RIGA TECHNICAL UNIVERSITY FACULTY OF
COMPUTER SCIENCE AND INFORMATION TECHNOLOGY OF
INSTITUTE OF APPLIED COMPUTER SYSTEMS

COMPREHENSIVE EXERCISE REPORT

APPLIED SYSTEM SOFTWARE

SARL Lem-Cloudtech

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Content

Note : We didn't know our Team Number or Section Number, we couldn't find them, so we used our Team Name.

1. Requirements/Analysis

Week 2

1.1. Journal

The following prompts are meant to aid your thought process as you complete the requirements/analysis portion of this exercise. Please respond to each of the prompts below and feel free to add additional notes.

- After reading the client's brief (possibly incomplete description), write one sentence that describes the project (expected software) and list the already known requirements.
    - Our project is to design and develop a professional and ergonomic website for SARL Lem-Cloudtech that showcases its IT consulting and training services, with a focus on Microsoft's cloud technologies.
        - Display the company's two main activities: IT consulting and training
        - Highlight specialization in Microsoft cloud technology
        - Include a list of training courses with descriptions
        - Showcase past projects
        - Leave the possibility for the client to integrate presentation videos for technical updates
        - Ensure that the design is professional and ergonomic, aligned with the content
        - Provide company details like name address…
- After reading the client's brief (possibly incomplete description), what questions do you have for the client? Are there any pieces that are unclear? After you have a list of questions, raise your hand and ask the client (your instructor) the questions; make sure to document his/her answers.
    - What is the expected number of pages for the website? || "It should have 3 pages: one for all that is proposed by Lem-Cloudtech, another for the legal notice, and the last for our privacy policy."
    - Do you have some design in mind for you website? || "I would like dark tones, that could go well with technologies and quite a simple style, not too cluttered. But if you have ideas that could go with for my site, I am open to them"
    - Do you already have videos for your "Technology Watch" so we can put on the website? || "Not yet, but keep the video section so I might add them later"
- Does the project cover topics you are unfamiliar with? If so, look up the topics and list your references.
    - Topics Unfamiliar
        - AJAX Form Submission : required research to implement asynchronous for handling without page reload
        - Responsive Design with Media Queries : Needed deeper understanding of breakpoints for mobile/desktop compatibility
        - PHP Backend Integration : Learned to configure send_email.php for the form processing
    - References Used
        - AJAX : MDN Web Docs : https://developer.mozilla.org/en-US/docs/Learn_web_development/Core/Scripting/Network_requests

        - CSS Media Queries : W3Schools : https://www.w3schools.com/css/css_rwd_mediaqueries.asp
        - PHP Mail Function : PHP Manual : https://www.php.net/manual/en/function.mail.php
        - Accessibility : WebAIM : https://webaim.org/techniques/formvalidation/
- Describe the users of this software (e.g., small child, high school teacher who is taking attendance).
    - Business clients seeking IT consulting services
    - Individuals or HR representatives looking for professional IT training
    - Returning clients exploring new training opportunities or recent projects
    - Lem-Cloudtech who can update site content
- Describe how each user would interact with the software
    - Business clients: Navigate to consulting section, view past projects and contact the company
    - Individuals Read course descriptions and possibly contact for enrollment
    - HR representatives: Use the site ti evaluate training options for staff development
    - Company staff: Verify that everything is ok and in right place after changing the code
- What features must the software have? What should the users be able to do?
    - 3 different pages for the main focus of the website, for the legal notice and the privacy policy
    - Services section split into Consulting and Training
    - Project portfolio section with summaries
    - Contact page or inquiry form
    - Responsive design for different screen sizes
- Other notes:
    - Clarity in the code so SARL Lem-Cloudtech can make changes easily

1.2. Software Requirements

The project is to design and develop a professional and ergonomic website for the company SARL Lem-Cloudtech, which is specialized in IT consulting and training, with a particular expertise on Microsoft cloud technologies. The main objective of this website and our project is to clearly present the company's two services, while highlighting its expertise in Microsoft technologies. The website should enable the company to promote its training programs, showcase completed projects, and eventually add videos related to technology watch. The design of the website should have a modern, sleek and tech-oriented identity, in line with our client's expectations: dark tones, a clean layout and easy readability. The website will be structured around three pages. A main page with all key information (services, projects, videos, contact form), a legal notice page and a privacy policy page.

The site must include a section dedicated to the company's IT consulting services as well as a separate section presenting the available training programs. In this section should be highlighted the company's specialization in Microsoft cloud technologies, such as Azure, Microsoft 365 or other related tools. A dedicated section will showcase completed projects, offering a brief summary of past missions to demonstrate Lem-Cloudtech's experience. There also must be a space reserved for future video content

focused on technology monitoring, even though no videos are available at the moment, so the company can add them as they want.

To ensure effective communication with visitors and potential clients, a contact form must be integrated into the site. The site must be responsive, working smoothly on all types of devices like desktop, tablet or mobile phones, offering an optimal user experience. The source code should be clean and well-structured so that Lem-Cloudtech can update content when needed.

Target users of the site include business seeking IT consulting services, individuals or HR professionals interested in staff training, returning customers looking for a new training opportunity or exploring completed projects, as well as Lem-Cloudtech itself for reviewing or updating the website content. Each type of user should be able to easily access the information relevant to them: business clients will explore consulting services and previous projects, prospective learners will view the available training programs, and internal staff will need clear and editable source code to manage the site efficiently.

2. Black-Box Testing

Instructions: Week 4

2.1. Journal

Remember: Black box tests should only be based on your requirements and should work independent of design.

The following prompts are meant to aid your thought process as you complete the black box testing portion of this exercise. Please review your list of requirements and respond to each of the prompts below. Feel free to add additional notes.

- What does input for the software look like (e.g., what type of data, how many pieces of data)?
    - Contact form data : name (text), email (text, valid email), message (text)
    - Navigation actions (clicks or taps on menu items or link)
    - Device details for responsive layout
- What does output for the software look like (e.g., what type of data, how many pieces of data)?
    - General website content:
        - Company information
        - Description of IT consulting services
        - List of training courses
        - Project summaries
        - "Technology Watch" section with future videos
        - Legal notice page
        - Privacy policy page
    - Contact form feedback:
        - Success message, the message has been sent
        - Error message, not valid email, all the field are not completed
    - Visual outputs: Success message, the message has been sent
        - Display of videos, if added later
        - Static images in the background
        - Page layout adapting responsively
    - Page content that changes when we click on navigation links
    - Hover effects, on buttons for example
- What equivalence classes can the input be broken into?
    - Contact form
        - Name
        - Email
        - Message
    - Devices types for the responsive
        - Desktop sizes
        - Tablet sizes
        - Phone sizes
- What boundary values exist for the input?

    - Name on the contact form : max 100 characters
    - Email on the contact form : valid format email like user@example.com
    - Message on the contact form : min 10 characters and max 1000 characters
- Are there other cases that must be tested to test all requirements?
    - To click on each menu item to see if it loads correctly the corresponding page
- Other notes:
    - No other notes

2.2. Black-box Test Cases

Use your notes from above to complete the black-box test plan section of the formal documentation by writing black box test cases (other than actual results since no program currently exists). Remember to test each equivalence class, boundary value, and requirement.

Test ID	Description	Expected Results	Actual Results
T01	Submit contact form with all valid inputs	Success message: "Message sent"	
T02	Submit contact form with empty fields	Error message "All fields are required"	
T03	Submit contact form with invalid email	Error message: "Enter a valid email address"	
T04	Submit contact form with name <100 charcaters	Success message: "Message sent"	
T05	Submit contact form with name >100 charcaters	Error message: "Name too long"	
T06	Submit contact form with message >10 and <1000	Success message "Message sent"	
T07	Submit contact form with message <1à or >1000	Error message: "Message too short" or "Message too long"	
T08	Click on "Legal Notice" link	Legal Notice page loads	
T09	Click on "Privacy Policy" link	Privacy Policy page loads	
T010	Hover over a button	Visual effect appears while hovering	

3. Design

Instructions: Week 6

3.1. Journal

Remember: You still will not be writing code at this point in the process.

The following prompts are meant to aid your thought process as you complete the design portion of this exercise. Please respond to each of the prompts below and feel free to add additional notes.

- List the nouns from your requirements/analysis documentation.
    - Website
    - Page
    - Title
    - Service
    - Training
    - Course
    - Consulting
    - Project
    - Video
    - Description
    - Content
    - Contact form
    - Name
    - Email
    - Message
    - Company
    - Address
    - User
    - Client
    - Layout
    - Section
    - Privacy Policy
    - Legal Notice
- Which nouns potentially may represent a class in your design?
    - Page
    - Service
    - Training
    - Consulting
    - Project
    - Video
    - Contact form
    - Privacy Policy
    - Legal Notice
    - Company
- Which nouns potentially may represent attributes/fields in your design? Also list the class each attribute/field would be a part of.
    - Contact form <= Name, Email, Message

- Legal Notice <= Page, Company <= Name, Address, Contact
- Consulting <= Description for User/Client
- Training <= Description for User/Client
- Project <= Section for each project, Description
- Page <= Layout, Title, Content

- Now that you have a list of possible classes, consider different design options (***lists of classes and attributes***) along with the pros and cons of each. We often do not come up with the best design on our first attempt. Also consider whether any needed classes are missing. These two design options should not be GUI vs. non-GUI; instead you need to include the classes and attributes for each design. Reminder: Each design must include at least two classes that define object types.
  - First Design:
    - Classes:
      - Page ➔ Attributes : title, content, layout
      - Service (parent class) ➔ Attributes : Title, Description
      - Training (from Service) ➔ Attributes : Course List, Description
      - Consulting (from Service) ➔ Attributes: Description
      - Project ➔ Attributes: List, Title, Description
      - Video ➔ Attributes : Title, url
      - Contact Form ➔ Attributes : Name Email, Message
      - Legal Notice (other page) ➔ Company ➔ Attributes : Name Address, Email
      - Privacy Policy
    - Pros:
      - Clean separation of concerns of the different parts what the client want
      - If need to modify the position of everything, it's easy because it's structured, so we can move a class, a feature… if needed.
    - Cons:
      - Maybe a little bit complex to do this for the whole project, if for example Legal Notice, or Privacy Policy pages are so simpler.

  - Second Design:
    - Classes:
      - Website ➔ Attributes : Company Info, Pages
      - Page ➔ Attributes : Title, Content
      - Content Block ➔ Attributes : heading, body text, media
      - Service ➔ Attributes : Name, Description
      - Project ➔ Attributes : Name, Description
      - Video ➔ Attributes : url, Description
      - Form ➔ Attributes : fields, is valid or not valid
    - Pros :
      - Simpler to implement, like everything is a page or a block
    - Cons :
      - Less expressive in code cause if everything is a code or a block it's not well structured
      - No distinction between Training and Consulting, whereas it's important to separate them according to the customer
- Which design do you plan to use? Explain why you have chosen this design.

We plan to use the First Design for its clarity, it's structured, clearly separates logic and it seems that it would be what the customer had in mind.

- List the verbs from your requirements/analysis documentation.
    - Display
    - Highlight
    - Include
    - Showcase
    - Integrate
    - Contact
    - Navigate
    - View
    - Read
    - Evaluate
    - Verify
    - Send
    - Promote
    - Verify
    - Add
    - Work
    - Update
    - Access
    - Change
- Which verbs potentially may represent a method in your design? Also list the class each method would be part of.
    - Display Services ➔ Page/Service : displays the consulting and training sections
    - Highlight Expertise ➔ Service : highlights the company's specialization in Microsoft cloud technologies
    - Show Project ➔ Project : displays summaries and description of completed projects
    - Add Video ➔ Video : allows future integration of videos in the tech watch section
    - Send Message ➔ Contact Form : handles from submission and sends a message
    - Verify Form ➔ Contact Form : checks that all fields are filled correctly
    - Navigate to ➔ User/Page :handles the navigation by the user between the pages
    - View Context ➔ User : allows the users to see different sections of the site
- Other notes:
    - We haven't use all the verbs because some may not directly translate into methods but represent expected behavior by the system. For example the verb Work, is for work smoothly with all devices size. And this is not a method but will be coded via CSS.

3.2. Software Design

Class Description of the UML Diagram :

1) Page
    - Attributes :
        - Title
        - Content
        - Layout
2) Home Page extends Page
    - Attributes :
        - Title
        - Content
        - Layout
    - Methods:
        - Display Services, shows consulting and training sections
        - Highlight Expertise, emphasizes cloud technologies
        - Show Projects, displays project description
        - Display Form, handles the contact form
3) Service extends Home Page
    - Attributes:
        - Title
        - Description
    - Methods :
        - Display Services, shows consulting and training sections
4) Training extends Service
    - Attributes:
        - Course List
        - Description
5) Consulting extends Service
    - Attributes:
        - Title
        - Description
6) Project extends Home Page
    - Attributes:
        - List
        - Title
        - Description
    - Methods:
        - Show Projects, displays project descriptions
7) Video
    - Attributes:
        - Title
        - url
    - Methods
        - Add Video : for future video integration by the customer
8) Contact extends Home Page

- Methods:
  - Display Form: handles the contact form

9) Company extends Contact
   - Attributes:
     - Name
     - Address
     - Email
     - Phone
10) Contact form extends Content
   - Attributes :
     - Name
     - Email
     - Message
   - Methods:
     - Send Message : handles form submission
     - Verify Form : validates input fields
11) Legal Notice extends Page
   - Attributes :
     - Company Info è Company
12) Privacy Policy extends Page
   - Attributes:
     - Privacy Policy Info
13) User
   - Methods:
     - View Content : allows viewing the different section of the site
     - Navigate to : allows to go to one page to another

Method Headers:

Page class :

```
class Page {
        constructor(title, content, layout) {
                this.title = title;
                this.content = content;
                this.layout = layout;
        }
}
```

Home Page class :

```
class HomePage extends Page {
        displayServices() {}
        highlightExpertise() {}
}
```

Contact Form class :

```
class ContactForm {
	constructor() {
		this.name = '';
		this.email = '';
		this.message = '';
	}
	verifyForm() {
		return this.name && this.validateEmail(this.email) && this.message;
	}
	sendMessage() {
		if (this.verifyForm()) {
			return true;
		}
		return false;
	}
	validateEmail(email) {}
}
```

User class :

```
class User {
	viewContent(section) {}

	navigateTo(page) {}
}
```

4. Implementation

Instructions: Week 8

4.1. Journal

The following prompts are meant to aid your thought process as you complete the implementation portion of this exercise. Please respond to each of the prompt below and feel free to add additional notes.

- What programming concepts from the course will you need to implement your design? Briefly explain how each will be used during implementation.
    - HTML/CSS frontend
        - To create the static visual and layout of the websites, like pages, sections and the form
        - Responsive design in the style.css with the @media
    - Dynamic Content
        - Examples
            - Accordion projects with the initProjectAccordions in active.js
            - Character counter for the contact form message
    - Event Handling
        - Examples
            - Form submission with contactForm.addEventListener('submit',…)
            - Click eventsfor navigation and project accordions
    - Form validation, input handling
        - Boundary checks for :
            - Name length (<100 characters)
            - Email format validation
            - Message length (10-1000 characters)
    - Conditional Rendering
        - For accordion arrow rotation, when the accordion is open or not
    - Modular design, separation of concerns
        - Separation of HTML, CSS and Java Script into different files, for the structure, the styling and the behavior
    - Dynamic Server Communication
        - AJAX concept used to send the message to the right addressee, in the contact form
- Other notes:
    - No other note

4.2. Implementation Details

The Lem-Cloudtech website provides information about the company's IT consulting and training services specializing in Microsoft cloud technologies. Users can navigate between the three main pages using the menu at the top of each page. The menu includes links to the pages "Accueil" (home page), "Mentions Légales" (legal notice) and "Politique de confidentialité" (privacy policy).

On the "Accueil" page, visitors will find sections showcasing the company's services divided into Consulting and Training programs. The Project section features expandable cards that show detailed descriptions when clicked. Each project title can be clicked to view more information, with an arrow icon that rotates to indicate whether the content is expanded or collapsed.

The Videos section currently displays a placeholder message, “Aucune vidéo ajoutée pour le moment.” indicating that no videos have been added yet, but this space is reserved for future Technology Watch content. Company contact information, including address, phone number and email address is available in both the Contact section and the “Mentions Légales” page.

The Contact Form includes required fields for Name, Email and Message, with a real-time validation. A character counters tracks message length and blocks you to continue if you have reached the max length (1000 characters). The form validates all inputs upon submission and displays appropriate error messages if requirements are not met. Successful submissions display a confirmation message “Message a été envoyé avec succès” and reset the form.

The website features responsive design that automatically adjusts layout for optimal viewing on desktops, tablets, and mobile devices. All interactive elements, including navigation links and form fields are designed for easy use across different screen sizes.

For technical support or questions about the website, users can contact Lem-Cloudtech directly with the provided email, franck.mapelli@outlook.com or phone number, +33 6 70 11 12 43. The system provides intuitive navigation and clear presentation of the company’s services with functional interactive elements throughout.

5. Testing

Instructions: Week 10

5.1. Journal

The following prompts are meant to aid your thought process as you complete the testing portion of this exercise. Please respond to each of the prompts below and feel free to add additional notes.

- Have you changed any requirements since you completed the black box test plan? If so, list changes below and update your black-box test plan appropriately.

Test ID	Description	Expected Results	Actual Results
T11	Send Contact Form, AJAX success	"Message sent" and the form is rest	
T12	Send Contact Form, Server error	"Server error – try again later"	
T13	Offline submission	"No network connection" warning	
T14	Project accordion toggle	Expands/collapses + arrow rotates	
T15	Video section placeholder	"Aucune vidéo ajoutée pour le moment."	

- List the classes of your implementation. For each class, list equivalence classes, boundary values, and paths through code that you should test.
    - Contact Form Class
        - Equivalence classes
            - Valid inputs : name<100 characters, valid email, message 10-1000 characters
            - Invalid inputs : empty fields, invalid email, out-of-bound message lengths
        - Boundary Values
            - Name : 99 characters➔valid vs. 101 characters➔invalid
            - Message: 9 characters➔invalid vs. 10 characters➔valid vs. 1001 characters➔invalid
        - Paths to test
            - Verify Form
                - Path 1 : all valid ➔ returns True
                - Path 2 : invalid email ➔ returns False
            - Send Message
                - Path 1 : all valid ➔ AJAX success ➔ UI confirmation
                - Path 2 : server error ➔ error message
    - Project Class (accordion)
        - Equivalence classes
            - Expanded state : shows content
            - Collapsed state: hides content
        - Boundary Values
            - Initial load : all collapsed
            - Maximum expanded items : all projects open

        - Paths to test
            - Path 1 : Click ➔ Expands and rotates arrow ▲➔▼
            - Path 2 : Click ➔ Retracts and rotates arrow ▼➔▲

    - Video class
        - Equivalence classes
            - Empty state ➔ “Aucune vidéo ajoutée pour le moment” in Edge.html
            - Loaded state
        - Boundary Values
            - Minimum : 0, current state
            - No maximum, for future implementation
        - Paths to test
            - Path 1 : Appearance of “Aucune vidéo ajoutée pour le moment” when no video are added in the first loading of the page.
            - Path2 : After the video(s) are added:
                - The message disappears
                - The video appears with responsive size
- Other notes:
    - No other note

5.2. Testing Details

List of Test Programs and Descriptions

1. Contact Form Validation Tests
    - Program: Manual testing of form submission scenarios
    - Tests:
        - T01 (Valid inputs)
        - T02 (Empty fields)
        - T03 (Invalid email)
        - T04/T05 (Name boundary checks)
        - T06/T07 (Message length limits)
    - Method:
        - Submit form with predefined inputs
        - Verify UI feedback matches expected results
2. AJAX Submission Tests
    - Program: Mock server responses using browser DevTools
    - Tests:
        - T11 (Success)
        - T12 (Error)
        - T13 (Offline mode)
    - Method:
        - Throttle network to "Offline" in Chrome DevTools
        - Mock API responses via "Network" tab

3. Project Accordion Tests
    - Program: initProjectAccordions() in active.js
    - Tests:
        - Expand/collapse functionality
        - Arrow rotation visual feedback
    - Method:
        - Click each project title → verify content visibility + arrow direction
4. Video Section Tests
    - Program: Manual inspection + future Jest unit tests
    - Tests:
        - Initial empty state rendering
        - Responsive video container (when implemented)
    - Method:
        - Check DOM for placeholder text on load
        - Resize browser to verify container scaling
5. Cross-Device Responsiveness Tests
    - Program: Chrome Device Toolbar + physical devices
    - Tests:
        - T08, T09, T10 (Navigation on mobile/tablet)
    - Method:
        - Viewport resizing (320px → 1200px)
        - Verify menu collapse on mobile

Test ID	**Description**	**Expected Results**	**Actual Results**
T01	Submit contact form with all valid inputs	Success message: "Message sent"	Form clears and success alert shows, OK
T02	Submit contact form with empty fields	Error message "All fields are required"	Alert appears on submit, OK
T03	Submit contact form with invalid email	Error message: "Enter a valid email address"	Rejects email without @ or domain, OK
T04	Submit contact form with name <100 characters	Success message: "Message sent"	Form submits successfully, OK
T05	Submit contact form with name >100 characters	Error message: "Name too long"	Prevents submission, OK
T06	Submit contact form with message >10 and <1000	Success message "Message sent"	Accepts mid-range length, OK
T07	Submit contact form with message <10 or >1000	Error message: "Message too short" or "Message too long"	Counter blocks at 1000, rejects submit, OK

T08	Click on “Legal Notice” link	Legal Notice page loads	Correct page displays, OK
T09	Click on “Privacy Policy” link	Privacy Policy page loads	Correct page displays, OK
T10	Hover over a button	Visual effect appears while hovering	CSS visual effect visible, OK
T11	Send Contact Form, AJAX success	“Message sent” and the form is rest	Email received at customer email address, OK
T12	Send Contact Form, Server error	“Server error – try again later”	Shows “Erreur”
T13	Offline submission	“No network connection” warning	Shows “Erreur réseau”, OK
T14	Project accordion toggle	Expands/collapses + arrow rotates	Content shows/hides, arrow animates, OK
T15	Video section placeholder	“Aucune vidéo ajoutée pour le moment.”	Default text appears, OK

6. Presentation

Instructions: Week 12

6.1. Preparation

The following prompts are meant to aid your thought process as you complete the presentation portion of this exercise. It is recommended that you examine the previous sections of the journal and your reflections as you work on the presentation as it is likely that you have already answered some of the following prompts elsewhere. Please respond to each of the prompts below and feel free to add additional notes.

- Give a brief description of your final project
    - Our project is a professional website for SARL Lem-Cloudtech, and IT consulting firm specializing in Microsoft cloud technologies. The website features three main pages : "Accueil" (services, project, videos, contact), "Mentions Légales" and "Privacy Policy". The sections for consulting services and training programs highlight expertise in Azure and Microsoft 365.. The website has interactive elements like expandable project accordions, a responsive contact form with validation or a placeholder for future technology watch videos. And finally, it has a dark theme and a modern design aligned with client's tch-focused branding.
- Describe your requirement assumptions/additions.
    - Assumptions :
        - Client would later add videos (placeholder implemented)
        - Simple navigation, three pages
    - Additions
        - Real time character counter for the contact form message
        - AJAX form submission
        - Responsive design tested across devices
- Describe your design options and decision. How did you weigh the pros and cons of the different designs to make your decision?

  We evaluate two designs :
    - Structured Class Hierarchy (chosen)
        - Pros :Clear separation of concerns, example services ➔ training and consulting ; and so easy maintenance if we need to remove, add, change things.
        - Cons : Slightly complex for simpler pages ➔Legal Notice or Privacy Policy
    - Flat Component Based Design
        - Pros : Simpler to implement
        - Cons Less expressive for distinct features like training and consulting
    - So we chose the first design for clarity and effectiveness, matching the client's need for distinct sections
- How did the extension affect your design?
    - Added form validation and AJAX to meet usability standards
    - Accordion functionality for projects improved interactivity more than static lists
    - Responsive tweaks ensured mobile computability, though not initially specified
- Describe your tests (e.g., what you tested, equivalence classes).

  1. Contact Form Validation
    - Equivalence Classes:
        - *Valid*: Name (1–100 chars), email (user@domain.com), message (10–1000 chars).
        - *Invalid*: Empty fields, email without @, out-of-bound lengths.
    - Boundary Tests:

        - Name: 100 chars (valid) vs. 101 chars (rejected).
        - Message: 10 chars (valid) vs. 9 chars (rejected).
    - Edge Cases:
        - Spaces-only input → Treated as empty.
        - HTML tags in message → Sanitized (e.g., <script> stripped).

2. Project Accordions
    - States:
        - *Collapsed*: Content hidden, arrow ▼.
        - *Expanded*: Content visible, arrow ▲.
    - User Interaction:
        - Clicking toggles state + CSS animation.
        - Multiple accordions can be open simultaneously.

3. Navigation & Responsiveness
    - Links: All menu items (Accueil, Mentions Légales, etc.) load correct pages.
    - Mobile:
        - Menu collapses into hamburger (if implemented).
        - Font sizes adapt (e.g., @media queries in CSS).

4. AJAX Form Submission
    - Success Path:
        1. Valid form → POST to send_email.php.
        2. Server returns success: true → Alert shows, form resets.
    - Error Paths:
        - Server offline → "Erreur réseau" message.
        - PHP script fails → JSON error field displayed.

5. Video Section
    - Placeholder: "Aucune vidéo ajoutée pour le moment." appears when no video elements exist.

- What lessons did you learn from the comprehensive exercise (i.e., programming concepts, software process)?
    - Process : Clear requirements are critical ; client feedback also shaped the design
    - Technical :
        - Separation of concerns (HTML/CSS/JS/php) simplified debugging
        - Mobile-first CSS saved time in responsive adjustments.
    - Collaboration : Regular synchronization meetings ensured consistent implementation
- What functionalities are you going to demo?
    - Navigation : smooth scrolling and page transitions
    - Project Accordions : Expand Collapse with arrow animation
    - Contact Form : Real-time validation, AJAX submission and error handling.
    - Responsiveness : Layout adapts to different sizes, mobile/desktop
- Who is going to speak about each portion of your presentation? (Recall: Each group will have ten minutes to present their work; minimum length of group presentation is seven minutes. Each student must present for at least two minutes of the presentation.)
    - Introduction – Ellios
    - Overview and Motivation of the project – Damien
    - SDLC – Critian
    - Gathering and Analysis – Gianna
    - Software Requirements Specification – Antoine

    - System and Software Design – Léna
    - Implementation Phase – Julien
    - Testing Strategy – Julien
    - Test Result and Validation – Yvantivong
    - Challenges and Lessons Learned – Yvantivong
    - Demo Overview and Highlight – Nikos
    - Conclusion and Future Work – Ellios
- Other notes:
    - No other note