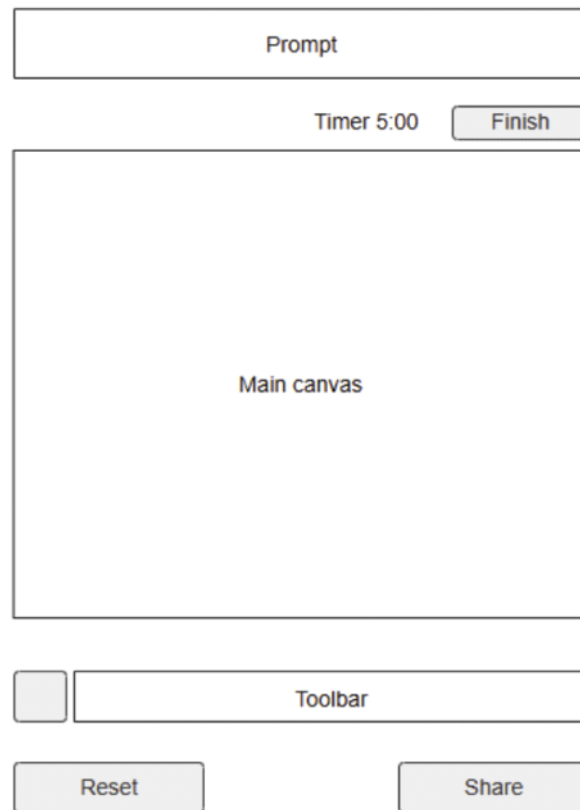


Fig.5 A simple mock-up of what the website's main/ daily challenge may look like, made using <https://app.moqups.com/> [4]

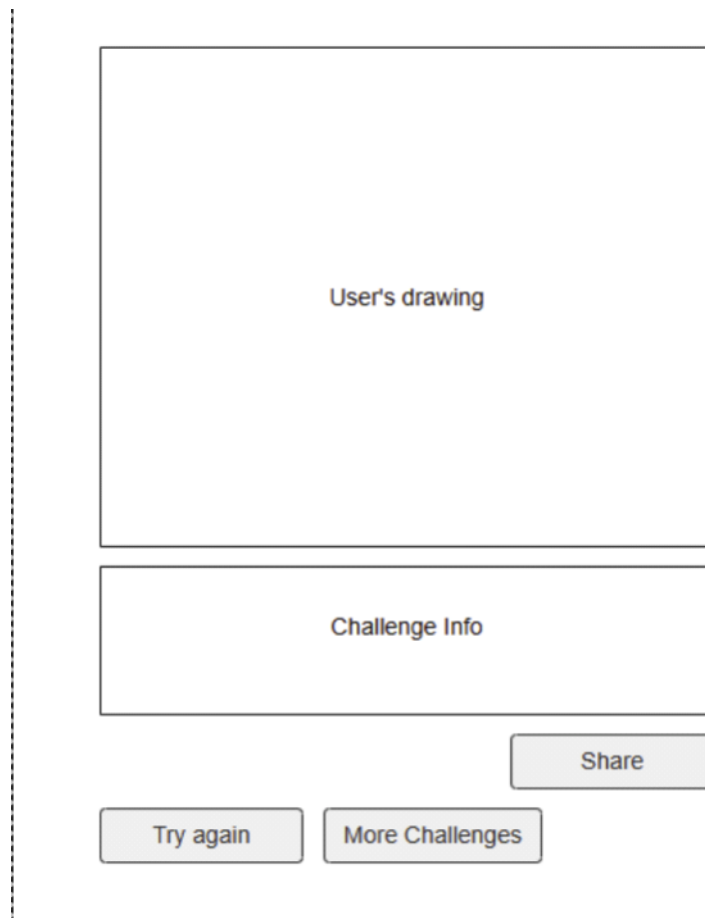


Fig.6 A mock-up of the website's results page after the user has completed a challenge

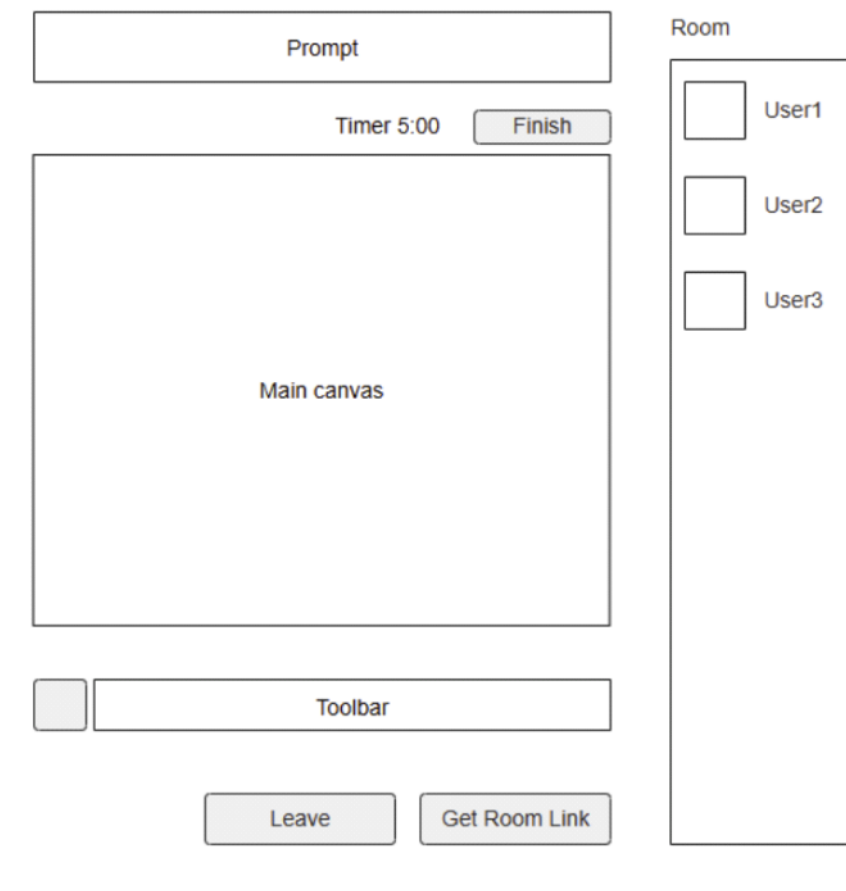
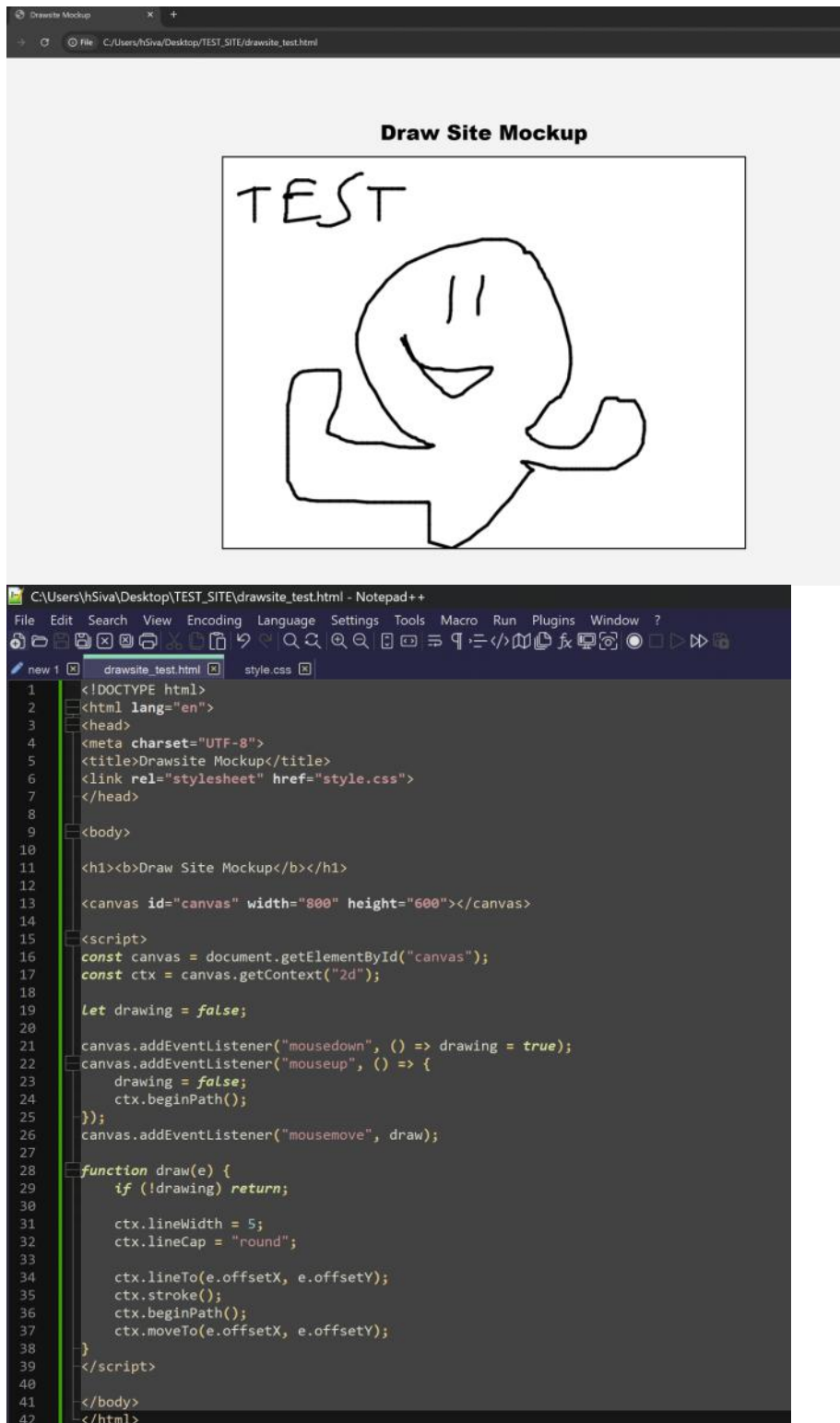
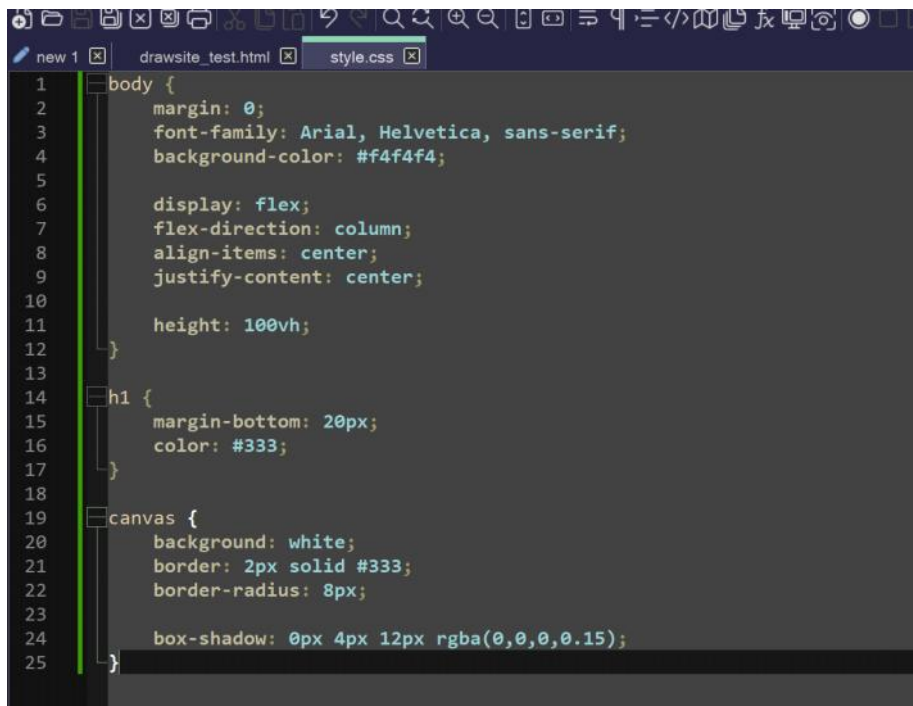


Fig.7 A mock-up of the website's multiplayer mode

Q3. Use Several screenshots with brief description to document some initial practical implementation work for your project.



A screenshot of a code editor with a dark theme. The editor has three tabs at the top: 'new 1', 'drawsite_test.html', and 'style.css'. The 'style.css' tab is active, showing CSS code. The code is as follows:

```
1 body {  
2   margin: 0;  
3   font-family: Arial, Helvetica, sans-serif;  
4   background-color: #f4f4f4;  
5  
6   display: flex;  
7   flex-direction: column;  
8   align-items: center;  
9   justify-content: center;  
10  
11   height: 100vh;  
12 }  
13  
14 h1 {  
15   margin-bottom: 20px;  
16   color: #333;  
17 }  
18  
19 canvas {  
20   background: white;  
21   border: 2px solid #333;  
22   border-radius: 8px;  
23  
24   box-shadow: 0px 4px 12px rgba(0,0,0,0.15);  
25 }
```

Fig.7 Above is a screenshot of a simple demo page with a usable drawing canvas, but no other features as well as its accompanying HTML and CSS scripts. In-page JavaScript allows the site to wait for user input and update the canvas accordingly to mouse presses and movements.

References:

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[1] "Unit 1 Topic 1: How innovation shapes the world.

<https://moodle.uwtsd.ac.uk/mod/scorm/view.php?id=460520> (accessed Feb. 11, 2026).

[2] Hans Rosling, "Hans Rosling's 200 Countries, 200 Years, 4 Minutes - The Joy of Stats - BBC Four," *YouTube*. Nov. 26, 2010. Available: <https://www.youtube.com/watch?v=jbkSRLYSojo>

[3] Harness, "Getting Started with Feature Driven Development: A Comprehensive Guide | Harness," *Harness.io*, Apr. 21, 2025. <https://www.harness.io/harness-devops-academy/getting-started-with-feature-driven-development-a-comprehensive-guide>

[4] "Online Mockup, Wireframe & UI Prototyping Tool · Moqups," *app.moqups.com*. <https://app.moqups.com>

[5] Kevin Powell, "The only tags you need when first learning HTML," *YouTube*, Aug. 08, 2023. https://www.youtube.com/watch?v=K_EVuLegRZ0 (accessed Mar. 03, 2026).

[6] *Tomsplanner.com*, 2020. <https://plan.tomsplanner.com/>

[7] "JavaScript Essentials 1: A Free Course from Cisco," *Netacad.com*, 2024. <https://www.netacad.com/courses/javascript-essentials-1?courseLang=en-US>

[8] C. Truong, "Why should you learn CSS? - CSS Essential Training," *LinkedIn*, Oct. 21, 2025. <https://www.linkedin.com/learning/css-essential-training-26985268/why-should-i-learn-css?u=77966930> (accessed Mar. 09, 2026).

Appendix:

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The image displays three sequential screenshots of the Cisco Academy JavaScript Essentials 1 course interface, showing the course outline and content for different sections.

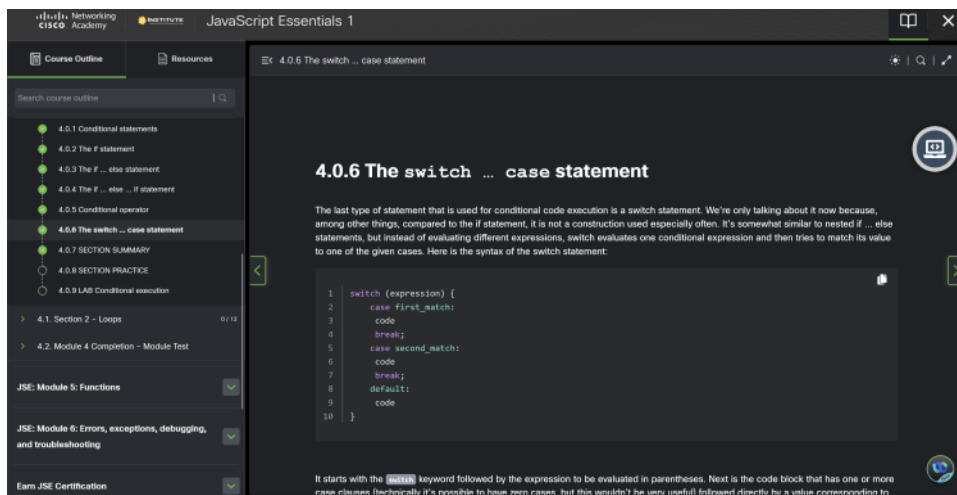
Top Screenshot: The interface shows the course outline on the left, with Section 1.3.9 highlighted. The main content area displays a browser window with a yellow background and a console log showing "Hello, World!". Below the browser window, there is a text box explaining that the console should display the specified text in any browser, including Chrome on Windows.

Middle Screenshot: The interface shows the course outline on the left, with Section 2.0.9 highlighted. The main content area displays the title "2.0.9 A brief word about functions" and a paragraph explaining that functions are used to perform specific tasks. It also includes a code block for a simple function definition:

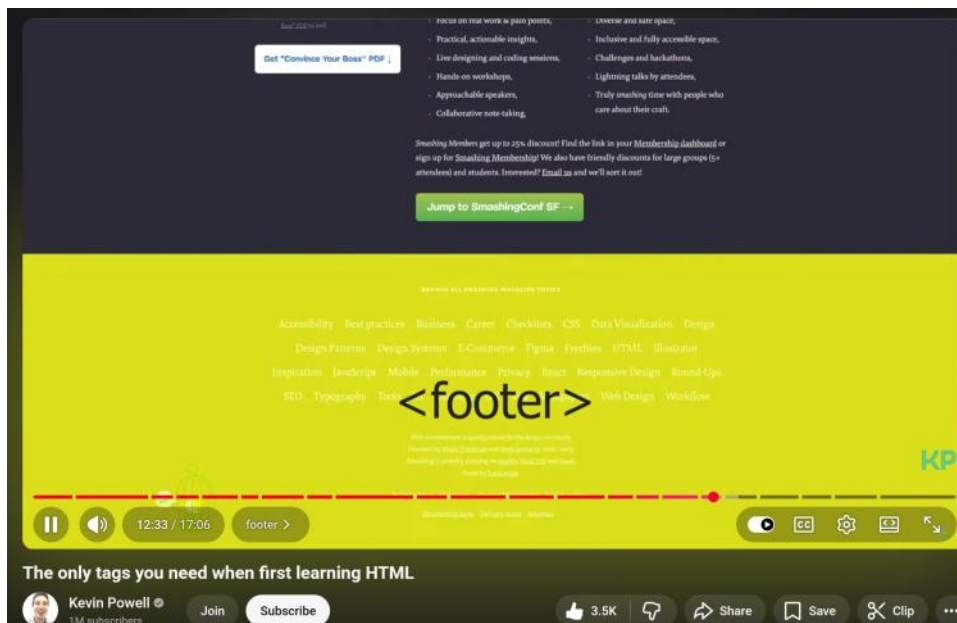
```
1 function testFunction() {  
2   console.log("Hello");  
3   console.log("World");  
4 }
```

Bottom Screenshot: The interface shows the course outline on the left, with Section 3.2.5 highlighted. The main content area displays the title "3.2.5 LAB Interaction" and a paragraph explaining the objectives of the lab. It also includes a code block for a simple function definition:

```
1 let contacts = [  
2   { name: "Maxwell Wright",  
3     phone: "(0191) 719 6495",  
4     email: "Curabitur.egetas.nunc@nonummyac.co.uk",  
5   }, {  
6     name: "Raja Villarreal",  
7     phone: "9866 398 2895",  
8     email: "posuere.valutatis@ad.com",  
9   }, {  
10    name: "Helen Richards",  
11    phone: "9999 1111",  
12    email: "libero@conwallis.edu",  
13  }];
```



Out of the courses outlined in the research section, I ended up going with Cisco Networking Academy's JavaScript Essentials[7] course as it is very beginner friendly and I am already familiar with the website.



The YouTube video 'The only tags you need when first learning HTML'[5] by Kevin Powell was also very useful as a refresher for HTML I'd learnt previously but had not put into practise in a while.