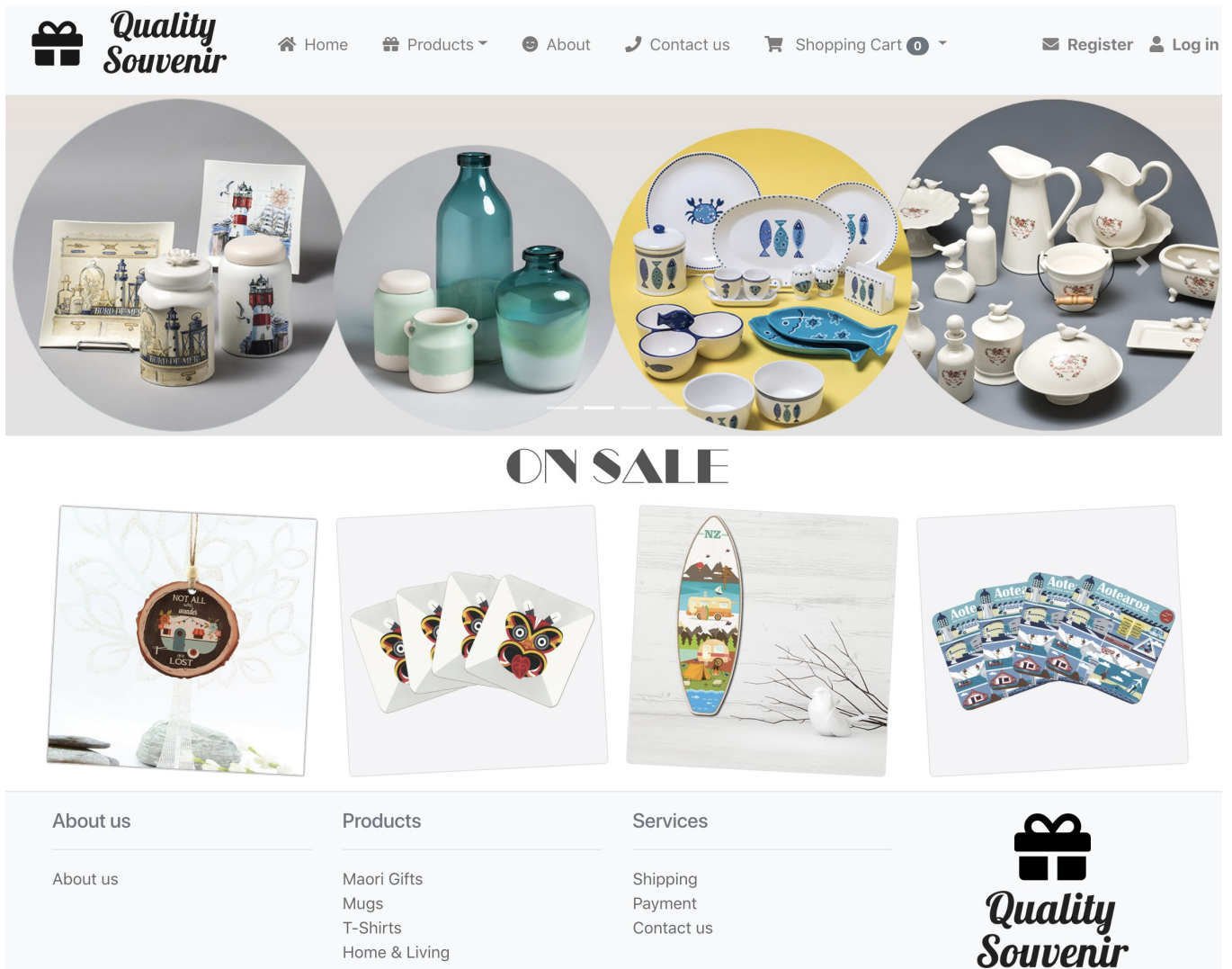


# 7420 Web Application and Development



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# 1 Introduction

This is an online shopping website for Quality Souvenir company where online customers can purchase souvenirs and make an order. Meanwhile, administrator can manage their products(category, supplier) and members. The online store mainly sales several kinds of local souvenirs,include Maori gifts, Mugs and other categories. The website has developed both user interface and backend management. The backend uses ASP.Net core MVC and Entity framework. SQL Server is the database server in this project. Other frontend techniques are HTML, CSS, JavaScript and Bootstrap framework.

## Test Account:

Name	Description
Website URL:	<a href="http://dochyper.unitec.ac.nz/zhangm67/asp_application1">http://dochyper.unitec.ac.nz/zhangm67/asp_application1</a>
Admin: Password:	admin@email.com P@ssw0rd
Customer: Password:	qsouvenirmu@gmail.com P@ssw0rd

## 2 Business Specification

This is a souvenir shopping website. In this online shopping system, there are two roles for different users, one is customers (member) and the other is administrators (admin). For customers, we have general guest and registered customer.

### 2.1 Customer

#### ***View part :***

\* View the website :

Any users(general guests and registered users) can view the pages of home,

about, contact us, login, register.

\* View the products:

Any users can view the products information or the product information in a specific category.

\* View the product detailed information:

Any user can view all the items, the price, product description, products category, stock, and supplier information.

\* View profile or account:

Only registered users can view their account page or profiles, including the name, email address, contact number, physical address, password, but they can't see their account status.

### ***Action part :***

\* Search products:

Any users can search products by key words through search input field and button.(Including product description, products category, and supplier information).

\* Sorter products:

Any users can use filter to sort the products(Price sorter )

\* Add/remove item from shopping cart:

Any users can click add to cart icon to add a selected product to the cart or click remove from cart to remove it or clear the cart or checkout button to go to place the order, and they can also view the cart to see how many items in the cart, but only registered users can place an order of caps.

\* Login/Register:

Unregistered users will redirect to login page when he/she checkout to go to place the order.

Unregistered users will redirect to register page when he/she checkout to go to place the order.

\* Account/Profile

Only registered users can view their account page or edit profiles, including the name, email address, contact number, physical address, password, but they can't see their account status.

## 2.2 Administrator

### ***View part :***

- \* View website:

Administrators can view the pages of home, about, contact, login, register.

- \* View Products:

Administrators can view the products information (including all the items, product category and supplier information ) or the product information in a specific category.

- \* View account:

Administrators can view their account page or edit profiles.

Administrator can view the current users' profiles and account.

### ***Action part :***

- \* Search products:

Administrators can search products through search input field and button.

- \* Login :

Administrators can login to admin management page.

- \* Edit information:

Administrators can edit the contact profile of the company.

- \* Edit products information:

Administrators have rights to add, edit or delete items, categories, suppliers.

- \* Change order status:

Administrators can change order status through management pages,

- \* Change user account status:

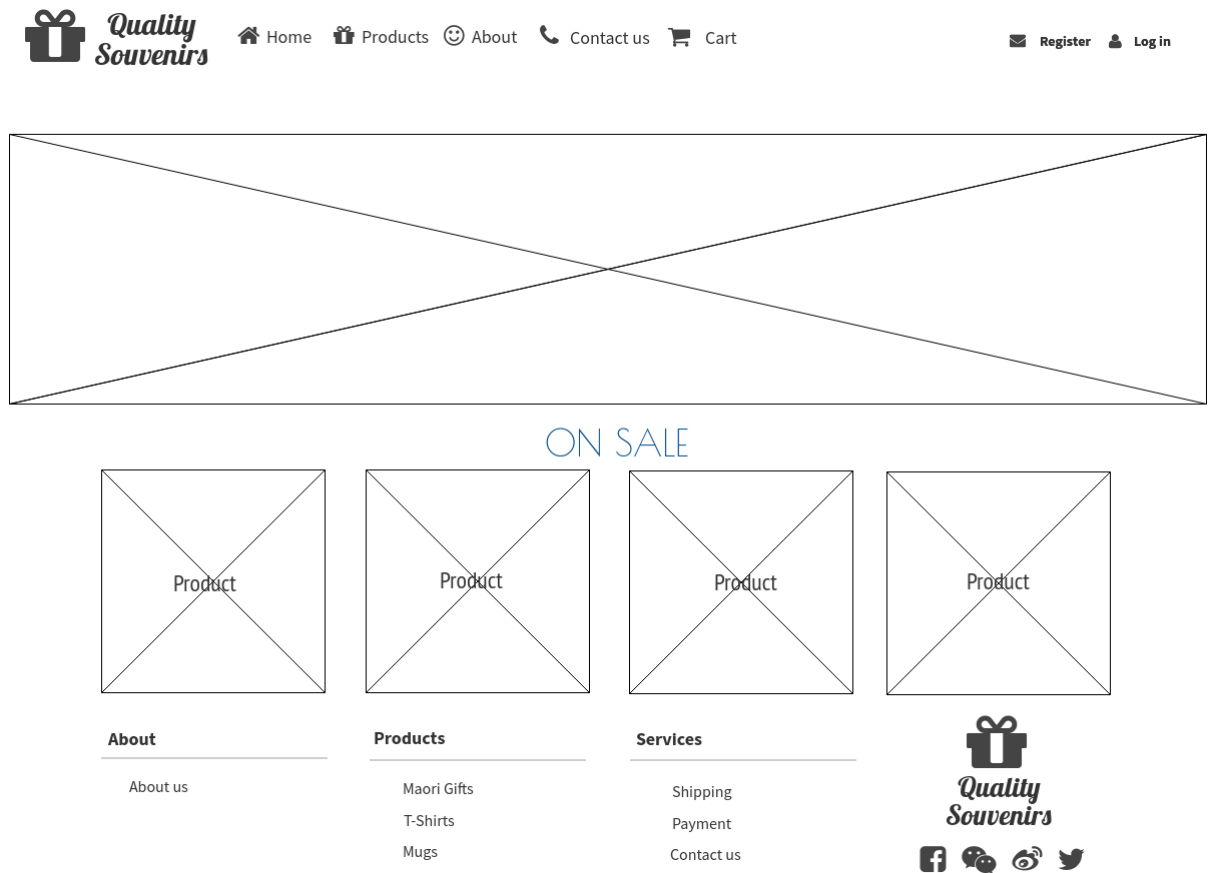
Administrators can disable, enable, edit an account in admin.

- \* Administrators have all rights of customers have, except administrators cannot add an item to shopping cart or place an order on their own shopping website.

## 3 User Interface Design

## 3.1 Wireframes design

### 3.1.1 Home page



### 3.1.2 Products



Search Products  All Products Name  Price 

Maori Gifts  
T-Shirts  
Mugs  
Home&Living  
On Sale



## Services

Maori Gifts  
T-Shirts  
Mugs

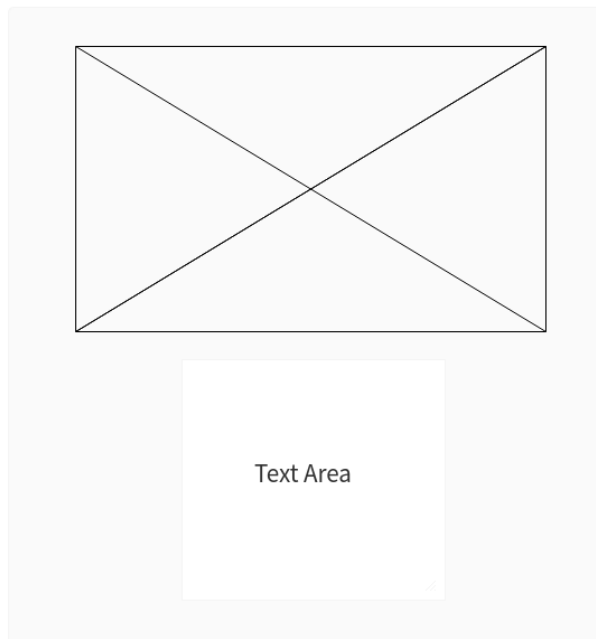
Shipping

Payment

Contact us



### 3.1.3 About

**About**[About us](#)**Products**[Maori Gifts](#)  
[T-Shirts](#)  
[Mugs](#)**Services**[Shipping](#)  
[Payment](#)  
[Contact us](#)

## 3.1.4 Contact us





Quality  
Souvenirs



Home



Products



About



Contact us



Cart



Register



Log in

Home > Contact us

Text Area

#### About

About us

#### Products

Maori Gifts

T-Shirts

Mugs

#### Services

Shipping

Payment

Contact us



Quality  
Souvenirs



## 3.1.5 Login and Register



Quality  
Souvenirs



Home



Products



About



Contact us



Cart



Register



Log in

Home > Log in

#### Log in



Email



Password

Log in

#### About

About us

#### Products

Maori Gifts

T-Shirts

Mugs

#### Services

Shipping

Payment

Contact us



Quality  
Souvenirs

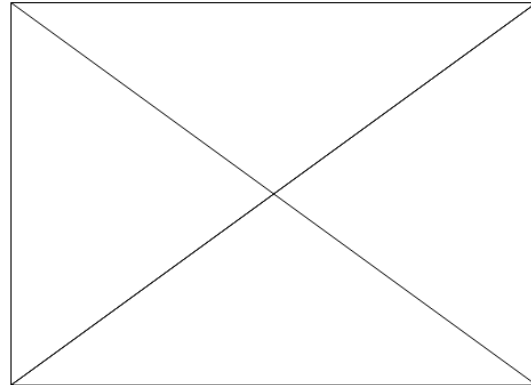




Home > Register

### Create a new account

Create your account



### About

[About us](#)

### Products

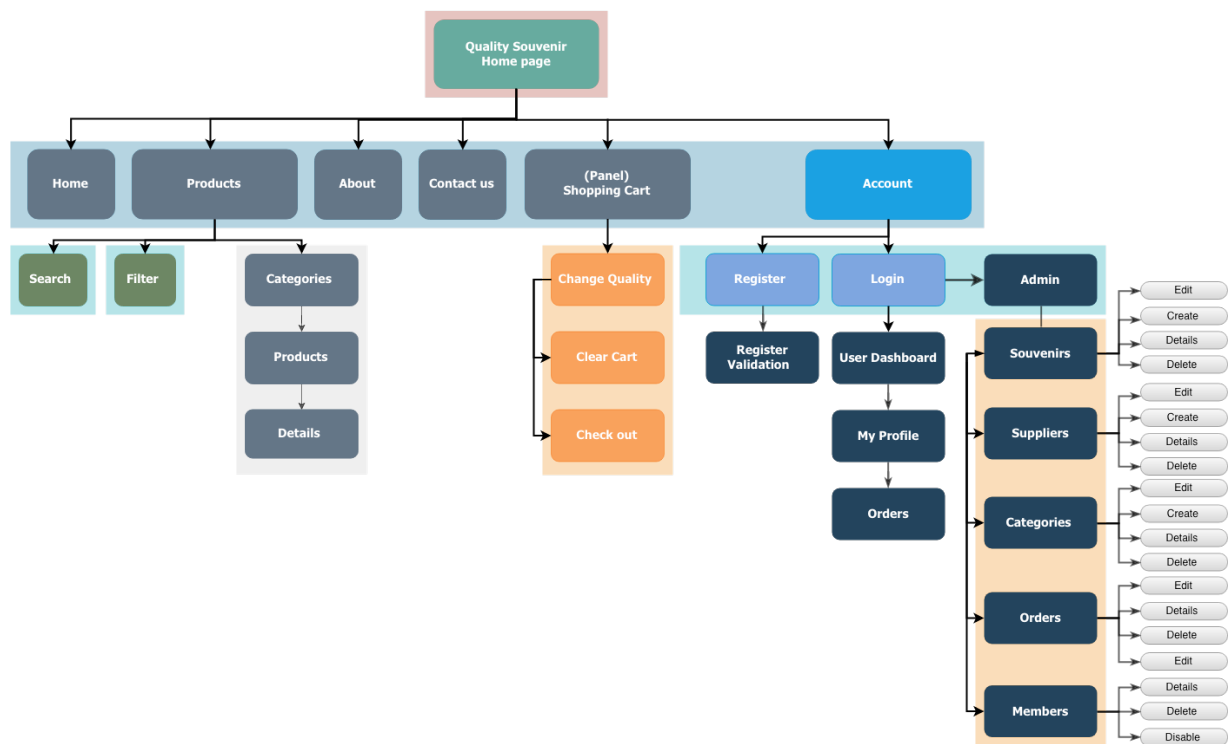
[Maori Gifts](#)  
[T-Shirts](#)  
[Mugs](#)

### Services

[Shipping](#)  
[Payment](#)  
[Contact us](#)



## 3.2 Sitemap



## 3.3 Site navigation

The website allows both registered user and guests to browse the home page, product page, about page , contact page, register and login page via the navigatian bar.

Both navigation bar and footer have links to these pages. Shopping cart is a dropdown panel where general Guests can view them in any pages.

After login, there are different views for administrator and users.

For general register users:

For administrator:

Anonymous visitors have to register an account to place an order. After purchasing, they can view their orders through their account details page.

Administrator have an administrator dropdown list in the navigation bar where they can manage suppliers, categories, bags, orders and members.

The administrator also has access to all the functions for anonymous users and registered customers to facilitate the testing for the website.

Each page have a clear site navigation and can back to Home page anytime

Home > Products

Search by name



All Products

Name

Price

Home > About

Home > Contact

## 4 Dataset Design

### 4.1 Table and fields

#### OrderItem

Field Name	Data Type	Key Constraint
OrderItemID	NUMBER	PK
OrderID	NUMBER	FK
Quantity	NUMBER	
SouvenirID	NUMBER	FK

## ShoppingCart

Field Name	Data Type	Key Constraint
ShoppingCartID	NUMBER	PK
GST	NUMBER(5,2)	
Subtotal	NUMBER(5,2)	
GrandTotal	NUMBER(5,2)	

## CartItem

Field Name	Data Type	Key Constraint
CartItemID	NUMBER	PK
ShoppingCartID	NUMBER	FK
Quantity	NUMBER(5)	
UnitPrice	NUMBER(5,2)	
DateCreated	Date	

## Souvenir

Field Name	Data Type	Key Constraint
SouvenirID	NUMBER	PK
Name	VARCHAR2	

Field Name	Data Type	Key Constraint
Price	NUMBER(5,2)	
Description	VARCHAR2	
SupplierID	NUMBER	PK
CategoryID	NUMBER	PK
Image	VARCHAR2	

### Supplier

Field Name	Data Type	Key Constraint
SupplierID	NUMBER	PK
Name	VARCHAR2	
PhoneNumber	NUMBER	
Email	VARCHAR2	

### Customer

Field Name	Data Type	Key Constraint
CustomerID	NUMBER	PK
UserName	VARCHAR2	
PhoneNumber	NUMBER	
Email	VARCHAR2	
Address	VARCHAR2	
Enabled	Bool	
Password	VARCHAR2	

### Order

Field Name	Data Type	Key Constraint
OrderID	NUMBER	PK
Status	VARCHAR2	
Date	DATE	
CustomerID	NUMBER	FK
LastName	VARCHAR2	
FirstName	VARCHAR2	
City	VARCHAR2	
State	VARCHAR2	
PostalCode	VARCHAR2	
Country	VARCHAR2	
Phone	VARCHAR2	
Subtotal	NUMBER(5,2)	
GST	NUMBER(5,2)	
GrandTotal	NUMBER(5,2)	

### Category

Field Name	Data Type	Key Constraint
CategoryID	NUMBER	PK
Name	VARCHAR2	
Description	VARCHAR2	

## 4.2 Relationships

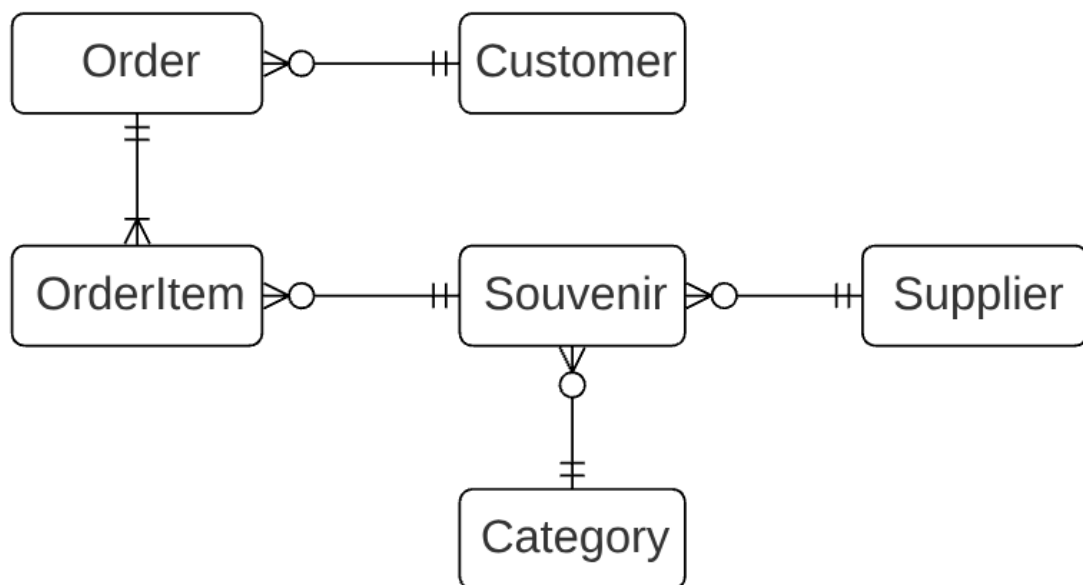
A category can have zero or many souvenirs, but one souvenir can only belong to one and only one category.

A supplier can supply zero or many souvenirs, but one souvenir can only belong to one and only one supplier.

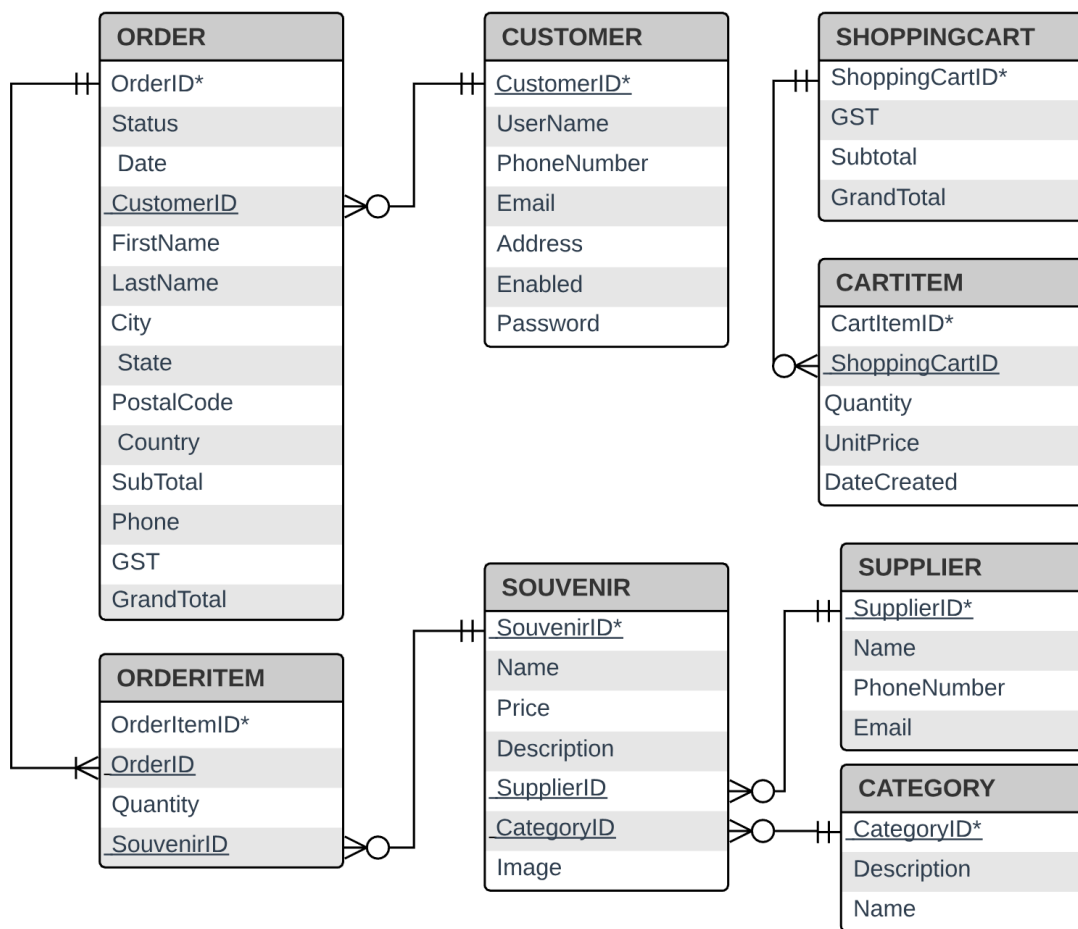
A souvenir can have zero or many OrderItems, but an order item can have one and only one souvenir.

An order can have one to many order items, but one order item can only belong to one and only one order.

A customer can have zero or many orders, but one order can only belong to one and only one customer.



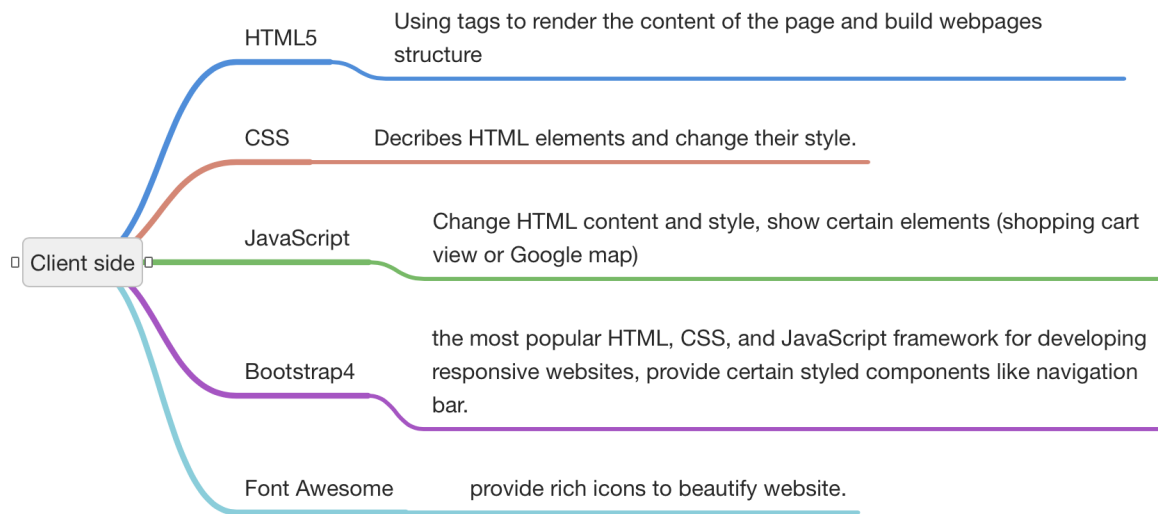
## 4.2 ERD diagram



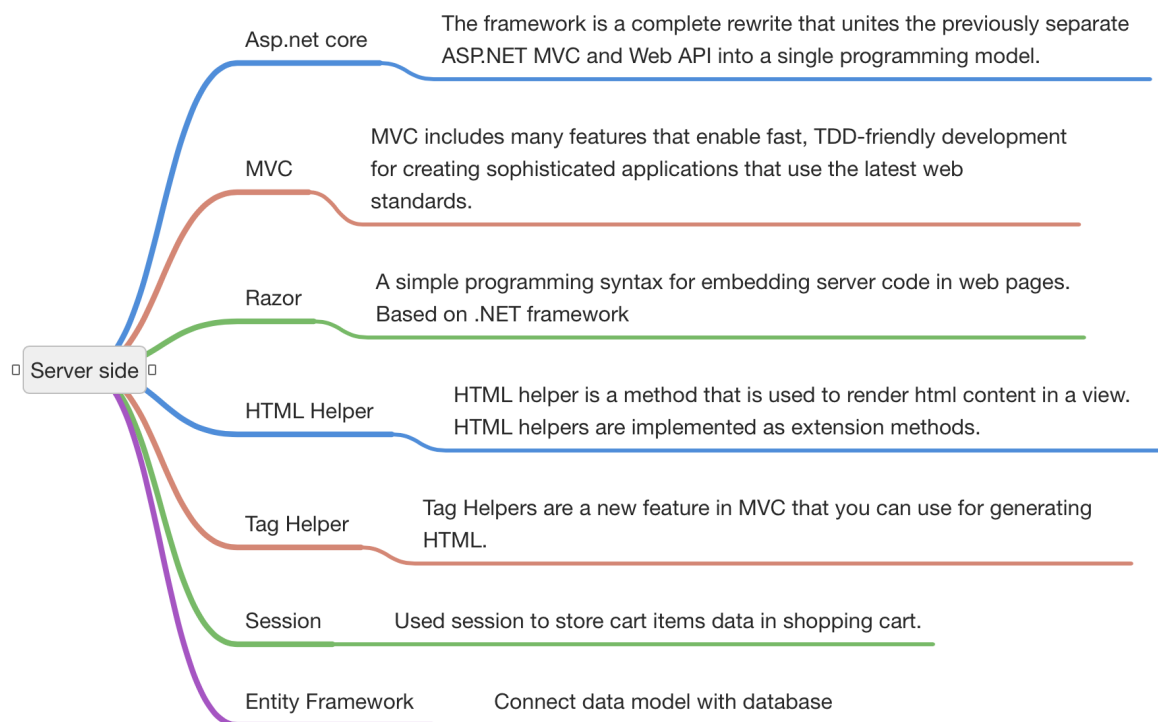
## 5 System Design Rationale

### 5.1 Client side techniques





## 5.2 Server side techniques



Examples:

### Razor

```
1. @ {
2.     var categories = (List<Category>) ViewData["Categories"];
3. }
```

```

4.         <ul class="list-group list-group-flush">
5.         <li class="list-group-item">
6.             <a asp-action="Index" class="alert-light font-weight-normal bg-transparent">All Souvenirs</a>
7.         </li>
8.         @foreach (var item in categories)
9.         {
10.            <li class="list-group-item">
11.                <a class="alert-light font-weight-normal bg-transparent" asp-action="Index" asp-route-categoryId=@item.ID>
12.                    @item.Name
13.                </a>
14.            </li>
15.        }
16.    </ul>

```

## Tag Helper

### Environment tag helper

```

1.     <environment names="Staging,Production">
2.
3.     </environment>

```

### Form tag helper

```

1.     <form asp-controller="Demo" asp-action="Register" method="post">
2.         <!-- Input and Submit elements -->
3.     </form>

```

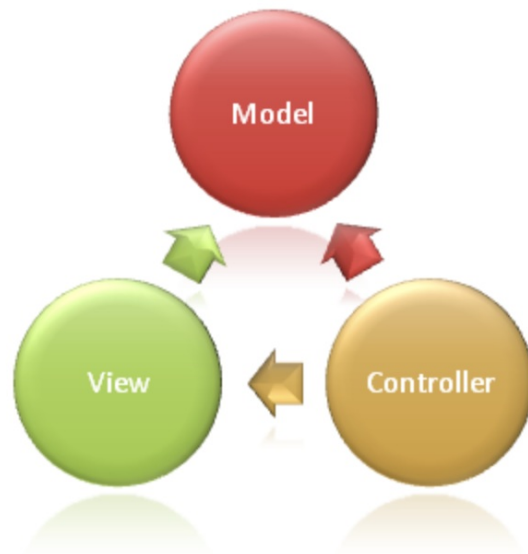
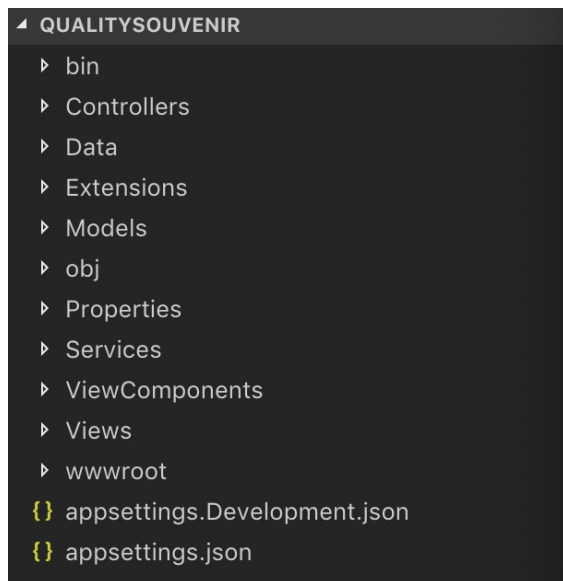
## Session

```

1.     services.AddSession(options =>
2.     {
3.         // Set a short timeout for easy testing.
4.         options.IdleTimeout = TimeSpan.FromMinutes(5);
5.         options.Cookie.HttpOnly = true;
6.     });

```

## MVC



## 6 Test Plan

### 6.1 Home page

No.	Case	Input	Expected Outcomes	Actual Outcomes
1	Enter URL	Open Website	Home page will show	As expected
		Click the top-left logo	Home page will refresh	As expected
		Click the top-left <span>Quality Souvenir</span>	Home page will refresh	As expected
2	Carousel test	Click left <span>&lt;</span> button	Back to previous image	As expected
		Click left <span>&gt;</span> button	Next slide will show	As expected
		Click any place to the picture	Link to products page	As expected

No.	Case	Input	Expected Outcomes	Actual Outcomes
3	Navigation bar test	Click <b>Home</b> on the navigation bar	Link to Home page	As expected
		Click <b>Products</b> on the navigation bar	Dropdown box will show and display products categories	As expected
	Under <b>Products</b> dropdown box menu	Click <b>All Products</b> on the navigation bar	Link to products page	As expected
		Click <b>All Souvenirs</b> in the dropdown box menu	Link to products page	As expected
		Click <b>Maori Gifts</b> in the dropdown box menu	Link to Maori Gifts products page	As expected
		Click <b>Mugs</b> in the dropdown box menu	Link to Mugs products page	As expected
		Click <b>T-shirts</b> in the dropdown box menu	Link to T-Shirts products page	As expected
		Click <b>Home &amp; Living</b> in the dropdown box menu	Link to Home & Living products page	As expected
		Click <b>About</b> on the navigation bar	Link to about page	As expected
		Click <b>Contact us</b> on the navigation bar	Link to contact page	As expected

No.	Case	Input	Expected Outcomes	Actual Outcomes
		Click <b>Shoppong Cart</b> on the top right area	A panel will display and show shopping cart	As expected
		Click <b>Log in</b> on the top right area	Link to Log in page	As expected
		Click <b>Register</b> on the top right area	Link to Register page	As expected
4	Onsale test	mouseover products	<b>Buy now</b> button will display	As expected
		Click <b>Buy now</b>	Link to this product detail page	As expected
5	Footer test	Click <b>About us</b>	Link to about page	As expected
		Click <b>Maori Gifts</b>	Link to Maori Gifts products page	As expected
		Click <b>Mugs</b>	Link to Mugs products page	As expected
		Click <b>T-shirts</b>	Link to T-Shirts products page	As expected
		Click <b>Home &amp; Living</b>	Link to Home & Living products page	As expected
		Click <b>Shipping</b>	Link to contact page	As expected
		Click <b>Payment</b>	Link to contact page	As expected
		Click <b>Contact us</b>	Link to contact page	As expected

## 6.2 Products page

No.	Case	Input	Expected Outcomes	Actual Outcomes
1	-	-	Products page will show	
	-	-	Navigation and footer are displayed consistently	As expected
2	Under left category menu	Click <code>All Souvenirs</code>	All the souvenirs are displayed.	As expected
		Click <code>Maori Gifts</code>	Only products belong to <code>Maori Gifts</code> category will display	As expected
		Click <code>Mugs</code>	Only products belong to <code>Mugs</code> category will display	As expected
		Click <code>T-shirts</code>	Only products belong to <code>T-shirts</code> category will display	As expected
		Click <code>Home &amp; Living</code>	Only products belong to <code>Home &amp; Living</code> category will display	As expected
3	Products Area		Products will show 4*2	As expected






No.	Case	Input	Expected Outcomes	Actual Outcomes
	-	Click products name	Link to Products details page	As expected
	-	Click Shopping Cart Plus icon	Products will be added to shopping cart	As expected
4	Search and Filter		Search inout box and name, price sorter will display	As expected
	Search by name	Enter <code>Coaster</code>	Three products of coaster will show	As expected
	Search by price	Enter number <code>1</code> at left input box and Enter number <code>9</code> at right input box Click <code>□</code> Button	Only <code>Fridge Magnet</code> product will show because it is price is \$9	As expected
	Sorter	Click <code>name</code>	Products will display descending according to its name	As expected
	Sorter	Click <code>price</code>	Products will display ascending by price	As expected
	Pagination	Click on <code>Next</code>	Show the next page product items	As expected
	Pagination	Click on <code>Previous</code>	Show the previous page product items	As expected





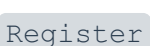
## 6.3 Login page

No.	Case	Input	Expected Outcomes	Actual Outcomes
1		Click <b>Log in</b> in the navigation bar	Log in section will show in the Left area and a picture will show in the right area	As expected
			Navigation and footer are displayed consistently	As expected
2	Log in(Admin)	Enter email <b>admin@email.com</b> enter password <b>P@ssw0rd</b> Click <b>Log in</b>	<b>Administrator</b> will show in the navigation bar while <b>Shopping cart</b> will hide	As expected
		Click <b>Administrator</b>	Dropdown menu will show	As expected
	Log in(User)	Enter email <b>muamu@gmail.com</b> enter password <b>P@ssw0rd</b> and click <b>Log in</b>	<b>My Profile</b> will show on the right of the navigation bar	As expected
	Forget your password?	Click <b>Forget your password</b>	Retrieve Password page will show.	As expected
3		Click <b>Log out</b>	Logout the system and home page shows	As expected

## 6.4 Register page



No.	Case	Input	Expected Outcomes	Actual Outcomes
1			Register section will show in the Left area and a picture will show in the right area	As expected
			Navigation and footer are displayed consistently	As expected
2	Register with empty email address	Click on 	Error message "The Email field is required" is displayed.	As expected
2.1	Register with invalid email address	Click on 	Error message "The Email field is not a valid e-mail address" is displayed.	As expected
2.2	Register with existing email address	Click on 	Error message "User name is already taken" is displayed.	As expected
2.3	Register with empty password	Click on 	Error message "The Password field is required" is displayed.	As expected
2.4	Register with invalid password	Click on 	Error message "The Password must be at least 6 and at max 100 characters long" is displayed.	As expected

No.	Case	Input	Expected Outcomes	Actual Outcomes
2.5	Register with unmatched confirm password	Click on 	Error message "The password and confirmation password do not match" is displayed.	As expected
2.6	Register with empty user name	Click on 	Error message "The Username field is required" is displayed.	As expected
2.7	Register with phone number	Click on 	Error message "The Phone Number field is required" is displayed.	As expected
2.8	Register with empty address	Click on 	Error message "The Address field is required" is displayed.	As expected
2.9	Register with invalid address	Click on 	Error message "The Address must be at least 6 and at max 100 characters long" is displayed.	As expected

No.	Case	Input	Expected Outcomes	Actual Outcomes
3	Register with all valid information	Enter information below: Email : azimeng@mail.com Username: azimeng Phone Number: 0271234567 Address: Auckland Password : P@ssw0rd Confirm Password : P@ssw0rd Click Create your account	Link to Thanks for Registering page	As expected
		Check mail box and confirm email. Log in with registered information.	Log in successfully.	As expected


## 6.5 User page

No.	Case	Input	Expected Outcomes	Actual Outcomes
1	Log in to the system with valid user email and password	Click Log in on the right of the navigation bar	Display Log in page	As expected
		Input valid registered customer email and password and click Log in button	Log in successfully. My Account will display in the right part of navigation bar	As expected
		Click My Account	Dropdown menu will show.	As expected

No.	Case	Input	Expected Outcomes	Actual Outcomes
	View Profile	Click <b>Profile</b>	User's profile will show	As expected
	View Orders	Click <b>Orders</b>	All the orders for this customer will be listed.	As expected
	View Order Details	Choose one current order Click <b>Details</b>	Each order details will be displayed.	As expected
2	Log out	Click <b>Log out</b>	Log out successfully and back to home page	As expected

## 6.6 Administrator page

No.	Case	Input	Expected Outcomes	Actual Outcomes
-		Administrator log in	The Administrator dropdown menu will show in the navigation	As expected
1	Souvenir Management	Click <b>Souvenir</b> Under Administrator menu	Link to products manage page	As expected
1.1	Add a new product	In product index page, click <b>Create New</b> button	Link to create products page	As expected

No.	Case	Input	Expected Outcomes	Actual Outcomes
		Enter the following information: Name: A New Souvenir Price: 100 Description: this is a new souvenir Supplier Name: Ajay Kumar Category Name: Maori Gifts  Choose a image in local computer Click 	In the product detail page, new product can be seen:	As expected
		In user product list page, type  in search box	New products occur in the result	As expected
1.2	Edit product	Choose the first product. Click  in the end of the row	Link to products details page	As expected
		Make changes like below: Name: Anchored Price: 100 Description: A good thing Supplier Name: Ajay Kumar Category Name: Mugs  Click 	Each information has been changed	As expected

No.	Case	Input	Expected Outcomes	Actual Outcomes
		In user product list page, type 'Anchored' in search box	Products occur in the result with changed information	As expected
1.3	Delete product	Choose the first product. Click <b>Delete</b> in the end of the row	Link to delete confirm page	As expected
		In the delete confirm page, click 'delete' button	The new item has been delete and images are also deleted in the folder	As expected
		In product list page, look for the first product info	Cannot be found at the list	As expected
2	Supplier Management	Click <b>Supplier</b> Under Administrator menu	Link to Supplier manage page	As expected
2.1	Add Supplier	In Supplier index page, click <b>Create New</b> button	Link to create Supplier page	As expected
		Enter the following information: Name: Birthday Gifts Description: this is a new Supplier  Click <b>Create</b>	In the Supplier detail page, new Supplier can be seen	As expected
2.2	Edit Supplier	Choose the Mugs Supplier Click <b>Edit</b> in the end of the row	Link to Supplier details page	As expected

No.	Case	Input	Expected Outcomes	Actual Outcomes
		Make changes like below: Name: NZ Mugs Description: Beautiful mugs  Click <b>Save</b>	Each information has been changed, and displays in the cat index page	As expected
2.3	Delete Supplier	Choose the Mugs Supplier .  Click <b>Delete</b> in the end of the row	Link to delete confirm page	As expected
		In the delete confirm page, click 'delete' button	The Supplier has been deleted.	As expected
3	Supplier Management	Click <b>Supplier</b> Under Administrator menu	Link to Supplier manage page	As expected
3.1	Add Supplier	In Supplier index page, click <b>Create New</b> button	Link to create Supplier page	As expected
		Enter the following information: Name: Muamu PhoneNumber: 02745678 Email: mumumu@email.com  Click <b>Create</b>	In the Supplier detail page, new Supplier can be seen	As expected
3.2	Edit Supplier	Choose the Muamu Supplier. Click <b>Edit</b> in the end of the row	Link to Supplier details page	As expected




No.	Case	Input	Expected Outcomes	Actual Outcomes
		Make changes like below: Name: Muamu PhoneNumber: 0271111111 Email: mumumu@email.com  Click <span>Save</span>	Each information has been changed, and displays in the cat index page	As expected
3.3	Delete Supplier	Choose the Muamu Supplier . Click <span>Delete</span> in the end of the row	Link to delete confirm page	As expected
		In the delete confirm page, click 'delete' button	The Supplier has been deleted.	As expected
4	Order Management	Click <span>Order</span> Under Administrator menu	Link to Order manage page	As expected
4.1	Change order status	Click <span>shipped</span>	The order status will change to shipped	As expected
4.2	Delete order	Choose the First order.  Click <span>Delete</span> in the end of the row	Link to delete confirm page	As expected
		In the delete confirm page, click 'delete' button	The Order has been deleted.	As expected
5	Member Management	Click <span>Member</span> Under Administrator menu	Link to Member manage page	As expected



No.	Case	Input	Expected Outcomes	Actual Outcomes
5.1	Enable a disabled account	Click on <b>Enable</b>	A tick for the enable checkbox appears.	As expected
5.2	Disable a valid account	Click on <b>Disable</b>	No tick for the enable checkbox any more.	As expected
5.3	Edit an account	Click on <b>Edit</b> and change the first name to another valid first name	The member account is changed, and the page is redirected to Account management page.	As expected
5.4	View an account details	Click on <b>Details</b>	The account details are displayed.	As expected
5.5	Delete an account	Select an account and click on <b>Delete</b> .	Link to delete confirm page	As expected
		Click on <b>Delete</b> to confirm.	The account is deleted.	As expected

## 6.7 Shopping Cart

No.	Case	Input	Expected Outcomes	Actual Outcomes
-	Guest or Log in as users.		The shopping cart dropdown box show in the navigation bar	As expected

No.	Case	Input	Expected Outcomes	Actual Outcomes
1	Add an item to shopping cart	Select a target bag and click shopping cart icon	The Shopping Cart has one item and the product ID, image, name, quantity, price, subtotal, GST and grand total price are displayed in the shopping cart pannel.	As expected
1.2	Add the same item to shopping cart	Select the same product and click shopping cart icon	The quantity for this product is increased to two, and the subtotal, GST and grand total is adjusted as well.	As expected
1.3	Increase a product quantity(quantity>1)	Click on  sign after the quantity of this product in shopping cart	The quantity has increased by 1.	
1.4	Reduce a product quantity(quantity>1)	Click on  sign after the quantity of this product in shopping cart	The quantity has decreased by 1.	As expected
1.5	Remove a product from shopping cart (quantity=1)	Click on  sign after the quantity of this product in shopping cart	The item is removed from shopping cart.	As expected

No.	Case	Input	Expected Outcomes	Actual Outcomes
2	Clear the shopping cart	Click on Clear Cart	All the items are removed from the shopping cart.	As expected
3	Checkout	Click on Checkout	The page is directed to Log in page for further purchase.	As expected
4	Place an order	Click on Checkout in the shopping cart	The page is directed to Log in page for further purchase.	As expected
		Log in with valid account email and password	The member information is displayed for confirmation.	As expected
		Click on Place an order	The order is successfully created.	As expected

## 6.8 Other pages

### About page

No.	Case	Input	Expected Outcomes	Actual Outcomes
1	-	-	Introduction of the brand will show	As expected
2	-	-	Navigation and footer are displayed consistently	As expected

No.	Case	Input	Expected Outcomes	Actual Outcomes
3	Scroll to bottom	Click Back to Home page	Link to home page	As expected

### Contact us page

No.	Case	Input	Expected Outcomes	Actual Outcomes
1	-	-	Contact information will show. Shipping and payment description will show	As expected
2	-	-	Navigation and footer are displayed consistently	As expected