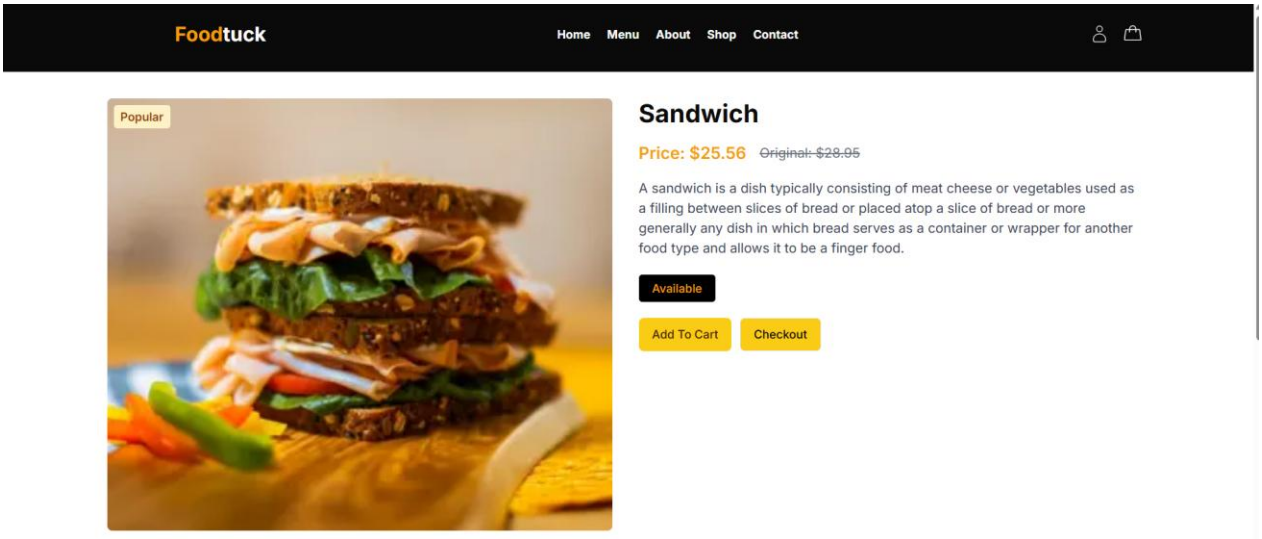
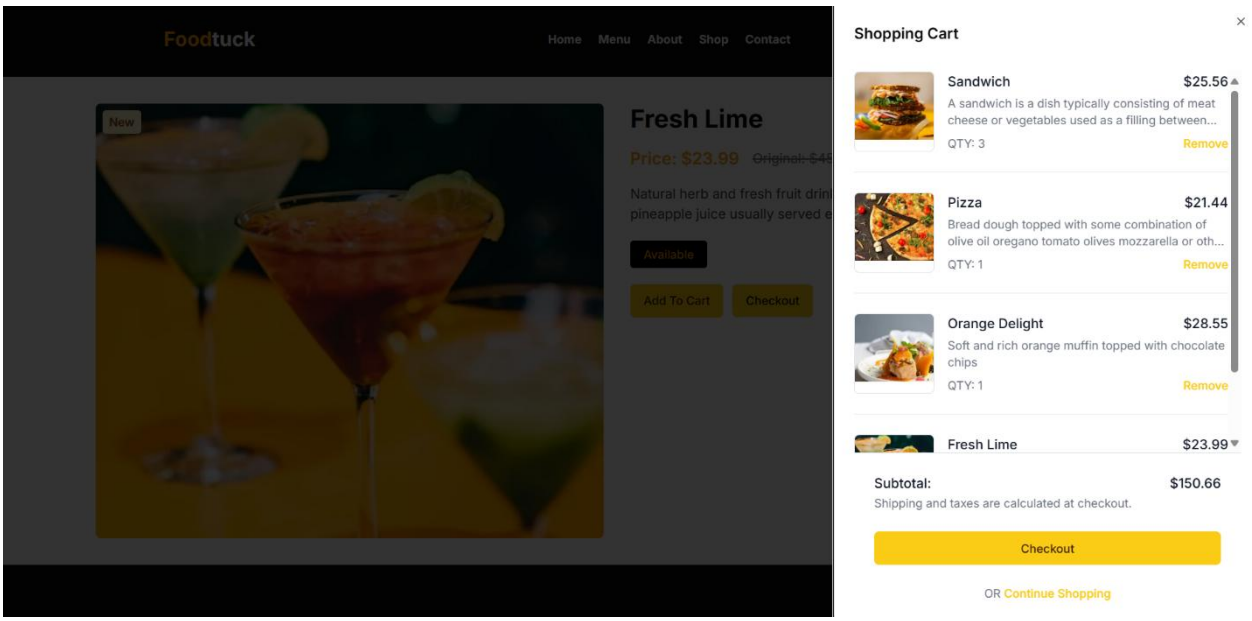
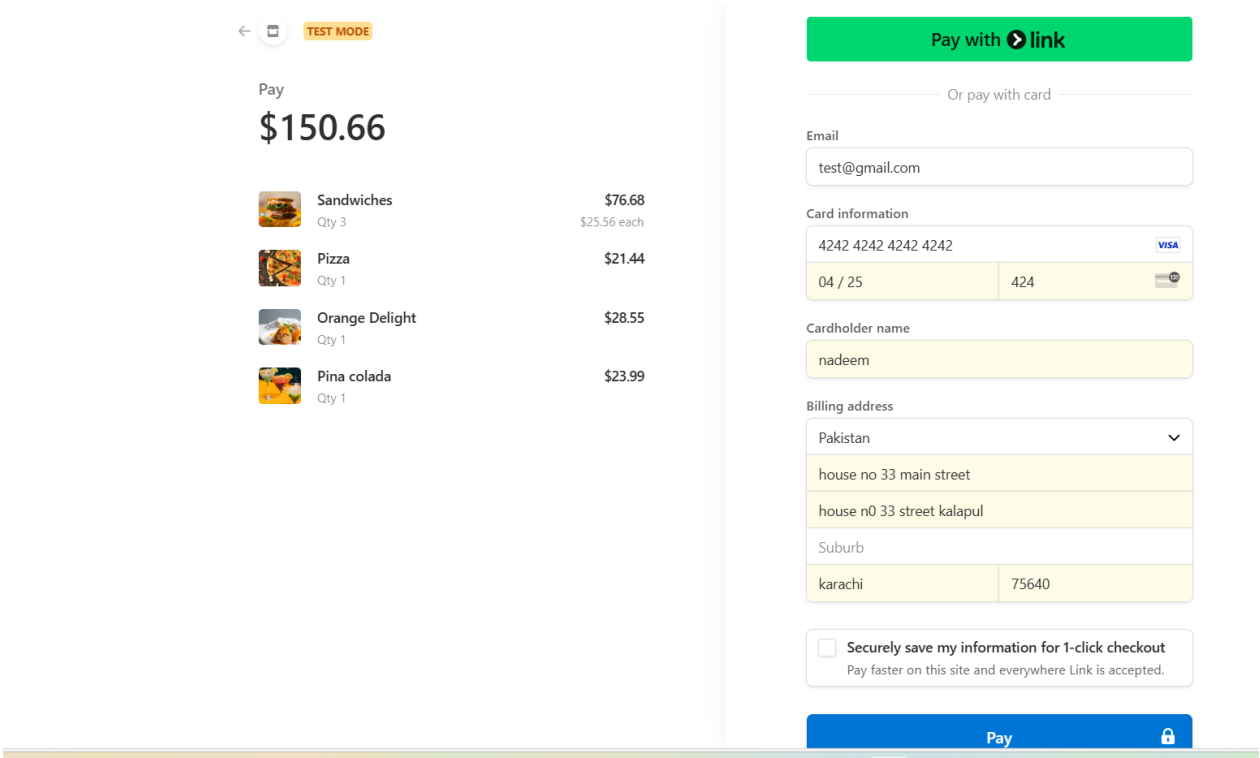
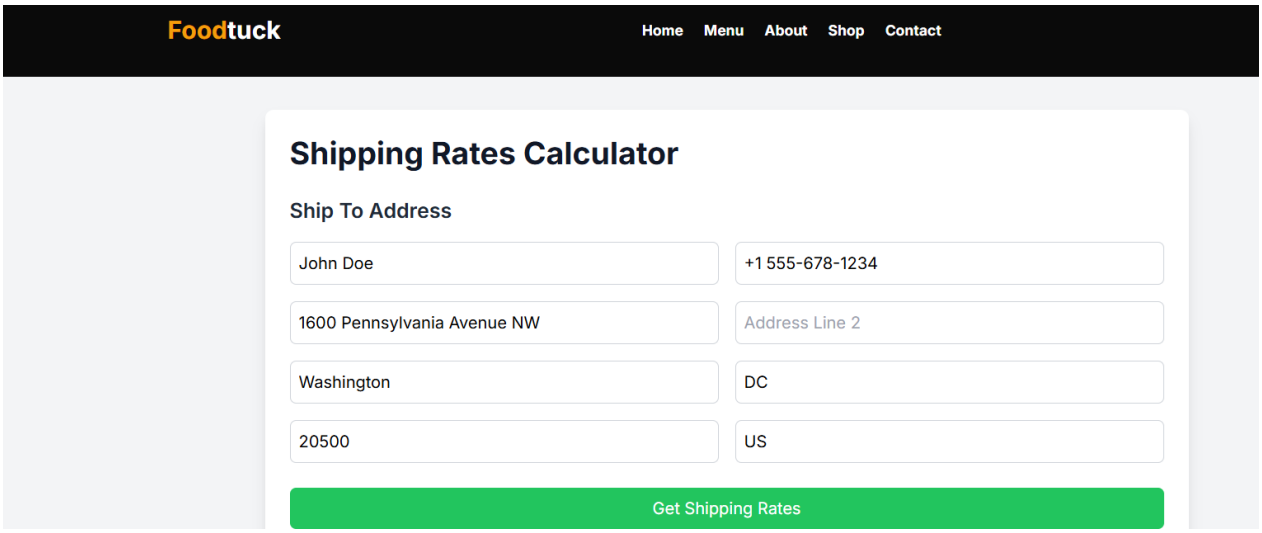
1. Functional Deliverables:

Functionality Image






TEST MODE
Pay
$150.66
Sandwiches
Qty 3
$76.68
$25.56 each
Pizza
Qty 1
$21.44
Orange Delight
Qty 1
$28.55
Pina colada
Qty 1
$23.99
Pay with link
Or pay with card
Email
test@gmail.com
Card information
4242 4242 4242 4242
04 / 25
424
Cardholder name
nadeem
Billing address
Pakistan
house no 33 main street
house n0 33 street kalapul
Suburb
karachi
75640
Securely save my information for 1-click checkout
Pay faster on this site and everywhere Link is accepted.
Pay


Foodtuck
Home
Menu
About
Shop
Contact
Shipping Rates Calculator
Ship To Address
John Doe
+1 555-678-1234
1600 Pennsylvania Avenue NW
Address Line 2
Washington
DC
20500
US
Get Shipping Rates

Responsiveness Image

Sandwich

Price: $25.56 ~~$28.95~~

Available

Foodtuck

Fresh Lime

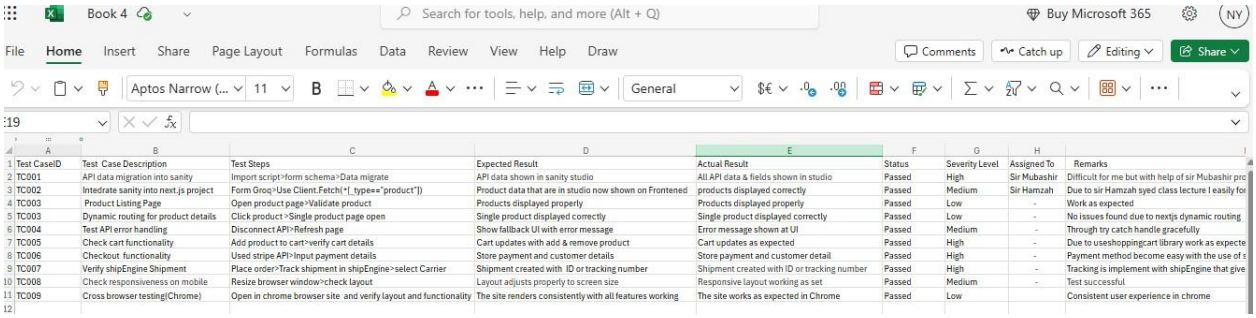
Price: $23.99 ~~Original: $45.99~~

Natural herb and fresh fruit drink made with rum cream of coconut and pineapple juice usually served either blended or shaken with ice.

Available

Add To Cart Checkout

2.Testing Report :



Test CaseID	Test Case Description	Test Steps	Expected Result	Actual Result	Status	Severity Level	Assigned To	Remarks
TC001	API data migration into sanity	Import script>form schema>Data migrate	API data shown in sanity studio	All API data & fields shown in studio	Passed	High	Sir Mubashir	Difficult for me but with help of sir Mubashir prc
TC002	Intedrate sanity into next.js project	Form Groq>Use Client.Fetch(*[_type=="product"])	Product data that are in studio now shown on Frontened	products displayed correctly	Passed	Medium	Sir Hamzah	Due to sir Hamzah syed class lecture I easily for
TC003	Product Listing Page	Open product page>Validate product	Products displayed properly	Products displayed properly	Passed	Low	-	Work as expected
TC003	Dynamic routing for product details	Click product >Single product page open	Single product displayed correctly	Single product displayed correctly	Passed	Low	-	No issues found due to nextjs dynamic routing
TC004	Test API error handling	Disconnect API>Refresh page	Show fallback UI with error message	Error message shown at UI	Passed	Medium	-	Through try catch handle gracefully
TC005	Check cart functionality	Add product to cart>verify cart details	Cart updates with add & remove product	Cart updates as expected	Passed	High	-	Due to useshoppingcart library work as expecte
TC006	Checkout functionality	Used stripe API>Input payment details	Store payment and customer details	Store payment and customer detail	Passed	High	-	Payment method become easy with the use of s
TC007	Verify shipEngine Shipment	Place order>Track shipment in shipEngine>select Carrier	Shipment created with ID or tracking number	Shipment created with ID or tracking number	Passed	High	-	Tracking is implement with shipEngine that give
TC008	Check responsiveness on mobile	Resize browser window>check layout	Layout adjusts properly to screen size	Responsive layout working as set	Passed	Medium	-	Test successful
TC009	Cross browser testing(Chrome)	Open in chrome browser site and verify layout and functionality	The site renders consistently with all features working	The site works as expected in Chrome	Passed	Low		Consistent user experience in chrome

3. Documentation:

Test cases executed and their results:

Test Summary: -

This report details the executed test cases and their results for various functionalities, primarily focusing on API integration, product pages, checkout, and responsiveness across devices and browsers. Each test case includes the description, steps followed, expected vs. actual results, status, severity level, assignee, and remarks.

Test Cases Executed

Test Execution Overview

- **Total Test Cases Executed**: 9
- **Total Passed**: 9
- **Total Failed**: 0
- **Overall Status**: All test cases passed successfully.

Test Summary and Key Remarks

1. **API Integration and Data Migration**:
    a. The integration of the API into the sanity studio was smooth and performed successfully after the script code was provided.

2. **Next.js Project Integration**:
    a. The integration of Sanity data into the Next.js frontend using Groq queries was achieved without issues, thanks to prior guidance from team members.

3. **Product Pages and Dynamic Routing**:
    a. Product listing and individual product detail pages rendered correctly, with dynamic routing functioning as expected.

4. **API Error Handling**:
    a. Error handling mechanisms were successfully tested, and fallback UI with error messages was properly displayed when the API connection was disrupted.

5. **Cart and Checkout Functionality**:
    a. Cart updates and checkout processes were fully functional, with successful data handling and payment processing through the Stripe API.

6. **ShipEngine Shipment Verification**:
    a. The tracking functionality for shipments via Ship Engine was successfully tested, including the creation of tracking IDs.

7. **Responsive Design**:
    a. The site's responsiveness across mobile and desktop platforms was validated, and the layout was consistent across varying screen sizes.

8. **Cross-Browser Testing**:
    a. The site’s functionality and layout were consistent in Chrome, confirming compatibility.

Performance optimization steps taken:

- Use next js Image component (next/image) for lazy loading, resizing and optimizing images.
- The Link component unable client-side transition between pages, avoiding full page reload and speeding up navigation.
- We used in image Alt attribute for good SEO (search engine optimization) in website.
- Use Tailwind CSS for optimized styling.
- Use the next/Font module to pre load Font and reduced layout shifts.
- Use the next –script components to lazy load scripts.
- For better SEO only use one H1 tag in one page.
- **Use CDN**: Distribute content globally and cache at edge locations.

Security measures implemented:

- **Use `.env` files** to store sensitive information like API keys, database credentials, and other environment-specific settings. Ensure these files are **never committed to version control** (e.g., add them to `.gitignore`).

- **Use environment variables** to securely store secrets and configurations instead of hardcoding them in code.

Challenges faced and resolutions applied:

Challenges:

- **Asynchronous Operations**: Fetching data asynchronously from APIs can lead to issues with managing data flow, timing, and UI updates.
- **Data Fetching Delays**: Fetching data from external sources, especially large datasets, can cause delays and slow down the user experience.
- **Error Handling**: Handling failed API requests, timeouts, and unexpected responses from external APIs can be complex.

- **Data Caching**: Repeated data fetching from the same source can increase load times and cause unnecessary network requests.

Resolutions Applied:

- **Use `async/await`**: Simplified handling of asynchronous operations by using the `async/await` syntax for fetching data, which provides cleaner, more readable code.
- **Loading States**: Implemented loading indicators or skeleton screens to show users that data is being fetched, improving user experience during delays.
- **Error Handling with Try-Catch**: Used `try-catch` blocks to handle API errors gracefully, displaying fallback content or error messages in case of failures.
- **Data Caching**: Implemented caching mechanisms such as **localStorage**, **Session Storage**, or **state management tools** like Redux or React Context to store fetched data temporarily and avoid redundant API calls.
- **Debouncing API Requests**: Implemented **debouncing** for search-related API requests to avoid triggering multiple unnecessary calls in rapid succession.
- **Optimized Data Fetching**: Used **pagination** or **lazy loading** techniques to load data in chunks, reducing initial load time and improving performance.