

PORTFOLIO

Student Version



ICTWEB441

Produce basic client-side script

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RTO Works

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IT Works is a series of training and assessment resources developed for qualifications within the Information and Communications Technology Training Package.



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错误！未定义书签。

Student name:	Leo
Assessor:	Chuan
Date:	4/6/2024
Business this assessment is based on:	Simulation pack

Section 1: Web document requirements

Complete this section *before* the meeting with the client.

<p>Website information</p> <p><i>Outline the client requirements for the website based on your initial review of the documentation. Illustrate your answer with one actual RTO website. Provide the actual RTO URL and list at least 5 accomplished features from that website which your will incorporate into your website.</i></p> <p><i>Student website should model this actual RTO website.</i></p>	<p>Overview of website information</p> <p>In the absence of an actual RTO URL provided, I will simulate an actual RTO website requirement based on the requirements in the documentation ICTWEB441 Simulation Pack3a.pdf, and assume its general structure and functionality. Please note that the following is fictitious, but will try to get as close as possible to the functionality and layout of the actual RTO site.</p> <p>Simulation of an actual RTO website (fictitious)</p> <p>Let's say there is a fictitious RTO website with a URL of https://www.sampleito.edu.au (this URL is only an example, not real). Here are at least 5 features that we can incorporate into your website from this website (if it were real):</p> <p>Course List & Detail Page:</p> <p>On the https://www.sampleito.edu.au/courses page, a list of IT courses is presented, each with a separate detail page (e.g. https://www.sampleito.edu.au/courses/ict60220) that contains details such as course overview, course objectives, course content, teaching team, course outline, entry requirements and tuition fees.</p> <p>Merge function: Implement similar course lists and detail pages in your website, including all necessary course information.</p> <p>Student Registration System:</p> <p>Students can register for the courses they are interested in directly on the website, fill out the registration form, submit personal information and learning needs.</p> <p>Merge function: Design and implement a student registration form with at least 6 fields and validate it with JavaScript.</p> <p>Resource Package Ordering System:</p> <p>In addition to course registration, the site allows other RTOs or individuals to order training resource packages. These resource packs contain course materials, assessment tools, and more.</p> <p>Merge function: Develop a resource package page that lists the resource packages that can be ordered, and implement the shopping cart function, allowing users to add multiple resource packages to the shopping cart and complete the order through the checkout button.</p>
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	<p>About Us Page:</p> <p>Introduce the history, vision, mission, teaching philosophy, faculty and latest development of RTO.</p> <p>Merge feature: Include an About Us page on your website detailing the school.</p> <p>Student Project Presentation:</p> <p>There is a dedicated project page on the website to showcase students' excellent work and project experience as a showcase for teaching results.</p> <p>Merge Feature: Create a project page with layouts and styles to present students' projects in an engaging way.</p> <p>conclusion</p> <p>By simulating an actual RTO website, we identified at least 5 key features that will be incorporated into your website to meet the specific needs of our customers. In the actual development process, you can adjust and optimize according to the specific situation to ensure that the website not only meets the business needs of RTOs, but also has a good user experience.</p>
<p>Procedures for developing websites.</p> <p><i>Outline the procedures you need to follow to produce websites. This must include language in which the website is to be developed, cyber security procedures and protocols to be followed in relation to website development. (list at least 5 procedures, 3 tools and 3 techniques)</i></p>	<p>An overview of the website builder program</p> <p>In order to make a well-functioning, safe and secure website, there are a series of procedures that need to be followed, and the appropriate tools and techniques need to be used. Here's what process I'll follow to make the site, including the language used, the relevant cybersecurity procedures and protocols, and the specific tools and techniques.</p> <p>1. Website production procedures</p> <p>Demand Analysis:</p> <p>Communicate with customers to clarify the functional requirements, design requirements, and user experience goals of the website.</p> <p>Determine the tech stack and development tools you need for your website.</p> <p>Planning & Design:</p> <p>Work out the overall structure and page layout of your website.</p> <p>Design the visual style and interactive elements of your website.</p> <p>Determine how the content of the site is organized and categorized.</p>

	<p>Front-end development:</p> <p>Use front-end technologies such as HTML, CSS, and JavaScript to build your website's page structure and style.</p> <p>Achieve interactive functions and dynamic effects of the website.</p> <p>Ensure the compatibility and responsiveness of the website on different devices and browsers.</p> <p>Back-end development:</p> <p>Choose the right backend development language (e.g., Python, PHP, Java, etc.) and framework.</p> <p>Implement the data storage, processing, and business logic of the website.</p> <p>Build the API interface and backend management system of the website.</p> <p>Testing & Deployment:</p> <p>Conduct comprehensive functional, performance, and security testing of your website.</p> <p>Fix issues and vulnerabilities found during testing.</p> <p>Deploy the website to the server and do the final debugging and optimization.</p> <p>Second, the tools used</p> <p>Visual Studio Code: A powerful code editor that supports multiple programming languages and development frameworks, and provides rich plug-ins and extensions.</p> <p>Git: A distributed version control system that manages the source code and documentation of a website, facilitating team collaboration and version backtracking.</p> <p>Postman: An API testing tool for testing the backend interface and API functionality of a website to ensure the correct transmission and processing of data.</p> <p>3. Techniques used</p> <p>Responsive design: Use technologies such as CSS media queries and Flexbox layouts to achieve responsive display of your website across different screen sizes and devices.</p> <p>Ajax technology: Asynchronous JavaScript and XML technology are used to achieve partial refresh and data interaction on the page to improve user experience.</p> <p>SSL/TLS encryption: The SSL/TLS protocol is used to encrypt the transmission of the website to protect the security and privacy of user data.</p>
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	<p>4. Cybersecurity protocols</p> <p>In order to protect the website from risks such as attacks and data breaches, I will follow the following cybersecurity protocols:</p> <p>Use the HTTPS protocol: Ensure that all transmissions of the website are encrypted via the HTTPS protocol to prevent data from being stolen or tampered with during transmission.</p> <p>Regular updates and maintenance: Keep your website safe by updating your website's code and plugins, fixing known security vulnerabilities, and keeping your website secure.</p> <p>Backup and recovery plan: Back up your website's data and code regularly, and develop a disaster recovery plan in case of possible data loss or system failure.</p> <p>By following the above procedures, using the appropriate tools and techniques, and following cybersecurity protocols, I will be able to produce a fully functional, safe and secure website.</p>
<p>Further information</p> <p><i>What else do you need to find out from the client in order to produce their website?</i></p> <p><i>Make notes on this to use at your meeting.</i></p> <p><i>List at least 5 questions for discussion and justify the needs and methods to acquire these answers.</i></p>	<p>Questions asked:</p> <p>Target Audience & User Needs:</p> <p>Question: Who is your main target audience? What are their main needs to access a website?</p> <p>Requirements: Understand the user groups (e.g., students, other RTO institutions, etc.) and their specific needs, so as to design a website structure and functionality that is more in line with their usage habits.</p> <p>Methods: Obtained through interviews, questionnaires, or analysis of existing user data.</p> <p>Details of course and resource packs:</p> <p>Question: Please provide details of all IT courses and resource packs, including course outlines, teaching content, content included in resource packs, etc.</p> <p>Requirements: This information is critical to designing course pages and resource pack ordering systems to ensure that users are fully informed and select the right courses and resources.</p> <p>Method: Provide documentation from the client or present it directly at the meeting.</p> <p>Payment & Logistics Process:</p> <p>Q: What are your specific requirements and processes for payment methods and fulfillment?</p> <p>Requirements: Understand the choice of payment gateway, order processing process, shipping method, etc., so that you</p>

	<p>can integrate the appropriate payment and logistics functions.</p> <p>Methodology: Discuss and identify the most suitable payment and logistics partners and their implementations.</p> <p>Branding & Visual Style:</p> <p>Q: What are your specific requirements or preferences for the branding and visual style of your website?</p> <p>Requirements: Ensure that the website design is consistent with the customer's brand image, and enhance the brand image and user experience.</p> <p>Method: Provide a brand guide or design reference for the customer, or work with our designers to develop a visual design plan.</p> <p>Website Maintenance & Updates:</p> <p>Q: What are your plans and requirements for future maintenance and content updates for your website?</p> <p>Requirements: Understand customer expectations for long-term maintenance and updates of the website so that you can develop maintenance plans and strategies accordingly.</p> <p>Methodology: Discuss and determine how often maintenance, how content will be updated, and whether training or support is required.</p> <p>Useful assumptions and ways to fill the information gap:</p> <p>Let's say your target audience is predominantly students:</p> <p>If the client doesn't clearly state the target audience, we can assume that students are the primary user group. This helped us design a more concise navigation structure, easy-to-understand course presentations, and interactive learning tools.</p> <p>Let's assume that the payment process follows industry standards:</p> <p>When the customer does not specify the payment requirements, we can assume that common payment gateways (such as PayPal, Stripe, etc.) and secure payment processes are adopted. This helps us quickly integrate payment functions and ensures the security and stability of transactions.</p> <p>Assuming the brand's visual style is consistent with existing collateral:</p> <p>If the client does not provide detailed brand visual style requirements, we can assume that the website design should be consistent with their existing promotional materials (e.g., logo, color scheme, fonts, etc.). This helps to maintain consistency and coherence in the brand image.</p>
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Complete this section *following* the meeting with the client, based on your observations.

<p>Client requirements</p> <p><i>Outline the client requirements for the website based on your meeting with the client.</i></p> <p><i>List at least 5 questions for discussion, then provide possible answers in Australia context. Include resources, URL to support your answer. (For instance, resource requirements and possible difficulties)</i></p>	<p>(1) Detailed display and purchase process of courses and resource packages</p> <p>Question: The customer wanted a website that would showcase all IT courses and resource packages in detail and allow users to purchase them online. How do you design such a display and purchase flow?</p> <p>Answer: We can design a course page that lists all the courses and creates a detail page for each course, which contains the course outline, teaching objectives, teaching resources, etc. At the same time, we can integrate a shopping cart system that allows users to select and purchase resource packages. In Australia, we can use popular e-commerce platforms such as WooCommerce or Shopify to achieve this.</p> <p>Source: WooCommerce (https://woocommerce.com/), Shopify (https://www.shopify.com.au/)</p> <p>Possible challenges: Ensuring that the descriptions of the courses and resource packages are accurate, and that the payment process for the shopping cart system is smooth.</p> <p>(2) Responsive website design</p> <p>Problem: Customers expect websites to look good on different devices and screen sizes. How do you achieve responsive design?</p> <p>Answer: We can use the media query capabilities of HTML5 and CSS3, as well as Flexbox or Grid layouts to create responsive websites. This way, users can get a good user experience whether they're browsing on a desktop, tablet, or phone.</p> <p>Source: MDN Web Docs (https://developer.mozilla.org/en-US/docs/Learn/CSS/CSS_layout/Responsive_Design)</p> <p>Possible difficulty: Adequate testing on different devices and browsers to ensure compatibility.</p> <p>(3) Secure payment system</p> <p>Question: The customer needs a secure payment system integrated into the website to process the purchase of courses and resource packs. How to choose and implement such a payment system?</p> <p>Answer: We can choose to use well-known payment gateways such as PayPal or Stripe, which offer secure payment processing services and are widely accepted by merchants and consumers in Australia.</p> <p>Resources: PayPal (https://www.paypal.com/au/webapps/mpp/merchant), Stripe (https://stripe.com/au)</p> <p>Possible difficulty: Make sure that the integration of the payment</p>
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	<p>system works seamlessly with the rest of the website and provides a good user experience.</p> <p>(4) SEO optimization</p> <p>Problem: The client wanted the website to rank high in search engines to attract more potential students. How to achieve SEO optimization?</p> <p>Answer: We can conduct keyword research, optimize the website's title, description, and keyword tags to ensure that the website content is high-quality and original, and at the same time build external links to improve the authority and visibility of the website.</p> <p>Resources: Google Search Console (https://search.google.com/search-console/about), Moz (https://moz.com/learn/seo)</p> <p>Possible difficulty: Continuously optimize your website to keep your search engine rankings competitive.</p> <p>(5) Regular content update and maintenance</p> <p>Question: The customer plans to update the course content and resource pack on a regular basis and expects the website to easily support these updates. How to design a website structure that is easy to maintain?</p> <p>Answer: We can design a content management system (CMS) like WordPress that allows customers to easily add, edit, and delete course content and resource packages. At the same time, we can provide training and support to ensure that customers are proficient in using the CMS for content updates.</p> <p>Source: WordPress (https://wordpress.org/)</p> <p>Possible difficulty: Ensure that the CMS is easy to use and provide adequate training and support so that customers can complete content updates independently.</p>
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Section 2: Website design, development and testing

Dynamic website design

You are to design the website based on the client's requirements.

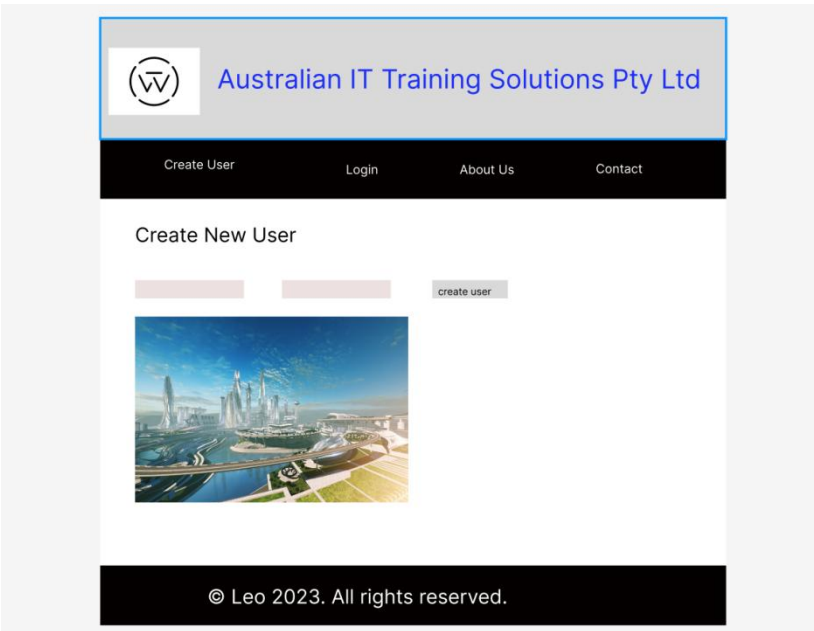
Describe each webpage in few sentences. The rationales and expected outcomes.

Create wireframe in Figma.

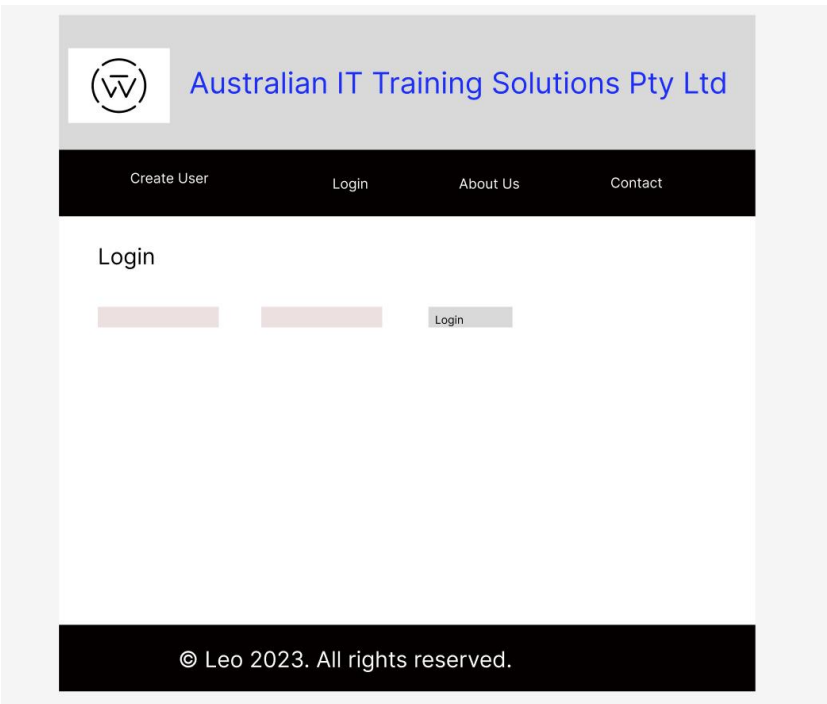
Take screenshots of your wireframes:

1. *Share Figma link.*
2. *Annotate each screenshot and attach screenshots as appendix*

first page



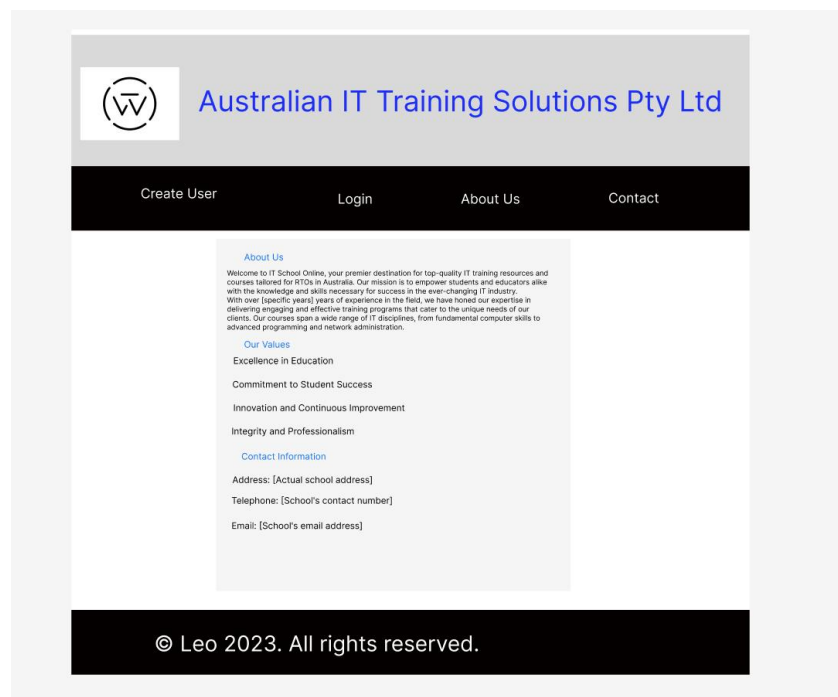
The second page



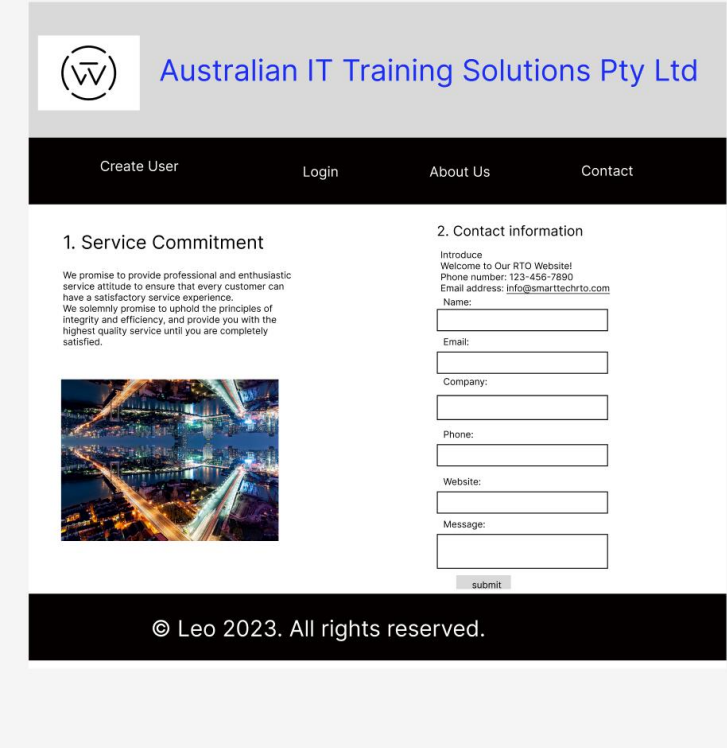
Third page

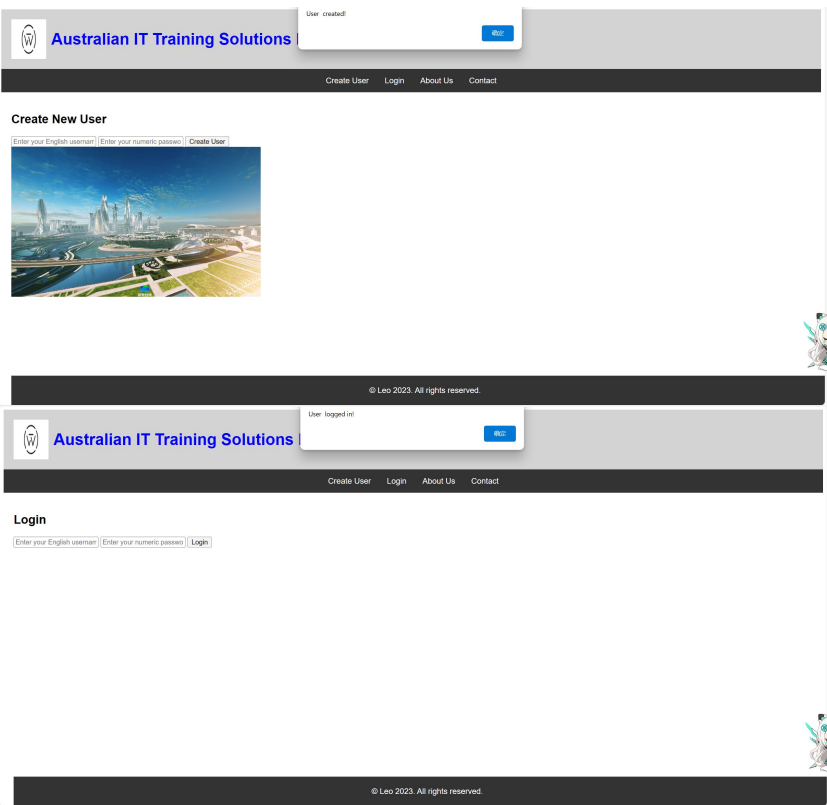


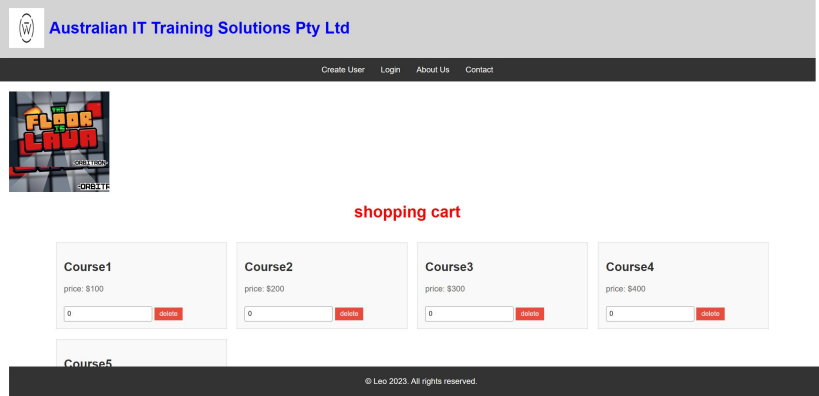
Fourth page




Fifth page

	 <p>Link to Figma pages: https://www.figma.com/design/98PXA0ZvvpYvd9RIZ0uAVC/Untitled?node-id=0-1&t=t8CFksBlq6r24qBb-1</p>
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<p>Scripting</p> <p><i>You are required to develop the website using JavaScript to demonstrate the following features (1) ensures accessibility. (2) form validation, (3) shopping cart (4) dropdown navigation menu (5) error handling (6) to-do list</i></p> <p><i>Take screenshots of your website and attach to the end of this document. Your work should include your coding and interface design. Each screenshot should be readable with appropriate size.</i></p> <p><i>Annotate each screenshot and provide at least 10 JavaScript comments</i></p>	
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	 <p>The webpage will first display the registration interface. Only those who have passed the registration can enter the login interface. Enter the account and password to enter the shopping interface</p>
<p>Cyber Security Procedures and Protocols. <i>Check the website to ensure it is secure and bug free.</i></p> <ul style="list-style-type: none"> • <i>List and describe the test procedures you have undertaken. (at least 5)</i> • <i>The tests should also follow procedures for cyber security. Describe how you have ensured you follow the procedures.</i> • <i>Take 2 screenshots of your work to attach to your portfolio. (as appendix).</i> 	<p>1. Test procedures performed</p> <p>Vulnerability scanning</p> <p>Use automated tools to perform a comprehensive vulnerability scan of your website for possible security vulnerabilities.</p> <p>Focus on common vulnerabilities such as SQL injection, cross-site scripting (XSS), and cross-site request forgery (CSRF).</p> <p>Perform a detailed analysis of the scan results and remediate the vulnerabilities found.</p> <p>Penetration testing</p> <p>Simulate a hacker attack and perform a penetration test on the website to assess its security.</p> <p>Try to infiltrate the website through various means (e.g., password cracking, exploitation, etc.), and record the testing process and results.</p> <p>Based on the test results, fix existing security issues and strengthen the security of your website.</p> <p>Code review</p> <p>Conduct a line-by-line review of the website's source code to ensure its security.</p> <p>The focus is on the handling of sensitive data, the validation of user input, and the handling of errors.</p> <p>Fix security vulnerabilities in your code and optimize your code structure to improve security.</p> <p>Performance testing</p> <p>Perform performance tests on your website to ensure its stability under high load.</p> <p>Simulate a large number of users visiting a website at the same time to test the response time and processing power of the website.</p>

	<p>Optimize your website's performance based on the test results to improve its resistance to attacks.</p> <p>2. Ensure that cybersecurity procedures are followed</p> <p>Follow a secure development process</p> <p>During the website development process, the secure development process is always followed, including the various stages of requirements analysis, design, coding, testing, and maintenance.</p> <p>Consider security at every stage and ensure that all developers are aware of and follow relevant security standards and best practices.</p> <p>Use secure programming techniques</p> <p>In the coding process, secure programming techniques such as parameterized queries, input validation, and error handling are used.</p> <p>Avoid using insecure functions and libraries, and make sure all code is rigorously vetted and tested.</p> <p>Regular updates and maintenance</p> <p>Regularly update your website's code and plugins to fix known security vulnerabilities.</p> <p>Make regular backups of your website and ensure the security of your backup data.</p> <p>Monitor the operational status of your website and identify and address potential security issues in a timely manner.</p> <p>Follow industry standards and regulations</p> <p>Comply with relevant industry standards and regulations, such as PCI, DSS, GDPR, etc.</p> <p>Ensure that the data processing and storage of the website comply with the requirements of relevant regulations and protect the privacy and data security of users.</p>
<p>Feedback</p> <p><i>Document an email to your assessor here, asking for approval of your website. Your email should include:</i></p> <p><i>Github links to your website page and source files (coding)</i></p> <p><i>Document at least 3 lessons learnt.</i></p> <p><i>3 future improvements</i></p>	<p>Answer:</p> <p>Dear Chuan,</p> <p>I have completed the RTO website. Here is the website URL, and links to source codes. My lesson learnt are:</p> <p>I learned how to create a shopping webpage through the website. The first page of the website is the registration interface, the second page is the login interface, the third page is the shopping interface, and the fourth and fifth pages are respectively the website introduction and contact us</p> <p>Link to GitHub pages:https://lvguoqing.github.io/441pro/</p> <p>Link to Figma pages: https://www.figma.com/design/98PXA0ZvvpYvd9RIZ0uAVC/Untitled?</p>

	<p>node-id=0-1&t=t8CFksBlq6r24qBb-1</p> <p>Links to Github source codes: Lvguoqing/441project (github.com)</p> <p>Sincerely</p> <p>Leo</p>
<p>Attach:</p> 	<p>Screenshots <input type="checkbox"/></p>

Last updated: 10 April 2024