

SCHOOL	OF	ENGI	NEERING	AND	TECHNOL	OGY
SUNUUL	UF		NEEKING	MINU	LECHNOL	LUU.

ACADEMIC SESSION AUGUST 2022;

WEB1201 WEB FUNDAMENTALS

DEADLINE: 25TH November 2022 (FRIDAY), 5:00 PM

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NRIC/PASSPORT NO: 030201-12-0402

INSTRUCTIONS TO CANDIDATES

- This final assessment will contribute 50% to your final grade.
- · This is an individual assignment.

IMPORTANT

The University requires students to adhere to submission deadlines for any form of assessment. Penalties are applied in relation to unauthorized late submission of work. Coursework submitted after the deadline will be subjected to the prevailing academic regulations. Please check your respective programme handbook.

Academic Ho	nesty Acknowledgement		
"]	Thien Tze Yea	(Name)	verify that this
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	Thien Tze Yea (Stude	ent's Signature / Date)	

Introduction

Types of Website:

The website I've made for this final assessment is an educational website. I have chosen "Air Pollution" as the topic and have inserted different informations to create user's awareness.

Rationale Behind the Creation and Aims:

Air pollution has always been a serious social issue. It not only endangers nature, but also endangers the health of the whole people. Since the industrial revolution, the air pollution index has been soaring, but it is sad that not everyone pays attention to this matter. They are more concerned with their own interests. In recent decades, the problem of air pollution has become increasingly serious, even our own national air index is often not up to standard, which is very worrying. Many people don't realize that this is a problem that needs to be improved, so they keep repeating actions that cause air pollution, such as turning on the air conditioner for a long time.

Besides, I understand that the reason why many people don't pay attention to this issue is that it is a boring topic compared to entertainment topics which is more interesting. I hope to attract the users through concise language and interesting typography to achieve the purpose of conveying information.

Finally, I hope that the public will be aware of this problem, and understand the source of air pollution, its consequences, and a series of small actions that we can implement to reduce air pollution through the information I published on the website.

Requirements of Website:

- R1. Labels
- R2. Textboxes
- R3. Dropdown Lists
- R4. Buttons
- R5. Links
- R6. Navigation
- R7. 'Contact Us' Form and Validation using JavaScript
- R8. 'Log in' and 'Sign Up' Function and Validation using JavaScript
- R9. No Issues with Scaling or Layout

Layout Design

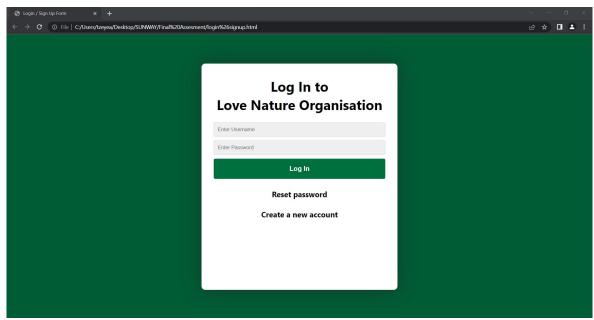


Image 1: Log In Page

Image 1 is a log in page shows when the user visit our website. They may log in directly or press the button below to create a new account. The "Reset Password" button is a dummy button.

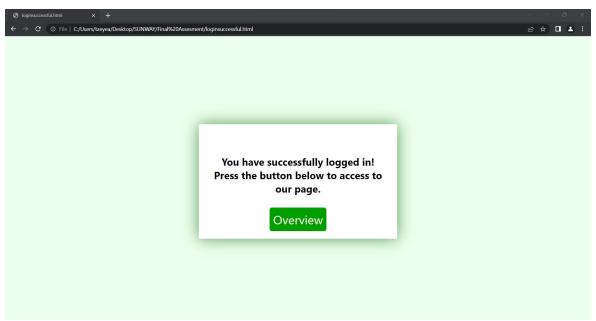


Image 2: Log In Successfully Page

Image 2 is a page showing that user has successfully logged in to our website. The user can click on the "Overview" button to access to our page.

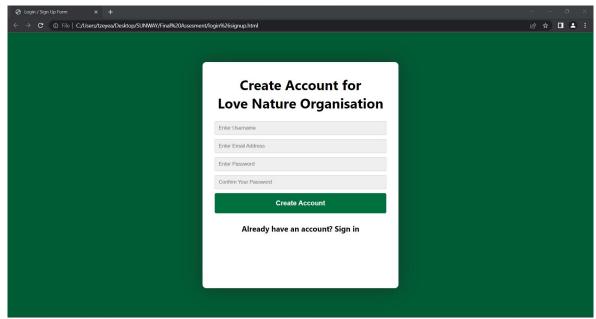


Image 3: Create Account Page

Image 3 is a sign up page or known as create account page. The user needs to click on the "Create a new account button" appears on the log in page before to access to this page. If the user has an account, they may click the "Already have an account? Sign in" link below to access to log in page again.

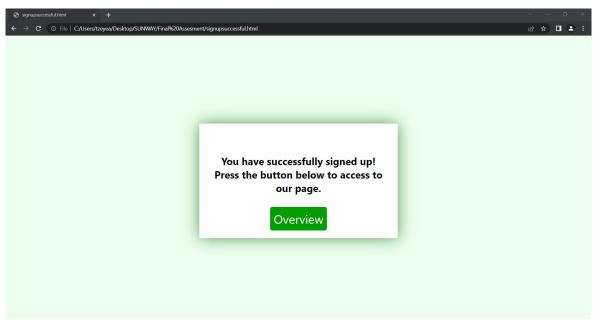


Image 4: Signed Up Successfully Page

Image 2 is a page showing that user has successfully logged in to our website. The user can click on the "Overview" button to access to our page.

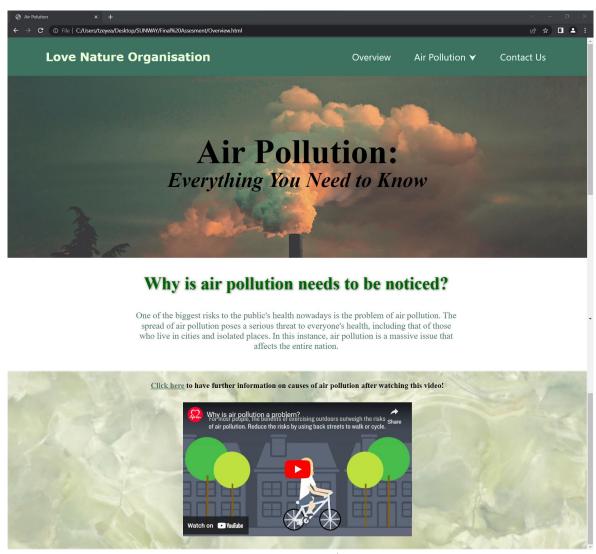
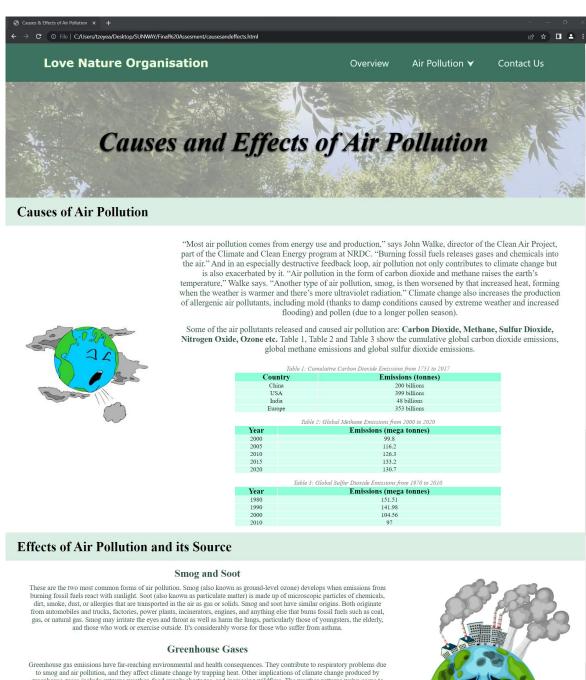


Image 5: Overview Page

Image 5 is a page about overview on air pollution. I have used a green theme and divided the title, brief explanation of why is air pollution needs to be noticed and a video with horizontal sections. The difference in color allows users to understand the message that wished to delivery to them at a glance.



to smog and air pollution, and they affect climate change by trapping heat. Other implications of climate change produced by greenhouse gases include extreme weather, food supply shortages, and increasing wildfires. The weather patterns we've come to anticipate will alter; some species will go extinct, while others may relocate or grow.

Nitrogen Dioxide

Nitrogen dioxide levels that are too high can harm the human respiratory tract and increase a person's susceptibility to, and severity of, respiratory infections and asthma. Chronic lung disease can be caused by long-term exposure to high amounts of mitrogen dioxide. It may also have an effect on the senses, such as impairing a person's capacity to detect odours. High quantities of nitrogen dioxide are also hazardous to vegetation, causing damage to the leaves, slowing growth, and diminishing agricultural yields. Nitrogen dioxide has the ability to fade and discolour furniture and textiles, as well as limit visibility and react with surfaces.



Image 6: Causes and Effects Page

Image 6 shows the causes and effects page. I have used two horizontal sections in green colour to separate the information. This will ease the user to understand the types of information which is delivered in this page.



Image 7: Ways to Overcome Page

Image 7 is a page talking about the ways to overcome air pollution. I have suggested 3 ways with detailed explanation and also other ways with no explanation. Finals words are given as well in this page. All the elements are centered, user may scroll down to read all the information clearly.

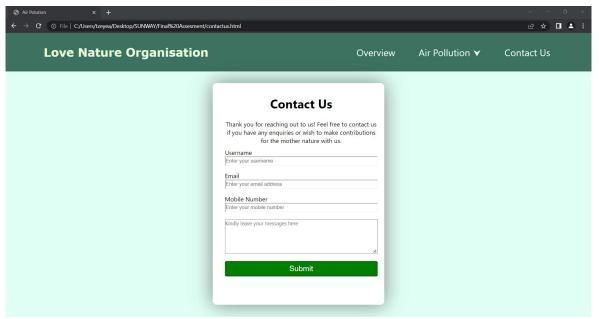


Image 8: Contact Us Page

Image 8 shows a page with a "Contact Us" form. The form is centered as well to look neatly.

Implementation and Results

Label:

Image 9: Labels (code)

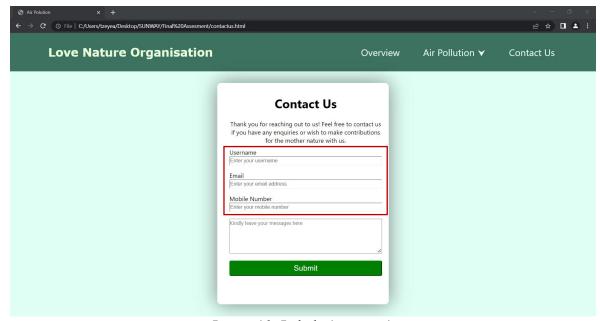


Image 10: Labels (outcome)

I have used <label> tag to specify a label for <input> element of the "Contact Us" form, such as "Username", "email" and "mobilenumber" which can be observed from Image 9 and Image 10.

Text box:



Image 11: Textarea (code)

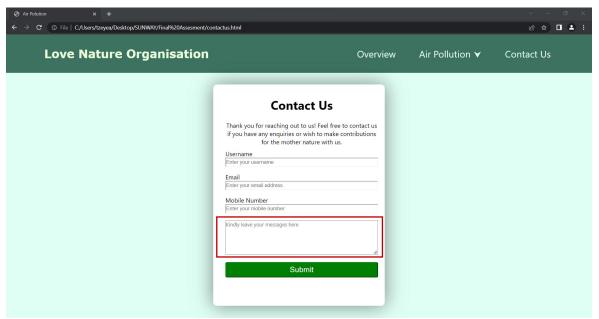


Image 12: Textarea (outcome)

I have used <textarea> tag in "Contact Us" form to collect user's messages.

Dropdown List:

Image 13: Dropdown List (code)



Image 14: Dropdown List (Outcome)

I have created a new class named "dropdown" to create the dropdown menu and add the dropdown links inside it.

Button:

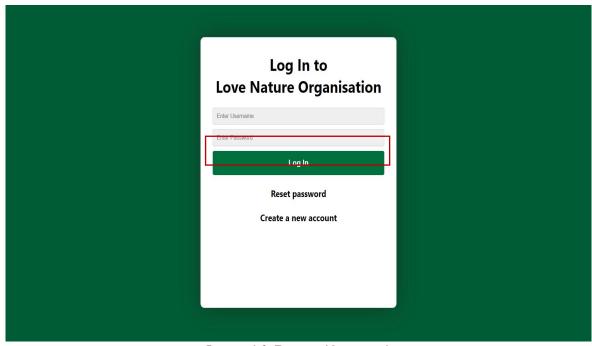


Image 16: Button (Outcome)

The <button> tag is used in both "Log In" page and "Sign Up" page. Image 15 and Image 16 shows the example in "Log In" page. Once the user click on the side of the button, messages will be displayed. For example, if the user has entered invalid details and press the "Log In" button, the message of "Invalid username/password combination" will be displayed. (Since the "Log In" page and "Sign Up" page is hard-coded, user should click on the side of the button to have messages displayed. Clicking on the middle of the word will jump to "Log In Successful" page.)

Links:

Image 17: Links (Code)



Image 18: Links (Outcome)

The HTML <a> tag defines a hyperlink. I have used the <a> tag to create hyperlinks many times in my website. This is an example of it. Once user click on the link as shown in Image 18, it will send the user to the "Causes and Effects" page.

Navigations:

Image 19: Navigation (Code)



Image 20: Navigation Bar (Outcome)

I have used <nav> tag to create a navigation bar on my website. User may access to all the links from the navigation bar.

Tables:

```
<caption>Table 3: Global Sulfur Dioxide Emissions from 1970 to 2010</caption>
    >
      Year
      Emissions (mega tonnes)
  </thead>
      1980
      151.51
      1990
      141.98
    2000
      104.56
    2010
      97
/table>
```

Image 21: Table (Code)

Table 3: Global Sulfur Dioxide Emissions from 1970 to 2010

Year	Emissions (mega tonnes)
1980	151.51
1990	141.98
2000	104.56
2010	97

Image 22: Table (Outcome)

I have used tag to create tables. The reasons I created table is that I wished to present the data of air pollutants index. With tables, all data are represented clearly and neatly. Presenting data in a table makes the user to better understand the data instead of writing a paragraph.

Video:

Image 23: Inserting YouTube Video (Code)



Image 24: Inserting YouTube Video (Outcome)

I have inserted a YouTube video that is related to my content as a multimedia object. This may increase the level of interesting and interactive as well for my website. This also allows user to better understand the messages delivered by different way but not only texts and tables.

Log In form & Sign Up form with Validations using JavaScript (Failed Situation):

Test Case ID	TC-01
Objective	Test if website will display error messages when user entered incorrect
	input in both Log In and Sign Up form
Requirement ID	R-8
Condition	User able to access to both Log In and Sign Up form.
Test Steps	1. Enter incorrect input.
Expected	All relevant error messages will be displayed based on format set in the
Results	JavaScript
Actual Results	Matches the expected results

```
function setError(inputElement, message) {
    inputElement.classList.add("form_input_error");
    inputElement.parentElement.querySelector(".form_input_errormessage").textContent = message;}
function clearInputError(inputElement) {
    inputElement.classList.remove("form_input_error");
    inputElement.parentElement.querySelector(".form input errormessage").textContent = "";}
function setFormMessage(formElement, type, message) {
    const messageElement = formElement.querySelector(".display_message");
    messageElement.textContent = message;
    messageElement.classList.remove("display_message_success", "display_message_error");
    messageElement.classList.add(`display_message--${type}`);}
    document.addEventListener("DOMContentLoaded", () => {
    const loginForm = document.querySelector("#login");
    const signupForm = document.querySelector("#signup");
    document.querySelector("#linksignup").addEventListener("click", e => {
         e.preventDefault();
         loginForm.classList.add("signupform_hidden");
         signupForm.classList.remove("signupform_hidden");});
    document.querySelector("#linklogin").addEventListener("click", e => {
         e.preventDefault();
         loginForm.classList.remove("signupform_hidden");
         signupForm.classList.add("signupform_hidden");});
    loginForm.addEventListener("submit", e => {
         e.preventDefault();
         setFormMessage(loginForm, "error", "Invalid username/password combination.");});
    signupForm.addEventListener("submit", e => {
         e.preventDefault();
         setFormMessage(signupForm, "error", "Please enter all required informations.");});
   document.querySelectorAll(".form_input").forEach(inputElement => {
      inputElement.addEventListener("blur", e => {
          if (e.target.id === "login_username" && e.target.value.length > 0 && e.target.value.length <8) {
              setError(inputElement, "Please enter a valid username. A username contains at least 8 characters.");}
          if (e.target.id === "signup_username" && e.target.value.length > 0 && e.target.value.length <8) {
    setError(inputElement, "Username must be at least 8 characters.");}</pre>
          if (e.target.id === "signup_email" && (!e.target.value.includes("@") || !e.target.value.includes(".com"))) {
    setError(inputElement, "Invalid email address. Email address should contains '@' and ends with '.com'.");}
          if (e.target.id === "signup_password" && e.target.value.length > 0 && e.target.value.length <8) {
    setError(inputElement, "Password must contains 8 characters.");}</pre>
          if (e.target.id === "signup_confirmpassword" && e.target.value!=document.getElementById('signup_password').value) {
              setError(inputElement, "Confirm password should be the same as password.");}});
       inputElement.addEventListener("input", e => {
          clearInputError(inputElement);});
```

Image 25: Log In form & Sign Up form Validation (Code)

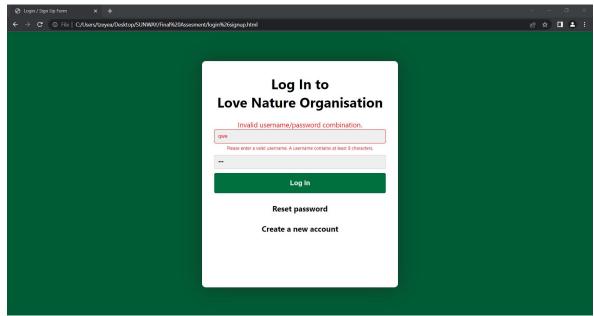


Image 26: Failed to Sign In (Outcome)

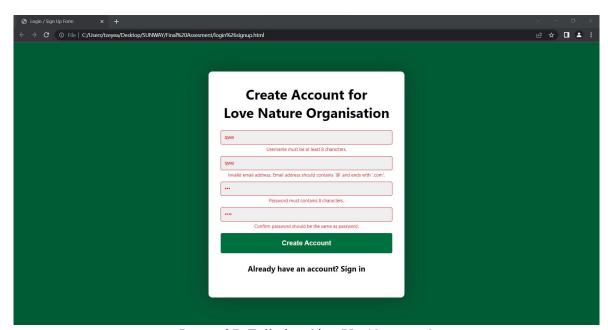


Image 27: Failed to Sign Up (Outcome)

I have used JavaScript to validate the forms. Error message will be given to user if they entered the input in incorrect format that I have set in JavaScript. Since both of the forms are hard-coded, the error message will only displayed when the user click the side of the button of "Log In" or "Create Account". If they click the words in the button, they will jump to another page.

Contact Us form with Validations using JavaScript (Failed Situation):

Test Case ID	TC-02
Objective	Test if website will display error messages when user entered incorrect
	input in both Log In and Sign Up form
Requirement ID	R-7
Condition	User able to access to Contact Us form.
Test Steps	1. Enter incorrect input.
Expected	All relevant error messages will be displayed based on format set in the
Results	JavaScript.
Actual Results	Matches the expected results
Test Results	Pass

```
form.addEventListener('submit', e => {
    e.preventDefault();
    validate_form();
const setError = (element, message) => {
  const categorize_contactus_input = element.parentElement;
  const errorDisplay = categorize_contactus_input.queryselector('.error');
       errorDisplay.innerText = message;
categorize_contactus_input.classList.add('error');
categorize_contactus_input.classList.remove('success')
const setSuccess = element => {
    const categorize_contactus_input = element.parentElement;
    const errorDisplay = categorize_contactus_input.queryselector('.error');
       errorDisplay.innerText = '';
categorize_contactus_input.classList.add('success');
categorize_contactus_input.classList.remove('error');
const isvalidEmail = email => {
    const re = /^(([^<\()[\]\\.;;\s@"]+\\.[^<\()[\]\\.;;\s@"]+\\.](".+"))@((\[[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\\.[0-9]{1,3}\\])[(([a-zA-Z\-0-9]+\.)+[a-zA-Z]{2,}))$/;
    return re.test(String(email).toLowerCase());</pre>
const isValidmobilenum = mobilenum => {
    const re = /^\(2(\d{3})\)?[- ]?(\d{3})[- ]?(\d{4})$/
    return re.test (String(mobilenum));
const validateInputs = () => {
  const usernameValue = username.value.trim();
  const emailValue = email.value.trim();
  const mobilenumValue = mobilenum.value.trim();
                verial = ''' | {
setError(username, 'Username is required');
       if(emailValue === '') {
    setError(email, 'Email is required');
         } else if (!isvalidEmail(emailValue)) {
   setError(email, 'Please enter a valid email address');
       } else {
   setSuccess(email);
   valid2 = true
     if(mobilenumValue === ``){
    setError(mobilenum, 'Wobile Number is required.');
} else if (!isvalidmobilenum(mobilenumValue)){
    setError(mobilenum, 'Please enter a valid mobile number.');
  nction validate_form(){
    if (validateInputs() === true){
        alert("Your messages has submitted successfully! We will reach you out as soon as possible!")
```

Image 28: Contact Us form Validations (Code)

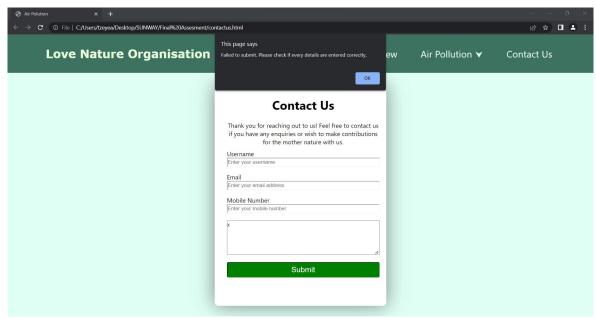


Image 29: User Left Out Some Inputs and Try to Submit (Outcome)

If the user try to submit without completing the form, an alert message will be displayed which asked the user to check whether all details are entered correctly.

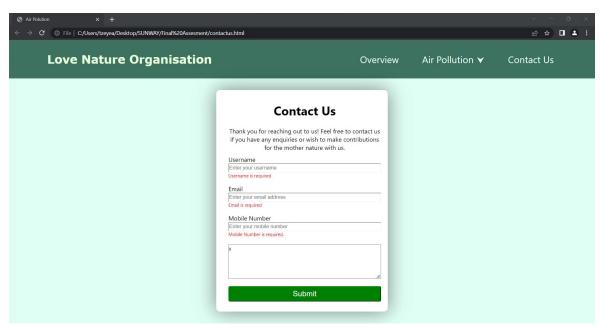


Image 30: Messages Displayed after User click "OK" for the alert message in Image 29 (Outcome)

After the user clicked on the "OK" button in the alert message, reminding messages will also be displayed in the form to tell the user which question is required to enter input.

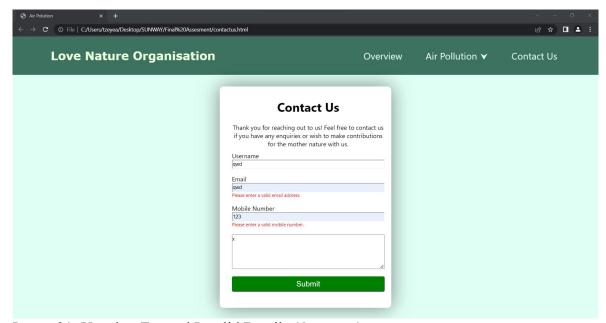


Image 31: User has Entered Invalid Details (Outcome)

If the user enters invalid email address or invalid mobile number and clicks submit, an alert message in Image 29 will be displayed as well. After the user has clicked the "OK" button, the website will tells the user to enter valid details.

Contact Us form with Validations using JavaScript (Success Situation):

Test Case ID	TC-02-02
Objective	Test if website will display error messages when user entered incorrect
	input in both Log In and Sign Up form
Requirement ID	R-7
Condition	User able to access to Contact Us form.
Test Steps	1. Enter correct input.
Expected	Alert message which tells the user that he/she submitted successfully
Results	will be displayed.
Actual Results	Matches the expected results
Test Results	Pass

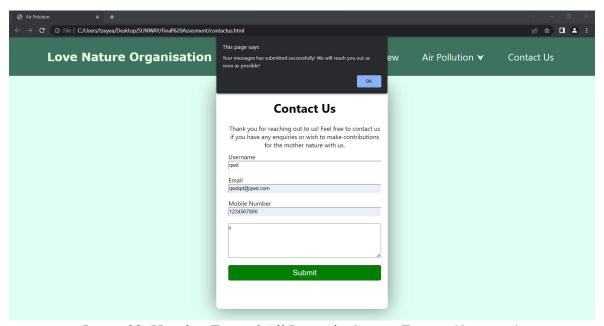


Image 32: User has Entered All Inputs in Correct Format (Outcome)

If the user enters all inputs in correct format and click on the "Submit" button, an alert message saying submitted successfully will be displayed.

References

- Hannah Ritchie, Max Roser and Pablo Rosado (2020) "CO₂ and Greenhouse Gas Emissions". Published online at OurWorldInData.org. Retrieved from: 'https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions' [Online Resource]
- IEA (2022), Global Methane Tracker 2022, IEA, Paris https://www.iea.org/reports/global-methane-tracker-2022
- NRDC Institute. (2021) How smog, soot, greenhouse gases, and other top air pollutants are affecting the planet—and your health.

 https://www.nrdc.org/stories/air-pollution-everything-you-need-know#:~:text=Smog%20and%20soot&text=Smog%20(sometimes%20referred%20to%20as,are%20carried%20in%20the%20air.

Dcode. (2020) How to Create a Login and Sign Up Form with HTML, CSS and JavaScript https://dcode.domenade.com/tutorials/how-to-create-a-login-signup-form-with-html-css-javascript