

Description of test	Data to be used (if required)	Expected outcome	Actual outcome	Comments and intended actions
Navigation Bar				
Created the basic structure of the navigation bar using Bootstrap. Added navigation links and dropdown menus.	None	Navigation bar with menu items and dropdowns should appear properly on large screens.	Successfully displayed the navigation bar with dropdown menus.	Navbar structure setup is successful
Added responsive 'hamburger' menu for smaller screens using Bootstrap.	None	'Hamburger' menu should appear on smaller screens and expand on click.	'Hamburger' menu appeared and worked correctly on small screens.	Responsive behaviour is added for all screen sizes.
Applied CSS styles for navbar design (colours, padding, spacing, hover effects).	None	Navigation links should have specific colours, padding and hover effect.	All styles applied as expected. Colours and spacing visually matched the design requirements.	Styling successful using CSS.
Tried to centre the navigation links using justify-content: centre only.	None	Links should be centred in the navbar.	Links were not properly centred due to Bootstrap's default styling.	Unsuccessful attempt. Resolved by using mx-auto on ul element in combination with flex display.
Added dropdown menus for Information, Calculators, Services using Bootstrap dropdown class.	Hover or click test	Dropdown should display sub-options on hover or click.	Dropdown worked successfully. Sub-options displayed correctly.	Dropdown hover enhanced with CSS for desktop view.
Added styling for dropdown items (padding, colour, hover background).	None	Dropdown items should look clean with padding and colour changes on hover.	Styling applied correctly. Dropdown items improved visually.	Added hover effect for user experience enhancement.
Attempted to show dropdown on hover using only Bootstrap default classes.	Hover test	Dropdown appears on hover.	Not working as Bootstrap default only supports click for toggling dropdown.	Unsuccessful attempt. Resolved by adding CSS: <code>.dropdown:hover .dropdown-menu { display: block; }</code>

Created a right-aligned Account section with dropdown menu.	None	Account menu should align to the far right of the navbar.	Successfully aligned Account section to the right.	Used account-nav class with margin-left: auto.
Tried to remove space from body and html using margin and padding reset.	None	No unwanted space around navbar or body.	Successfully removed extra space. Layout was clean.	Used html, body { margin: 0; padding: 0; }.
Linked Google Fonts (Inter) to apply globally for the website's typography.	None	All text within navbar should use Inter font.	Font applied successfully across navbar elements.	Added to <head> section and applied globally via body { font-family: 'Inter', sans-serif; }.
Footer				
Created the basic structure of the footer with left-aligned logo and social media icons, and right-aligned footer links.	None	The footer should have the logo and social media links on the left, and footer links on the right.	Footer displayed correctly with the logo, social media links, and footer links properly aligned.	Basic layout of the footer is added.
Added social media icons with links to Facebook, LinkedIn, YouTube, and Instagram, with appropriate alt attributes.	Click on each social media link	Social media links should navigate to the correct external pages when clicked.	Social media links worked correctly, leading to the platforms. But there is an underline near each social media icon.	Added alt attributes for better accessibility. I will remove an underlines near each social media icons.
Applied custom styling for social media icons to remove underline, ensure uniform size, and add margin between icons.	Hover over icons	Icons should appear without underlines, with consistent sizes and spacing.	Icons appeared as expected: no underline, consistent size, and spacing.	Good user experience with proper icon display is added.
Used flexbox for layout control the left side with logo and social icons, and the right side with footer links.	None	The layout should use flexbox to distribute space between the left and right footer sections.	Layout successfully implemented using flexbox with space properly distributed.	Flexbox effectively used to create responsive design.
Created footer links divided into 4 sections using unordered lists.	None	Footer links should be organized in 4	Footer links were divided into 4 columns, wrapped	Ensured proper use of lists for

		columns with proper alignment and wrapping.	properly on smaller screens.	structure and readability.
Styled footer links to add margin between the links.	Click on footer links	Footer links should have spacing between each link.	Footer links displayed with appropriate spacing.	Applied margin and padding for clear structure.
Attempted to make footer links responsive by allowing them to wrap based on screen size.	Resize browser window	Footer links should wrap into multiple rows on smaller screens, keeping proper alignment.	Links wrapped correctly on smaller screens as expected.	Responsive design for small screen users is added. Used flex-wrap: wrap; for flexible column layout.
Applied hover effect for footer links to underline them when hovered.	Hover over footer links	Footer links should display an underline effect on hover to indicate interactivity of footer.	Hover effect successfully applied to footer links.	Footer link hover effect is added for better user interaction.
Attempted to make footer columns horizontally aligned by adjusting flex-grow.	None	Footer columns should maintain horizontal alignment with even spacing.	Columns aligned correctly, but additional spacing issues appeared on small screens.	Unsuccessful attempt, which was resolved by gap and flex-wrap properties for better small screens alignment.
Customized the footer's background colour and added border-top styling for separation.	None	Footer should have a white background with a green border at the top.	Background colour and border-top styling worked as expected.	Added styling to separate the footer from the body and make it visually stand out.
Terms and Conditions page				
Created base structure of terms.php with HTML and included global navbar.php and footer.php	None	Navigation bar and footer included across the page	As expected	Reused common layout parts for consistency and maintainability
Added terms and conditions banner section with large title	None	Background colour of terms and conditions with a clear title in the centre	As expected	Created specific class in CSS: terms-section, for styling the banner

Added the small description section with a title and paragraph describing terms and conditions.	None	The text should display properly with a heading and describing terms and conditions of the company.	The section displayed the heading of terms and conditions and description of terms and conditions with appropriate spacing and styling.	Added terms and conditions section as intended.
Home Page				
Created the basic structure for the homepage with a Navigation Bar, Hero Section, About Section, Services Section, Carbon Footprint Calculator, Energy Usage Calculator, Testimonials, and Footer.	None	The homepage should display the Navigation Bar, Hero Section, About Section, Services, Carbon Footprint Calculator, Energy Usage Calculator, Testimonials, and Footer.	Homepage displayed correctly with all sections.	All key sections were present.
Added PHP includes for global navbar and footer	None	Navbar and footer are displayed correctly	As expected	Used include for navbar.php and footer.php to ensure a consistent site structure.
Implemented the Hero Section with a large background image and centred text "green energy solutions".	Change screen sizes	The Hero section should fill the screen with a background image and centre the text and button.	Hero section filled the screen with background, centred text, and a working button.	Added proper layout using flexbox and background image styling.
Added a "Find out more" button in the Hero Section that links to 'How to reduce carbon footprint' information page.	Click on button	The button should lead to 'How to reduce carbon footprint' information page.	Button worked correctly and led to the correct page.	"Find out more" button in the Hero Section works correctly
Added the "Who We Are" section with a title and paragraph describing the company.	None	The text should display properly with a heading and description of the company.	The section displayed the heading and description with appropriate spacing and styling.	Added about us section, focusing on branding and company introduction.

Created the "We Provide" section, which includes 3 services with images, titles, and links.	Click on each service item	Each service item should be displayed with an image, title, and link to a detailed page when clicked.	Service items were displayed correctly with images and links working as expected.	Services offered by the company are designed with flexbox for responsive design.
Applied flexbox to the "We Provide" section for responsive layout and ensured the service images and text aligned properly.	Resize the browser window	Service items should be laid out in a flexible row that adjusts based on screen size.	The service items adjusted their layout responsively on different screen sizes.	Ensured the responsiveness of service items using flexbox.
Created the Carbon Footprint Calculator and Energy Usage Calculator sections with a background image and button for the calculators.	Click on each button	The background should display correctly, and the buttons should redirect to their calculators.	Background images and buttons worked as expected.	Interactive buttons leading to calculators for carbon footprint and energy usage.
Created the Testimonials section with a title and three testimonial boxes displaying placeholder names and feedback.	None	The testimonials section should display 3 testimonial boxes, each containing a name and feedback.	Testimonial boxes displayed correctly with the sample text inside.	Customer feedback section. The content in testimonials can be changed in future.
Styled the Testimonials section with appropriate spacing, box shadows, and a responsive layout.	Resize the browser window	The testimonial boxes should appear with appropriate margins, shadows, and should be responsive.	The testimonial boxes displayed properly with consistent spacing, and responsive adjustments worked.	Ensured good User Experience by styling testimonial boxes with shadows, margins, and flexbox layout.
Applied responsive design principles to ensure the layout adjusts for small screens.	Resize browser window	The entire homepage should be responsive, with elements adjusting to different screen sizes.	Works as expected	Homepage is responsive, and all elements are adjusting to different screen sizes
Information Page				
Solar Panel				
Created base structure of solpanel.php with	None	Navigation bar and footer	As expected	Reused common layout parts for

HTML and included global navbar.php and footer.php		included across the page		consistency and maintainability
Added solar panel banner section with background image and large title	None	Background image of solar panels with a clear title in the centre	As expected	Created specific class in CSS: info-solar-section, for styling the banner
Developed "Who We Are" section with basic text information about solar panels	None	Section should display information text about solar panels	As expected	about-section used for basic content display
Created product comparison table with 4 features across 3 solar panel options	None	Table should display product comparisons in a clean, readable format	As expected	comparison-section structured with HTML table and styled using CSS
Attempted to add image icons inside the comparison table cells for better visualisation	None	Small icons next to '+' and '-' signs	Icons did not align well and affected table layout	Removed icons due to layout issues and kept simple '+' and '-' symbols
Added "Book a Consultation" section with styled button linking to consultation.php	Click on button	Redirects user to consultation booking page	As expected	consultation-link section designed with flex layout for responsiveness
Developed "Links to other pages" section for better navigation with background image	Click on each link	Redirects to other information pages	As expected	other-links-solar used for linking to charger.php, home.php, reduceinfo.php with background styling
Styled entire page with infostyle.css including background images, flexbox layouts, text styling	None	Consistent and responsive page layout with clear readability	As expected	Used separated stylesheet infostyle.css for better code management
Applied responsive design values to be sure that the layout adjusts for small screens.	Resize browser window	The entire solar panel page should be responsive, with elements adjusting to different screen sizes.	Works as expected	Solar panel page is responsive, and all elements are adjusting to different screen sizes
EV Charger				

Created the basic structure of charger.php page with HTML linked to infostyle.css	None	Webpage should display correctly with no styling errors	Page structure loaded as expected	Reused common layout parts for consistency and maintainability
Added PHP includes for global navbar and footer	None	Navbar and footer are displayed correctly	As expected	Used include for navbar.php and footer.php to ensure a consistent site structure.
Created info-charger-section with EV Charging Stations banner and background image	None	Image background of EV charger with centred heading text	Correct image and text position	Used separate CSS class infostyle.css for EV chargers
Added informative About Section explaining what EV charging stations are	None	Clear and readable information displayed in centre	Correct layout and content	Improves user understanding of the product
Developed Comparison Table with 4 features for 3 EV charging products	None	Table should display product comparison in a readable format	Correct display with styling	Provides product comparison for customers
Created consultation link section to redirect users to booking page	Click on consultation button	Button redirects to consultation.php	Link working properly	Improves user interaction with the website
Created links to other information pages in other-links-charger section	Click on each link	Links should redirect to home.php, reduceinfo.php, and solar.php	All links redirect correctly	Improves navigation between pages
Added background images for sections using CSS background-image property	None	Each section should have relevant background images	Correct images applied without errors	Improves visual appeal
Applied responsive design principles to ensure the layout adjusts for small screens.	Resize browser window	The entire EV charger page should be responsive, with elements adjusting to different screen sizes.	Works as expected	EV charger page is responsive, and all elements are adjusting to different screen sizes
Smart Home System				
Created smartsystem.php file	None	The page structure	Page displayed without issues	Initial setup of HTML structure

with basic HTML structure		displays correctly with head, body and PHP includes		for Smart Home System page
Added PHP includes for global navbar and footer	None	Navbar and footer are displayed correctly	As expected	Used include for navbar.php and footer.php to ensure a consistent site structure.
Developed Hero Banner section with background image smarthome1.jpg	None	Background image shows with centered heading	Worked as expected	Created .info-home-section class in CSS for background styling
Created About Section with information text about Smart Home Energy Management System	None	Informative paragraph displayed under title	Displayed as expected	Added .about-section styling from existing CSS structure
Developed Comparison Table of Smart Home Products	None	Table showing comparison of product features	Displayed correctly	Used table structure for clarity which are styled with .comparison-table class
Added "Book a Consultation" section with styled button linking to consultation.php	Click on button	Button redirects to consultation booking page	Link worked correctly	Styled using .consultation-link class for design consistency
Developed "Links to other pages" section for better navigation with background image	Click on each link	Redirects to other information pages	As expected	other-links-solar used for linking to charger.php, solar.php, reduceinfo.php with background styling
Applied responsive design principles to ensure the layout adjusts for small screens.	Resize browser window	The entire Smart Home system page should be responsive, with elements adjusting to different screen sizes.	Works as expected	Smart Home system page is responsive, and all elements are adjusting to different screen sizes
How to reduce carbon footprint				

Created basic page structure with PHP	None	The page structure displays correctly with head, body and PHP includes	Worked as expected	Initial setup of HTML structure for 'How to reduce Carbon Footprint' page
Added PHP includes for global navbar and footer	None	Navbar and footer are displayed correctly	As expected	Used include for navbar.php and footer.php to ensure a consistent site structure.
Added banner section with background image solpanel3.jpg	None	Background image shows with centred heading	Worked as expected	Created .info-home-section class in CSS for background styling
Added "About" section explaining ways to reduce carbon footprint	None	Informative text should display correctly	Worked as expected	Main content section explaining the topic
Created a section with link to book consultation	None	Button linking to consultation.php	Link worked correctly	Call to action for user engagement
Developed "Links to other pages" section for better navigation with background image	Click on each link	Redirects to other information pages	As expected	other-links-solar used for linking to charger.php, home.php, solar.php with background styling
Added custom CSS for new section (info-reduce-section, comparison table styling)	None	Page should be visually consistent with rest of website	Worked as expected	Ensured consistent styling across site
Applied responsive design principles to ensure the layout adjusts for small screens.	Resize browser window	The entire Reduce Carbon Footprint page should be responsive, with elements adjusting to different screen sizes.	Works as expected	Reduce Carbon Footprint page is responsive, and all elements are adjusting to different screen sizes
Carbon Calculator				
Created the page structure using HTML	None	Basic webpage structure with	As expected	Set up <head> and <body>

		title and sections		sections for the calculator page.
Designed page layout using internal CSS for styling	None	Clean layout with distinct sections like header, slider, results, and recommendations	As expected	Used flexbox for alignment; customized typography and colours. Added responsive behaviour.
Added PHP includes for global navbar and footer	None	Navigation bar and footer appear on the page	As expected	Used include function for navbar.php and footer.php. Promotes code reusability.
Developed radio buttons for heating type selection (electric/gas)	Electric, Gas	User can switch between electric and gas options	As expected	Used <code><input type="radio"></code> for selecting energy source.
Added range slider to select energy consumption	Values: 0 to 1000	Slider to adjust consumption from 0 to 1000	As expected	Used <code><input type="range"></code> with min, max, and value. Initial value set to 500.
Created JS script to calculate and display carbon footprint dynamically	Electric 500, Gas 500	Correct CO2 estimation displayed and updated real-time	As expected	Used event listeners for input and change events to update values.
Applied different carbon factors for Electric (0.4) and Gas (2.2)	Electric 500 to 200kg CO2, Gas 500 to 1100kg CO2	Correct calculation displayed	As expected	Handled unit changes (kWh or m3) and applied different multipliers.
Added Recommendations Section with energy-saving tips	None	Informative section visible on page	As expected	Content designed for user awareness on reducing carbon footprint.
Attempted to add form submission to store user input to database	Test inputs: Electric, 500	Expected data to store in MySQL database	Failed	Realized storing wasn't necessary for this calculator. Removed to keep page dynamic and simple.
Tested validation for slider input limits	-50, 2000 (manual change)	Prevent values beyond 0-1000	As expected	Slider input already limits values between 0-1000 by

				default. No further validation needed.
Applied responsive design principles to ensure the layout adjusts for small screens.	Resize browser window	The entire Carbon Calculator page should be responsive, with elements adjusting to different screen sizes.	Works as expected	Carbon Calculator page is responsive, and all elements are adjusting to different screen sizes
Energy Usage Calculator				
Created basic page layout using HTML	None	Basic structure with title and sections	As expected	Set up the <head> and <body> sections for the Energy Usage Calculator.
Styled the page using internal CSS	None	Clean, centred layout with styling for appliances, sliders, and results	As expected	Applied flexbox for alignment and designed an intuitive UI for selecting appliances.
Added PHP includes for global navbar and footer	None	Navbar and footer are displayed correctly	As expected	Used include for navbar.php and footer.php to ensure a consistent site structure.
Developed checkbox system to select appliances	Refrigerator, Washing Machine, Light Bulb, Microwave	User can select appliances using checkboxes	As expected	Used checkboxes for appliance selection. The list can be easily extended.
Created input section for each appliance	Checked "Refrigerator" to Inputs for usage time and number of appliances displayed	Inputs for each selected appliance appear dynamically	As expected	Created a container for each appliance with sliders for usage time and appliance count.
Added functionality to adjust appliance usage time and count using sliders	Usage time: 5 hours, Appliances count: 3	Sliders update values for appliance usage and number	As expected	Added event listeners to sliders to dynamically update appliance values.

Implemented energy calculation logic based on wattage, usage time, and appliance count	Refrigerator (150W), 5 hours, 3 appliances	Total energy consumption displayed correctly	As expected	Total energy usage calculated in kWh based on appliance data and displayed in real-time.
Created a dynamic update function to recalculate energy usage whenever sliders are adjusted	Adjusted sliders for light bulb and microwave	Total energy usage recalculates instantly	As expected	Each slider update triggers an update to the total energy usage, ensuring the result is accurate.
Added recommendations for energy-saving tips	None	Energy-saving tips displayed at the bottom	As expected	Added an informative section about reducing energy consumption.
Attempted to add form submission to calculate energy usage for user accounts	Test inputs: Appliances selected, energy usage calculated	Expected to submit data to the backend	Unsuccessful	Realized it wasn't required for this feature, as the calculator was meant for real-time estimation.
Applied responsive design principles to ensure the layout adjusts for small screens.	Resize browser window	The entire Energy Usage page should be responsive, with elements adjusting to different screen sizes.	Works as expected	Energy Usage page is responsive, and all elements are adjusting to different screen sizes
Login/Register/Personal				
Login				
Setup of login.php page with HTML form (email, password fields)	None	Basic login form displayed	As expected	Basic form structure ready for next development stage
Added PHP includes for global navbar and footer	None	Navbar and footer are displayed correctly	As expected	Used include for navbar.php and footer.php to ensure a consistent site structure.
Connect to database using include db.php	None	Database connection established	As expected	Prepared for querying user data from database

Added user verification by querying the database with prepared statement using email	Correct email, correct password	User redirected to personal.php	As expected	Ensured protection against SQL Injection
Added password_verify function to check password hash	Correct email, wrong password	Error message "Invalid email or password!"	As expected	Correct validation with hashed password
Handled incorrect email input (email not existing in database)	Wrong email	Error message "Invalid email or password!"	As expected	Used \$stmt->num_rows to check if user exists
Added error message display for invalid login attempts	Wrong email/wrong password	Error message shown on login page	As expected	Better user experience by providing feedback
Added session handling to store user_id and firstname after successful login	Correct email and password	User redirected to personal.php with session set	As expected	Better for personalized user experience
Tried direct SQL query without prepared statements	Correct email/password	SQL Injection risk	Security concern identified	Replaced with prepared statements for security
Forgot to close statement using \$stmt->close()	Correct login	Warning in PHP error logs	Resolved	Statement is closed
CSS Styling of login page (centered form, responsive design)	None	Clean, responsive login page with background image	As expected	design used from style.css
Added redirect if already logged in using isset(\$_SESSION['user_id'])	Already logged in user	Redirect to personal.php	As expected	Prevents unnecessary login attempts
Added link to register.php if user doesn't have an account	Click register	Redirect to register page	As expected	Improved usability
Forgot to validate empty fields in form	Empty fields	PHP error due to undefined array index	Resolved	Added required attribute to inputs for front-end validation
Register				
Created basic HTML structure with form for user registration	None	Form fields displayed correctly	As expected	Basic structure set up for register page

(first name, last name, email, password, repeat password)				
Added PHP includes for global navbar and footer	None	Navbar and footer are displayed correctly	As expected	Used include for navbar.php and footer.php to ensure a consistent site structure.
Connected to database using db.php and started session for user management	None	Connection established	As expected	Prepared for inserting user data into database
Added PHP logic to check if user already logged in, then redirect to personal.php	Already logged in user	User redirected to personal.php	As expected	Prevents registered users from accessing register page
Implemented form submission handling and data retrieval via \$_POST	Input test data in form	Data retrieved successfully	As expected	Ready for data validation
Added validation to check if passwords match	Different passwords entered	Error message: "Passwords do not match!"	As expected	Added user-friendly error message
Attempted to check if email already exists using prepare and execute on INSERT query	Same email twice	Expected error: "Email already exists!"	Unsuccessful — Duplicate entry error shown from database	Issue: INSERT query doesn't check for existing emails. Need to add SELECT check first
Fixed email uniqueness check by adding SELECT query before INSERT	Register twice with same email	Error message: "Email already exists!"	Successful after adding SELECT statement	Added SELECT query and conditional error handling before INSERT
Hashed password using password_hash() for security	Input password: test123	Password hashed in database	As expected	Ensured password stored securely
Implemented storing user data in users table (firstname, lastname, email, password) using prepared statements	Register with valid data	User inserted into database	As expected	Used bind_param for security
Developed checkbox system to accept rules and terms of the company	Tick a checkbox	User can agree to terms and conditions of the company using checkbox	As expected	Used checkboxes for user to agree to terms and conditions of the company.

Created user session after successful registration and redirected to personal.php	Register new user	User redirected to personal.php	As expected	User logged in immediately after registration
Styled register page using external style.css file for design	None	Responsive, clean design	As expected	style.css document is applied to the page
Added dynamic error message display for users	Leave password fields mismatching	Error message shown in red	As expected	Helpful for user experience
Personal page				
Initial setup of personal.php to display user information after login using HTML.	Logged in user: ID, firstname	User is redirected to personal page displaying "Welcome, John!"	Worked as expected. User greeted properly.	Intended for personal greeting section using \$_SESSION variables.
Added PHP includes for global navbar and footer	None	Navbar and footer are displayed correctly	As expected	Used include for navbar.php and footer.php to ensure a consistent site structure.
Fetch and display user consultations from database (MySQL SELECT query).	User with 2 consultations booked	List of consultations displayed with type, date, time	Successfully displayed the correct bookings	Intended for Consultations Section.
Fetch and display user installations from database (MySQL SELECT query).	User with 1 installation booking	Installation displayed with type, date, time, address	Displayed correctly	Intended for Installations Section.
Added Cancel booking functionality for consultations and installations (POST form with hidden bookingID).	Try cancelling consultation	Booking should be removed from database	Cancel worked successfully	Handled via cancel_booking.php.
Attempted to show cancelled booking message after cancel	Booking cancelled, expected message "Booking cancelled"	No message displayed	No redirect or session message handling implemented	Need to improve feedback for user actions.
Styled account page using CSS for dark transparent theme	Visual inspection	Clear white text on background image	Worked well, visually clean	Used .account-container and buttons style from style.css.

Validated login status at the top of personal.php (checking if user is logged in)	Not logged in user accessing personal.php directly	Redirected to login.php	Worked as expected	Important for security handling sessions properly.
Attempted to order bookings from latest to oldest	Booking dates varied	Expected newest first	Bookings were ordered from earliest to latest	I decided to leave as earliest-first for clarity to user.
Added buttons to book new Consultation or Installation	Visual test clicking buttons	Redirects to consultation.php or installation.php	Worked as expected	Enhances user navigation experience.
Implemented responsive design using % width and max-width for content	Resize browser window	Content adapts to any screen sizes	Worked as expected	Done via .account-container CSS styling.
Added "Delete Account" button which deletes users account	Click on "Delete Account" button	The users account will be deleted	"Delete Account" feature works as expected	"Delete Account" feature works as intended
Edit Account Page				
Created basic HTML structure with input bars for user information	None	Input bars displayed correctly	As expected	Input bars displayed as intended
Added PHP includes for global navbar and footer	None	Navbar and footer are displayed correctly	As expected	Used include for navbar.php and footer.php to ensure a consistent site structure.
Added a "Save Changes" button which when clicked, will save new information about user	Click on "Save Changes"	The system will work as expected, and will save new users information	As expected	The system works as intended
Consultation page				
Created basic HTML structure with form for user consultation (consultation type, time)	None	Form fields displayed correctly	As expected	Basic structure set up for consultation page
Added PHP includes for global navbar and footer	None	Navbar and footer are displayed correctly	As expected	Used include for navbar.php and footer.php to ensure a

				consistent site structure.
Created session validation to check if user is logged in	User logged in & user not logged in	Redirect to login page if not logged in	Worked as expected	Intended for session management and security check
Connected to database using db.php	None	Successful connection to database	Connected successfully	Used for accessing the consultation bookings
Added logic to prevent booking in the past	Selected a past date like 2023-01-01	User should not be able to select past dates	Worked successfully	Used date() and conditional checking to restrict past dates
Attempted to restrict past dates only using JavaScript date validation	Selected past date manually in URL	Past date still opened in browser	Failed - JS validation only worked for UI	Realized I need server-side validation as well - moved to PHP for security
Fetches already booked slots from database using prepared statements	Existing data in consultations table	Booked times should be disabled	Worked successfully	Helped prevent double-booking - intended for time slot management
Created dynamic time slots using PHP loop	None	Slots should appear dynamically	Worked successfully	Easy to modify in the future if time changes needed
Added dynamic styling for booked vs available time slots	Booked slot should show grey, available green	Correct colour coding for slots	Worked as expected	Used CSS classes .booked and .available for clarity
Attempted to use JavaScript alert for booked slots	Clicked on booked time	Alert showed, but button still clickable	Failed - not user-friendly	Decided disabling button is better UX than alert pop-ups
Implemented changing date functionality with previous and next buttons	Navigated through dates	Date should change and reload booked slots	Worked successfully	Used JS function changeDate() and passed date via GET method
Designed responsive layout with CSS grid for time slots	Various screen sizes	Slots adjust accordingly	Worked fine	Used grid-template-columns for flexible layout
Styled the entire booking section	None	Clean and user-friendly interface	Looked modern and professional	Used consistent styling from constyle.css
Installation Page				

Created basic HTML structure with form for user installation (installation type, physical address, time)	None	Form fields displayed correctly	As expected	Basic structure set up for installation page
Added PHP includes for global navbar and footer	None	Navbar and footer are displayed correctly	As expected	Used include for navbar.php and footer.php to ensure a consistent site structure.
Created session check and redirect for non-logged in users	No test data	Non-logged-in users should be redirected to login.php	Worked as expected	Security feature to ensure only logged-in users can access installation page
Added date selection logic that prevents selecting past dates	URL with ?date=2023-01-01	Redirects to today's date if past date is selected	Worked correctly	Validation of selected date
Developed database query to fetch booked time slots for selected date	Selected future date	Already booked time slots should be disabled	Worked successfully	Efficient SQL query using prepared statements
Attempted to disable booked slots using inline PHP inside foreach loop	None	Expected to disable booked slots	Syntax error in inline PHP	Resolved by adjusting PHP logic with ternary operator
Designed time slot buttons dynamically, changing color if booked	Various booked slots in DB	Booked slots show red and cannot be clicked	Fully functional	Visual indication of booked/available slots
Added form with select option for installation type and address input	Select "Solar Panel" and address	Should allow user to enter details and submit	Worked as expected	Required fields with HTML validation
Implemented JavaScript function to navigate days forward or back while preventing past dates	Click left arrow on today	Should not go back to previous day	Worked correctly	Client side date validation
Forgot to update hidden input with new date	Click next date	Date changes visually but form still submits old date	Bug identified and resolved by updating hidden input value	Consistency is ensured between visible and form data
Styled booking page using custom CSS	None	Clean responsive layout with readable time slots	Styling successful	Used grid for time slot layout and modern user interface design

Added hover effects for available time slots	Hover on available slot	Button background changes on hover	Worked successfully	Enhances user experience
Attempted to set "today" using JavaScript without setting hours to 0 (bug found)	Navigating to previous day	Date selector allowed going to previous day if time was close to midnight	Bug fixed by resetting time with <code>today.setHours(0,0,0,0)</code>	It is important to keep precise date handling in JS