Politecnico Di Milano

WEB DESIGN PROJECT (PROGETTO DI WEB DESIGN)

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Design Report of Online Photo Processing System

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Modification History

- 11 – 06 – 07
  - o Final Editing

- 8 – 05 – 07 ; V 1.1.0.1
  - o Added Class Diagram
  - o Prototype Screenshot
  - o Project Plan

- 5 – 05 – 07 ; V 1.0.0.1
  - o Initial version

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1. Introduction

Online photo processing system software is a commercial product for the normal user to get digital photo printing service. This document is provided for the requirement and design specification so that developer can get the clear idea of the system and also the design specification of the system. It contains also prototype UI which is very useful for the customer to know about front-end view.

2. Business requirement

Printing digital photos through online print shops is significantly gaining market. Typically, print shops only offer payment via credit card and automatically apply standard picture settings that not always produce acceptable results. To guarantee professional service, higher quality and flexible payment options, the following procedure (to be automated) could help.

A user starts the processing by logging (user name and password) in the system. If the user is new then he/she has to be register to enter in the system. After that, user will place a new print order by uploading his/her picture files and by specifying the desired print sizes and qualities. Immediately, the system checks whether the uploaded files are compatible picture files and whether the pictures' resolutions are suited to the specified print sizes. In case of problems, the user is asked to modify his order. This procedure goes on until no further problems can be detected, in which case the order is forwarded to a photo editing expert, which is in charge of checking the aesthetic quality of the pictures. If the expert has some comments, he/she fills in a form with appropriate feedback and (if required) suggests possible editing operations. After that, the user can comment the provided feedback via the shop's Web site and accept/deny the suggestions. Based on the user's decisions, the expert applies the accepted modifications and fixes the final cost. If the expert has no additional comment, he/she just fixes the cost according to the price list. Once the cost of the order is known, the system sends an email with the required payment instructions to the user and, also, forwards the pictures to the print department. The user can choose between online payment via credit card, money order or bank transfer. Credit card payments are directly supported and processed by the shop's Web site, while the two other options are not under control of the system, which thus keeps waiting until the payment occurs. After completing the payment terms, system will ask for the shipment address. In the meantime, the print department prints the pictures and prepares them for shipment. Once the payment has arrived, the prints are shipped, and the user has one month to provide his feedback (and to close the order) before the process terminates automatically.
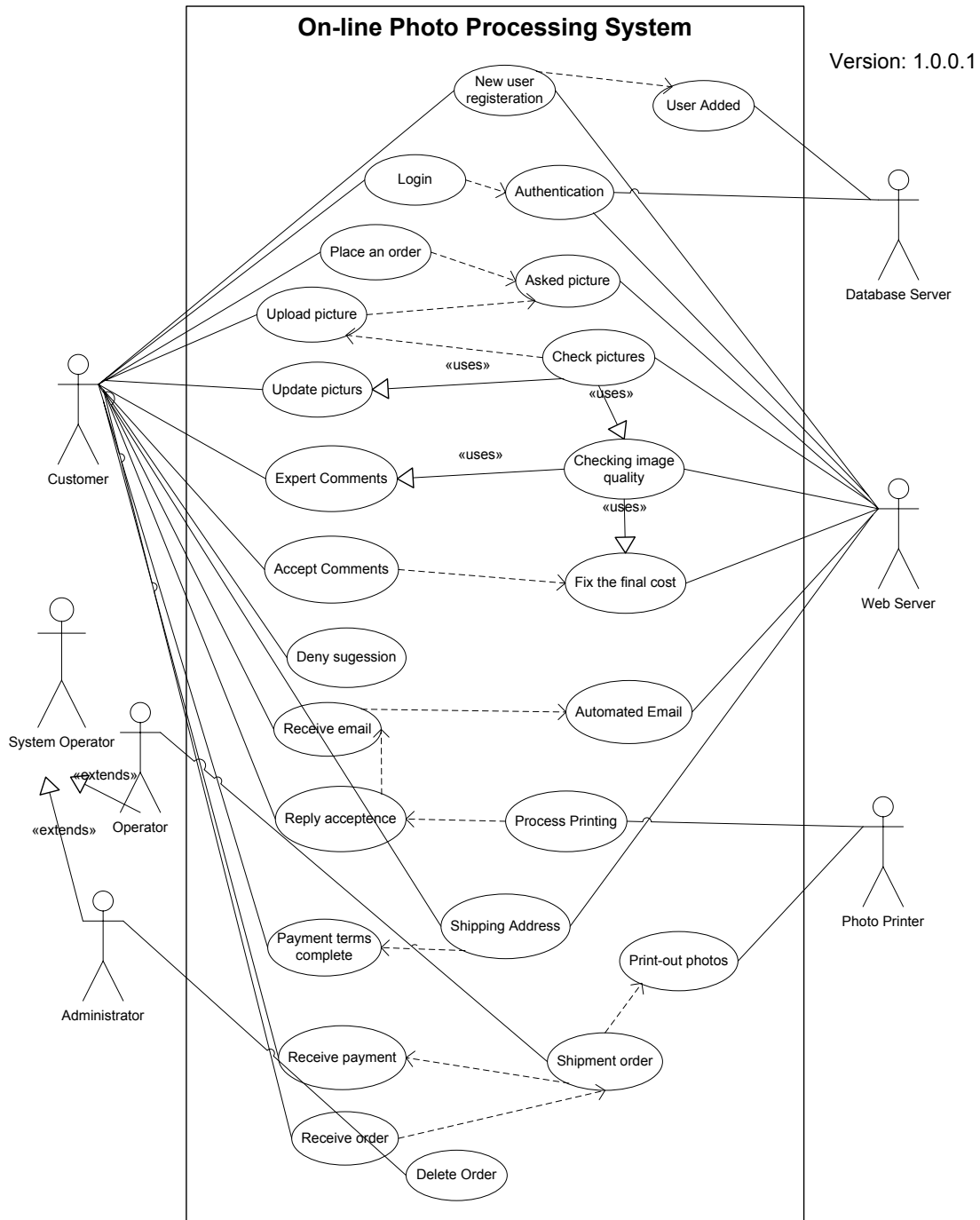
3. UML Design

3.1 Use case diagram

On-line Photo Processing System

Version: 1.0.0.1

New user registeration → User Added

Login → Authentication

Place an order → Asked picture

Upload picture

Check pictures «uses» → Update picturs

«uses»

Expert Comments ← «uses» Checking image quality

«uses»

Accept Comments → Fix the final cost

Deny sugession

Receive email → Automated Email

Reply acceptence ← Process Printing

Shipping Address

Payment terms complete

Print-out photos

Receive payment ← Shipment order

Receive order → Delete Order

Customer

System Operator

«extends» «extends» Operator «extends»

Administrator

Database Server

Web Server

Photo Printer

Figure 2.1: Use case diagram of Online Photo Processing System (OPPS)

The Use case diagram of the online digital photo processing system contains the scope of the system, the list of system functionalities and the total vision of the possible interactions between the system and the actors of this system. The main actors identifying here are:

i)   *Customer:* Customer represents as the primary actor for this system. The printing company offers the digital photo printing service online for the customer in different location.

ii)   *System operator:* The general operator and the administrator are the two actors and these are the generalizations of system actor.

        General Operator: This type of actor supports the system to complete the main flow of events to achieve the goal. It takes care to delivery the shipment order to the requested customer.

        Administrator: Administrator of the system is responsible to several interactions with the system to reach the objectives. As an example administrator can delete the customer order at any time with proper reasoning.

iii)   *Database Server*: A Database server act to store the customer authentications information and it's also added the new customer's information when a new customer-user registration occurs.

iv)   *Web Server:* Web server take care of new user registration, user authentication, ask picture, check picture, checking image quality, fix the final cost, automated email and collecting shipping address.

v)   *Photo Printer:* Printer is responsible for process printing and prints out photo to delivery this to the requested customer.

Based on the above use case diagram we can identify the following groups of main types of activities:

i.   Customer starts the processing by logging in the system. In case of a new customer, he/she has to be register to enter in the system.
ii.   Customer will place a new print order by uploading his/her picture files with specifying the desired print sizes and qualities.
iii.   The system checks the picture files with respect of compatibility and resolution suited to specific print size. In case of problems, the user is asked to modify his order. This procedure goes on until no further problems can be detected.
iv.   The expert applies the accepted modifications and fixes the final cost.
v.   The system sends an email with the required payment instructions to the user and forwards the pictures to the print department.
vi.   Credit card payments are directly supported and processed by the shop's Web site.
vii.   After completing the payment terms, shipment address will be collected. The print department prints the pictures and prepares them for shipment.
viii.   Once the payment has arrived, the prints are shipped, and the user has one month to provide his feedback and after that the process terminates automatically.
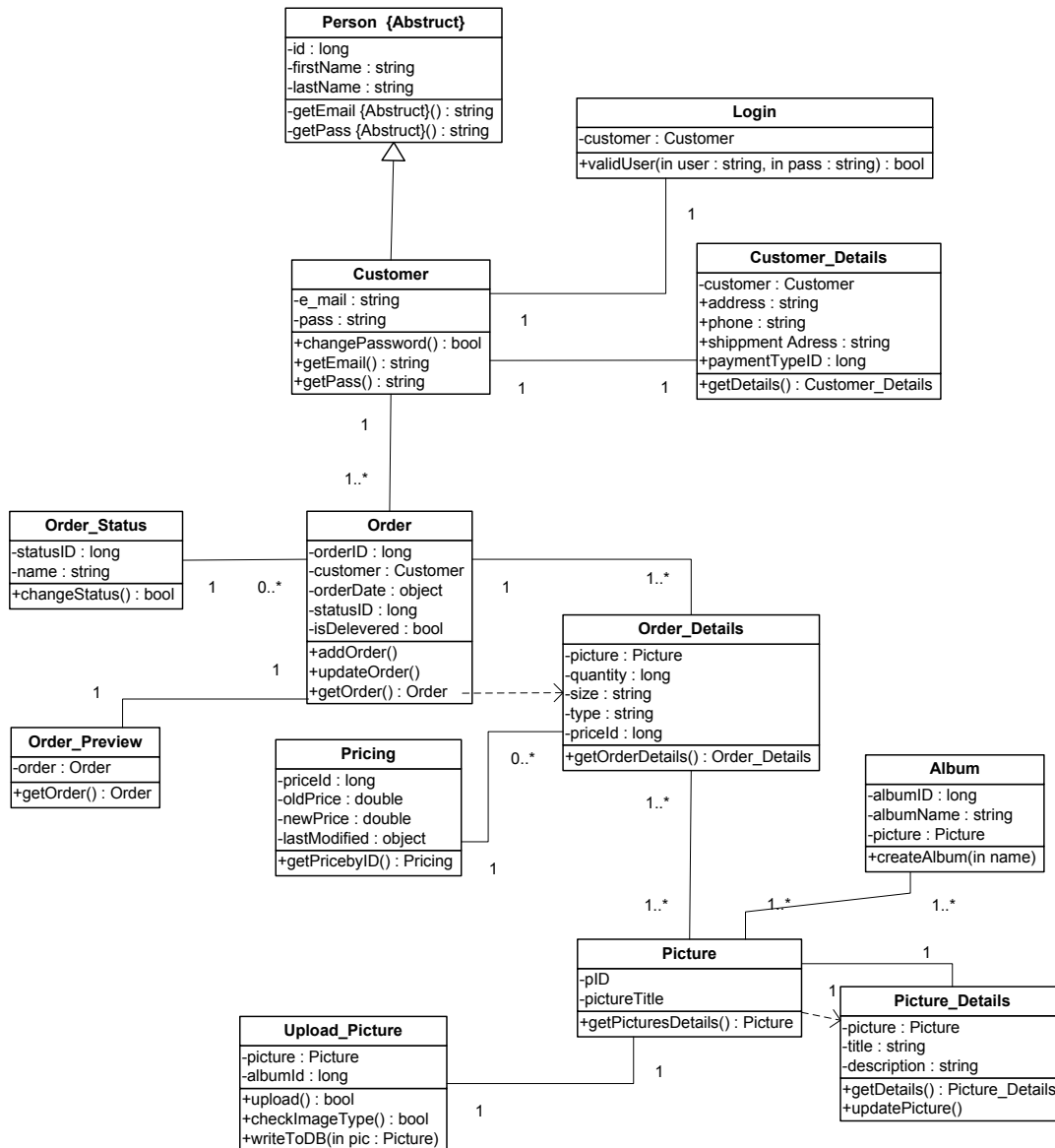
3.2 UML classes

Figure 2.4: UML- Class diagram for on-line photo processing system

Using the above class diagram we represent the vocabulary of our online photo processing system. It is built and refined when system is developed. Each class description consists of a class name, state variables, reference variables and methods. We make a clear distinction between variables containing the state of an object and variables that express which other objects a given object knows. A class description defines the types of each variable as well as a signature for each method.

The objectives of class diagram are.

➢ Names and models concepts existing in the system.
➢ Specifies collaboration paths.
➢ Specifies the basic logical schema.

In On line photo processing system, the front view of class diagram is shown in the above figure. The class diagram are composed of several classes and there relationship between these classes. In the Online photo processing system, classes are the following:

- ➢ Person
- ➢ Customer
- ➢ Customer_Details
- ➢ Login
- ➢ Order
- ➢ Order_Details
- ➢ Order_Preview
- ➢ Order_Status
- ➢ Pricing
- ➢ Album
- ➢ Picture
- ➢ Picture_Details
- ➢ Upload_Picture

4. Framework of the development

4.1 Logical architectural diagram
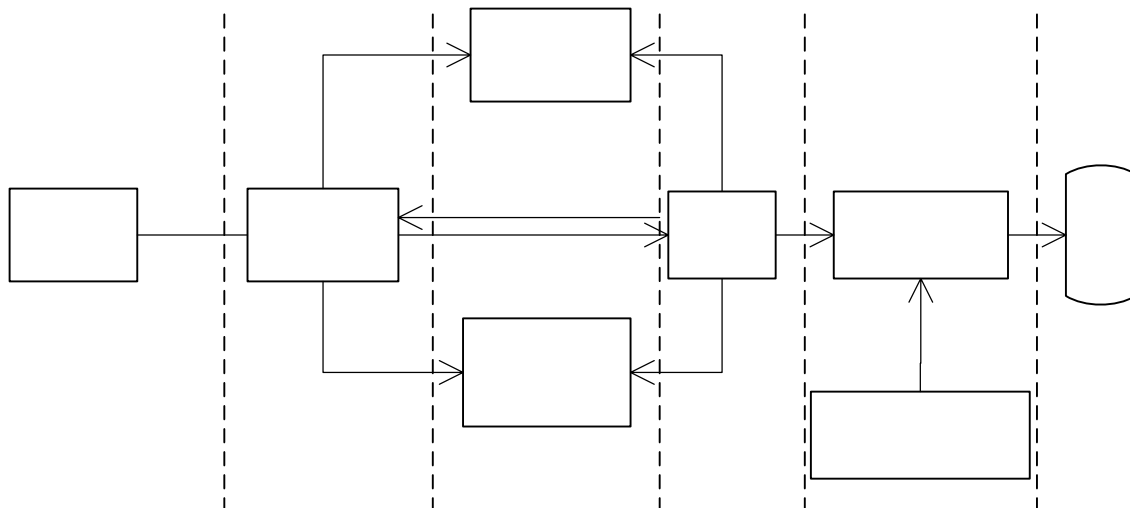
Figure 3 : Logical architectural diagram

It is basically the coding layer of our application. There are there layers between User Interface (UI) and Database. Those are:

User Interface   Busine

Façade Layer: It contains the all methods/ function of the application to update, delete and insert in to database. It is directly connected to the User interface and also business layer. Sometimes it access Data Access Layer (DAL) directly if the functionality does not require any business logic.

Business Layer: It contains the whole business logic of the system. If developer requires any changes in the business logic after develop the software then they will only change on this layer. They do not need to change the whole application. BL connected with DAL and Façade Layer.

Data Access Layer: It is used to access data from Database and only know the query or stored procedure of the database to retrieve, modify data like SELECT, UPDATE.

Base Layer: It contains the all configuration setup of the system and base class of the different layers.

4.2 IDE and tools

Visual Studio.Net 2005: We have used Visual Studio.Net 2005 as an Integrated Development Environment (IDE) to develop our prototype.

Visio 2003 & UML 2.0: We have used Visio 2003 to draw all design with UML2.0 notation.

SQL Server 2005: We have stored our sample database in to SQL Server 2005 Express Edition

5. Prototype of the System (Graphical User Interface)

We've made to make the new users to understand the Qavi online photo processing system easily. Thus it is a dynamic web page customers will easily be able to upload their digital photos through CD drive, floppy drive, external devices or hard drive. Also be able to create their own account, album and upload pictures to that album and can save them. And could order them according to his choice by my given sizes with price. And then he/she could be able to proceed to the check out. Now we'll explain the total system point of users view.

We've created the header & footer because we will need to use them throughout the whole application. In this page we have got Home, Register & Login link button I'll use Logout in the other pages, Home button to call the home page, Register to register as a new customer & Login for the users who have already registered. In the Footer we've also got some following link button Contact us, Pricing, Help, FAQ. Contact us to get our e-mail & web address customers will be able to mail us as well. In the pricing page we've given some price list with respect to shipping time, paper size and quantity. And I made another page for help there we've given some problems customers might face with solution. So the following is my home page with these actions. We've also given two buttons for Login & Register. (Help and FAQ are under construction).
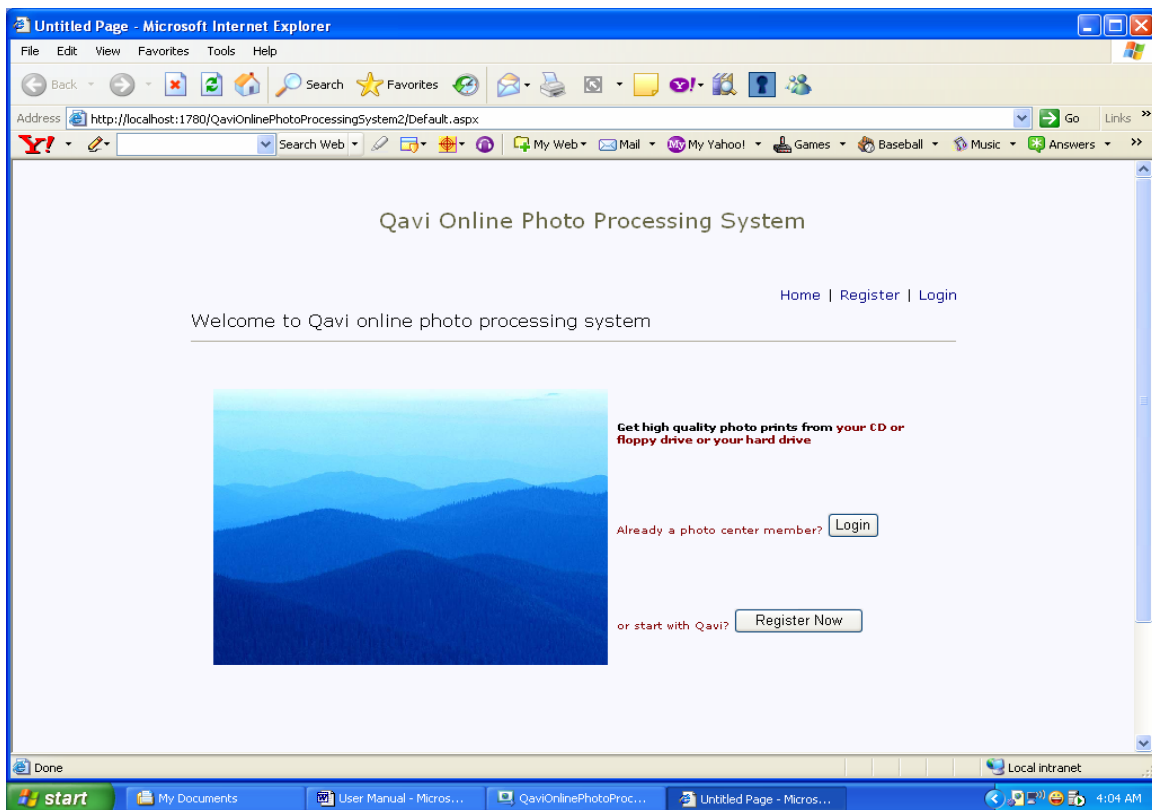
Figure 13: Home page of the online photo processing system

Register Page: When a customer will click on the register button the register page will come up. It will take the all users details.

Figure 14: Register page of the online photo processing system

You must have to fill up the last name, e-mail address, Password and Re-type Password to complete your registration. If you don't fill any of them error message will be shown.
Then click on the registration button to finish registration. And it will bring you into the Login page. You can also cancel your registration by clicking the cancel button.

Figure 15: Register page (check validation) of the online photo processing system

Login Page: The total system will be very easy to operate now. In the login page just type your given e-mail address and password. We've also given a check box to save the e-mail address and password. If he/she is a new customer they could register by clicking the Get Started button. And from now and the following pages we'll get a link button Log out on the Header to Log him out.
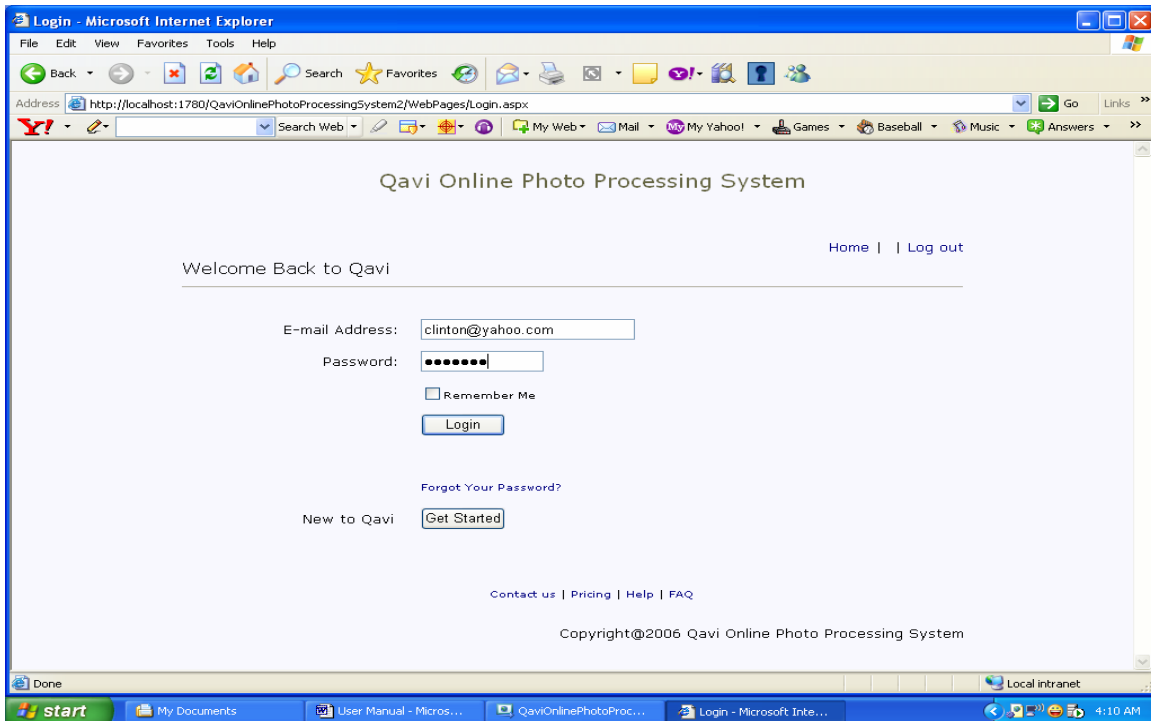
Figure 16: Login page of the online photo processing system

Album page: After Login you will get the album list page. Here all your album names will be displayed. Default album name is the date. To create an album first you have to click on the link button Add New Album.
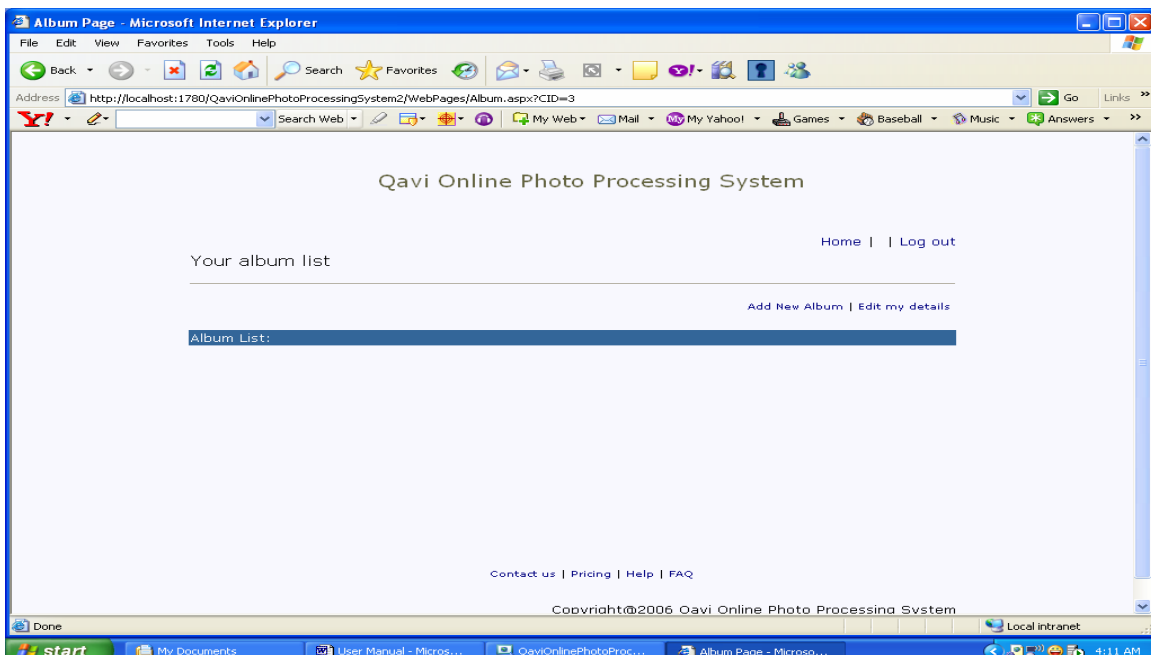
Figure 17: Album page of the online photo processing system

First We've created a page to create a new album name for specific album. The default name will be the current date. Click on the create button the album will be created with that given name.
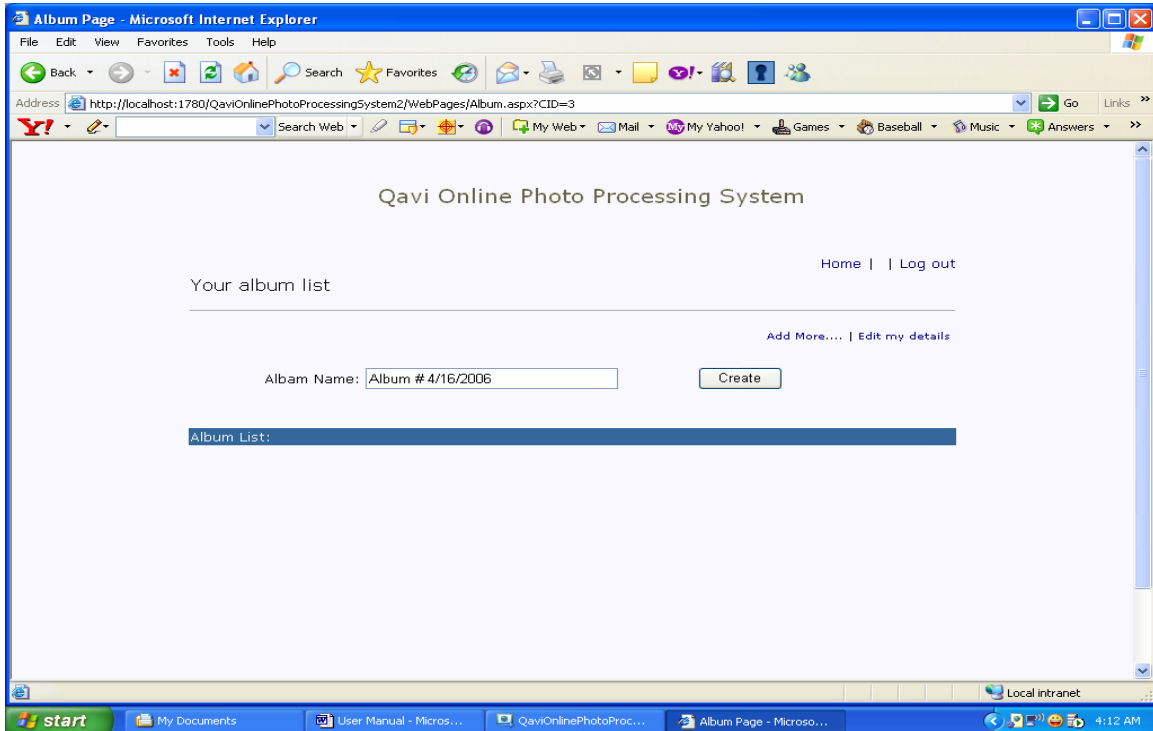
Figure 18.a : Album list page of the online photo processing system

Now to add pictures into the album click onto the edit button in that specific album row.
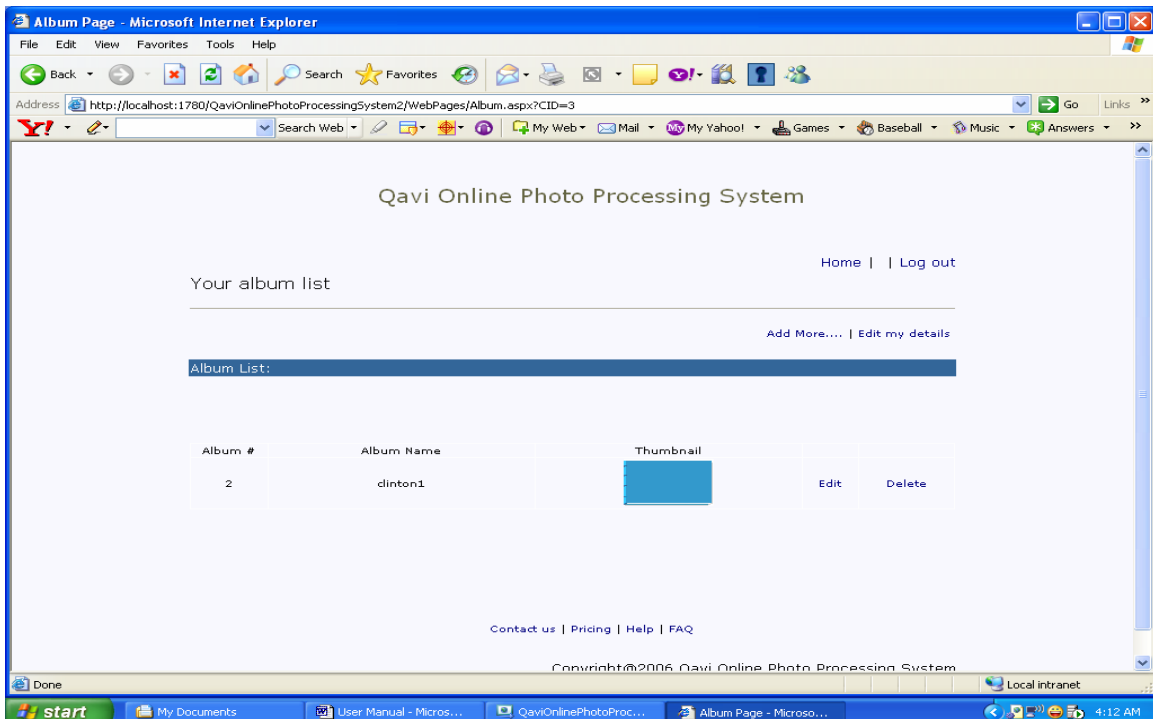
Figure 18.b: Album list page of the online photo processing system

You will get the upload picture window. We've made three text boxes for picture title, destination path and description. To upload a picture just click on the browse button and select the picture you want to upload from any device. And finally click on save button to save the picture.
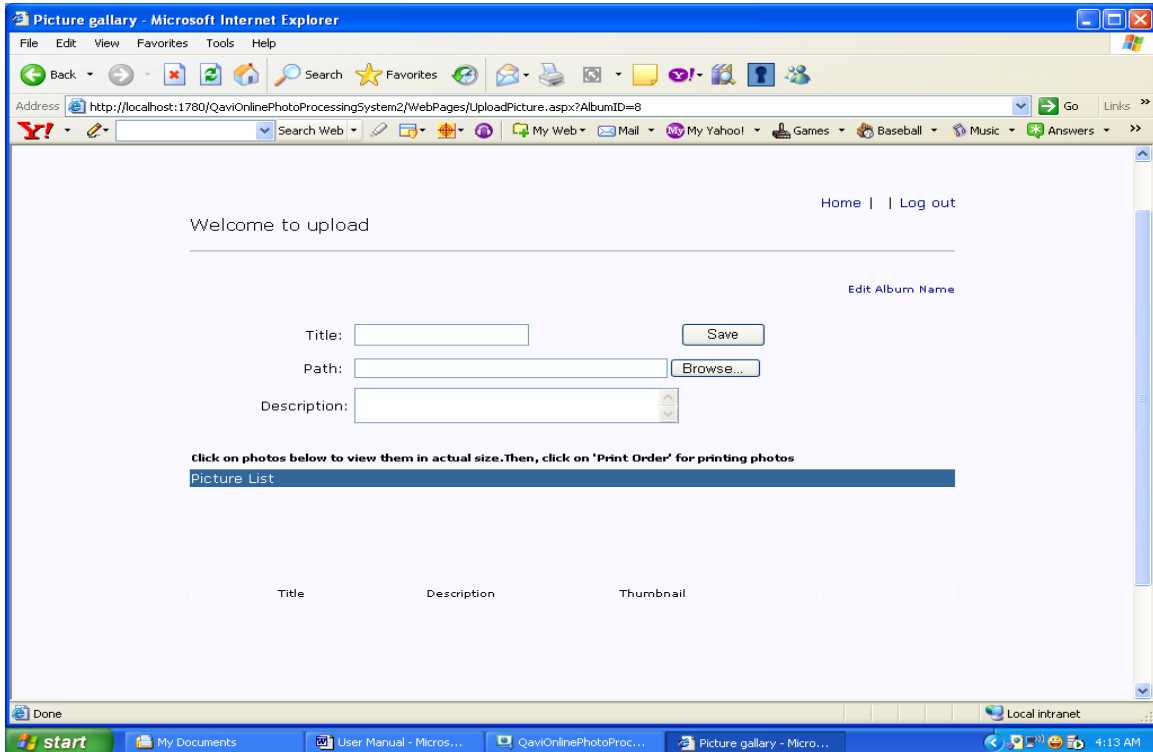
Figure 19.a: Picture upload page of the online photo processing system
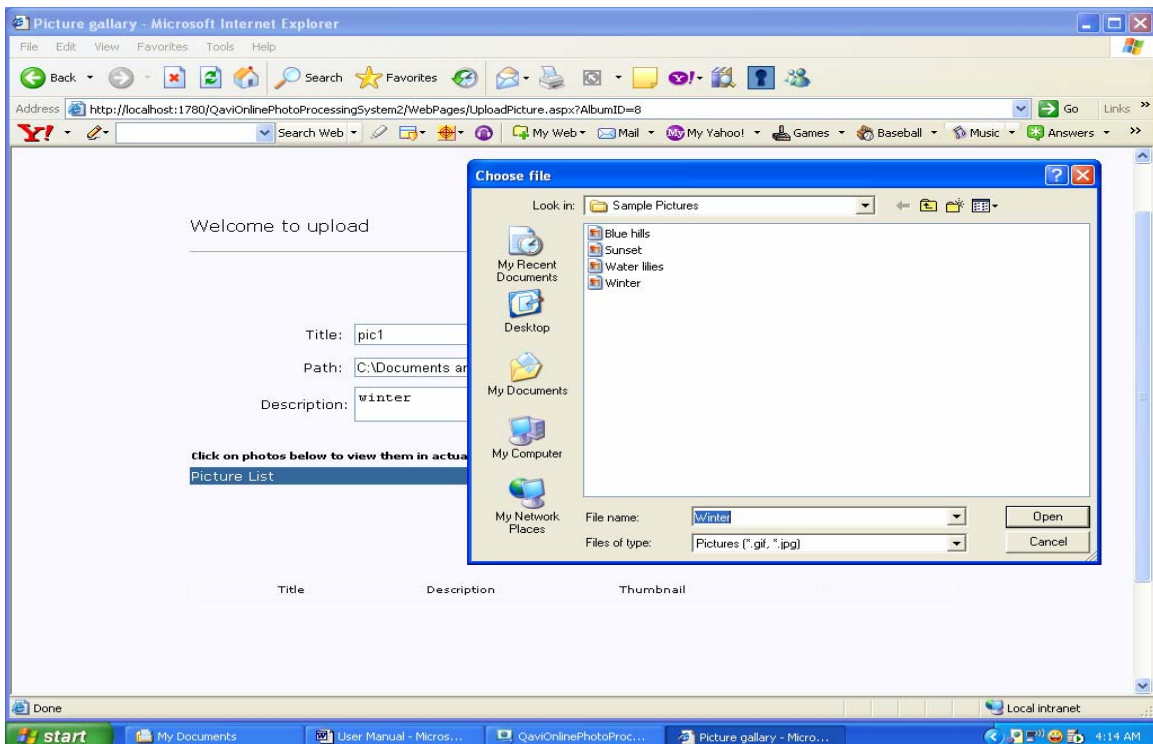
Figure 19.b: Picture upload page of the online photo processing system

The picture will be shown by the thumbnail view into the grid. Repeat the same procedure if you want to add more pictures.
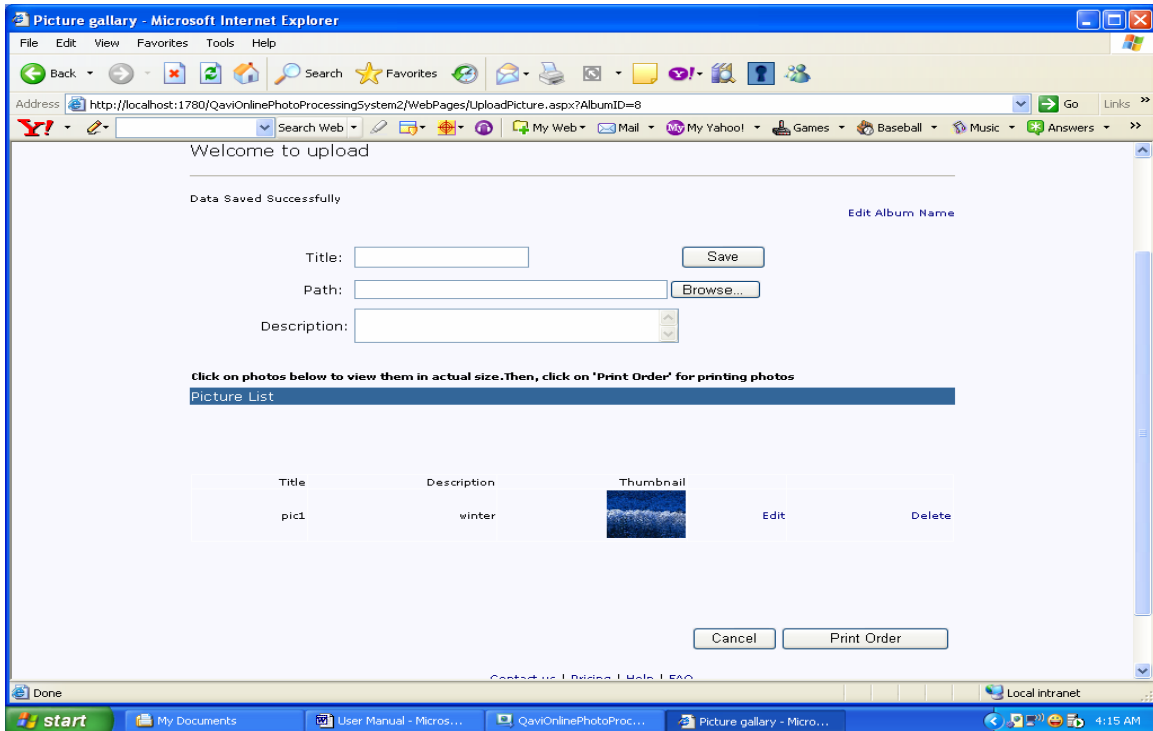
Figure 20.a: Picture upload & with picture list page of the online photo processing system

To create a new album click on the link button edit album name and repeat the same procedure to upload picture into it.
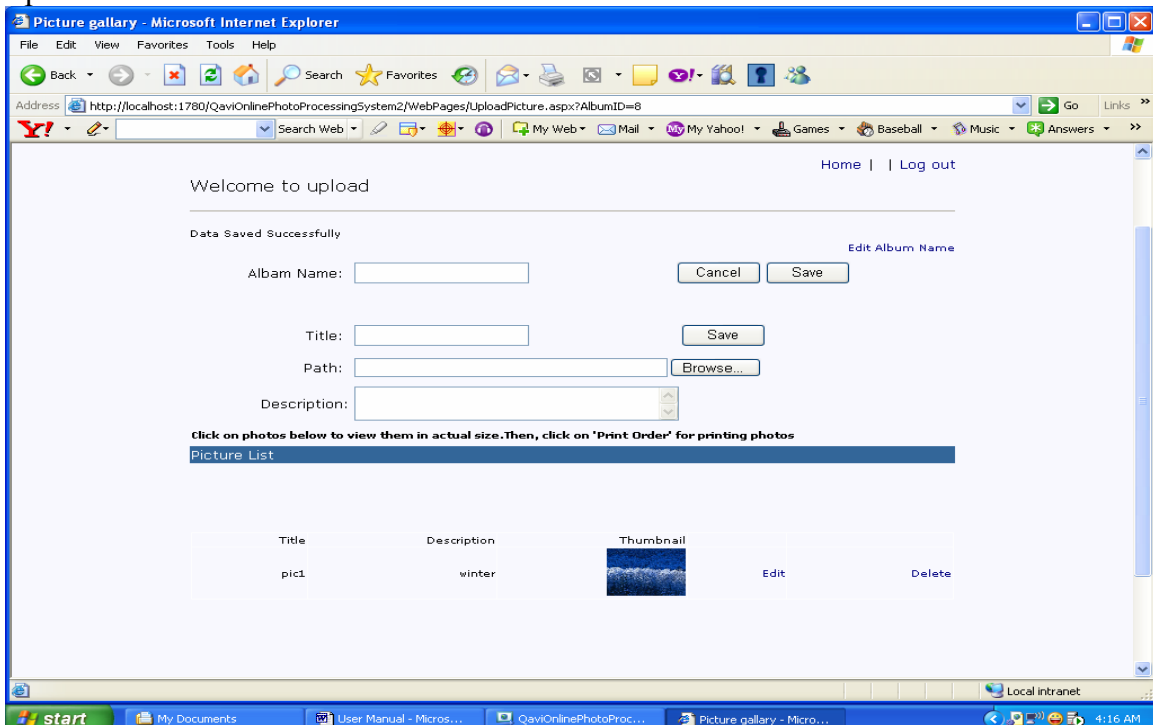
Figure 20.b:Picture upload & with picture list page of the online photo processing system

If you want to delete the picture click on the delete button following pop up will show to confirm the deletion. If you press ok the picture will be deleted.
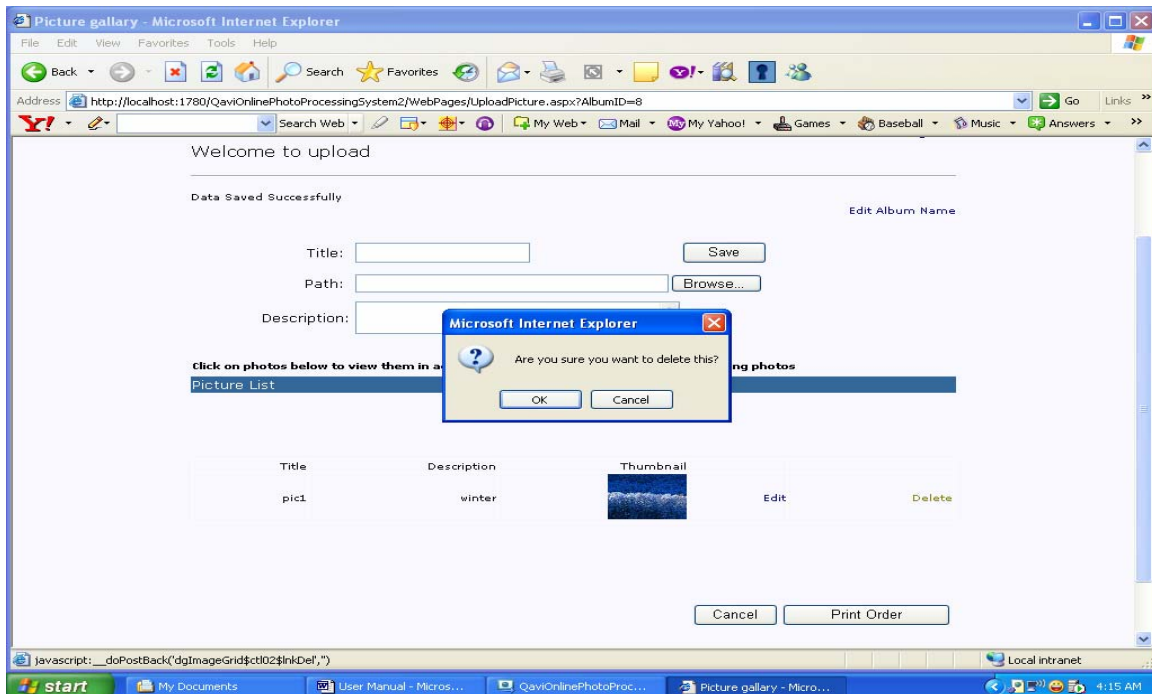
Figure 20.c: Picture upload & with picture list page of the online photo processing system

Click on the edit button and repeating the same procedure add another picture in the same album. You can add more doing the same procedure, if you don't want to add more click on the print order button to make a order for these pictures.
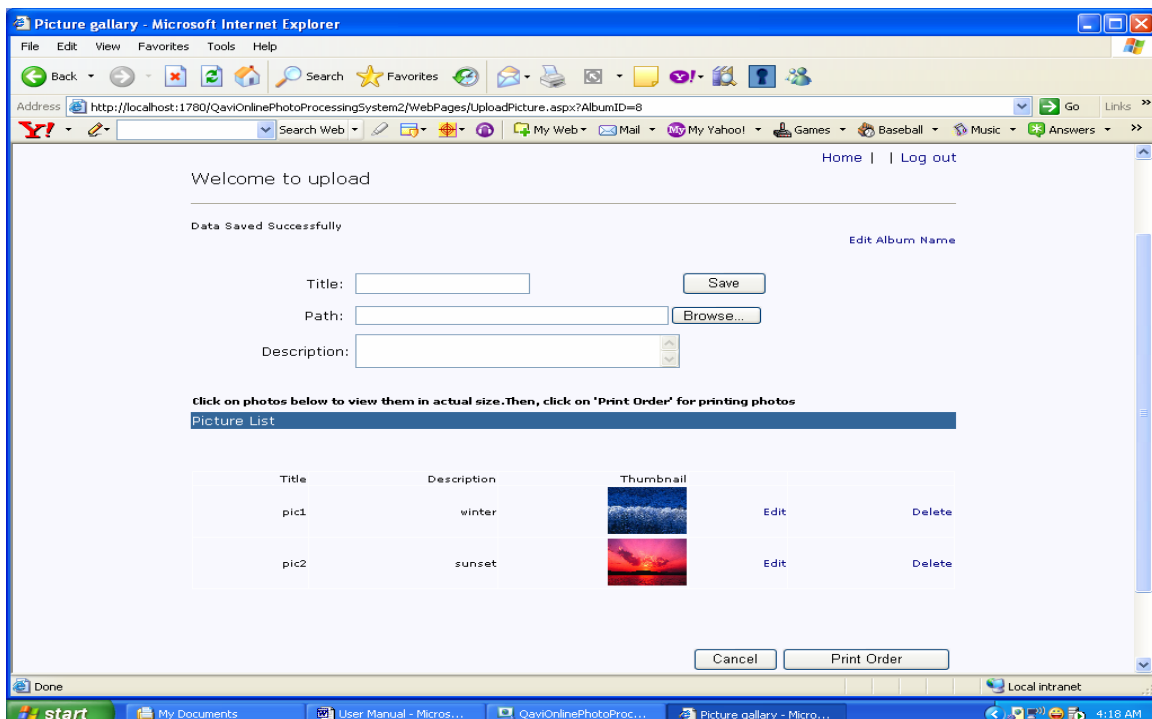
Figure 20.d:Picture upload & with picture list page of the online photo processing system

To order print select the pictures you want to upload by clicking the check boxes and click on the button choose these pictures or to cancel click on the cancel button.
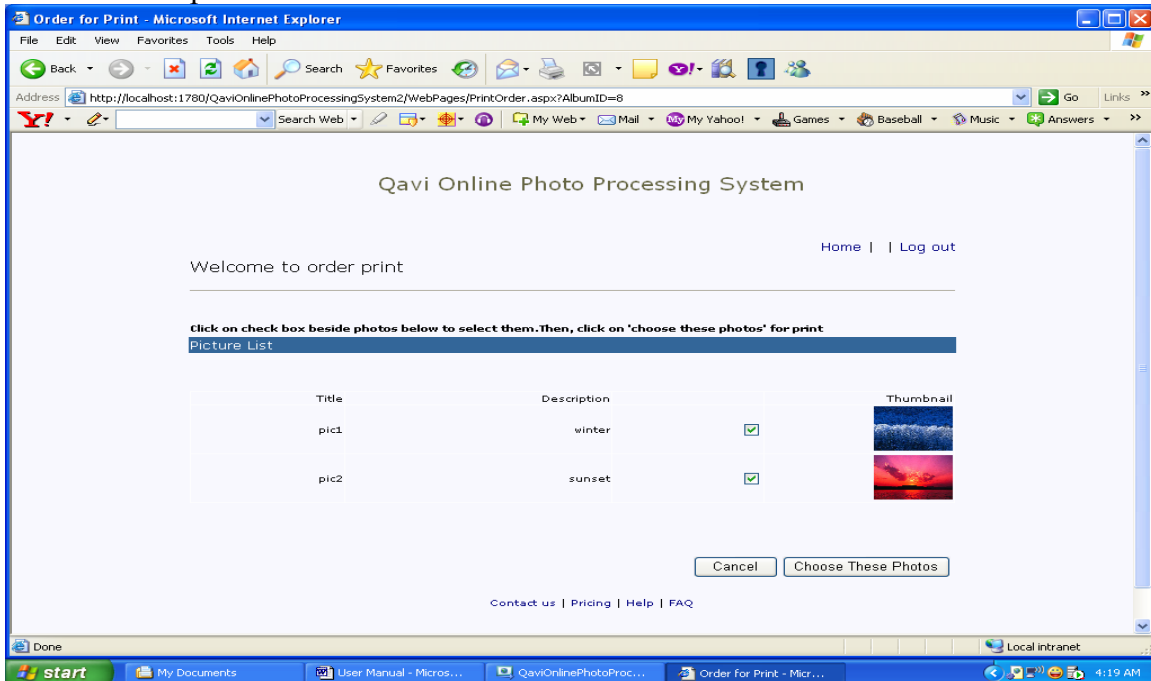
Figure 21.a : Order print page of the online photo processing system

Then to make a order with size and quantity here you will get all the options for them. *When you will type the quantity you will see the price according your . After selecting your copies click on the calculate total price button. It will show you the total price. Then click on the check out to make a payment or cancel button to cancel the order.
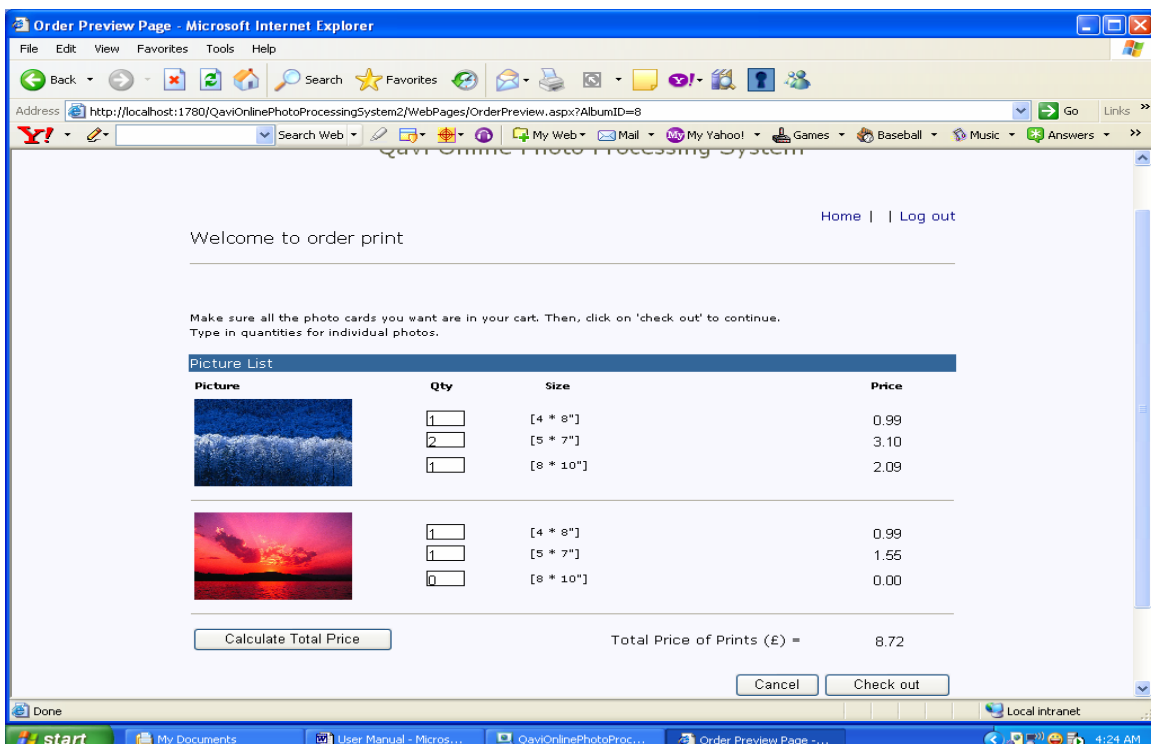
Figure 21.b : Order page of the online photo processing system

Pricing: If customers wish to see the pricing list. He/she just need to click on the link button Pricing then the price page will come up and customer can see the Cost of print/ Postage and according to size.
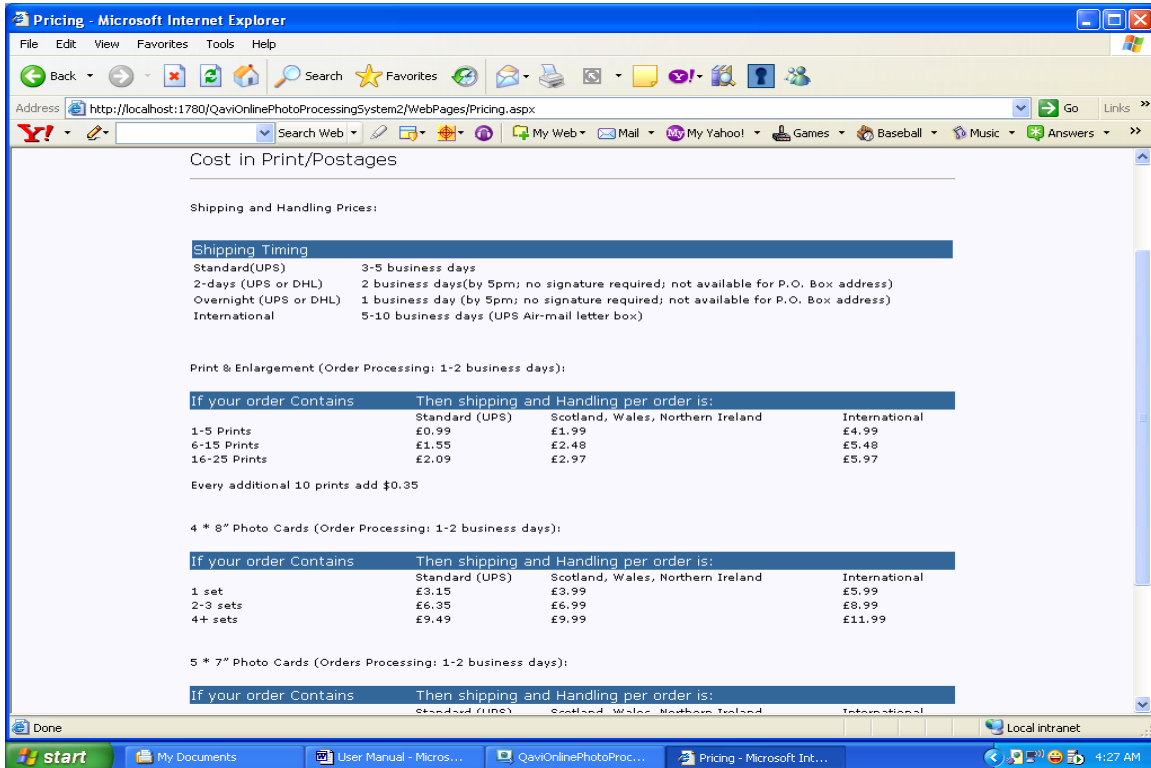
Figure 22 : Pricing page of the online photo processing system

Finally customer will come into this page. As it's an online system you have to pay by card. So to make the payment you have to type the card holders name, Card number, Card Expiry date. Also if your billing address is different than shipping address type it in the billing address text boxes or if it is same as the shipping address (which customer have given in time of registration) just click on the check box. Shipping address will be given by default. If it is different, then also type it in the shipping address text boxes. And click on the submit button to complete your order or cancel to cancel the order.

Figure 23: Billing and shipping page of the online photo processing system

Then you will get the confirmation of your order. If you want to e-mail us just click on the link info@qaviphoto.com and if you want to see the order list click on the show My Order List link button.

Figure 24 : Order submitted page of the online photo processing system

It will show the order status and you will also could be able to hide your order list by clicking the Hide My Order List link button.
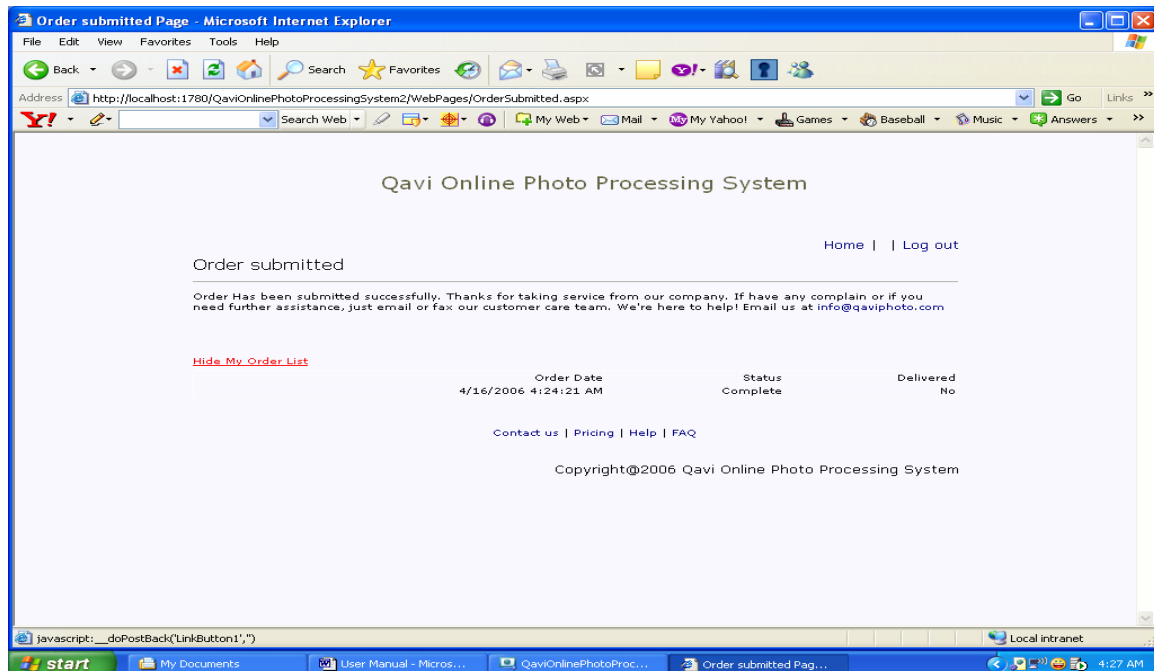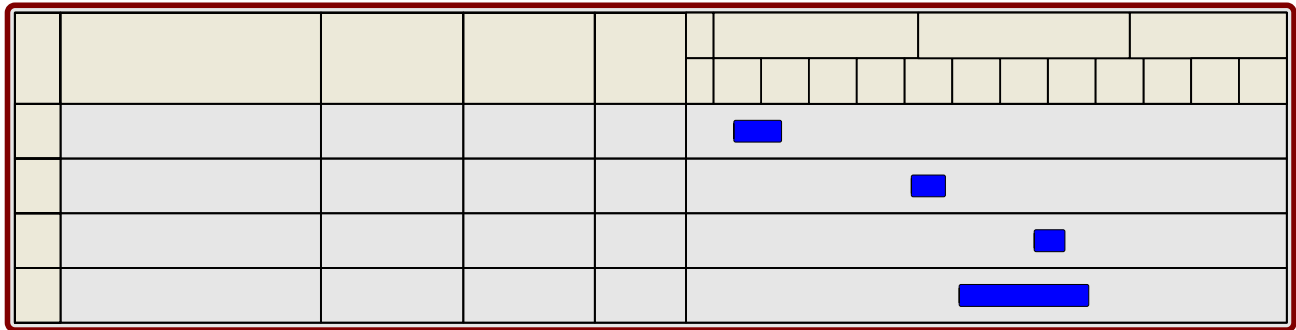

Figure 25 : Order view page of the online photo processing system

5. Reference and Bibliography

[1] G. Booch, J. Rumbaugh and I. Jacobson, "The Unified Modeling Language User Guide", Pearson Education (Singapore) Publication Ltd., Seventh Reprint Edition, 2003.

[2] Internet: http://www.usernomics.com/user-interface-design.html

[3] Internet: http://www.ambysoft.com/essays/userInterfaceDesign.html

Appendix A

Project Plan

ID	Task Name	Start	Finish	Durat
1	Study on domain and Requirement Analysis	4/4/2007	4/10/2007	1w
2	Design	4/30/2007	5/4/2007	1w
3	Documentation	5/18/2007	5/22/2007	.5w
4	Implantation (Prototype)	5/7/2007	5/25/2007	3w