**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, Home Number, Work Number, and Mobile 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.

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.

A customer can remove items from the shopping 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.

Products can only be added or changed if there is at least one supplier and at least one category.­

## 3. Site URL

The Site is to be located at the following URL:

http://dochyper.unitec.ac.nz/AskewR04/asp\_assignment

# 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 site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Home Page, Top Menu, Visitor. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  | Examine the Top Menu. | Top Menu shows the logo at left, the links Contact Us and Register, a grey Login link, and “Greetings Visitor!” | Top Menu shows what is described in expected outcome. |
|  | Click “Contact Us” | Contact Us page is shown. | Contact Us page is shown. |
|  | Click “Register” | Register page is shown. | Register page is shown. |
|  | Click “Login” | Login page is shown. | Login page is shown. |
|  |  |  |  |
| Home page, Categories Section. | Enter the site URL into the browser address bar and press enter. | The home page appears.  The Categories section shows 3 categories, including Business Caps, Women’s Caps and Men’s Caps. | The home page appears. |
|  | Click the picture for the category “Business Caps” in the Categories section at left. | The top of the Products section at centre, says Business Caps. |  |
|  | Click the picture for the category “Women’s Caps” in the Categories section at left. | The top of the Products section at centre, says Women’s Caps. |  |
|  | Click the picture for the category “Men’s Caps” in the Categories section at left. | The top of the Products section at centre, says Men’s Caps. |  |
|  | Click the “next” button at the bottom of the Category section. | New categories are shown in the categories section, including Children’s Caps |  |
|  | Click the picture for the category “Children’s Caps” in the Categories section at left. | The top of the Products section at centre, says Children’s Caps. |  |
|  | Click the “previous” button at the bottom of the Category section. | The Categories section shows 3 categories, including Business Caps, Women’s Caps and Men’s Caps. |  |
|  |  |  |  |
|  |  |  |  |
| Home Page, Products Section. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  | Click the picture for the category “Business Caps” in the Categories section at left. | The top of the Products section at centre, says Business Caps. A Grid of caps is shown. Page number is 1. |  |
|  | Click the picture for the category “Top Breaker” in the Products section at centre. | New Section appears with following details: ID: 5, Top Breaker, $16.80. |  |
|  | Click Cancel. | The previous Grid of caps is shown again. |  |
|  | Click the picture for the product “Bottom Breaker” in the Products section at centre. | Section appears with following details: ID: 21, Bottom Breaker, $11.40. |  |
|  | Click Cancel. | The previous Grid of caps is shown again. |  |
|  | Click “Next” at the bottom of the Products section. | A new Grid of caps is shown. Page number is now 2. |  |
|  | Click the picture for the product “Bold Breaker” in the Products section at centre. | Section appears with following details: ID: 37, Bold Breaker, $19.30. |  |
|  | Change the Quantity to 2. | The Quantity textbox now contains 2. |  |
|  | Click the colour combo box, and change the Colour to green. | The colour combo box now contains “Green” |  |
|  | Click “Add To Basket”. | A new item appears in the shopping cart:  “ID: 37 Bold Breaker  $19.30 Green X 2” |  |
|  | Click Cancel. | The previous Grid of caps is shown again. |  |
|  | Click “Previous” at bottom of Products section. | A new Grid of caps is shown. Page number is now 1. |  |
|  | Click on the category “Men’s Caps” in the category section. | A new Grid of caps is shown. Page number is now 1. The top left cap is called “Top flex”. |  |
|  |  |  |  |
| Home Page, Shopping Cart. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  | Click on the picture “Men’s Caps” in the Category section. | A new Grid of caps is shown. Page number is now 1. A cap is shown called “Side Trucker”. |  |
|  | Click on the picture “Side Trucker” in the products section. | Section appears with following details: ID: 15, Side Trucker, $12.00. |  |
|  | Change the colour to “red”. | Colour combo box now says “red”. |  |
|  | Change the quantity to “1”. | Quantity textbox now says “1”. |  |
|  | Click add to basket. | New shopping cart item appears. Details: “ID: 15 Side Trucker  $12.00 Red X 1”  Total number of shopping cart entries is 1. |  |
|  | Change the colour to “blue”. | Colour combo box now says “blue”. |  |
|  | Change the quantity to “2”. | Quantity textbox now says “2”. |  |
|  | Click add to basket. | New shopping cart item appears. Details: “ID: 15 Side Trucker  $12.00 Blue X 2”  Total number of shopping cart entries is 2. |  |
|  | Change the colour to “red”. | Colour combo box now says “red”. |  |
|  | Change the quantity to “1”. | Quantity textbox now says “1”. |  |
|  | Click add to basket. | The shopping cart item with ID: 15, changes quantity to “X 2”.  Total number of shopping cart entries is 2. |  |
|  | Click the “X” next to Shopping Cart entry “ID:15 Side Trucker Blue X 2” in the shopping basket section. | Shopping Cart entry “ID:15 Side Trucker Blue X 2” disappears.  Total number of shopping cart entries is now 1. |  |
|  | Click “Clear” at the bottom of the shopping basket. | All shopping cart entries disappear. Cart says “Your Shopping Cart is empty.“  Total number of shopping cart entries is now 0. |  |
|  | Click Cancel. | The previous Grid of caps is shown again. |  |
|  | Click the cap “side Flex”. | Section appears with following details: ID: 11, Side Flex, $10.80. |  |
|  | Change the colour to “white”. | Colour combo box now says “white”. |  |
|  | Click add to basket. | New shopping cart item appears. Details: “ID: 11 Side Flex  $10.80 White X 1”  Total number of shopping cart entries is 1.  1 Shopping Cart Entries is visible.  The page numbers above the cart totals reads “Previous 1 Next” |  |
|  | Change the colour to “green”. | Colour combo box now says “green”. |  |
|  | Click add to basket. | New shopping cart item appears. Details: “ID: 11 Side Flex  $10.80 Green X 1”  Total number of shopping cart entries is 2.  2 Shopping Cart Entries are visible.  The page numbers above the cart is unchanged. |  |
|  | Change the colour to “yellow”. | Colour combo box now says “Yellow”. |  |
|  | Click add to basket. | New shopping cart item appears. Details: “ID: 11 Side Flex  $10.80 Yellow X 1”  Total number of shopping cart entries is 3.  3 Shopping Cart Entries are visible.  The page numbers above the cart is unchanged. |  |
|  | Change the colour to “pink”. | Colour combo box now says “Pink”. |  |
|  | Click add to basket. | New shopping cart item appears. Details: “ID: 11 Side Flex  $10.80 Pink X 1”  Total number of shopping cart entries is 4.  4 Shopping Cart Entries are visible.  The page numbers above the cart is unchanged. |  |
|  | Change the colour to “orange”. | Colour combo box now says “Orange”. |  |
|  | Click add to basket. | Total number of shopping cart entries is 5.  4 Shopping Cart Entries are visible.  The page numbers above the cart totals have changed to “Previous 1 2 Next” |  |
|  | Click “next” at bottom of the shopping basket. | 1 Shopping Cart Entries is visible.  The details of this one item are:  “ID: 11 Side Flex  $10.80 Orange X 1” |  |
|  | Click “previous” at bottom of the shopping basket. | The previous 4 Shopping Cart Entries are visible. |  |
|  | Verify the subtotal in the shopping basket. | Subtotal is $54.00 |  |
|  | Verify the gst total in the shopping basket. | GST is 15% of the Subtotal. This is understood to be $8.10 |  |
|  | Verify the full total in the shopping basket. | This should match sum of subtotal and gst total ($62.10) |  |
|  | Click Clear, at bottom of shopping basket. | The shopping cart is empty. |  |
|  |  |  |  |
| Home Page, Logo. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  | Click the “contact Us” link. | The Contact Us page appears. | The Contact Us page appears. |
|  | Click the Logo. | The home page appears. | The home page appears. |
|  |  |  |  |
| Visitor Restrictions. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  | Verify Checkout is not enabled. | There is no checkout button, and instead it says “Login to Complete Order” | Matches expected outcome. |
|  | Enter the URL “http://dochyper.unitec.ac.nz/AskewR04/asp\_assignment/Customer/” in the address bar and press enter. | The Login page appears. The Url says “http://dochyper.unitec.ac.nz/AskewR04/asp\_assignment/Login?ReturnUrl=%2FAskewR04%2Fasp\_assignment%2FCustomer%2F” | Matches expected outcome. |
|  |  |  |  |
| Contact Us Page. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  | Click Contact Us link in top menu. | The contact Us page appears. | The contact Us page appears. |
|  |  |  |  |
| Registration. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  | Click the link “Register” in the top menu. | The Registration page appears. | The Registration page appears. |
|  | Click Register |  |  |
|  | Type “Simon!” in the First Name field. |  |  |
|  | Click Register |  |  |
|  | Change First Name field to “Simon” |  |  |
|  | Type “Joe” in the last Name field. |  |  |
|  | Type “AskewR04@myunitec.ac.nz” in the email field. |  |  |
|  | Type “Customer111” in the login field. |  |  |
|  | Type “123456” in the password field. |  |  |
|  | Type “Carly Road” in the Street Address field. |  |  |
|  | Type “Mt Albert” in the Suburb field. |  |  |
|  | Type “Auckland” in the City field. |  |  |
|  | Click Register |  |  |
|  | Change Email. Use an email you can access at this time. |  |  |
|  | Change Login to “Customer\_Testing” |  |  |
|  | Change password to “ThisIsAPassword” |  |  |
|  | Change Street Address to “123 Carly Road” |  |  |
|  | Click Register |  |  |
|  | Type “44888899999” into Home Contact Number |  |  |
|  | Type “5500111” into Work Contact Number |  |  |
|  | Type “33355577777” into Mobile Contact Number |  |  |
|  | Click Register |  |  |
|  | Change Mobile Number to “0220556666” |  |  |
|  | Remove the Work Number |  |  |
|  | Change home Number to “095554444” |  |  |
|  | Click Register |  |  |
|  | Verify Email was Received. |  |  |
|  |  |  |  |
| Login, Customer. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  | Click “Login” at top menu. | The login page appears. | The login page appears. |
|  | Type “Customer111” into login textbox. Type “passwordpassword” into password textbox. | Login control shows “Customer111” and “passwordpassword” in relevant textboxes. | Login control matches the expected outcome. |
|  | Click Login button. | Profile page appears. The first and last names are “Harry” and “Bloggs”. | Profile page appears. First and last names match what is expected. |
|  | Examine the Top Menu. | Top Menu shows the logo at left, the links Contact Us and Profile, a grey Logout link, and “You are logged in as Customer005.” | Top menu matches the expected outcome. |
|  | Click Logout button. | The home Page shows. The top menu says “Greetings Visitor!” | The home page shows as expected. |
|  |  |  |  |
|  |  |  |  |
| Customer, Edit Profile. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Customer, Checkout. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Customer, Place Order. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Login as Administrator. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Add new Category. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Modify Existing Category. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Add new supplier. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Modify existing supplier. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Add new product. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Modify existing product. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Modify existing customer. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Disable existing customer. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Change Order Status from waiting to Shipped. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Add new colour. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Modify existing colour. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Administrator logout. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |
| Disabled Account login. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  | Click “Login” at top menu. | The login page appears. |  |
|  | Type “SuspendedCustomer” into login textbox. Type “passwordpassword” into password textbox. | Login control shows “SuspendedCustomer” and “passwordpassword” in relevant textboxes. |  |
|  | Click Login button. | Login page reappears, with notice that the account is disabled or suspended. |  |
|  |  |  |  |
| Session Timeout. | Enter the site URL into the browser address bar and press enter. | The home page appears. | The home page appears. |
|  |  |  |  |