**ISCG7420**

**Web Application Development**

**Assignment 1: ASP.NET**

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# 1. Business Specification

## 1. Original Requirements

There must be a home page.

There must be a Quality Caps logo (image), which links back to the home page.

There must be a login section, allowing a user to login with a provided name and password.

An Administrator can reach the Administration section through the login.

A Customer can also login through the login section.

A Customer may register themselves, and afterward, login to the login section.

After successful registration, the Customer receives an email with their registration details.

After login, a customer will see their details, a list of orders, and the status of each order.

The Administration section must have a Caps Categories subsection.

An Administrator can add Caps Categories through the Caps Categories subsection.

The Administration section must have a Cap Item subsection.

An Administrator can add Cap Items, including selecting a Cap Category and Supplier and providing all required details of the Cap Item.

The Administration section must have an Order subsection.

The Administration section must have a Supplier subsection.

The Administration section must have a Customer subsection.

The Administrator can modify customer details in the Customer subsection.

The Administrator can modify supplier details in the Supplier subsection.

The Administrator can change an Order Status from waiting to shipped in the Order subsection.

The Administrator can disable a customer account.

Upon logging in with a disabled account, the Customer receives a notice that the account is disabled.

A Shopping cart is shown on the site, to Customers.

When a Cap Item is added to the shopping cart, all details of the Cap Item are shown in the cart, along with the colour, quantity and total price.

Adding the same Cap Item repeatedly will update the existing item in the Shopping Cart.

The Shopping Cart has a Checkout link.

If a Customer is not logged in, then when clicking Checkout, they receive a notice that login is required, or they can register then login.

If a Customer is logged in, then when completing Checkout, their Order is recorded to the database. A notice is given that the order has been completed.

The Shopping Cart and Checkout must show the GST and total cost.

A Category has a name.

An Administrator has a login name and password.

A Customer has a Name, Address, Home contact number and/or work number and/or mobile number, an email address, login name and password.

An Order has a customer, Order Items and a status.

An Order Item associates an order with a Cap, a Colour and a Quantity.

A Cap has a Name, Price, Description, Image to show, a Category, a Supplier, and has one or more colours.

A Colour has a name.

A Supplier has an Email Address, Name and Contact Number.

## 2. Expanded Requirements

After registration, the Customer will still need to log in.

When not logged in, a customer cannot click Checkout from the shopping Cart.

The Administrator cannot add Cap Items when there exist no Suppliers or Categories.

Whether or not they are logged in, the Customer may select a category to view cap items.

Whether or not they are logged in, the Customer may select a shown cap item to view the cap item details.

A customer can add a Cap Item to the Shopping cart while viewing the Cap Item details.

A customer can remove a Cap Item from the Shopping cart while viewing cap items or a cap item details.

A customer can select the desired colour of a Cap Item while viewing the Item Details, before adding it to the cart.

A customer can select the desired amount of a Cap Item while viewing the Item Details, before adding it to the cart.

At Checkout, a customer has the opportunity to modify the quantity of any and all Cap Items.

At Checkout, a customer has the opportunity to modify the Colour of any and all Cap Items.

At Checkout, a customer has the opportunity to remove any Cap Item in the cart.

A Contact page can be visited from the home page.

The Administrator can add new Suppliers.

The Administrator can add new Colours.

The Administrator can modify existing Colours.

The Administrator can add new or modify existing Categories.

Orders cannot be deleted.

Products cannot be deleted.

Customers cannot be deleted, only disabled.

Suppliers cannot be deleted.

Colours cannot be deleted.

Categories cannot be deleted.

## 3. Site URL

The Site is to be located at the following URL:

http://dochyper.unitec.ac.nz/AskewR04/AspAssignment1\_ZZZZZ

# 2. User Interface Design

## 1. Site Map



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## 2. Wire-Frames

Note that all Wireframes are approximate prototypes – The final web forms may have minor differences in appearance.

### 1. Home Page



The black and white theme (except for colours in pictures) was decided for readability for users of all ages and to avoid colour-blind issues. It also fits in with the Art Deco style of the logo and section headings.

The header and footer technique (Logo and top menu as header, Copyright bar as footer) will be a template common to all public pages.

The login menu is part of the header menu, and thus is visible at all times. So a user can login at any time. When logged in the menu is replaced with the user’s name and a log out option.

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### 2. Product Detail



When a product is viewed, the customer has the opportunity to choose a colour, and a quantity. Note that the customer can also change the colour of a cap present in the basket.

### 3. Registration



### 4. Contact page



### 5. Checkout



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### 6. Post Checkout / Profile Page

This page shows a profile of the customer information, and a list of orders (Paginated) on record for this customer.

When a new order is made, the customer is redirected back to the Profile page, with a notice that the order has been placed and will be visible in the list of orders.

A wireframe is not available due to a lack of time.

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### 7. Customer Login



If the login is rejected, or the account is disabled, a notice appears at the bottom of the middle section.

### 8. Customer Post-Login

After logging in, The customer is redirected to their profile page.

### 8. Administrator Administration



### 9. Category Administration

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All administration forms consist of a menu of entities at the top (category, caps, suppliers etc.), a sidebar of current items for that entity, and a main area where details of one item can be viewed, and changes made.

Most items support adding new entries. Adding customers is not supported, as normally a customer adds themselves by registration. Orders are not added as the customer normally completes new orders.

Most items support modification.

### 9. Supplier Administration



### 10. Customer Administration



### 11. Caps Administration



### 12. Orders Administration



### 13. Colours Administration



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### 3. Database Design

## 1. ERD



# 4. System Design Rationale

## 1. Client Side Techniques

HTML / CSS / JavaScript will be used. Where possible, templates will be created using these technologies for content which is static, or event-driven but without database or server interaction. This will have faster performance and web-form response.

JavaScript will be used for some data validation too.

## 2. Server Side Techniques

Some parts of web-form responses will require information from the database. For this, ASP.NET sections and server controls will be used within web-forms.

As Server-side updates can be slow, AJAX will be used to only update parts of web-forms, instead of entire web-forms. This will be done using UpdatePanels, with Triggers and ContentTemplates.

Validation controls will be used in Administration forms to validate data entry. This will be slower, but valid data entry is more important than Response time for the Administration section.

Some information which is commonly to all pages (such as the percent cost of GST) will be refactored into common access Resources (e.g. shared static classes).

# 5. Test Plan with Results

|  |  |  |  |
| --- | --- | --- | --- |
| Test | Actions | Expected outcome | Actual Outcome |
| Initial Site Visit. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Viewing Categories. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click on the category “Women’s Caps”. | The product listing contains |  |
|  | Click on the Category “Men’s Caps”. | The product listing contains |  |
|  | Click on the Category “Children’s Caps”. | The product listing contains |  |
| Viewing Product Details. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click on the category “Women’s Caps”. | The product listing contains |  |
|  | Click on the Cap NNN. | The centre section shows |  |
|  | Click Return. | The home page appears. The product listing contains |  |
|  | Click on the Cap MMM. | The centre section shows |  |
|  | Click Return. | The home page appears. The product listing contains |  |
| Contact Us. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click the Contact Us Link in the top right. | The centre section shows |  |
| Add item to Shopping Cart. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click the category AAA | The product listing contains |  |
|  | Click the cap BBB | The centre section shows |  |
|  | Select the Colour White. | The centre section shows |  |
|  | Change the quantity to 2. | The centre section shows |  |
|  | Click Add To Basket. | The centre section shows  The Shopping basket shows |  |
| Items retained in shopping cart across visitor lifecycle. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click the category AAA | The product listing contains |  |
|  | Click the cap BBB | The centre section shows |  |
|  | Select the Colour White. | The centre section shows |  |
|  | Change the quantity to 2. | The centre section shows |  |
|  | Click Add To Basket. | The centre section shows  The Shopping basket shows |  |
|  | Click the category CCC | The Shopping basket shows |  |
|  | Click the Contact Us Link. | The centre section shows |  |
|  | Click the logo. | The Shopping basket shows |  |
| Add same item and colour to shopping cart. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click the category AAA | The product listing contains |  |
|  | Click the cap BBB | The centre section shows |  |
|  | Select the Colour White. | The centre section shows |  |
|  | Change the quantity to 2. | The centre section shows |  |
|  | Click Add To Basket. | The centre section shows  The Shopping basket shows |  |
|  | Select the Colour White. | The centre section shows |  |
|  | Change the quantity to 3. | The centre section shows |  |
|  | Click Add To Basket. | The centre section shows  The Shopping basket shows |  |
| Add same item and different colour to shopping cart. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click the category AAA | The product listing contains |  |
|  | Click the cap BBB | The centre section shows |  |
|  | Select the Colour Red. | The centre section shows |  |
|  | Click Add To Basket. | The centre section shows  The Shopping basket shows |  |
|  | Select the Colour Blue. | The centre section shows |  |
|  | Change the quantity to 2. | The centre section shows |  |
|  | Click Add To Basket. | The centre section shows  The Shopping basket shows |  |
| Customer Registration, New. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Customer tries to register, with existing UserName. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Checkout without having logged in. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Customer login. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Login using bad username. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Login using bad password. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Select category while logged in. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click on the category “Women’s Caps”. |  |  |
|  | Click on the Category “Men’s Caps”. |  |  |
|  | Click on the Category “Children’s Caps”. |  |  |
| View item while logged in. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click on the category “Women’s Caps”. |  |  |
|  | Click on the Cap NNN. |  |  |
|  | Click Return. |  |  |
|  | Click on the Cap MMM. |  |  |
|  | Click Return. |  |  |
| Add item to cart while logged in. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click the category AAA |  |  |
|  | Click the cap BBB |  |  |
|  | Select the Colour White. |  |  |
|  | Change the quantity to 2. |  |  |
|  | Click Add To Basket. |  |  |
| Add same item to cart with same colour while logged in. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click the category AAA |  |  |
|  | Click the cap BBB |  |  |
|  | Select the Colour White. |  |  |
|  | Change the quantity to 2. |  |  |
|  | Click Add To Basket. |  |  |
|  | Click the cap BBB |  |  |
|  | Select the Colour White. |  |  |
|  | Change the quantity to 3. |  |  |
|  | Click Add To Basket. |  |  |
| Add same item to cart with different colour while logged in. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click the category AAA |  |  |
|  | Click the cap BBB |  |  |
|  | Select the Colour Red. |  |  |
|  | Click Add To Basket. |  |  |
|  | Click the cap BBB |  |  |
|  | Select the Colour Blue. |  |  |
|  | Click Add To Basket. |  |  |
| Checkout and Complete order. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
|  | Click the category AAA |  |  |
|  | Click the cap BBB |  |  |
|  | Select the Colour Red. |  |  |
|  | Click Add To Basket. |  |  |
|  | Click the cap BBB |  |  |
|  | Select the Colour Blue. |  |  |
|  | Click Add To Basket. |  |  |
|  | Click the cap BBB |  |  |
|  | Select the Colour Pink. |  |  |
|  | Change the quantity to 3. |  |  |
|  | Click Add To Basket. |  |  |
|  | Click Checkout. |  |  |
|  | Verify the Checkout Details. |  |  |
|  | Click Proceed with Order. |  |  |
| Customer logout. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Login as Administrator. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Add new Category. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Modify Existing Category. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Add new supplier. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Modify existing supplier. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Add new product. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Modify existing product. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Modify existing customer. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Disable existing customer. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Change Order Status from waiting to Shipped. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Add new colour. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Modify existing colour. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Administrator logout. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Disabled Account login. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Logo acts as home page link. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |
| Customer profile. | Enter the base URL “” into the browser address bar and press enter. | The home page appears. |  |