

# SEG 3125

## Assignment #1 Videotaped Cooperative Interface Evaluation

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Date: DD MMM YYYY

## **1- Summary of the Evaluation Procedures**

The system evaluated is a web application developed in a previous course (SEG3202) at the University of Ottawa. The system is an online photo store providing the functionality for shoppers to browse, search, and shop for photos online.

The evaluation was performed in the SITE building in the Discover Lab on the fifth floor at 5:30 pm on May 11<sup>th</sup>, 2007. Two subjects with good computer skills but very little knowledge of the system participated in the evaluation session. The first subject is Ali Jaber, a government employee with good knowledge in computers and software. The second user is Ehab Kazem, a research assistant at the SITE Discover lab at the University of Ottawa.

The videotaping procedure was an active/cooperative one where proper communication, questions, and feedback took place with the user. The users were videotaped performing identical tasks we had laid out for them, and their actions and spoken-out-loud expressions were taken into consideration in the user interface's evaluation. Suitable communication was undertaken with the subjects during the videotaping session to acquire their feedback on issues they encountered. During the tasks and at the end of the videotaping session, the users were asked specific questions to acquire their feedback and opinions efficiently.

### **Pseudo Code of the Steps Performed by User 1:**

#### **1.1 Create Account:**

- Click <<Register>> link
  - Type "user" next to <<Username>> text field
  - Type in password next to <<Password>> text field
  - Type in password next to <<Retype password>> text field
  - Type "First" next to <<First Name>> text field
  - Type "Last" next to <<Last Name>> text field
  - Type "my\_Email@hotmail.com" next to <<Email>> text field
  - Click <<Register>> button
    - Popup warning message confirming that the user has successfully registered the account appears on the screen.
- Click <<Ok>>

#### **End result:**

The user is taken back to the Homepage, logged into his account, text on the right of the screen indicates that the user is logged in, and a warning message, informing the user that he has successfully registered his account, pop ups asking for his confirmation. Logout functionality is enabled on the far right of the navigation bar.

User's comments and interaction:

- The user wondered whether all fields were mandatory.
- The user seemed surprised and displeased with the warning message, which confirmed that the registration was successful.

## **1.2 Login:**

- Move mouse cursor over the screen in search for login section
- Type "user" next to <<Username>> text field
- Type in password next to <<Password>> text field
- Click <<login>> button

End result:

The user is logged into his account and text to the right of the homepage indicates that the user is logged in. Logout functionality is enabled on the far right of the navigation bar.

User's comments and interaction:

- The user mentioned that the login area is not clearly highlighted to the users.

## **1.3 Browse Photos by Country:**

- Click on the map on the homepage
  - No functionality found
- Move mouse cursor over to far left of the homepage to <<Browse Countries>> section
- Click <<Country>> drop-down menu
  - Select <<Canada>>
- Click <<browse>> button

End result:

The photo captions for the country "Canada" are displayed on the screen, 10 per page with the option of browsing next/previous pages. Blank photo frames are displayed on the last page where there are less than 10 photos. The right column of the screen still indicates to the user that he is logged on, displaying the message "You are logged on" in big font.

User's comments and interaction:

- The user commented on the map displayed on the website's homepage, saying that he thought you can access photos for each country by selecting the country on the map.
- He later proposed removing the map from the homepage since it does not relate to the system in any way.
- The user was misled by the <<Browse Countries>> section and the <<Advanced Search>> section since they were not clearly separated.
- The user mentioned that it is not clear what the <<Browse Countries>> section portrays and what functionality it provides.

#### **1.4 Sort Photos by {country, description, date} – After Browsing for Photos:**

- Move mouse cursor over the <<Sort by>> section
- Click <<Sort by>> drop-down menu
  - Select <<Date>>
- Click <<Sort>> button

##### End result:

The photo captions are displayed on the screen, sorted by date, 10 per page with the option of browsing next/previous pages. Blank photo frames are displayed on the last page where there are less than 10 photos. The right column of the screen still indicates to the user that he is logged on, displaying the message “You are logged on” in big font.

##### User's comments and interaction:

- The user found this step straight forward, but proposed restructuring the <<Sort by>> section to be more appealing to users.

#### **1.5 View a Specific Photo:**

- Move mouse cursor over the photo icons
- Click on a specific photo

##### **1.5.1 Continue Browsing Photos:**

- Click <<Back>> link on the screen
  - An incorrect page is opened <<My Photos>>, which should not be accessible to the shopper
    - Click <<Back>> button in the Internet Explorer
- Click <<Back>> button in the Internet Explorer

##### **1.5.2 Add Photo to Shopping Cart:**

- Click <<Add to shopping cart>> button

End result:

1.5.1 The previous page is opened (<<Browse Photos>> page sorted by date). 1.5.2 No confirmation that the photo was added to the shopping cart is given and the user is directed back to the homepage instead of being taken back to the <<Browse Photos>> page.

User's comments and interaction:

- After clicking the <<Back>> link provided on the webpage, the user was directed to a wrong page. From that point on, the user seemed to use the <<Back>> button provided in the Internet Explorer whenever he wanted to go back to previous pages and he stopped using the <<Back>> links provided on the webpage.
- The user mentioned that he should be directed back to the <<Browse Photos>> page after adding the photo to the shopping cart instead of being taken to the home page, in case he wishes to add more photos to the shopping cart.

## **1.6 View Shopping Cart:**

- Click <<Back>> button in the Internet Explorer
- Click <<Back>> button in the Internet Explorer
- Click <<Shopping Cart>> link in the navigation panel

End result: The shopping cart page is opened.

User's comments and interaction:

- The user navigated back to the <<Browse Photos>> section before clicking on the <<Shopping Cart>> link instead of directly clicking the link from the homepage.

## **1.7 Remove Photo from Shopping Cart:**

- Click <<remove>> link under photo caption

End result: The shopping cart is empty.

User's comments and interaction:

- When asked what he thinks of this task, he mentioned that it is quite straight-forward.

## **1.8 Purchase Photos:**

- Click <<Shopping Cart>> link in the navigation panel
- Click <<Home>> link in the navigation panel
- Move mouse cursor over to far left of the homepage to <<Browse Countries>> section
- Click <<Country>> drop-down menu
  - Select <<Canada>>
- Click <<browse>> button
- Click on a specific photo
  - Click <<Add to shopping cart>> button
- Click <<Back>> button in the Internet Explorer
- Click <<Back>> button in the Internet Explorer
- Click on a specific photo
  - Click <<Add to shopping cart>> button
- Click <<Shopping Cart>> link in the navigation panel
- Click <<Check out>> button
  - Type “my\_Email@hotmail.com” next to <<Email>> text field
  - Type “1111222233334444” next to <<Credit Card Number>> text field
  - Type “First Last” next to <<Name of primary card holder>> text field
  - Click <<Purchase>> button
- Payment is confirmed and the user is asked to go to the download location to retrieve the photos.
- Click <<Shopping Cart>> link in the navigation panel
- User didn’t find the purchased photos.

End result: Shopping cart still contains the previously added photos and it is not emptied. User was unable to find the links to the photos he had purchased.

User’s comments and interaction:

- When asked to perform the “Purchase Photos” task, the shopping cart was empty, hence we needed to remind the user to browse for photos and add them to the shopping cart in order for him to purchase the photos.
- It was noted that the user was using the <<Back>> button provided by the Internet Explorer to navigate back to the <<Browse Photos>> page instead of using the provided <<Back>> links on the webpage.
- Although not part of this use case, the user clicked on the <<Shopping Cart>> link to search for the purchased photos, but he did not find the links. Afterwards, he asked where the links were located.

## 1.9 View Purchased Photos:

- Click <<Shopping Cart>> link in the navigation panel

- User didn't find the purchased photos.
- Click <<Home>> link in the navigation panel
- Move mouse cursor over the screen
- Click <<My Account>> link in the navigation panel
- Move mouse cursor over the screen
- Click <<View Purchases>> link in the top right corner of the screen

End result: The links for the purchased photos are displayed on the screen.

User's comments and interaction:

- The user was extremely frustrated in this task and he said that he didn't expect the links of the purchased photos to be stored under the <<My Account>> page.

### **1.10 Logout:**

- Click <<logout>> link in the navigation panel

End result: The user is taken to the homepage and is logged out of his account.

User's comments and interaction:

- Straight-forward task, but the user was not satisfied with the user interface effects displayed after logging out.

## **Pseudo Code of the Steps Performed by User 2:**

### **2.1 Create Account:**

- Click <<Register>> link
  - Type "ehab" next to <<Username>> text field
  - Type in password next to <<Password>> text field
  - Type in password next to <<Retype password>> text field
  - Type "ehab" next to <<First Name>> text field
  - Type "mrad" next to <<Last Name>> text field
  - Type "ehab@hotmail.com" next to <<Email>> text field
- Click <<Register>> button
  - Popup warning message confirming that the user has successfully registered the account appears on the screen.
- Click <<Ok>>

End result:

The user is taken back to the Homepage, logged into his account, text on the right of the screen indicates that the user is logged in, and a warning message, informing the user that he has successfully registered his account, pop ups asking for his confirmation. Logout functionality is enabled on the far right of the navigation bar.

*User's comments and interaction:*

- The user commented on the popup message confirming the successful registration stating that the feedback is unpleasing and not a valid mean of confirmation.

## **2.2 Login:**

- Type "ehab" next to <<Username>> text field
- Type in password next to <<Password>> text field
- Click <<login>> button

*End result:*

The user is logged into his account and text to the right of the homepage indicates that the user is logged in. Logout functionality is enabled on the far right of the navigation bar.

*User's comments and interaction:*

- The user stated that this was a simple task to perform.

## **2.3 Browse Photos by Country:**

- Move mouse cursor over to far left of the homepage to <<Browse Countries>> section
- Click <<Country>> drop-down menu
  - Select <<Australia>>
- Click <<Search>> button
  - The wrong page opens. We informed the user that he clicked on the wrong button and he was asked to go back to the home page to repeat the process.
- Click <<Country>> drop-down menu
  - Select <<Australia>>
- Click <<browse>> button

*End result:*

The photo captions for the country "Australia" are displayed on the screen,



10 per page with the option of browsing next/previous pages. Blank photo frames are displayed on the last page where there are less than 10 photos. The right column of the screen still indicates to the user that he is logged on, displaying the message “You are logged on” in big font.

*User’s comments and interaction:*

- The user was misled by the <<Browse Countries>> section and the <<Advanced Search>> section since they were not clearly separated and recommended separating these two sections clearly so that the user may distinguish between the two functionalities.

**2.4 Sort Photos by {country, description, date} – After Browsing for Photos:**

- Move mouse cursor over the <<Sort by>> section
- Click <<Sort by>> drop-down menu
  - Select <<Description>>
- Click <<Sort>> button

*End result:*

The photo captions are displayed on the screen, sorted by date, 10 per page with the option of browsing next/previous pages. Blank photo frames are displayed on the last page where there are less than 10 photos. The right column of the screen still indicates to the user that he is logged on, displaying the message “You are logged on” in big font.

*User’s comments and interaction:*

- The user mentioned that this step was a fairly simple one.

**2.5 View a Specific Photo:**

- Move mouse cursor over the photo icons
- Click on a specific photo

**2.5.1 Continue Browsing Photos:**

- Click <<Back>> button in the Internet Explorer

**2.5.2 Add Photo to Shopping Cart:**

- Click <<Add to shopping cart>> button

*End result:*

2.5.1 The previous page is opened (<<Browse Photos>> page sorted by date). 2.5.2 No confirmation that the photo was added to the shopping cart is given and the user is directed back to the homepage instead of being taken back to the <<Browse Photos>> page.

*User's comments and interaction:*

- The user did not use the <<Back>> link provided on the page and directly used the <<Back>> button provided by the Internet Explorer instead. When asked about the reason for that the user said that he didn't find the <<Back>> link appealing and clear to him.
- When asked where he prefers to be directed after adding a photo to the shopping cart, the user mentioned that it would be most efficient to be directed back to the browsing photos page instead of the homepage.
- The user complained that no notification was provided confirming that the selected photo was added to the shopping cart and he was directly taken to the homepage.

## **2.6 View Shopping Cart:**

- Click <<Shopping Cart>> link in the navigation panel

*End result:* The shopping cart page is opened.

*User's comments and interaction:*

- The user found this task simple and mentioned that the <<Shopping Cart>> link stood out clearly in the navigation bar.

## **2.7 Remove Photo from Shopping Cart:**

- Click <<remove>> link under photo caption

*End result:* The shopping cart is empty.

*User's comments and interaction:*

- When asked what he thinks of this task, he mentioned that it was an easy one.

## **2.8 Purchase Photos:**

- Click <<Home>> link in the navigation panel
- Move mouse cursor over to far left of the homepage to <<Browse Countries>> section
- Click <<Country>> drop-down menu

- Select <<Australia>>
  - Click <<browse>> button
  - Click on a specific photo
    - Click <<Add to shopping cart>> button
  - Click <<Shopping Cart>> link in the navigation panel
  - Click <<Check out>> button
    - Type “ehab@hotmail.com” next to <<Email>> text field
    - Type “111111” next to <<Credit Card Number>> text field
    - Type “ehab mrad” next to <<Name of primary card holder>> text field
    - Click <<Purchase>> button
- Payment is confirmed and the user is asked to go to the download location to retrieve the photos.

End result: User is waiting on the page with the confirmation page asking the user to access his purchased photos.

User’s comments and interaction:

- When asked to perform the “Purchase Photos” task, the shopping cart was empty, hence the user was asked to browse for photos and add them to the shopping cart in order for him to purchase the photos.
- It was noted that the user was using the <<Back>> button provided by the Internet Explorer to navigate back to the <<Browse Photos>> page instead of using the provided <<Back>> links on the webpage.

## **2.9 View Purchased Photos:**

- Click <<My Account>> link in the navigation panel
  - User didn’t find the purchased photos.
- Click <<Home>> link in the navigation panel
- Move mouse cursor over the screen
- Click <<My Account>> link in the navigation panel
- Move mouse cursor over the screen
- Click <<View Purchases>> link in the top right corner of the screen

End result: The links for the purchased photos are displayed on the screen.

User’s comments and interaction:

- The user was extremely frustrated in this task and had trouble finding the purchased photos.
- When asked whether or not he expected the purchased photos link to be provided in the <<My Account>> section, the user said yes. He added that the link was not very visible on that page and hence he had trouble finding it.

## **2.10 Logout:**

- Click <<logout>> link in the navigation panel

End result: The user is taken to the homepage and is logged out of his account.

User's comments and interaction:

- The user mentioned that it was a straight-forward task.

## General User Comments and Suggestions

### **User 1:**

- The color scheme used is not appealing to the eyes.
- The <<login>> section should be more visible to the user.
- Navigation between the pages should be improved.

### **User 2:**

- The color scheme has no appeal.
- The purchased photos links should be more visible to the user.
- The shopping cart should be more visible and accessible to the user.

## 2- Malfunctions list

The malfunctions below are listed by priority, where the malfunction with the smaller ID is of higher priority.

ID	Description
1	The main page does not contain any introductory messages informing the user about the overall system and its services.
2	The navigation bar is not available to the user during the registration process and when he/she is viewing a photo.
3	If the user adds a photo to the shopping cart, he/she is then directed to the home page instead of being returned to the “Browse Photos” page.
4	If the user clicks on the back link while viewing a specific photo, then he/she is directed to the wrong page.
5	The system does not inform the user about the different types of accounts (visitor,

	shopper) until he/she initiates the registration process.
6	The map on the main page of the website is not related to the theme of the site, does not provide any functionality, and misleads the users.
7	The “Sort by” functionality does not reflect the correct sorting parameter chosen by the user.
8	The registration form does not inform the user of the mandatory fields.
9	If the user adds a photo to the shopping cart, no feedback confirming the transaction is returned.
10	The interface does not allow the user to clear all the photos with one click; thus if the user wishes to clear the shopping cart, he/she must remove each photo manually.
11	The warning pop-up message confirming the user’s successful registration is not a valid method of confirmation and may portray failure in registration.
12	In the shopping cart, the subtotal is portrayed in bold while the total is not, hence misleading the user’s perception of the final price.
13	The login area is not clearly highlighted to the user.
14	The “Browse Countries” section and the “Advanced Search” section are not clearly separated and hence indistinguishable.
15	The separation between the “Account ID” section and the “Account Information” section does not convey any useful information since both sections of the form should be filled out by the user.
16	The currency of the prices of the photos is not shown under the viewed photo.

17	If the user is viewing a specific photo, and the image size is large, then the “add to shopping cart” button will only be visible to the user after he/she scrolls down through the page.
18	The shopping cart shows duplicate items instead of showing one item and the associated quantity.
19	The “My Photos” link in the navigation bar changes from gray to black when the user enters the shopping cart; however, there was no change in the link functionality.
20	There is excessive empty space between the report section and the photos section on the shopping cart page.
21	When the user is on a specific page, the link for this page in the navigation bar is not disabled and the user may click on it again.
22	The location of the “You are logged on.” message changes from one page to another as the user browses through the photos, giving a false impression of the login status update.

### ***3- Four Most Significant Malfunctions***

1. The main page does not contain any introductory messages informing the user about the overall system and its services.

#### **Description:**

The main page interface does not provide adequate information to introduce the users to the system and its functionalities.

As shown in figure 1, the main page consists of the following:

- Title (OPS Home Page)
- Navigation bar
- Browse countries section
- Advanced search section
- A world map image
- A login form

During the evaluation process, the system was presented to the users but they couldn't seem to deduce what it was about. The homepage did not contain any messages introducing the system to its users. The evaluators had to inform the subjects verbally about the system and its provided services. Both subjects complained about the absence of any introductory messages, stating that it was quite ambiguous. The webpage's first impression to the users was that relating to countries, since it contained a world map, and the section "Browse Countries" with no reference to photo purchasing. The first subject mentioned that despite it being a photo purchase application, the webpage did not even mention the word "photo". The subjects also mentioned that they were initially misguided by the central map, which does not relate to the theme of the system, nor does it provide any specific functionality. The first user asked "What does your system do?" and the evaluators had to explain to the user the system's functionalities and how to begin navigating through the webpages.

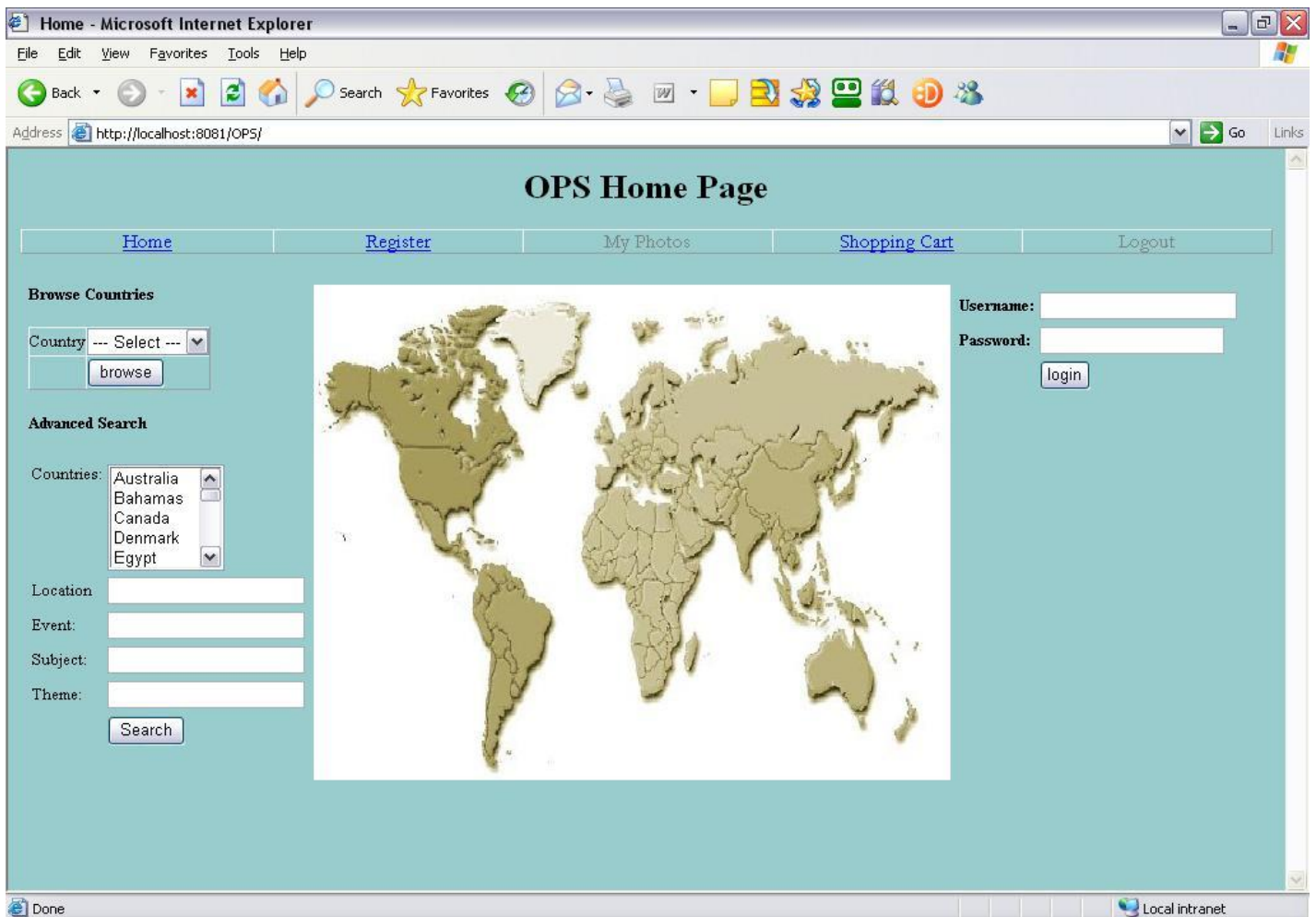


Figure1. The main page

## **Significant Questions Answered**

- 1) How is the malfunction manifested?  
The user could not tell what the system is about and necessitated the evaluator's assistance in order to start using the system.
- 2) At what stage in the interaction is it occurring?  
The malfunction is occurring at the introductory stage of the interaction.
- 3) At what level of the user interface is it occurring?  
This malfunction is occurring at the presentation level of the user interface.
- 4) Why is it occurring?  
It is occurring mainly because of the lack of adequate information (verbal and visual) that would introduce the users to the system. Moreover, unrelated images (i.e. the map) misguided the users' perception of the system.

## **Result of Malfunction Analysis:**

The currently presented main page sections are necessary but not sufficient, especially for novice users. The main function of the system is to allow the users to shop for photos, yet there are no textual or visual clues that suggest such functionality. The users were expecting some kind of guidance on the system's main page.

## **Recommendations for Changes:**

A logo representing the main theme of the system could be used to replace the currently used textual title in order to add more character and enhance the site's overall appearance, since this logo could be reused for the other pages. Moreover, a brief welcome message could be used to introduce novice users to the system; the message can contain generic description of the system and its functionalities. Also, inserting a few sample photos would help give the user a feeling of what to expect from the website; those photos could be randomly chosen by the system at the start of each session to create a more dynamic interaction with the users.

2. The navigation bar is not available to the user during the registration process and when he/she is viewing a photo.

## **Description:**

When the user is registering a new account or viewing a specific photo, the navigation bar will not be available. During the evaluation process, while the first subject was viewing a photo, he wanted to check the current items in the shopping cart in order to avoid duplicate purchases; however, he was then forced to use Internet Explorer's "Back" button due to the absence of the navigation bar. The second subject also showed uneasiness with this behavior by stating that "It would be helpful if I could still see the navigation bar at this stage so I can access the different pages." The users portrayed to the evaluators the need for the navigation bar to be available in such scenarios since they



wanted to perform specific tasks whose functionalities are directly provided by the navigation bar. Figure 2 is a snapshot of the view photo section; the reader can observe the absence of the title and navigation bar.

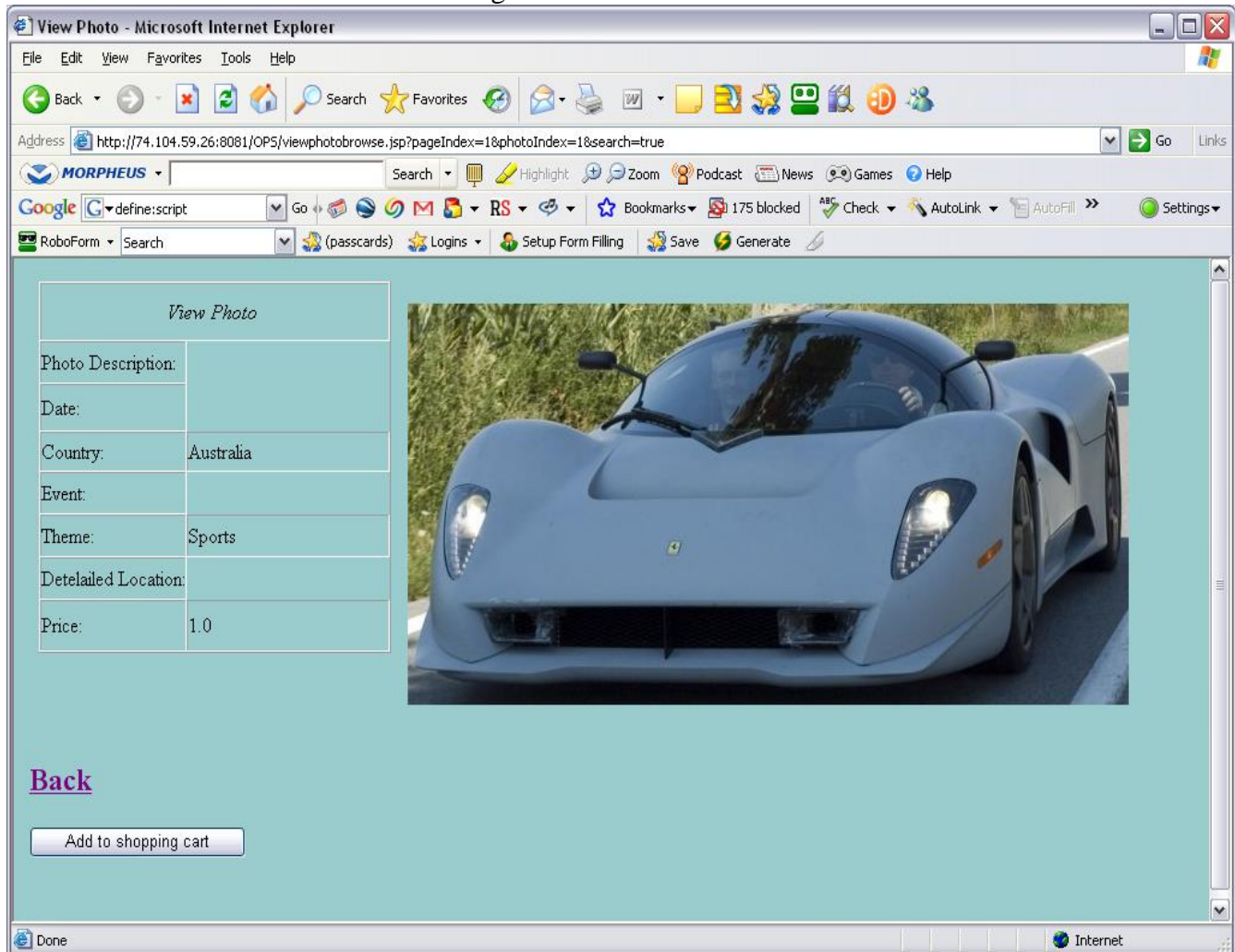


Figure 2. View Photo Section

### Significant Questions Answered

- 1) How is the malfunction manifested?  
Both subjects were complaining about the lack of flexibility in the view photo and registration section due to the absence of the navigation bar. Specifically, the first user was forced to use the “Back” button supplied by the Internet Explorer and the second subject expressed this dissatisfaction verbally.
- 2) At what stage in the interaction is it occurring?  
The malfunction is occurring while the user is registering a new account or viewing a specific photo.
- 3) At what level of the user interface is it occurring?  
This malfunction is occurring at the presentation level of the user interface.

4) Why is it occurring?

It is occurring because the view photo and registration jsps do not contain the html tags responsible for displaying the navigation bar, which offers such flexibility for achieving tasks on those specific pages.

**Result of Malfunction Analysis:**

The absence of navigation bar in the view photo and registration sections decreases the system's flexibility and efficiency as the evaluation of both users demonstrated.

**Recommendations for Changes:**

Add the navigation bar to both the registration and view photo pages. A better way would be to fix the navigation bar frame and to present the changes in this new frame, thus ensuring more consistency throughout the interaction.

3. If the user adds a photo to the shopping cart, he/she is then directed to the home page instead of being returned to the "Browse Photos" page.

**Description**

After browsing through the photos, the user clicks on a specific photo in order to view it in larger size along with its detailed information. The user clicks on the button "Add photo to shopping cart" in order to add that specific photo to his shopping cart. The user is then taken back to the homepage without being given any confirmation message. Both users were unsatisfied by being guided back to the home page. The first user spoke voluntarily and asked the evaluator why he wasn't taken back to the "Browse Photos" page in order to continue shopping for photos. The second user was asked whether he prefers to be guided to the "Browse Photos" page to continue shopping, or to the "Shopping Cart" page, he confirmed that being taken back to the "Browse Photos" page would be the most appealing to the user. Both users perceived that after adding a photo to the shopping cart, they would be taken back to the "Browse Photos" page. They complained that being guided back to the home page would necessitate them to re-specify the browse criteria and hence adding to their efforts. This defect may be portrayed through figure 2.

**Significant Questions Answered**

1) How is the malfunction manifested?

The users noticed the malfunction after the completion of the "Add Photo to Shopping Cart" task, while trying to add a photo to the shopping cart. The users were unsatisfied with being guided to the homepage after adding the photo, and therefore highlighting the existence of a malfunction at that level of the user interface.

- 2) At what stage in the interaction is it occurring?  
The malfunction is occurring at the end stage of the “Add to shipping Cart” task, specifically at the interpretation of results stage of that task.
- 3) At what level of the user interface is it occurring?  
This malfunction is occurring at the presentation level, at the end of the “Add to shopping Cart” task, taking place after viewing a specific photo.
- 4) Why is it occurring?  
The homepage opens after adding a photo to the shopping cart while the user prefers being guided back to the photos to accommodate the ease of purchase.

### **Result of Malfunction Analysis**

Being guided back to the main page after adding a photo to the shopping car is irrelevant and inefficient for the user. After adding a photo to the shopping cart, the user was expecting a proper confirmation message and then being guided back to the “Browse Photos” page to continue shopping for photos.

### **Brief Recommendations for Changes**

An ideal solution to this malfunction would be to display a message confirming the successful completion to the task (adding a photo to the shopping cart), and then taking the user back to the photos page to continue browsing and shopping for photos. A more ideal solution would be to display the shopping cart to right of the “Browse Photos” section and the user would simply drag and drop the photos he/she wishes to purchase to the shopping cart.

4. If the user clicks on the back link while viewing a specific photo, then he/she is directed to the wrong page.

### **Description**

After browsing through the photos and clicking on a specific photo, a page displaying the photo in larger size along with its detailed information is opened. A link named “Back” located under the photo information is highlighted in blue color. After clicking this link, the first user was guided to the incorrect page while he was expecting to return to the photos page to continue browsing the photos. The second user did not use the link at all and instead he used the “Back” button supplied by the Internet Explorer and hence portraying that the link is not that appealing to the user’s eyes. Both the fact that the link misled the first user to the wrong page and the fact that the link did not appeal to the second user at all, indicate that there exists a malfunction at the level of the provided “Back” link. The first user stopped using the “Back” links provided on the web pages after being misguided by the link, and the second user did not find any appeal in that link. The second user was expecting a more specific link rather than a generic “Back” functionality, which may be simple achieved through Internet Explorer’s “Back” button.

## **Significant Questions Answered**

- 1) How is the malfunction manifested?  
The first user noticed the malfunction after clicking the link in order to go back to browsing for photos. He was guided to the wrong page and this created a state of distrust towards the “Back” links provided in this system. The second user’s avoidance of the link and his use of the “Back” button provided by Internet Explorer pointed out the malfunction. When asked why he didn’t use the provided links, he stated that the links did not appeal to him due to being generic (i.e. displaying “Back”).
- 2) At what stage in the interaction is it occurring?  
The malfunction is occurring at the stage where the user wishes to continue browsing for photos after having opened a specific photo to view.
- 3) At what level of the user interface is it occurring?  
This malfunction is occurring at the presentation level, where the user wishes to continue browsing for photos after having opened a specific photo to view.
- 4) Why is it occurring?  
The provided “Back” link guides the user to the wrong page and the link is too generic, hence not appealing to him/her. The user prefers a more appealing solution to such functionality.

## **Result of Malfunction Analysis**

Being guided to the wrong page after clicking on the “Back” link is inefficient for the user and shakes his/her trust of the user interface’s reliability. Moreover, the generic nature of the link does not appeal to the user. The user is expecting more a more specific solution that allows him/her to continue browsing for photos, while always guiding him/her to the correct page.

## **Brief Recommendations for Changes**

An ideal solution to this malfunction is to provide a “Back” link on the photo page that guides the user back to browsing for photos. To make this link more appealing to the user, less generic, and closely tied to the website’s theme, the “Back” link could be replaced with an icon that portrays browsing for photos.

#### **4- Proposal**

After conducting the video-taped evaluation with two users and gathering the required feedback, we have decided to redesign and implement most of the system's features. Currently, the user interface provides functionality for both shoppers and visitors. We plan to integrate both these perspectives into our design, although we will not provide any login functionality and identity check, we will include the login field. Currently, only the shopper may add photos to the shopping cart and purchase these photos, and the visitor may only browse these photos without purchasing them. In our implementation, and since we won't be providing login functionality, we will be providing the shopping cart and purchase functionality to visitors as well in order to show its proper implementation in the user interface.

In summary, we will implement the user interface for an online paintings store, where users may buy paintings online. The login functionality will be included for the UI's sake, but disabled. The visitor may choose to browse the paintings on the website according to certain specified fields. The user may also view the painting in larger size, and choose to add it to the shopping cart. He/She may remove photos from the shopping cart as well. However, the functionality to purchase photos (filling forms) will not be implemented. Hence we will be designing an advanced UI for the system allowing users to browse, view, and purchase paintings, and integrating drag-and-drop features using Flex into this system.