

# ASSIGNMENT 3

FINAL WEB APPLICATION

TOURISM NORTH QUEENSLAND

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**LIVE WEBSITE:**

<https://66c8ddd937ef60fcdf569ee3--lucent-smakager-c7557a.netlify.app>

# 1. PSEUDOCODE

## Main.js

### Lines 1-9

#### - Debounce Event Function:

- Creates a debouncing function to limit how often a function ( `callbackFunction` ) is executed.
- Default delay is 10 milliseconds.
- If `executeImmediately` is true, the function runs immediately on the first call and subsequent calls are delayed.

### Lines 11-19

#### - Easing Transition Function:

- Defines an easing function for smooth scrolling transitions.
- Applies a quadratic easing formula to control the speed of the transition.
- Adjusts the easing for the first and second halves of the transition duration.

### Lines 21-37

#### - Smooth Scroll To Section Function:

- Smoothly scrolls the page to a target section based on the link clicked.
- Accounts for the height of the sticky navigation bar.
- Uses the `calculateEasingTransition` function to animate the scroll over a set duration.
- Uses `requestAnimationFrame` to handle the scroll animation.

### Lines 39-60

#### - Update Navigation Indicator Function:

- Updates the position and size of the navigation indicator based on the scroll position.
- Highlights the active navigation link corresponding to the currently visible section.

- Iterates over sections to determine which is most visible and adjusts the navigation indicator accordingly.

## **Lines 62-71**

### **- Init Navigation Indicator Function:**

- Sets up event listeners for scroll and resize events to update the navigation indicator.
- Uses debounce to improve performance and reduce the frequency of updates.
- Adds click event listeners to navigation links for smooth scrolling to target sections.

## **Lines 73-91**

### **- Init Responsive Burger Menu Function:**

- Initialises the burger menu for responsive design.
- Toggles the side navigation menu when the burger menu is clicked.
- Closes the side menu when a link within it is clicked.

## **Lines 93-99**

### **- Init Image Gallery Carousel Function:**

- Sets up the image carousel functionality.
- Determines how many images are visible based on screen width.
- Updates the carousel position and progress bar.
- Handles button clicks to scroll through images and adjusts the carousel on window resize.

## **Lines 101-103**

### **- Init Itinerary Form Interactions Function:**

- Sets up interactions for the itinerary form.
- Handles form submission and displays a confirmation message.
- Manages bubble selection toggling.

## Lines 105-107

### - Main Initialisation Function:

- Calls initialisation functions for different features of the website.
- Ensures each feature is set up correctly.

## Lines 109-111

### - DOMContentLoaded Event Listener:

- Waits for the DOM to fully load before executing the ``init`` function.
- Ensures that all necessary elements are available before initialising the features.

## GSAP.js

### Lines 1-3

#### - Register GSAP and ScrollTrigger:

- Registers the GSAP library and its ScrollTrigger plugin for use in animations.

### Lines 5-36

#### - Hero Section ScrollTrigger Animation:

- Creates a ScrollTrigger instance to animate the hero section as it enters and exits the viewport.

##### - On Enter:

- Animates the main heading (``h1``) with a fade-in and upward movement.
- Animates the sub-heading with a slight delay for a staggered effect.

##### - On Leave Back:

- Resets the animations when the user scrolls back up, clearing the ``opacity`` and ``y`` properties.

##### - On Enter Back:

- Replays the animations when scrolling back into the viewport.

## Lines 38-48

### - Section Headings (h2) Animation:

- Animates the section headings ( `h2` ) as they enter the viewport.
- Uses `ScrollTrigger` to trigger the animation, making the headings fade in and move upward.
- The animation is scrubbed, meaning it follows the scroll progress smoothly.

## Lines 50-64

### - Carousel Container Slide-In Animation:

- Animates the carousel container ( ` .gallery-container ` ) sliding in from the left as it enters the viewport.
- Uses `ScrollTrigger` to start the animation when the container is 80% down the viewport and ends when it's 20% down.
- The animation is smooth and reverses when scrolling back up.

## Lines 66-80

### - Experiences Container Slide-In Animation:

- Animates the experiences container ( ` .experiences-grid ` ) sliding in from the right as it enters the viewport.
- Uses `ScrollTrigger` to start the animation when the container is 80% down the viewport and ends when it's 20% down.
- The animation is smooth and reverses when scrolling back up.

## Lines 82-95

### - Bubble Selectors Animation:

- Animates the bubble selectors ( ` .bubble ` ) with a staggered fade-in and upward movement.
- The bubbles animate sequentially, with a small delay between each.
- The animation is triggered when the itinerary section enters the viewport and reverses when scrolling back up.

## 2. CRITICAL REFLECTION

### **Aesthetic Changes:**

The transition from the A2 design to the final website involves significant aesthetic refinements. The A2 design utilised a hero image with centred text and a call-to-action button, but it suffered from readability issues due to insufficient contrast and colour conflicts. In the final design, these issues are addressed through a more cohesive colour scheme and improved contrast. The hero section now features a coral orange button with an opaque background, enhancing visibility compared to the less distinct button in the A2 design. This update aligns with modern design practices, enhancing both accessibility and visual appeal. Typography in the final design has been modernised with "Josefin Sans," offering a consistent and contemporary look throughout the site.

### **Conceptual and Functional Enhancements:**

The header in the final design features sticky positioning, keeping the navigation accessible as users scroll. This is a notable improvement over the A2 design, which may have used a static or less adaptive header. The final design also introduces a responsive burger menu for smaller screens and a side navigation menu for desktop users, optimising screen real estate and enhancing usability ('Responsive Web Design: What It Is And How To Use It'). This addresses the less adaptive navigation system in the A2 design.

### **Gallery Section:**

- The gallery section in the A2 design featured a coral red heading and horizontal scrolling images. The final design has evolved to include a more interactive and responsive gallery, with images zooming in on hover and a progress bar for navigation. These enhancements provide a more engaging visual experience ('Responsive Navigation Patterns' 2012) compared to the static gallery in the A2 design.

### **Experiences Section:**

- The experiences section in the final design retains the concept of showcasing user-generated content but with improved responsiveness and interactivity. Hover effects now reveal testimonials, enhancing user engagement. This is a step forward from the simpler display in the A2 design, where interactivity and responsiveness were less emphasised.

### **Forms and Inputs:**

- Forms in the final design feature modern styling with rounded corners and smooth transitions, including interactive bubble buttons for location selection (Soegaard 2024). This represents a significant improvement over the more basic form design in the A2 design, offering a more engaging and user-friendly interface.

### Responsiveness and Interactivity:

- Media queries ensure that the layout adapts seamlessly to various screen sizes, from tablets to mobile phones. Adjustments in layout, font sizes, and visibility of elements like the burger menu and side navigation improve usability across devices. This addresses the limitations in the A2 design, where adaptability was less effectively implemented. Additionally, the final design incorporates subtle animations and transitions, such as fade-ins and hover effects, which enhance the dynamic quality of the user experience compared to the less refined transitions in the A2 design.

### Feedback from Tutor/Peers

Feedback from my tutor and peers significantly influenced the final design. Key improvements included:

- Button Visibility: The “Get Started” button was updated from a transparent to an opaque background with coral orange text, improving readability and prominence.
- Alignment Issues: The toggle switch in the form was realigned to match other form elements, creating a more cohesive layout.
- Responsiveness: A burger menu was added for mobile screens, and hover effects were implemented in the experiences section to enhance user engagement.

### Addressing Project Goals

The final website meets the project goals outlined in Assignment 2. It engages users through interactive elements such as the enhanced gallery and hover prompts in the experiences section. It also provides valuable information with a clearer layout and improved usability. The refined use of whitespace and contrast enhances readability and visual appeal, contributing to a polished user experience.

### Unfinished Wish List Items

Several features were not implemented due to time constraints:

- Content Switcher Based on Locations/Languages: This feature would improve accessibility and personalisation. Future projects will explore JavaScript frameworks like Vue.js or React for this enhancement.
- Interactive Explore Map Section: Although omitted, this feature will be prioritised in future updates using APIs like Google Maps to enhance user engagement.

## References

‘Responsive Navigation Patterns’. 2012. Brad Frost. 24 February 2012.

<https://bradfrost.com/blog/post/responsive-nav-patterns/>.

‘Responsive Web Design: What It Is And How To Use It’. Smashing Magazine. 22:27 + UTC .

<https://www.smashingmagazine.com/2011/01/guidelines-for-responsive-web-design/>.

Soegaard, Mads. 2024. ‘How to Design UI Forms in 2024: Your Best Guide’. The Interaction Design Foundation. 18 March 2024. <https://www.interaction-design.org/literature/article/ui-form-design>.



## FIGURE LIST

- ‘Contact Us via LiveChat!’ n.d. Accessed 23 August 2024. <https://secure.livechatinc.com/>.
- ‘Daintree: Lower Daintree Crocodile & Wildlife Cruise’. n.d. GetYourGuide. Accessed 23 August 2024. <https://www.getyourguide.com/en-au/daintree-national-park-12928/daintree-river-crocodile-wildlife-cruise-daintree-gateway-t434843/>.
- ‘Daintree Rainforest’. n.d. Accessed 23 August 2024. <https://www.daintreerainforest.com/>.
- ‘Daintree Tours - Rainforest Day Tour’. n.d. *Cairns Travel Agents [Dr.Tours]* (blog). Accessed 23 August 2024. <https://drtours.info/tours/409760/>.
- ‘Destination: Queensland Australia | Ahoy Club’. n.d. Accessed 23 August 2024. <https://ahoyclub.com/news/destination-queensland-australia/>.
- ‘Diving the Great Barrier Reef. Feb 15-17, 2024 - YouTube’. n.d.-a. Accessed 23 August 2024. [https://www.youtube.com/watch?app=desktop&v=\\_k12YhBjA0U](https://www.youtube.com/watch?app=desktop&v=_k12YhBjA0U).
- ‘———’. n.d.-b. Accessed 23 August 2024. [https://www.youtube.com/watch?app=desktop&v=\\_k12YhBjA0U](https://www.youtube.com/watch?app=desktop&v=_k12YhBjA0U).
- Frank Wittig. 2015. *Ellinjaa Falls*. Photo. <https://www.flickr.com/photos/frankwittig/16788104742/>.
- Gaspar, Author Olly. 2022. ‘20 Best Things to Do in Cape Tribulation & the Daintree’. 8 February 2022. <https://www.weseekestravel.com/things-to-do-cape-tribulation/>.
- ‘Great Barrier Reef Festival 2020, Whitsundays - Sailing Whitsundays’. n.d. Accessed 23 August 2024. <https://sailing-whitsundays.com/article/Great-Barrier-Reef-Festival-2020-Whitsundays>.
- ‘Highres-0040-Crop-Square.Jpg 480×480 Pixels’. n.d. Accessed 23 August 2024. <https://www.paronellapark.com.au/files/media/thumbcache/00d/5b1/a0a/Highres-0040-Crop-Square.jpg>.
- Kingdom), Planet Travel Ltd, Brighton (United. n.d. ‘Mozambique Diving Holidays | Mozambique Dive Holiday’. World. Accessed 23 August 2024. <https://www.planetdiveholidays.com/countries/mozambique/moz>.
- ‘Phoenix Rising’. n.d. Accessed 23 August 2024. <https://www.nationalgeographic.com/magazine/article/phoenix-islands>.