

FPT UNIVERSITY

Capstone Project Document

Image Sharing Site

ISS Team	
Group Member	Nguyễn Nhật Minh - 01432 Nguyễn Khắc Khu - 00707 Phạm Ngọc Hiếu - 00427 Nguyễn Ngọc Khánh - 00426 Nguyễn Thanh Tùng - 00232
Supervisor	Mr. Bùi Đình Chiến
Capstone Project code	ISS

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1. Introduction

1.1. Introduction

1.1.1. Project information

- Project name: Image sharing Site
- Project code: ISS
- Product type: Website
- Timeline: From May 8th 2012 to August 2012

1.1.2. Purpose

- This project is registered and implemented as a capstone project for the team members. Our purpose is to fulfill the requirements from FPT University studying program.
- It is also the first step to build a first completed Social Network Image Sharing for Vietnamese

1.2. Background

With the explosive increment of Internet users, the need of files hosting services is dramatically increasing. And almost people meet those below problems:

- Your storage is out of space and you do not want to purchase for a new storage.
- You want to share pictures with friends, as well as post images on message boards, websites, forums and blogs.
- You want to put your pictures into albums and easy to share that albums as well embed those albums into your own websites.
- A place where you can back up all your images just in case your local storage suddenly broken.
- Vietnamese users want a images hosting service that is made for them with easy to use functions, comfortable user-interface and support Vietnamese

1.3. Literature review

1.3.1. Overview of the similar existing solutions.

During the study, we found out that each system has its own advantages but it will be more wonderful if we can combine all the advantage and resolve the disadvantage of all the existing systems to give a better product to the market, especially for Vietnamese customers.

Methods	Imgur.com	Minus.com
Type	an online image hosting service	Image hosting service and Image Sharing Social Network
Upload from Computer	yes	yes
Upload from a specific URL (Example: http://i.imgur.com/AtML0.jpg)	yes	yes
Retrieve all images from a given webpage with an URL and save them into users' album	no	yes
Drag and Drop Files from anywhere into website and save it into users' album	yes	yes
Manager Images/ Album (rename, sort, move, delete)	yes	yes
Support Embed Link for images (Image Direct Link, PHP Forum Code, Html Code, Thumbnail Link)	yes	yes
Support the embed HTML code for album	yes	yes
Manipulate Images	Yes (if you use Firefox plug-in or Google chrome extension)	yes
Support interactions between users (make friends, tracking activities)	No	yes
Firefox plug-in to support files upload	yes	yes
Google Chrome extension to support files upload	yes	yes

Window application to support upload multiple files	yes	yes
Vietnamese User Interface	No	No

1.3.2. Overview of the existing systems

Imgur.com

Imgur.com	Standard	Pro
Total Account Images	225 Limit	
Standard accounts are limited to the 225 most recent images. After that, the newest uploads will be shown and the oldest uploads will be bumped out of the account (not deleted, just hidden from within the account). There is no limit to pro accounts.		
Image Compression	1 MB maximum	5 MB maximum
With standard accounts, images over 1 MB will be compressed until they are less than 1 MB. With pro accounts, your images aren't touched in any way unless they are over 5 MB, in which case they will be compressed until they reach 5MB in size.		
Image Removal	6 months with no views	Never
Normal images that are not viewed for 6 months may be removed. However, images with pro accounts can only be removed by you. if the image violates our terms of service, it will be remove by admins		
Thumbnails	Small and Large	Small, Medium, Large, Huge, Small Square, Big Square
You get 4 extra thumbnails with pro accounts, making 6 thumbnails total. The sizes are: longest side 1024px, longest side 640px, and longest side 320px, longest side 160px, cropped square 160px, and cropped square 90px.		
Ads	Yes :-(	No! :-D
When you're logged into a pro account, there are no ads anywhere to be seen. Also, if someone is browsing your albums, they won't see any ads either!		

They earn money from selling premium account (Pro-account) and putting the advertisement into their website

If users do not want to see advertisement and use advance functions, they have to pay

Source: <http://imgur.com/register/upgrade>

Minus.com

Why is Minus absolutely free?

Their goal is to create a world-class product and experience for users and the business model will follow. We can see many ways Minus can monetize itself.

Minus is venture funded by IDG Capital Partners, a global network of venture capital funds with a portfolio of over 220 companies built over the last 15 years.

Minus.com	Standard
Total Account Images	There can be a max of 300 files per folder. There is no limit to number of folders you can create.
After sign up for a new account, you get 10GB of free disk space. You can buy for more disk space later You also can introduce new users about minus.com and if they sign up for a new account, you got free extra space	
Image Compression	2GB maximum
Image Removal	Never
Minus.com keeps all files indefinitely unless deleted by the uploader or if it violates their terms of service.	
Thumbnails	Small (one-quarter)
Ads	No

Source: <http://minus.com/pages/help>

1.3.3. Proposal

Initial idea

Nowadays there are thousands of websites and forums, almost of them need hosting the images for posting there.

We strongly believe that: “A picture is worth a thousand words”. We want to create an application which supports people to upload, managing and sharing their favorite and memorial pictures easily. Put their related images in albums and manage those albums.

What we want is establish the fun, simple way to share your images. Free and unlimited file sharing for your images. A universal file sharing platform that lets you share, explore and connect.

They can also share their images to many other social networks (twitter, facebook, myspace, tumblr...) by clicking a button or some simple operations.

Users also can express their feelings/opinions/ideas about their friends' photos. Tell their friends that they like/dislike or assess the photos/albums

Main functions

User's functions

- Sign up, Sign in, Sign out
- Create Albums, Delete Albums, Manage Albums (sort Albums, add more/ remove images in an Album, rename Album, move/copy images from an Album to another Album), Share Albums, set accessibility for Albums (public/private/ protected).
- Upload, Deletes, Sort images.
- Explore / Like/ rate/ comment about others' public images/ public albums
- Share albums/ images via other social networks (twitter, facebook, tumblr...)
- Follow friends to see the images which they are sharing
- Get 5GB of free disk space
- Upload multiple images up to 16MB (support multiple way)
- Unlimited Downloads and Transfer
- Report images/albums/ comments which do not meet the policy. (abuse/ pornographic)

Administrator's functions

- Manager Users:
 - add new user, delete/ ban/ block user , set user type
 - delete / ban/ block albums/ images
- Statistic:
 - How many new users/ albums/ images in today/ this week/ this month/ this year
 - Supporting Table and Charts

Non-Users' functions

- Upload single image up to 2MB
- Get share link (hot link)

Extend functions / products

Edit Images: adjust brightness/ level/ contract, resize, zoom in/out, histogram, crop....

Firefox plug-in / Google Chrome extension/ client applications for upload images.

Update the activities from users' friends in real-time (like “notification” in Facebook).

2. Software project management plan

2.1. Introduction

2.1.1.Purpose

This document includes the plan, timetable and project convention. According to it, all members can learn the task to complete work on schedule.

2.1.2.Definitions and Acronyms

#	Acronym	Definition	Note
1	AD	Architecture Design	
2	ISS	Image Sharing Site	
3	DD	Detail Design	
4	PM	Project Manager	
5	PTL	Project Technical Leader	
6	PC	Personal Computer	
8	QA	Quality Assurance Officer	
9	SRS	Software Requirement Specification	
10	Source	Source Code	
11	URD	User Requirement Document	

2.2. Problem Definition

2.2.1.Name of this Capstone Project

This project which is created as a website is named “Image sharing site” (ISS).

2.2.2.Problem Abstract

Nowadays there are thousands of websites and forums, almost of them need hosting the images for posting there.

We strongly believe that: “A picture is worth a thousand words”. We want to create an application which supports people to upload, managing and sharing their favorite and memorial pictures easily. Put their related images in albums and manage those albums.

What we want is establish the fun, simple way to share your images. Free and unlimited file sharing for your images. A universal file sharing platform that lets you share, explore and connect.

They can also share their images to many other social networks (twitter, facebook, myspace, tumblr...) by clicking a button or some simple operations.

Users also can express their feelings/opinions/ideas about their friends' photos. Tell their friends that they like/dislike or assess the photos/albums

ISS - Image Sharing Site - is a social network oriented website about images sharing for Vietnamese users. Users can upload photos and share them via social features of the site.

2.3. Project Overview

2.3.1. The current system

Current picture sharing websites is created with the huge server for unlimited storage. Vietnamese always used to use these sites with high frequency but not really have an Images Sharing Social Network for Vietnamese.

2.3.2. The Proposed System

Refer to the **Report 1 – Project Description [1]**.

Boundaries of the system

The scope of the system under development:

Based on the current modern web process, in three month period of capstone project and the limitation of human resources, ISS Team decided to focus on many problems which have been raised before:

- User's functions
 - Sign up, Sign in, Sign out
 - Create Albums, Delete Albums, Manage Albums (sort Albums, add more/ remove images in an Album, rename Album, move/copy images from an Album to another Album), Share Albums, set accessibility for Albums (public/private/ protected).
 - Upload, Deletes, Sort images.
 - Explore / Like/ rate/ comment about others' public images/ public albums
 - Share albums/ images via other social networks (twitter, facebook, tumblr...)
 - Follow friends to see the images which they are sharing
 - Get 5GB of free disk space
 - Upload multiple images up to 16MB (support multiple way)
 - Unlimited Downloads and Transfer
 - Report images/albums/ comments which do not meet the policy. (abuse/ pornographic)
- Administrator's functions
 - Manager Users:
 - add new user, delete/ ban/ block user , set user type
 - delete / ban/ block albums/ images
 - Statistic:

- How many new users/ albums/ images in today/ this week/ this month/ this year
 - Supporting Table and Charts
- Non-Users' functions
 - Upload single image up to 2MB
 - Get share link (hot link)

The future vision

We can develop additional features have been available

- Sign In: you can use your account from other internet services to sign in ISS (such as: Google, facebook, twitter...)
- Upload: To enhance the image by the algorithm up to help the process up of the photos faster.
- Edit: continually add small functions to edit photos in diversification of the ability to edit website
- Social Networking: Add more features such tag, real time notifications...

Development Environment

2.3.3.Hardware

- Personal computers for developing with the minimum configuration:
3 GB of RAM, 100Gb of hard disk, Core 2 Duo 2.0 GHz
- A server computer for testing with the minimum configuration:
4 GB of RAM, 100Gb of hard disk, Core 2 Duo 2.0 GHz

2.3.4.Software

- Operating system: Windows 7/Windows Server 2008
- Web Server: IIS 7
- DBMS: SQL Server 2008 R2
- IDE: VS2010 & .NET Framework 4.0
- SVN Server
- Microsoft Project Professional 2010

- Microsoft Visio Professional 2007
- Microsoft Office 2007

2.4. Project Organization

2.4.1. Software Process Model

There are six steps which are repeated during the project process: Requirements, Design, Implementation, Testing, and Evaluation, Re-plan.

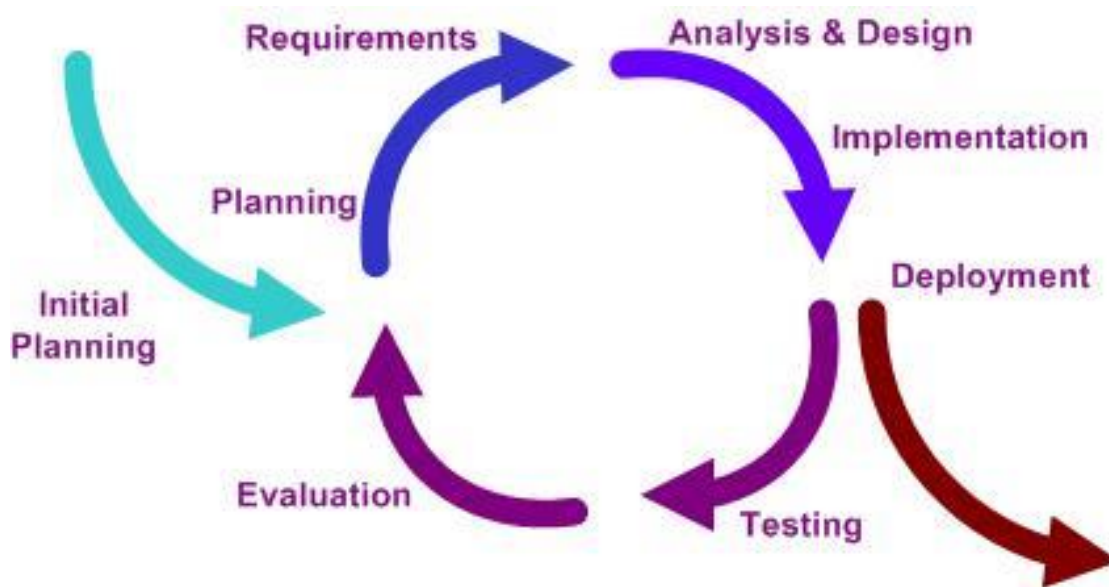


Figure 2.1: Iterative Process Model

All following steps are repeated during project development process:

- **Requirements:** All information about the product we make: functional & non-functional requirement... We come back to it many times for fulfilling requirements.
- **Design:** Including Architecture Design, Detail Design and Diagram.
- **Implementation & Testing:** Coding and Testing.
- **Evaluation:** Check if the product meets Requirement and QA. If not, come back to re-plan.
- **Re-plan:** Extend the Initial Plan or earlier plan to new version depends on time, requirement and situation.

For each cycle of the model, a decision has to be made as to whether the software produced by the cycle will be discarded, or kept as a starting point for the next cycle (sometimes referred to as incremental prototyping). Eventually a point will be reached where the requirements are complete and the software can be delivered, or it becomes impossible to enhance the software as required, and a

fresh start has to be made.

The iterative lifecycle model can be likened to producing software by successive approximation. Drawing an analogy with mathematical methods that use successive approximation to arrive at a final solution, the benefit of such methods depends on how rapidly they converge on a solution.

The key to successful use of an iterative software development lifecycle is rigorous validation of requirements, and verification (including testing) of each version of the software against those requirements within each cycle of the model. The first three phases of the example iterative model is in fact an abbreviated form of a sequential V or waterfall lifecycle model. Each cycle of the model produces software that requires testing at the unit level, for software integration, for system integration and for acceptance. As the software evolves through successive cycles, tests have to be repeated and extended to verify each version of the software. [2]

2.4.2.Roles and Responsibilities

Project Stakeholders

Project Instructor - Supervisor

❖ Mr. Bùi Đình Chiến

Project team member

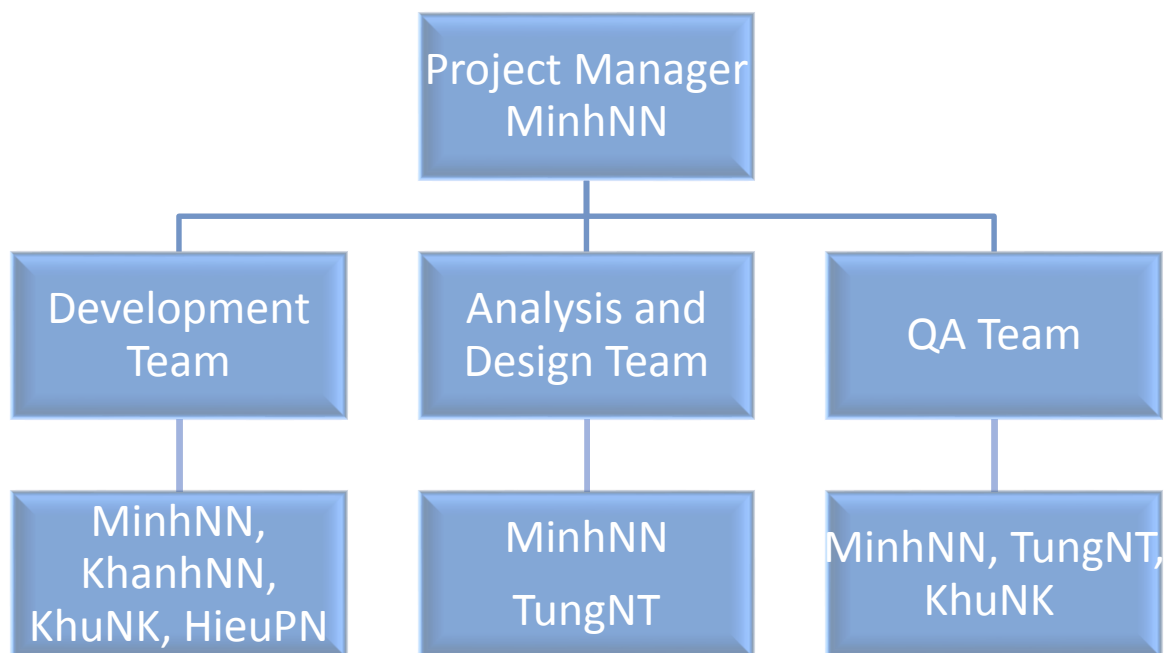


Figure 2.2: Project organization chart in ISS project

2.4.3.Roles of ISS Team

Name	Roles
Supervisor	The person has expert knowledge about project development process and knows how to do. He drives project to the goal. He acts like operation manager and Inspectors, make enforce discipline in project team. He is involved from the start of the project; participate with project team as guider and reviewer.
Responsibilities	
• Provide an environment for the project team that is conducive to research and in which the student can grow intellectually. • Construct an master plan for the project team for the period of time for the degree : ○ Establish a timeline and goals with the project team at the beginning of the project. ○ Provide appropriate guidance to the project team during their research and working. ○ Arrange a regular meeting with the project team members and committee to monitor the project development process. ○ Discuss with the project team the normal expectations held by the supervisors, the faculty at the beginning of project. ○ Assist the project team in refining their research topic and questions.	

- Assist and advise the project team with their application to the Research Ethic Board or other ethics as required.
- Inform and assist the project team in preparing an abstract for the conference.
- Clarify with the project team any questions regarding intellectual property rights, primary
- authorship on research activities, and the specific role of the project team members, the supervisor
- And other collaborators in the project.
- Ensure all tasks are on schedule and deliverable on time.

Name

Roles

Project Manager

Responsible for managing project in conjunction with the supervisors. The PM ensures that the project is delivered on time and met the requirements and standard quality. PM guarantee the project is on schedule and checks status with other team members daily.

The important role of the PM is managing the work of consultants, allocating and maximizing resources effectively. PM also motivates and inspires the others to achieve the project's goal.

Responsibilities

General Functions

- Comprehend and implement organizational project policies and procedures
- Maintain project staff technical proficiency and productivity, provide training where required
- Establish and maintain project quality
- Identify and procure project infrastructure needs
- Develop Project Charter and obtain approval
- Define project goals, objectives and success criteria

- Identify and document project constraints
- Identify and document project assumptions
- Identify and secure project team resources
- Serve as focal point for project communications
- Develop and present Milestone review briefings

Project Planning

- Create/Review/Approve Project Plan including Project Charter, Scope Statement, constraints, assumptions, WBS, defining project deliverables, cost estimates and project budget, major milestones, schedule, resource requirements, acquisition/procurement plans, risk analysis and response plans, project team structure and communications plan. Also included will be the deliverables acceptance criteria (quality metrics) and the acceptance process.
- Develop the supporting plans such as scope, cost, risk, schedule, quality, resource, security deliverables, procurement and change management plans
- Obtain stakeholder approval and acceptance of the Project Plan
- Obtain organizational commitment and support for completion of project task assignments, timing and quality
- Establish baseline

Project Execution

- Manage and monitor day-to-day activity and provide direction to team members and supporting organizations
- Manage to and monitor quality targets and goals (both project and product)
- Manage and monitor risk response strategies
- Disseminate project information and maintain communication
- Manage, or support, procurement process and contract administration requirements

Project Control

- Develop and distribute project performance reports. Regularly review project status, evaluating performance criteria (scope, cost, schedule & quality)
- Develop and manage corrective action plans

- Evaluate project performance and initiate change requests as required (scope, cost, schedule or quality)

Participate in change control board to review and approve product/project changes

Name	Roles
Analysis & Design Team	The team who create AD and DD document base on SRS. They have a vision of the system with expert knowledge, analysis SRS and make it more readable for programmers. The primary responsibility of them is providing the development team with a roadmap that is specific enough for them to create a website that lives up to the website envisioned by the designers. Their vision drives the rest of the production process. All of the assets created by the project team and the activities programmed by the software engineers are driven by the decisions made by the website designers at the pre-production stages
Responsibilities	
• Analysis and understand Website Design (SRS) with expert knowledge • Create Architecture Design and Detail Design document	
Name	Roles
Development Team (DT)	Responsible for designing and implementing an executable code solution, testing the resulting components, and analyzing runtime profiles to debug errors that might exist. A software developer may also be responsible

	for creating the software's architecture and/or employing rapid application development tools.
Responsibilities	
Development Team is responsible for programming the functionality of the website. So while Analysis & Design Team is tasked with determining what a website should do, the Development Team figures out how it is going to do it and then writes the necessary programming code. Much of this programming code is behind the scenes and not visible to the user. However, Development Team also is responsible for the code that the user sees. This is the HTML/DHTML and JavaScript that make up most of the web pages users interact with in users' web browser.	

Name	Roles
QA Team	Decrease the defect through attend the process of analysis/design/development, so it need a process that go through the whole software development life cycle and supported by the other team such as design/dev. QA should detect the potential defects and help the dev to decrease them in the earlier phase of the software development life cycle

Responsibility

- Provide Test case and Testing Strategy & Plan
- Implement Test Strategy & Plan

RASCI Model

R – Responsible – Those who are responsible for the task, ensuring that it is done as per the Approver. There is typically one role with a participation type of Responsible, with others delegated to assist as the 'Support' in the work required. (RASCI separately identifies those who participate in a supporting role).

A – Accountable – Those who are ultimately accountable for the correct and thorough completion of the deliverable or task, and the one to whom Responsible is accountable. In other words, an Accountable must sign off (Approve) on work that Responsible provides. There must be only one Accountable specified for each task or deliverable.

S – Support – Resources allocated to Responsible. Unlike Consulted, who may provide input to the task, Support will assist in completing the task.

C – Consulted – Those whose opinions are sought; and with whom there is two-way communication.

I – Informed – Those who are kept up-to-date on progress, often only on completion of the task or deliverable; and with whom there is just one-way communication.

		Project Instructor		Project Leader	Analysis & Design Team	Development Team	QA Team
1	Initiation						
	Identify Business cases and key stakeholders	C		A	R	S	S
	Prepare Project Charter	C		A	R	S	I
	Hold project kick-off meeting	I		A	R	R	R
2	Planing	C		A	R	R	R
3	Executing						
	Requirement Analysis	C		A	R	S	S
	Architecture Design	C		A	R	R	S
	Detailed Design	C		A	S	R	S
	Test Plan	C		A	S	S	R
	Create Test Case	C		A	S	S	R
	Coding	C		A	S	R	S

	Testing	C		A	S	S	R
	Create Test Report	C		A	R	R	R
	Documentation	C		R	S	S	S
4	Controlling						
	Quality Management			A			R
	Progress Report			A			R

2.5. Project Management Plan

2.5.1.Task

Overview Plan

Basically the project is divided into six main phases as follows:

- Phase 1: Introduction
- Phase 2: Planning
- Phase 3: Create SRS
- Phase 4: Design
- Phase 5: Implementation
- Phase 6: Testing, Improvement & Deployment

	i	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Add New Column
1		Images Sharing Site	67 days	Tue 5/8/12	Wed 8/8/12		MinhNN,KhuNK,Kh	
2	✓	Introduction	4 days	Wed 5/9/12	Mon 5/14/12		MinhNN	
10		Software Project Management Plan (SPMP)	11 days	Tue 5/8/12	Tue 5/22/12		MinhNN	
32		Presentation 1: Introduction	5 days	Fri 5/18/12	Thu 5/24/12		HieuPN,KhanhNN,I	
36		Software Requirement Specification (SRS)	10 days	Tue 5/8/12	Mon 5/21/12			
56		Software Design Descriptions (SDD)	10 days	Tue 5/8/12	Mon 5/21/12			
75		Development	25 days	Tue 5/8/12	Mon 6/11/12			
82		Software Test Document	5 days	Tue 5/8/12	Mon 5/14/12			
95		Test Implementation	20 days	Tue 5/8/12	Mon 6/4/12			
99		Software User Manual	5 days	Tue 5/8/12	Mon 5/14/12			

Figure 4.1: Overview Plan

2.5.2.Detail Plan

The Detail Plan will be updated in [\[ISS\] Master Plan for Report.mpp](#)

2.5.3.Task Sheet: Assignments and Timetable

Please find the [attached document \(ISS.mpp\)](#) for further reference.

2.6. Risk Management

2.6.1.List of Risks

See Risk Register document for completed information and details: [\[ISS\] Risk Register.xls](#)

2.6.2.Risk Evaluation

- We assigned them a numeric value on a scale:
Probability: 1-Low, 2-Medium, 3-High
Impact: 1-Low, 2- Medium, 3- High

In order to list the relative probability of a risk occurring on one side and the relative impact of the risk occurring on the other, I used probability/impact matrix or chart.

Probability	High			Risk 3
	Medium			Risk 1 Risk 4 Risk 6
	Low	Risk 5	Risk 2	
		Low	Medium	High
		Impact		

In order to calculate the simple Risk Score, we multiplied the probability and impact value of each risk. The values we've got were:

$$\text{Risk 1} - \text{Risk Score} = 2 * 3 = 6$$

$$\text{Risk 2} - \text{Risk Score} = 2 * 1 = 2$$

$$\text{Risk 3} - \text{Risk Score} = 3 * 3 = 9$$

2.6.3.Risk Response Strategy

There are several different ways to respond on negative and positive risks.

For negative risks, there are four basic response strategies:

1. Risk avoidance – eliminate a specific threat by eliminating its causes;
2. Risk acceptance – accept the consequences in case a risk occurs;

3. Risk transference – shifting the consequence of a risk and responsibility for its management to a third party;
4. Risk mitigation – reducing the impact of a risk event by reducing the probability of its occurrence. For positive risks, we also have four basic response strategies:
 - Risk exploitation – doing whatever we can to make sure the positive risk happens;
 - Risk sharing – allocating ownership of the risk to another party;
 - Risk enhancement – changing the size of the opportunity by identifying and maximizing key drivers of the positive risk;
 - Risk acceptance – applies to positive risks when the project team cannot or chooses not to take any actions toward a risk.

2.7. Issues

No	Issues	Probability	Effects	Strategy
1	Technology: Technical Issues faced during project development process.	High	Serious	With the guidance of Technical Directors, people follow Researching Technology Plan and coordinate to each other to resolve all technical issues.
2	Human: Project team members lack of skills: technical skills, soft skills (communication, team work)	Moderate	Serious	Creating a training plan that includes all technology and soft skill team members need to develop the project. Create a plan clearly and make sure that all team members understand what they do.
3	Tools: Software that used to develop project are not free, beta version...	Moderate	Tolerable	Use software in MSDN. Use open source software.

2.8. Coding conventions

We follow Coding conventions rules which is provided by FPT-Software (based on Standard C Sharp Coding Convention from Microsoft)

For more Details: [\[ISS\] Standard CSharp Coding Convention.pdf](#)

2.9. All meeting minutes

3. Software Design Details

3.1. Design Overview

This document describes the technical and UI design of the ISS system. It includes the architectural design and the detailed design of common functions and business functions. It also includes the design of database model, and overall design of user interface.

The architectural design describes the overall architecture of the system, and the architecture of each main component and subsystem. It will describe the patterns being used, the role of each component and the role of the system in the working environment.

The detailed design describes static and dynamic structure for each component and function. It includes class diagrams, class explanations, and sequence diagrams of the main use cases. The detailed design uses notations of .NET framework 4.0 and C# 4.0 as they are the framework and language for developing the system.

The database design describes the relationship between entities, and details of each entity. It uses notations of SQL Server 2008 as it is the database server for developing the system.

The user interface design describes the layout of the system, and some design for the screens.

3.2. System Architectural Design

3.2.1.Overall System Architecture

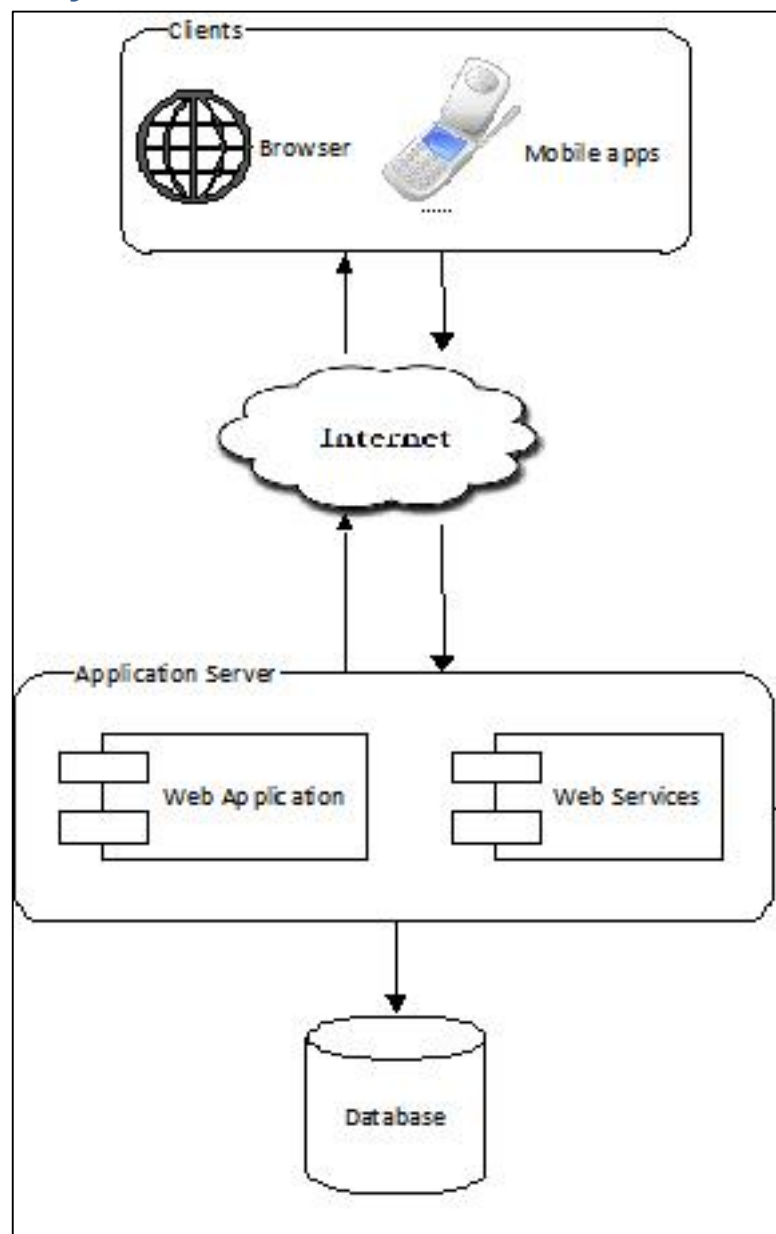


Figure 1 - Overall System Architecture

The system will use the Client-Server and SOA architectural patterns as the main architecture. It makes use of the Internet and common web protocols to deliver its services to the users.

The main entities of the above diagram will be described as following:

- **Database store:** this is the central data storage for the system. It may be running on a separate server to the Application Server, or in the same machine.
- **Application Server:** this is the server of the system running on IIS web server. It includes two main components: Web Application and Web Services. Web Application is responsible for creating web pages. It is developed using **ASP.NET MVC 3** framework. Web Services provides the system's API to the world and some parts of the application. The services are consumed by some mobile applications. It is

noted that this component will not be included in this project's scope. However the system architecture must be extensible for adding such a component in the future.

- **Clients:** these include internet browsers running on personal computers, or mobile applications targeting mobile devices. The web browsers will interact with the web application via normal protocols (HTTP, HTTPS...). The mobile applications use SOA pattern to interact with the system via web services. However it is also noted that they are not included in this project's scope.

3.2.2.Web Application Architecture

The architecture for the ISS web application will be depicted as the following diagram:

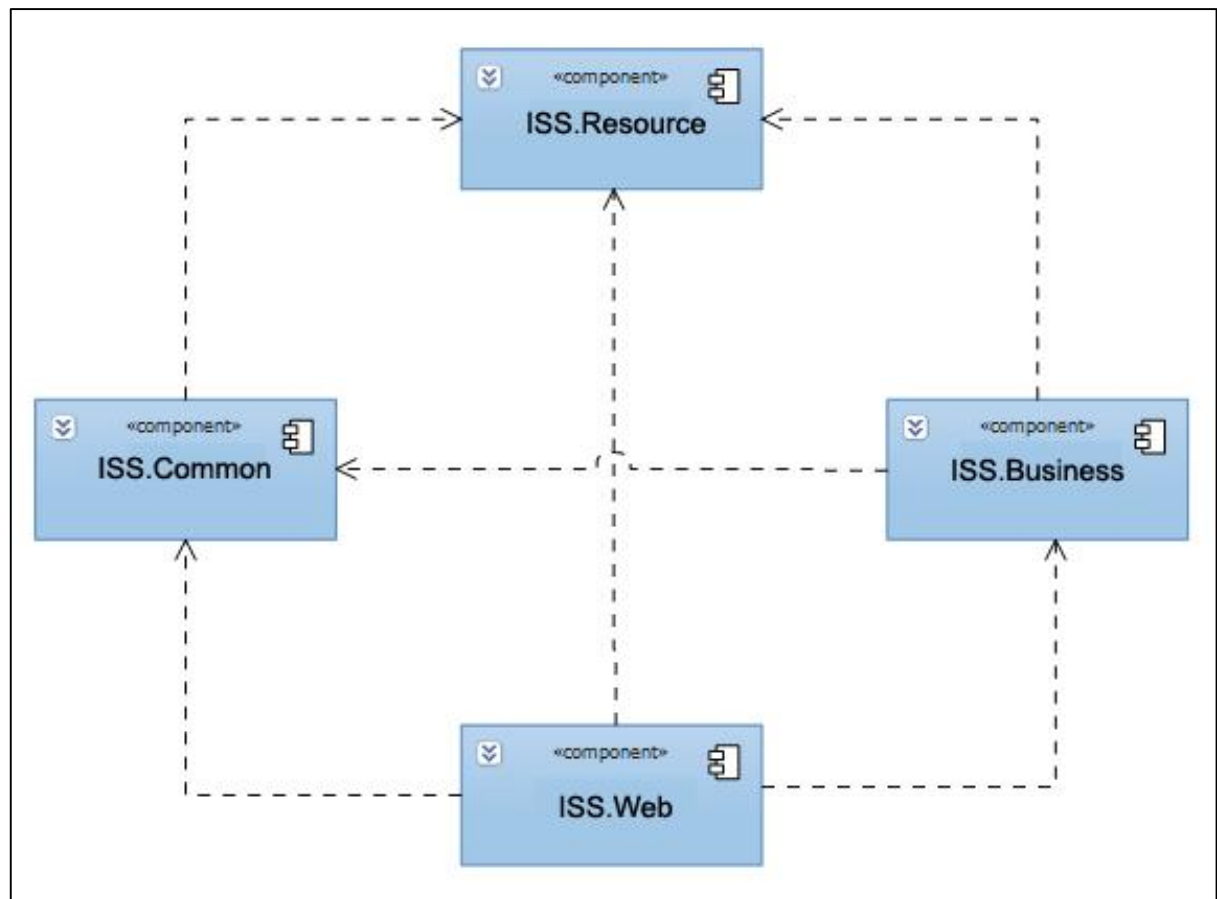


Figure 2 - Web Application Architecture

3.3. ISS.Common Component

This component contains common logic that can be used throughout the application.

3.3.1. ISS.Resources Component

This component contains static resources for the system. It includes localized strings and messages.

3.3.2. ISS.Business Component

This component contains all business logic for the system. It includes ORM classes, business classes, data access layer, business interface...

The aim and challenge for the design is that this component will be application type independent. That is this component is not tied only to web application but can be used for other .NET application types if necessary.

All the services of this component will be used by dependent components via its interfaces.

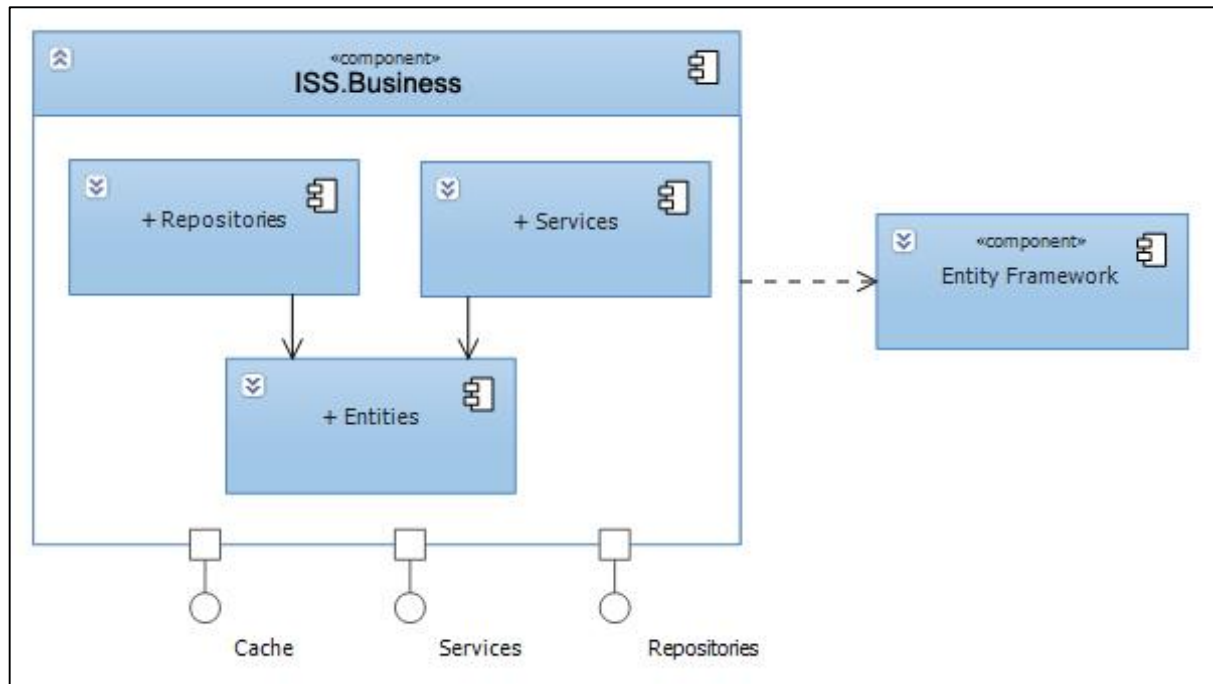


Figure 3 - ISS.Business

3.3.3. ISS.Web Component

This component is responsible for delivering the front end to the users and accepting their inputs. It will be developed using ASP.NET MVC 3 framework. An MVC Application is designed and implemented using the following three attributes:

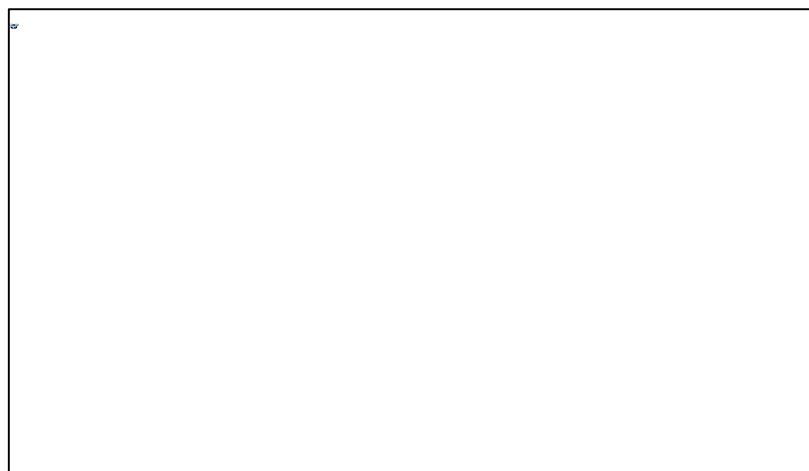


Figure 4 - 3 Attributes of An MVC Application

- **Model:** The model contains the core information for an application. This includes the data and validation rules as well as data access and aggregation logic.
- **View:** The view encapsulates the presentation of the application, and in ASP.NET this is typically the HTML markup.
- **Controller:** The controller contains the control-flow logic. It interacts with the Model and Views to control the flow of information and execution of the application.

The overall architecture of **ISS.Web** component will be depicted as the following diagram:

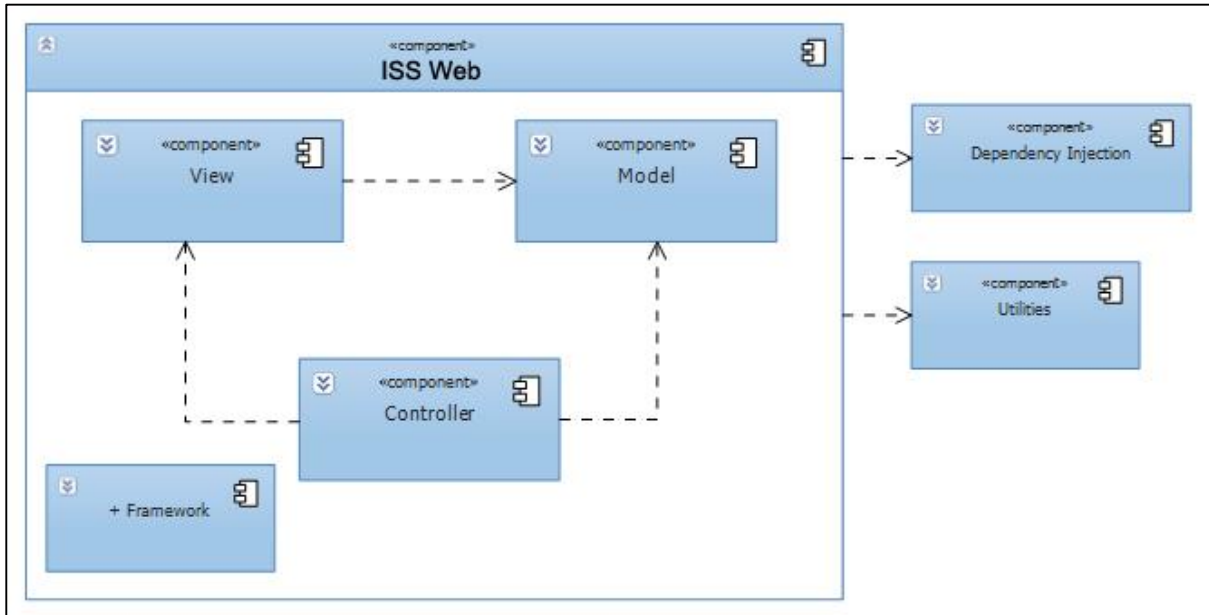


Figure 5 - The overall architecture of ISS.Web component

- **Framework:** Contain the core framework to build web application

3.4. Detailed Design

3.4.1. Class Diagram

Overview

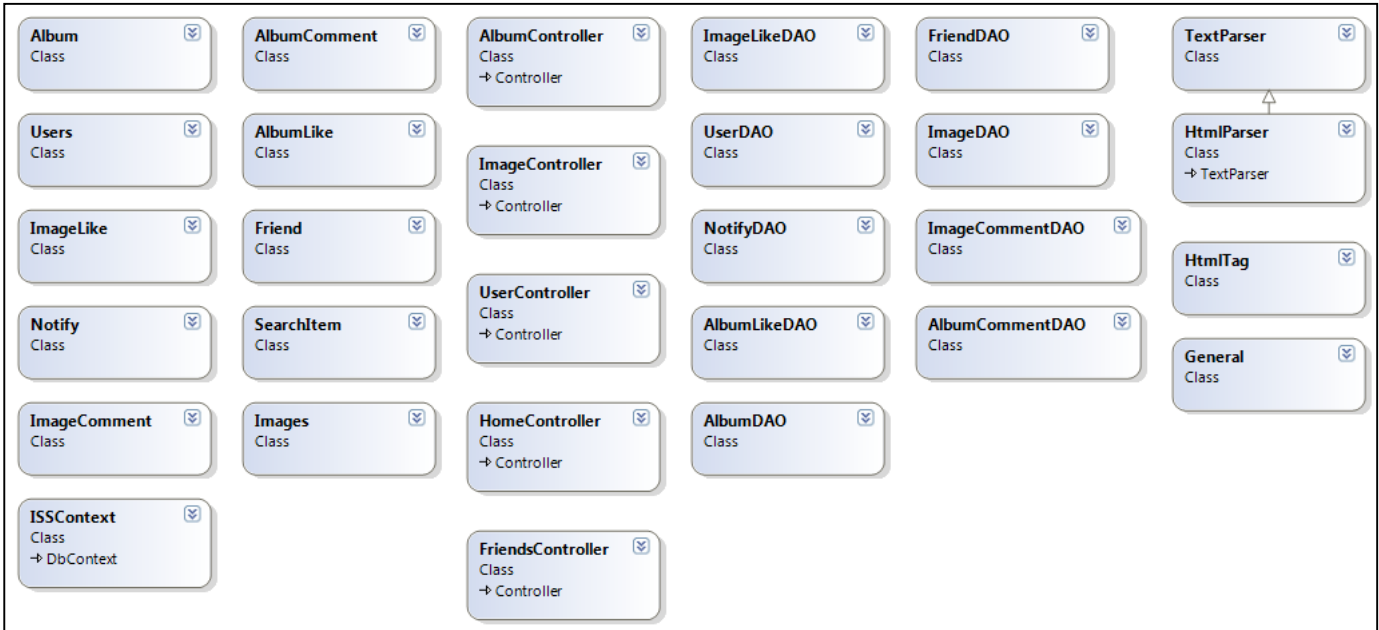


Figure 6 - Class Diagram Overview

3.4.2. Class Explanations

Model

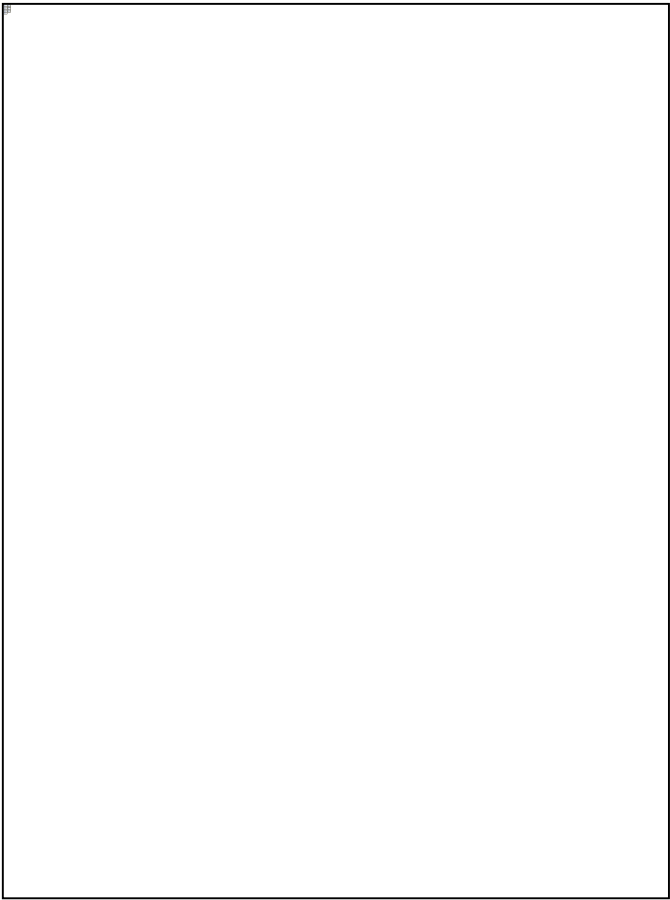


Figure 7 - Model Overview

Details

Name	Type	Modifier	Summary
Methods			
GetPermission	string	public	
Properties			
AlbumId	int	Public	
AlbumAlias	string	Public	
AlbumName	string	public	
CommentCount	int	Public	
CreateDate	System.DateTime	Public	
Creator	int	Public	
EmbedHTML	String	public	

ImageCount	int	Public	
Images	System.Collections.Generic.ICollection<images>	Public	
Like	int	Public	
NumbersOfImage	int	Public	
Permission	byte	Public	
Tags	string	Public	
Thumbnail	string	Public	
User	ISS.Models.Users	Public	
ViewCount	int	Public	

AlbumComment

9

Details

Name	Type	Modifier	Summary
Properties			
AlbumCommentId	int	Public	
AlbumId	int	Public	
Album	ISS.Models.Album	public	
Content	String	Public	
CreateDate	System.DateTime	Public	
Creator	int	Public	
UserID	int	Public	
User	ISS.Models.Users	Public	
Vote	int	Public	

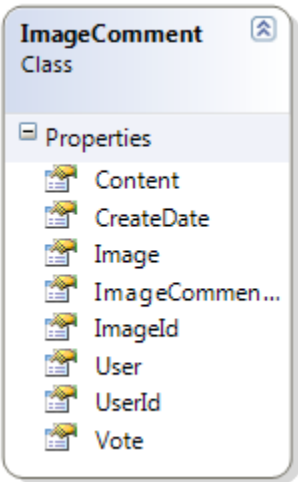
Details

Name	Type	Modifier	Summary
Properties			
AlbumLikeId	int	Public	
AlbumId	int	Public	
Album	ISS.Models.Album	public	
LikeDate	System.DateTime	Public	
Creator	int	Public	
UserID	int	Public	
User	ISS.Models.Users	Public	
Vote	int	Public	

Details

Name	Type	Modifier	Summary
Properties			
ImageId	Int	public	
AlbumId	int	Public	
Album	ISS.Models.Album	public	
Alias	string	Public	
Title	string	public	
CommentCount	int	Public	
Comments	IEnumerable < ImageComment>	Public	
UploadDate	System.DateTime	Public	
Like	int	Public	
NumbersOfImage	int	Public	
DirectLink	String	Public	
EmbedHtml	String	Public	<html><iframe></ ifram e ></html>
HtmlCode	String	Public	<a>
ImageLink	String	Public	
ForumCode	String	Public	
ImageThumbnail	string	Public	
OriginalFrom	String	Public	
ViewCount	int	Public	

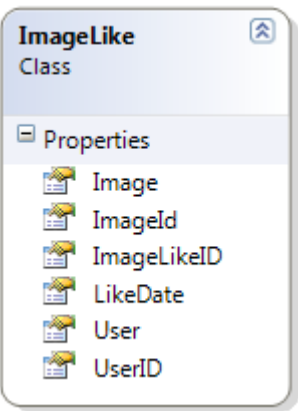
ImageComment



Details

Name	Type	Modifier	Summary
Properties			
ImageCommentID	int	public	
Content	String	public	
CreateDate	Datetime	public	
Image	ISS.Models.Images	public	
ImageID	int	public	
User	ISS.Models.Users	public	
UserId	Int	public	

ImageLike



Details

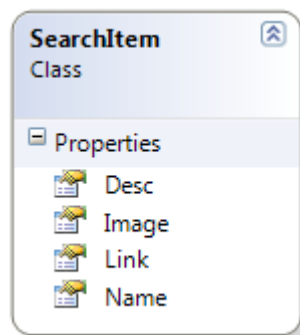
Name	Type	Modifier	Summary
Properties			
ImageCommentID	int	public	
Content	String	public	
CreateDate	Datetime	public	
Image	ISS.Models.Images	public	
ImageID	int	public	
User	ISS.Models.Users	public	
UserId	Int	public	

Details

Name	Type	Modifier	Summary
Properties			
UserId	Int	Public	
UserName	String	Public	

UserType	byte	Public	
_Album	IEnumerable <ISS.Models.Album>	Public	
_Images	IEnumerable <ISS.Models.Images>	Public	
Avatar	String	Public	
BirthDay	DateTime	Public	
ConfirmPassword	String	Public	
Email	String	Public	
FullName	String	Public	
IsActive	bool	Public	
LastLogin	DateTime	Public	
OldPassword	String	Public	
Password	String	Public	
Phone	string	Public	
RegisterDate	System.DateTime	Public	
Sex	bool	Public	
TotalAlbum	int	Public	
TotalComment	int	Public	
TotalFollower	int	Public	
TotalFollowing	int	Public	
TotalImages	int	Public	
TotalLike	int	Public	
TotalViews	int	Public	

SearchItems



Details

Name	Type	Modifier	Summary
Properties			
Desc	String	public	
Image	String	public	
Link	String	public	
Name	String	public	

Details

Name	Type	Modifier	Summary
Properties			
FriendId	id	public	
AcceptDate	System.DateTime	public	
FollowDate	System.DateTime	public	
Follower	int	public	
FollowerUser	ISS.Models.Users	public	
IsAccept	bool	public	
toFollow	int	public	
toFollowUser	ISS.Models.Users	public	

Details

Name	Type	Modifier	Summary
Properties			
NotifyId	id	public	
NotifyTime	System.DateTime	public	
Content	String	public	
FromUserId	int	public	
Link	ISS.Models.Users	public	
toAllFriend	bool	public	
toUserId	int	public	

ISSContext



View

Album

AlbumDetail.cshtml

Contain HTML markup and .NET code to render Album Detail screen

AlbumInfo.cshtml

Contain HTML markup and .NET code to render Album Info screen

AlbumInfo_NotOwn.cshtml

Contain HTML markup and .NET code to render Album Info which does not belong to User screen

Index.cshtml

Contain HTML markup and .NET code to render Album Index screen

Image

Details.cshtml

Contain HTML markup and .NET code to render Image Details screen

ImageTitle.cshtml

Contain HTML markup and .NET code to render Image Title screen

Index.cshtml

Contain HTML markup and .NET code to render Image Index screen

MyAlbum.cshtml

Contain HTML markup and .NET code to render Image List in the Album screen

Home

Dashboard.cshtml

Contain HTML markup and .NET code to render Dashboard screen

Explore.cshtml

Contain HTML markup and .NET code to render Explore screen

Login.cshtml

Contain HTML markup and .NET code to render Login screen

Search.cshtml

Contain HTML markup and .NET code to render Search screen

Notify.cshtml

Contain HTML markup and .NET code to render Notify screen

PreviewImage.cshtml

Contain HTML markup and .NET code to render Preview Image screen

UploadFromWeb.cshtml

Contain HTML markup and .NET code to render Upload from Web screen

NonePermission.cshtml

Contain HTML markup and .NET code to render None Permission screen

Index.cshtml

Contain HTML markup and .NET code to render Home Index screen

Shared

_Layout.cshtml

Contain HTML markup and .NET code to render Layout screen

[Album_LikeView.cshtml](#)

Contain HTML markup and .NET code to render Album Like View screen

[AlbumComments.cshtml](#)

Contain HTML markup and .NET code to render Album Comments screen

[Comments.cshtml](#)

Contain HTML markup and .NET code to render Comments screen

[Error.cshtml](#)

Contain HTML markup and .NET code to render Error screen

[ImageAction.cshtml](#)

Contain HTML markup and .NET code to render Image Action screen

[ImageList.cshtml](#)

Contain HTML markup and .NET code to render Image list screen

[ImageList_NotOwn.cshtml](#)

Contain HTML markup and .NET code to render Image list which does not belong to the user screen

[LikeView.cshtml](#)

Contain HTML markup and .NET code to render Like View screen

[NotifyMenu.cshtml](#)

Contain HTML markup and .NET code to render Notify Menu screen

[LikeDetailView.cshtml](#)

Contain HTML markup and .NET code to render Like Detail View screen

[User](#)

[AccountInfo.cshtml](#)

Contain HTML markup and .NET code to render Account Info screen

[AccountSettings.cshtml](#)

Contain HTML markup and .NET code to render Account Settings screen

[AlbumDetails.cshtml](#)

Contain HTML markup and .NET code to render Album Details screen

[Follow.cshtml](#)

Contain HTML markup and .NET code to render Follow screen

[Follower.cshtml](#)

Contain HTML markup and .NET code to render Follower screen

[Following.cshtml](#)

Contain HTML markup and .NET code to render Following screen

FriendRequest.cshtml

Contain HTML markup and .NET code to render Friend Request screen

ImageDetails.cshtml

Contain HTML markup and .NET code to render Image Details screen

PublicAlbum.cshtml

Contain HTML markup and .NET code to render Public Album screen

UserInfo.cshtml

Contain HTML markup and .NET code to render User Info screen

Index.cshtml

Contain HTML markup and .NET code to render User Index screen

Other

_ViewStart.cshtml

Contain HTML markup and .NET code to render ViewStart screen

Controller

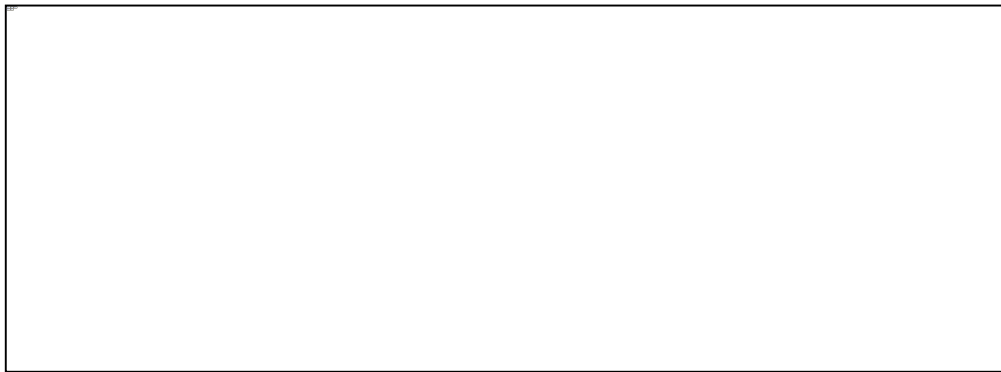


Figure 8 - Controller Overview

HomeController

01

UserController

02

AlbumController

£

ImageController

¶

FriendsController

°

Business

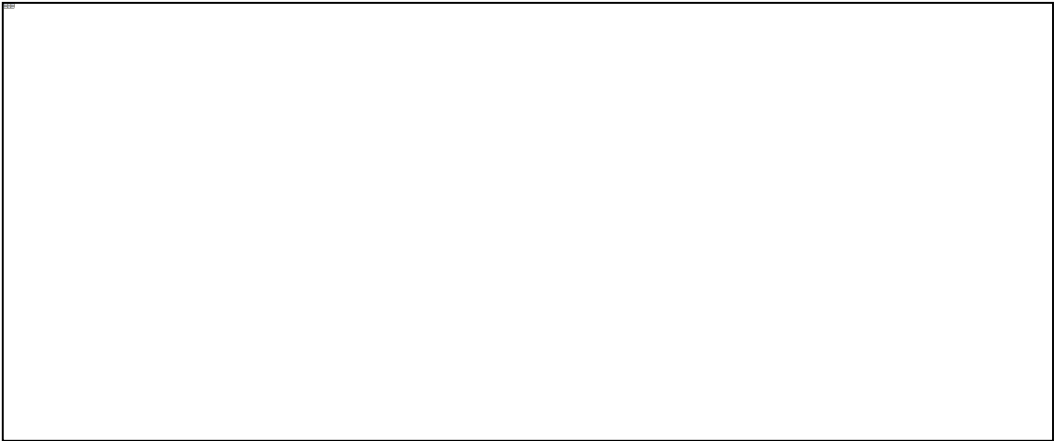


Figure 9 - Business Overview

<i>AlbumDAO</i>	<i>AlbumCommentDAO</i>	<i>AlbumLikeDAO</i>
	AlbumCommentDAO Class Fields context Methods Create DeleteComment GetByImage	AlbumLikeDAO Class Fields context Methods GetByUser Like

ImageDAO	ImageCommentDAO	ImageLikeDAO

UserDAO

FriendDAO

NotifyDAO

General

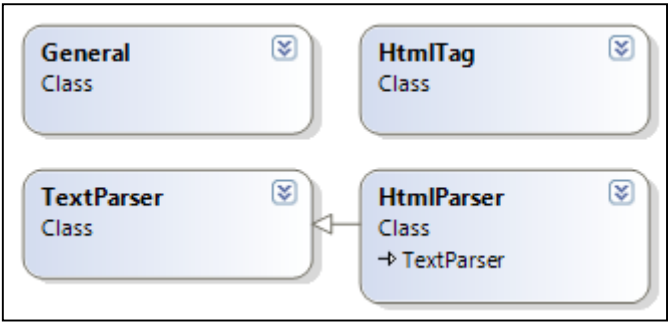


Figure 10 - General Class Overview

General

HtmlTag

HtmlTag

Class

Properties

Attributes

Name

TrailingSlash

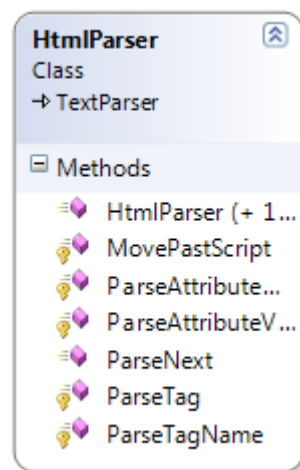
Methods

HasAttribute

TextParser

46

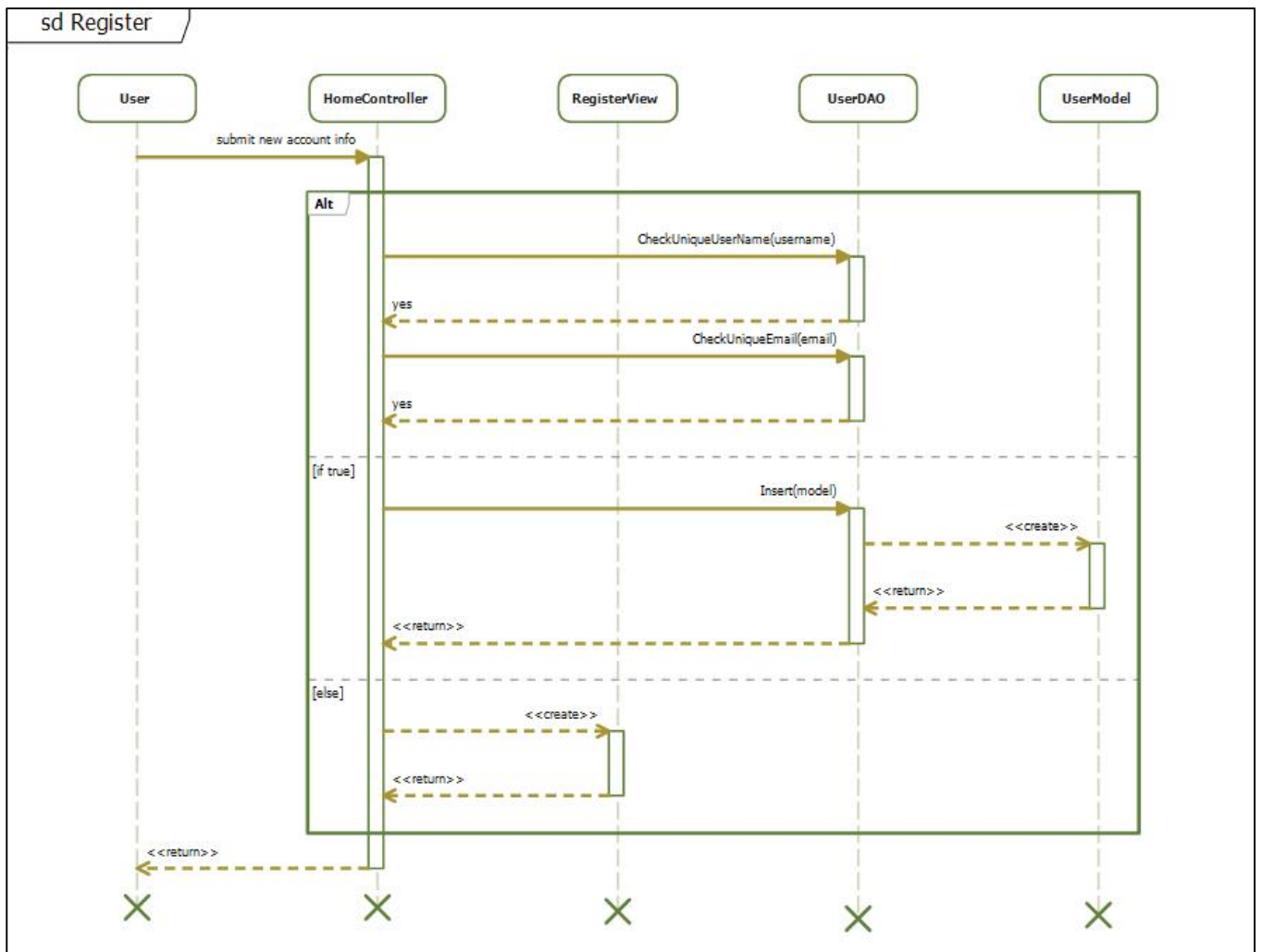
HtmlParser



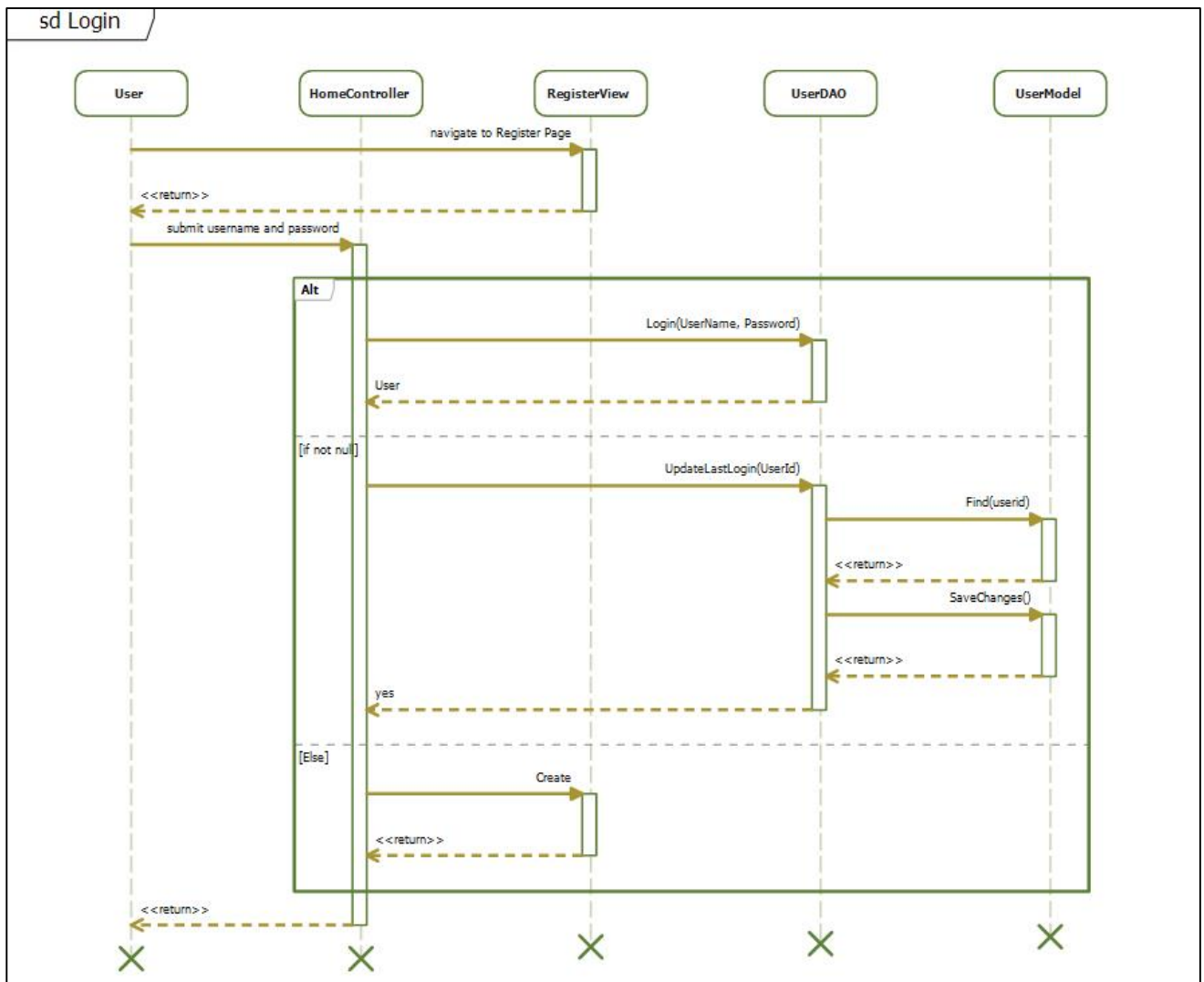
3.4.3. Time Sequence Diagram

Login / Logout / Register

Register



Login

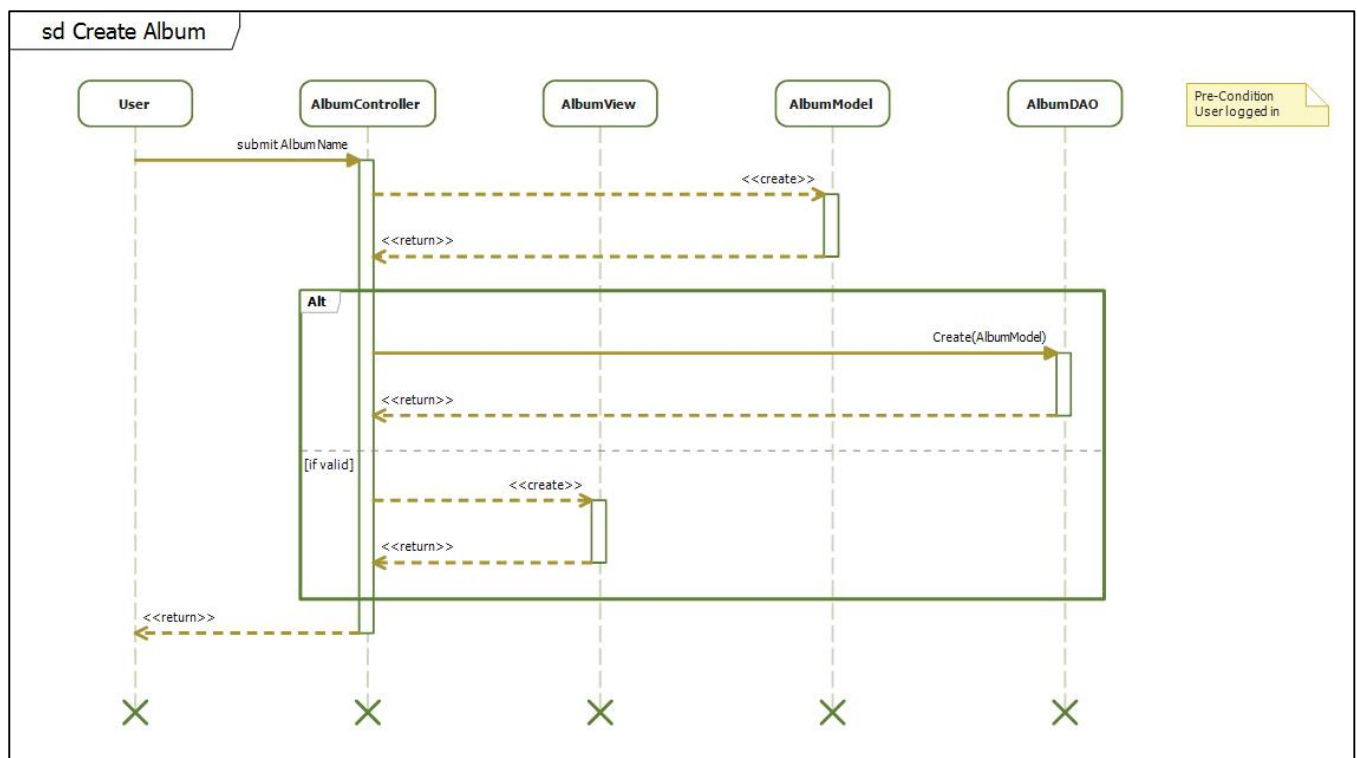


Logout

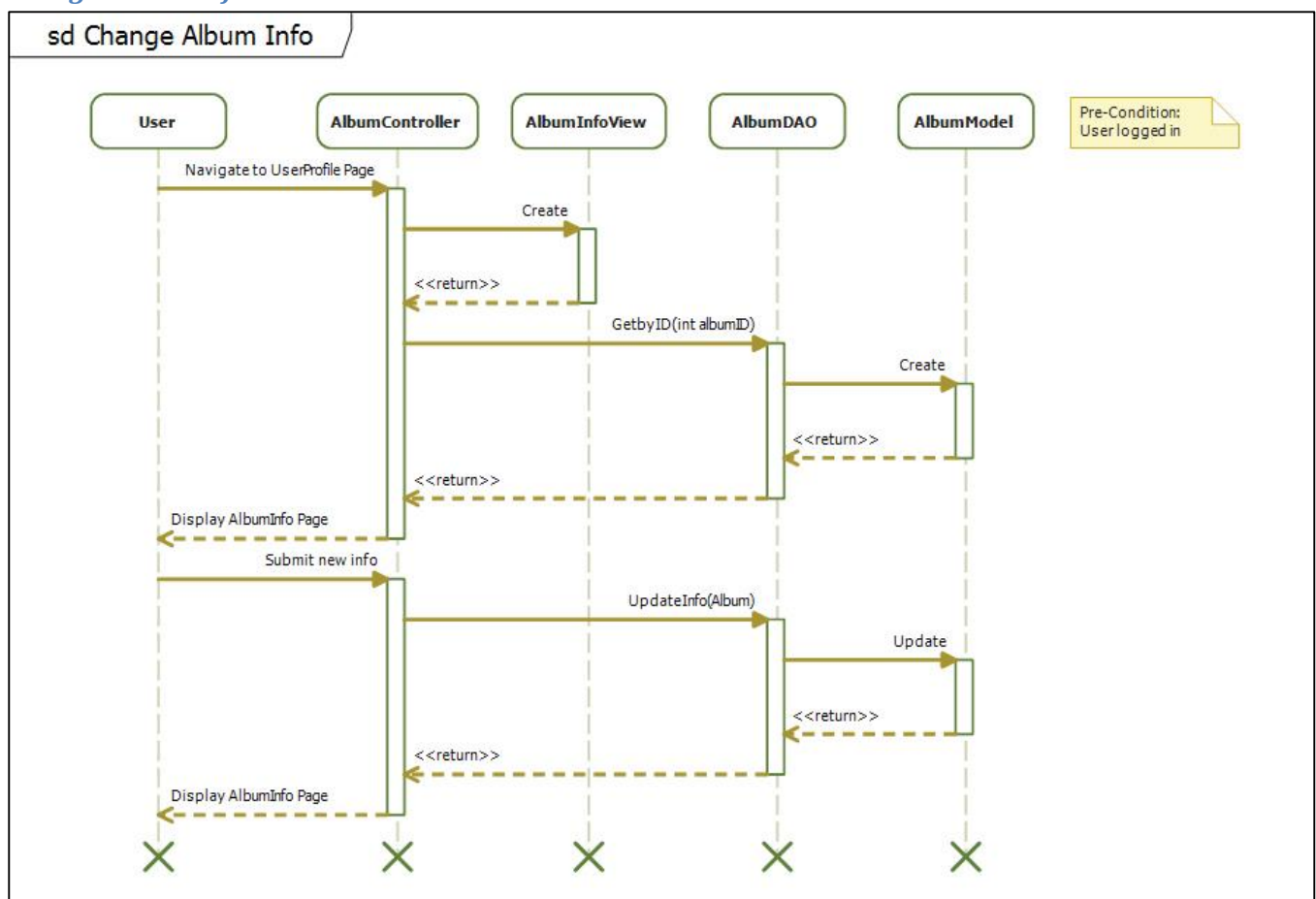
Album

Create Album

Pre-Condition: User logged in



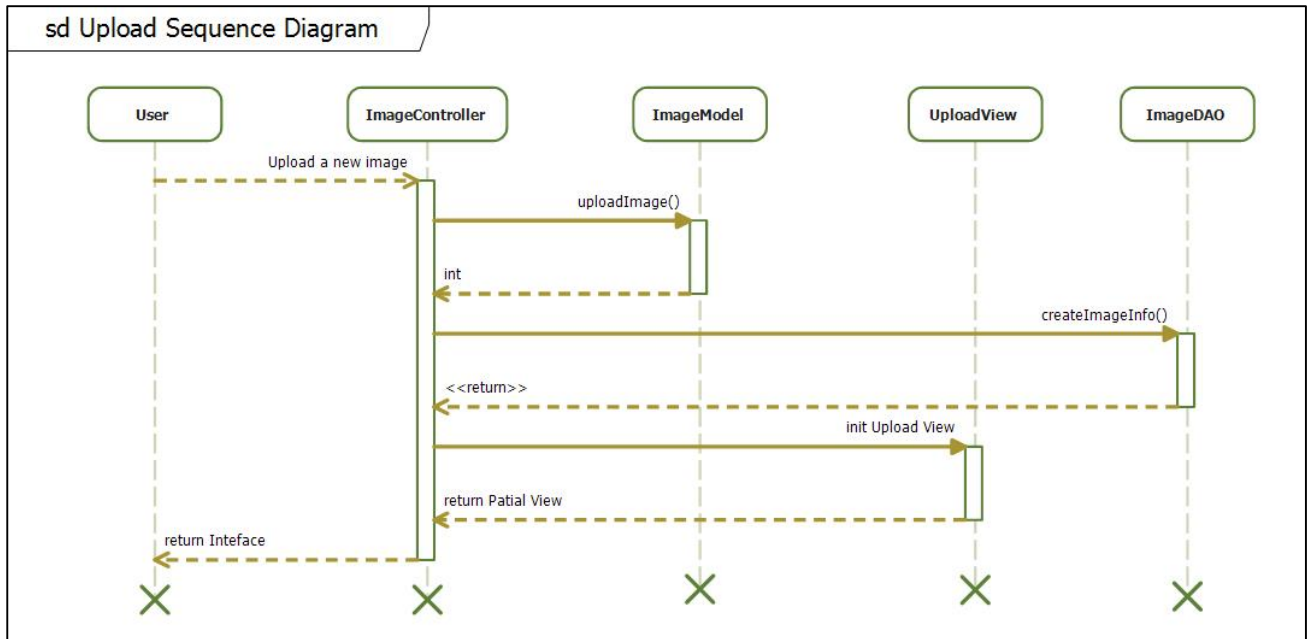
Change Album Info



Delete Album

Image

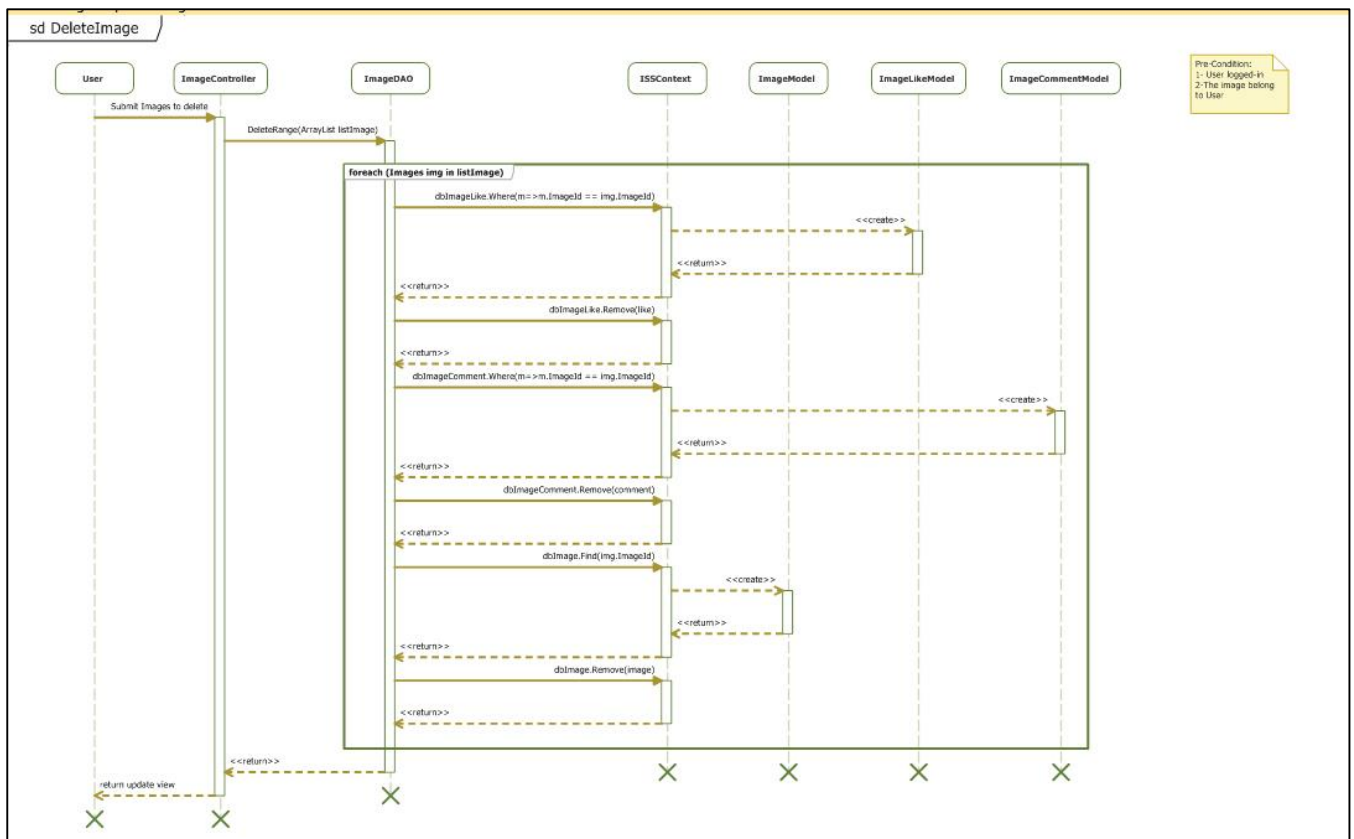
Upload Images



Delete Images

Pre-Condition:

- 1- User logged-in
- 2-The image belong to User



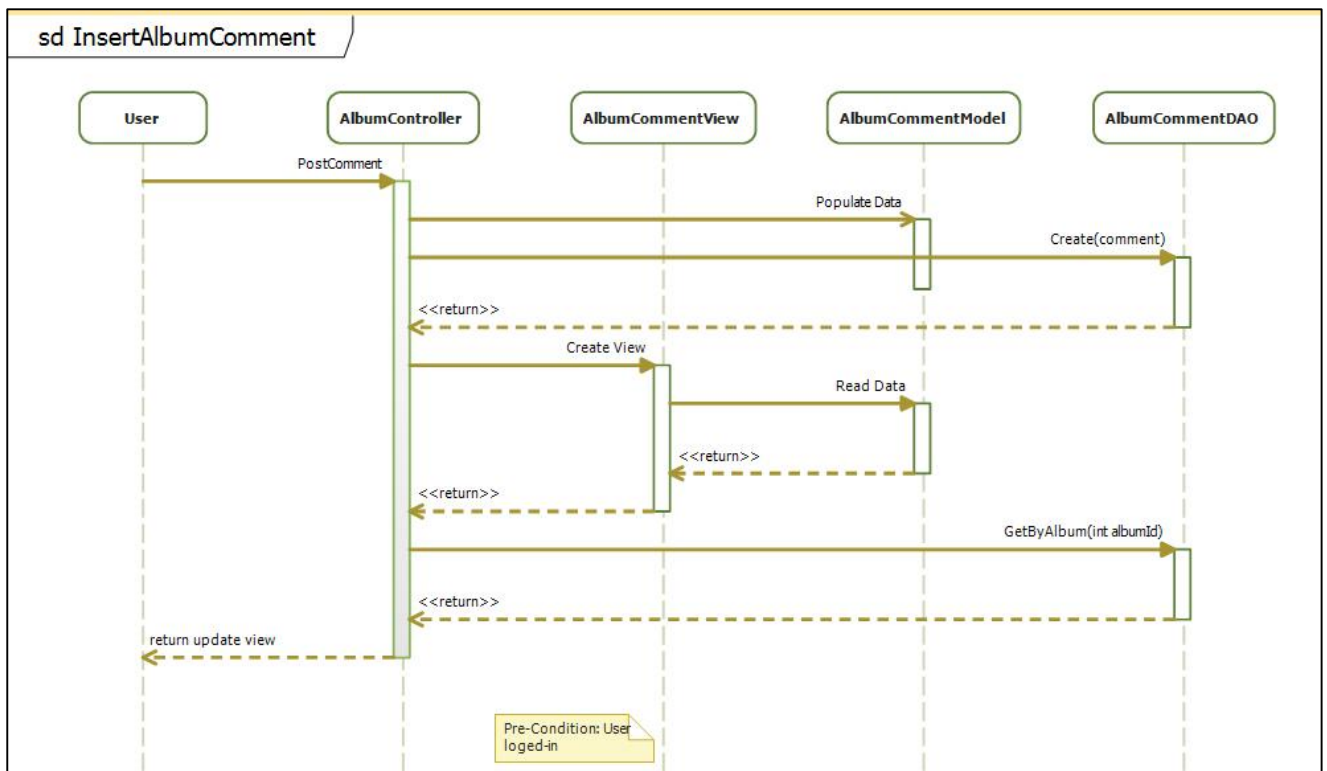
Move Images

Change Image Title

Album Comment

Post New Album Comment

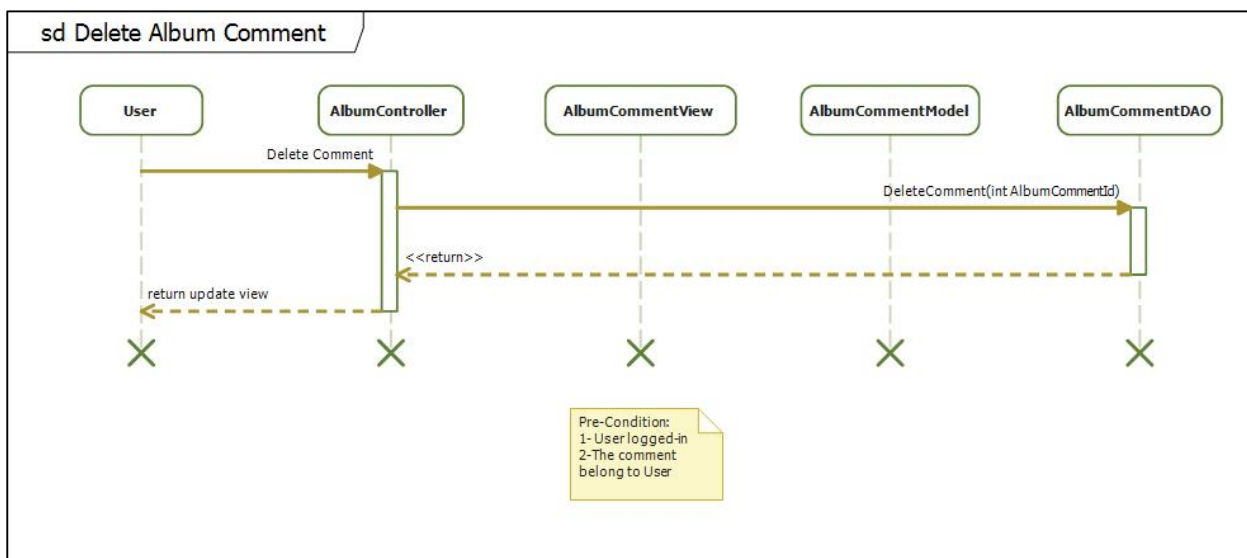
Pre-Condition: User logged in



Delete Album Comment

Pre-Condition:

- User logged in
- The comment belongs to user



ViewAlbumComment

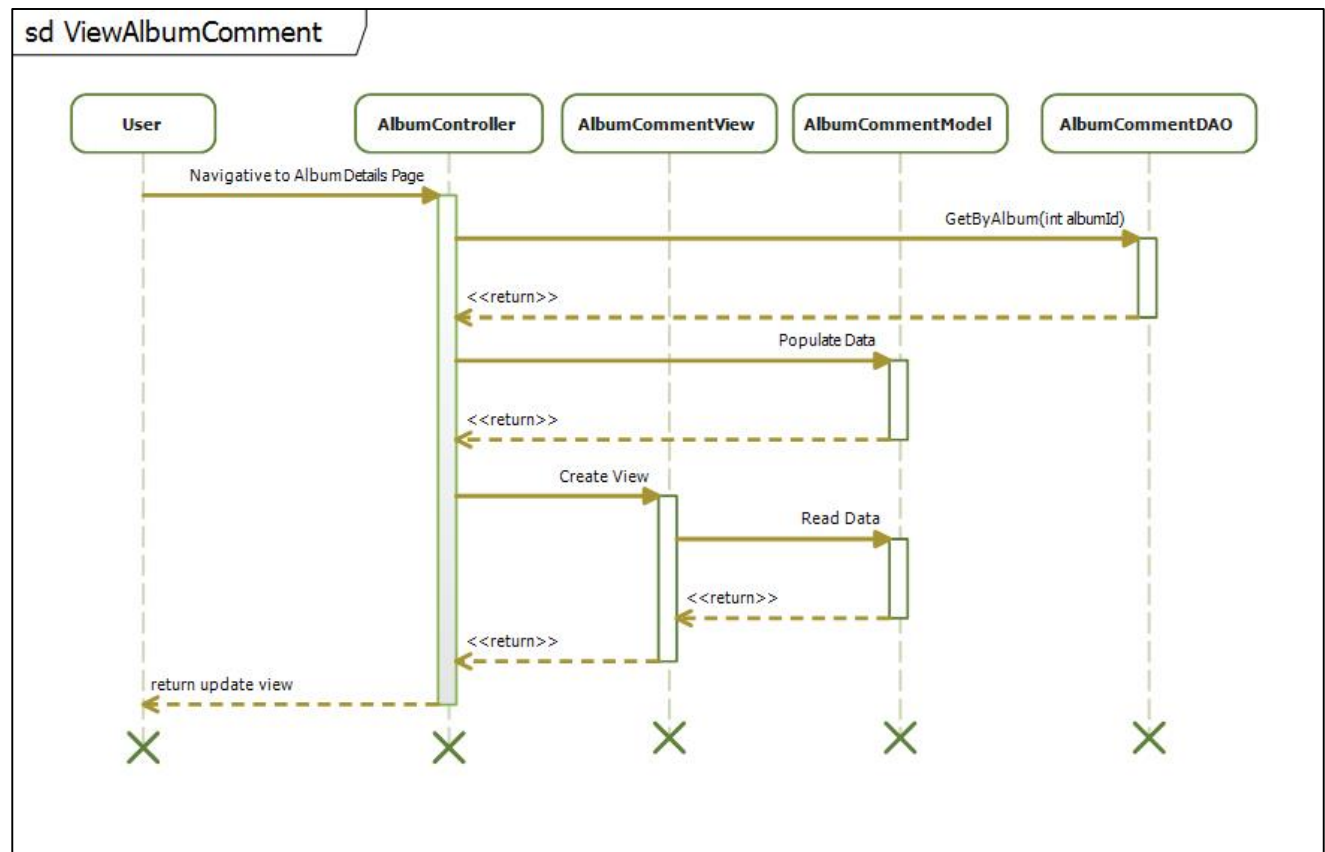
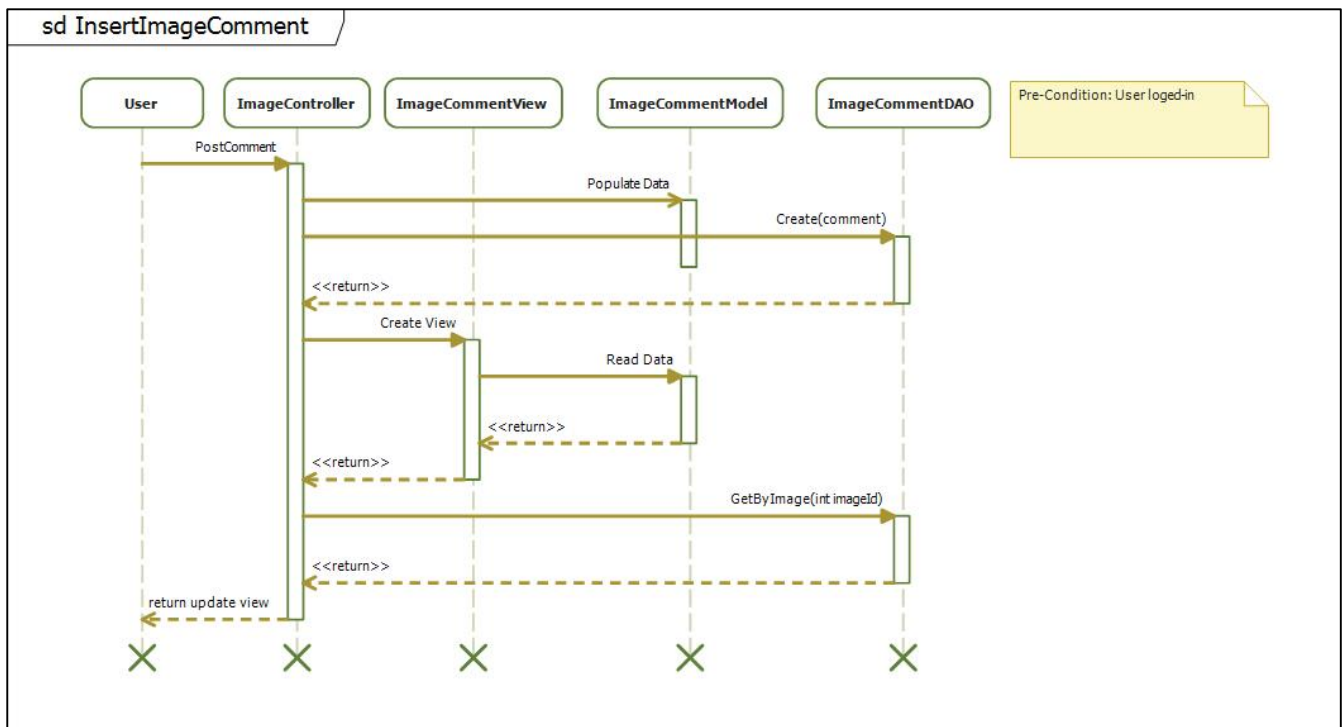


Image Comment

Post New Image Comment

Pre-Condition:

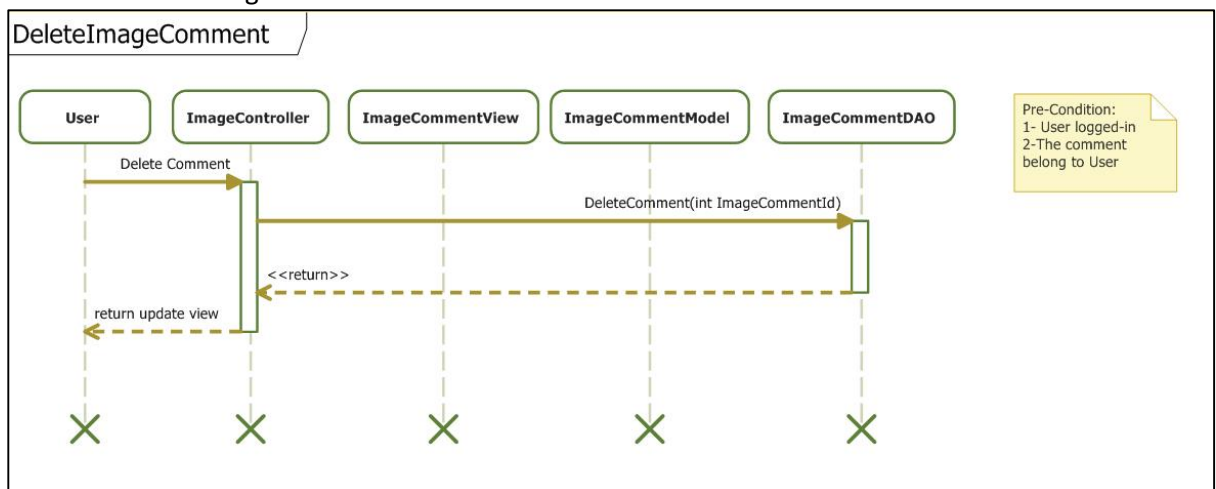
- User logged in



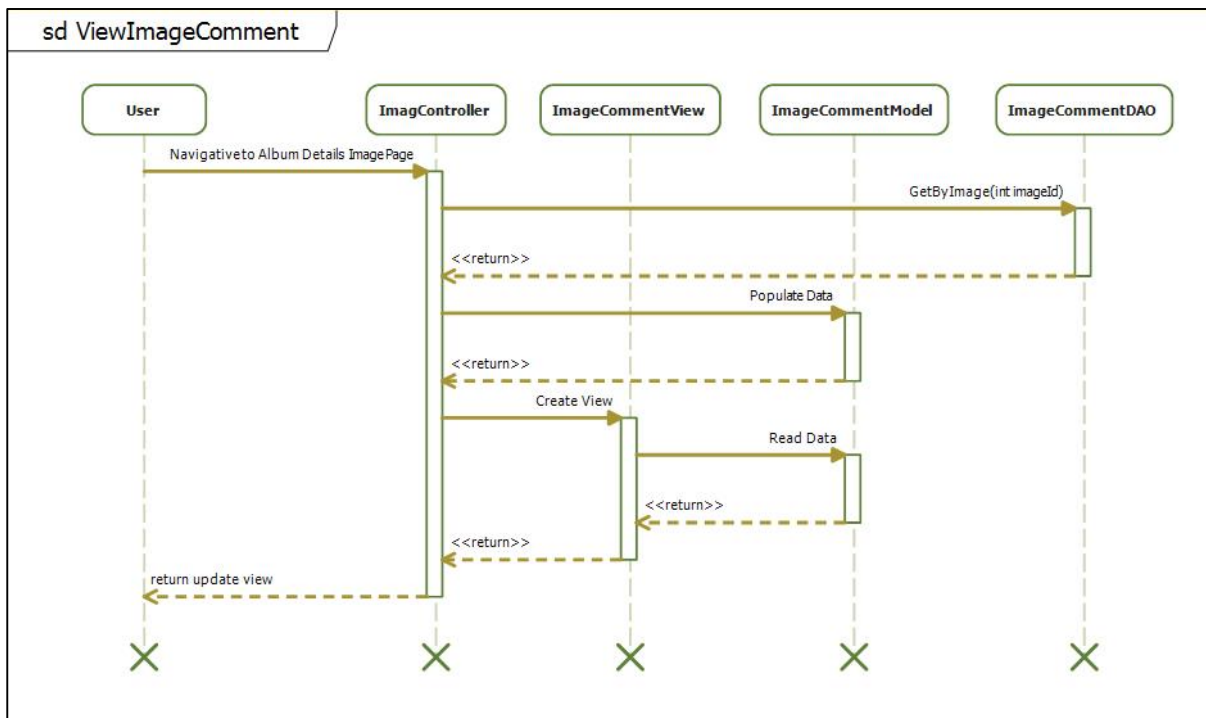
Delete Image Comment

Pre-Condition:

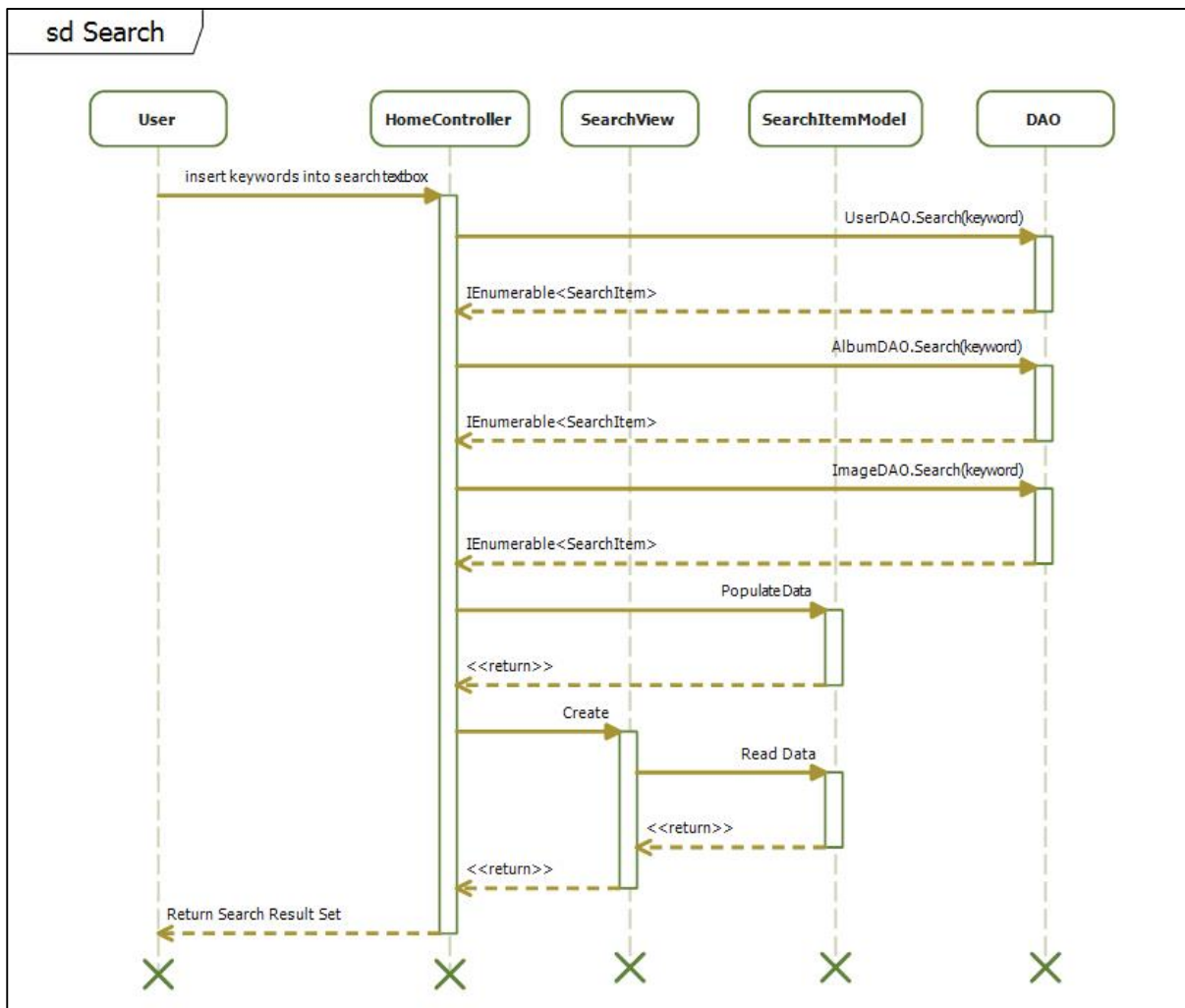
- User logged in
- The comment belongs to user



View Image Comment

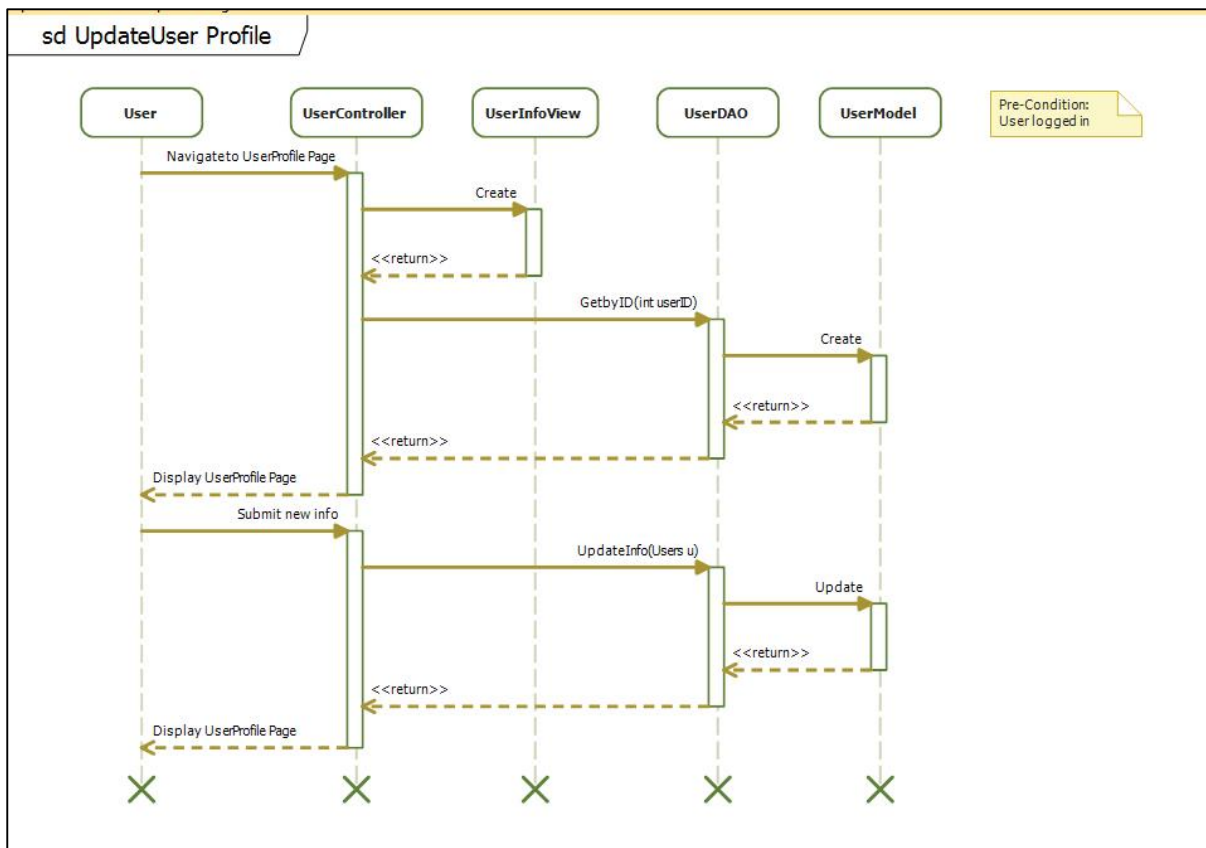


Search



Update User Profile

Pre-Condition: User logged in



Album Like

Pre-Condition: User logged in

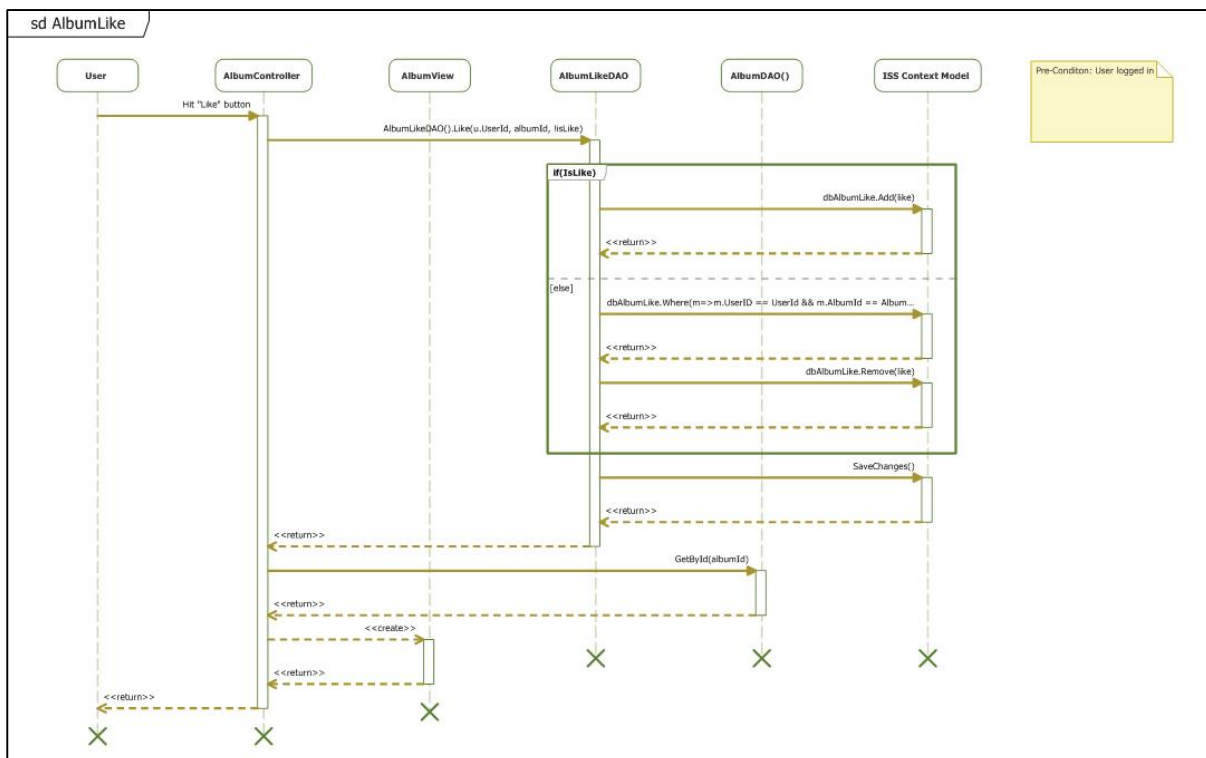
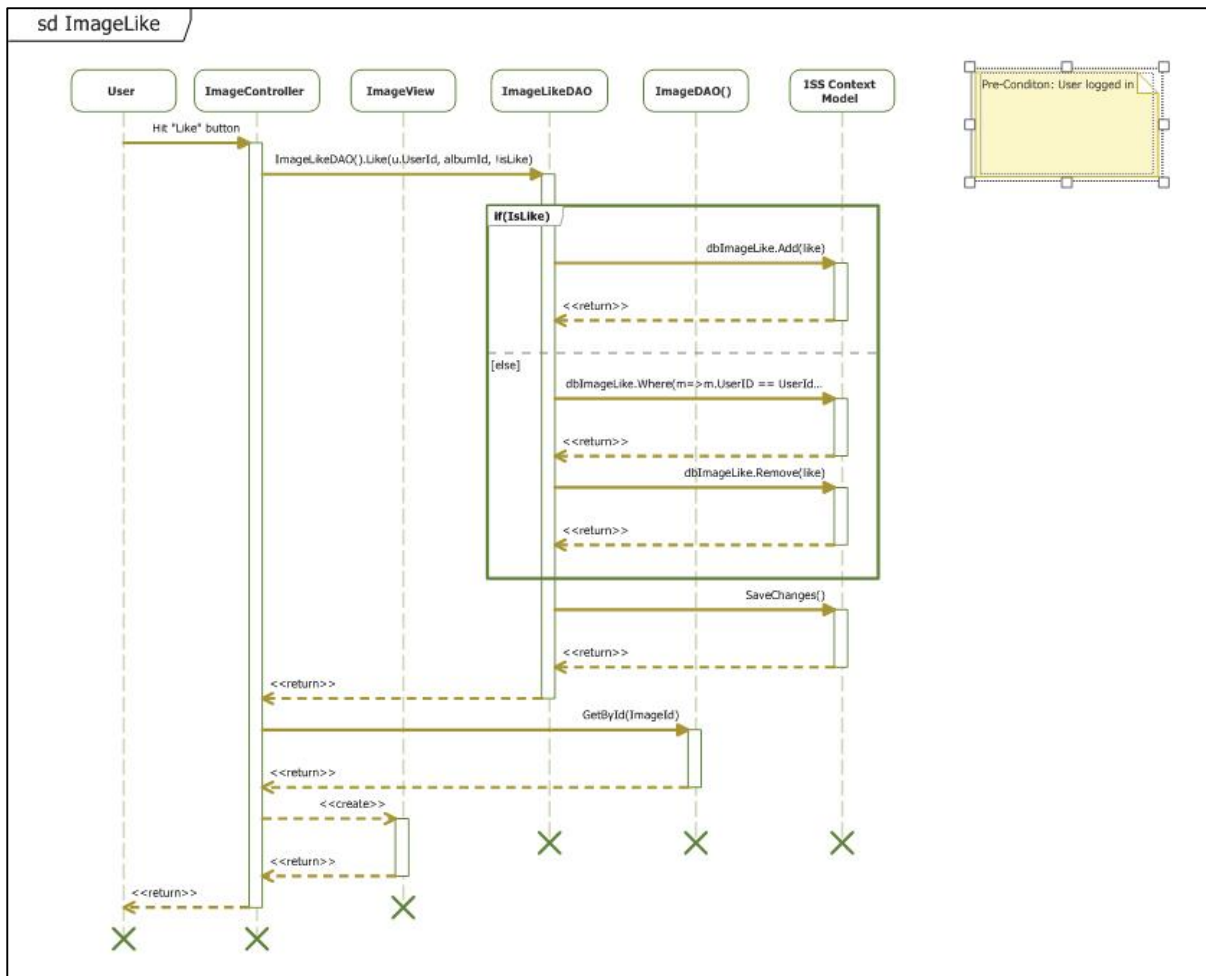


Image Like

Pre-Condition: User logged in



3.5. Database Design

3.5.1.ERDs

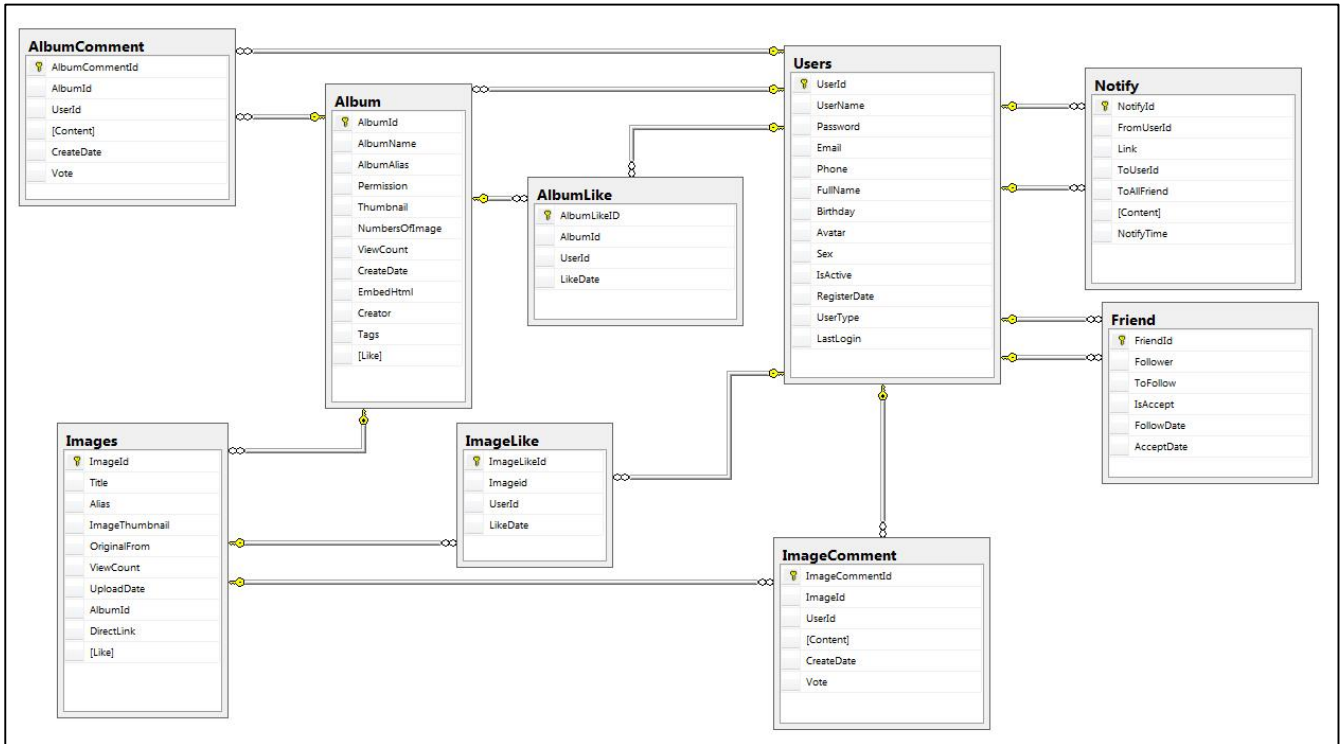


Figure 11 - Entity Relationship Diagram

3.5.2. Table List

#	Table Name	Description
1	Album	Store album details
2	AlbumComment	Store comments in albums of users
3	AlbumLike	Store album like details
4	Image	Store image details
5	ImageComment	Store comments in images of albums
6	ImageLike	Store image like details
7	Users	Stores information of users
8	Notify	Stores notification (like, comment, friends create a new album, upload new images)
0	Friends	

3.5.3. Tables Detailed

Album

Column Name	Type	Null	Unique	P/F Key	Default	Description
AlbumId	int	not	yes	PK		ID of Album
AlbumName	nvarchar (255)	not				Name of Album
AlbumAlias	varchar (255)	not				Use for Search function
Permission	tinyint	not			Public	Accessibility of the album (public/ protect/private)
Thumbnail	nvarchar (255)	not				For Album preview
NumbersOfImage	int	not				The total number of the images in album
ViewCount	int	not				The total number of times which album was viewed
CreateDate	datetime	not				The day when Album was created
EmbedHtml	nvarchar (1000)	not			N/A	For paste in Users' websites
Creator	int	not		FK		Album owner's UserID
Tags	xml	not				The keywords are referred to the album
[Like]	int	not				The total number of the users who hit like the album

AlbumComment

Column Name	Type	Null	Unique	P/F Key	Default	Description
AlbumCommentId	int	Not	Yes	PK		Id of comment
AlbumId	int	Not		FK		Id of album which was commented
UserId	int	Not		FK		Id of user who commented
[Content]	nvarchar (1000)	Not				Content of comment
Vote	int	Not				The total number of users who voted for this comment

AlbumLike

Column Name	Type	Null	Unique	P/F Key	Default	Description
AlbumLikeID	int	Not	Yes	PK		ID of Album Like
AlbumId	int	Not		FK		Id of album which was liked
UserId	int	Not		FK		ID of user who liked the album
LikeDate	datetime	Not				When the user hit "like" button

Friend

Column Name	Type	Null	Unique	P/F Key	Default	Description
FriendId	int	Not		PK		Id of friend request
Follower	int	Not				Who sent follow request
ToFollow	int	Not				Who received follow request
IsAccept	bit	Not			0	The accept of friend request
FollowDate	datetime	Not				When Follow request was sent
AcceptDate	datetime	Not		FK		When Follow request was accepted

Image

Column Name	Type	Null	Unique	P/F Key	Default	Description
ImageId	int	Not	Yes	PK		Id of image
Title	Nvarchar (255)	Not				Name of image
Alias	Varchar (255)	Not				For Search function purpose
ImageThumbnail	Nvarchar (255)	Not				For preview the image
OriginalFrom	Nvarchar (1000)	Not				Where the image was copied from
ViewCount	int	Not				How many times the image was viewed
UploadDate	datetime	Not				When the image was upload
AlbumId	int	Not		FK		The ID of the album which contains the image
DirectLink	Nvarchar (255)	Not				Where the image is located in server
[Like]	int	Not				The total number of users who like the image

ImageComment

Column Name	Type	Null	Unique	P/F Key	Default	Description
ImageCommentId	int	Not	Yes	PK		Id of comment image
ImageId	int	Not		FK		The ID of image which was commented
UserId	int	Not		FK		The ID of User who commented
[Content]	Nvarchar (1000)	Not				The content of the comment
CreateDate	datetime	Not				When the comment was made
Vote	int	Not				The total vote for this comment

ImageLike

Column Name	Type	Null	Unique	P/F Key	Default	Description
ImageLikeId	int	Not		PK		Id of the image like
ImageId	int	Not		FK		Id of the image was liked
UserId	int	Not		FK		ID of the user who liked the image
LikeDate	datetime	Not				When the user hit 'like'

Notification

Column Name	Type	Null	Unique	P/F Key	Default	Description
NotifyId	int	Not		PK		The ID of the notification
FromUserId	int	Not		FK		The ID of user who made notification
Link	Nvarchar (255)	Not				The link to image, album which was changed, liked or commented
ToUserId	int	Not		FK		The ID of user who own the album or image
ToAllFriend	bit	Not			0	Notify to all friends or not
[Content]	Nvarchar (255)	Not				The content of the notification
NotifyTime	datetime	Not				When the notification was made

Users

Column Name	Type	Null	Unique	P/F Key	Default	Description
UserId	int	Not		PK		The ID of the user
UserName	Nvarchar (255)	Not				Name of the user
Password	Nvarchar (255)	Not				The user's password
Email	Nvarchar (255)	Not				User's email address
Phone	Varchar (20)	Not			0	User's phone number
FullName	Nvarchar (255)	Not				User's full name
Birthday	datetime	Not				User's birthday
Avatar	Nvarchar (255)	Not				User's profile picture
Sex	bit	Not			1	User's sex: Male/Female
IsActive	bit	Not			0	The account is activated or not
RegisterDate	datetime	Not				When the user signed up
UserType	tinyint	Not				The type of the account

LastLogin	datetime	Not				Last time user was signed in
-----------	----------	-----	--	--	--	------------------------------

3.6. Software Requirement Specifications

3.6.1. User Requirement Specification

User Requirements

- User can create accounts on the website. Email address and password are required for registering an account on the website. Each email address can only be used once for registering.
- User can edit his/her account information: Display Name, Avatar, and Password. But he/she can't change the email address which was used for registering.
- User can use his/her account or third party account(Google, Facebook, Twitter, Yahoo,...) to log in to the website.
- User can change password which was registered in case he/she forgot it. Change Password link will be in content of email sent to user. This link will open Change Password page for user.
- User can change his/her password through his/her User Profile page
- User can see his/her account information and other's
- User can see other user's statistic like: Display Name, Registered Date, number of uploaded images/albums.
- User can search for Images, Albums, other Users by using Search function
- User can view information of image, rate the image from 1 to 5 stars, like it, share it on social networks (Twitter and Facebook), comment or report it as spam or abuse.
- User can view information of album, rate the image from 1 to 5 stars, like it, share it on social networks (Twitter and Facebook), comment or report it as spam or abuse.
- Registered User can upload multiple images.
- User can view his/her favorites album and remove album from the list at his/her profile page
- User can vote up, vote down or report comments of other users but his/her comments

Administration requirements

- Admin can view a list of all Tags in the system, add new Tags, edit Tags and delete Tags.

- Admin can view a list of all users in the system, view and edit user information, active users on the system, ban users or block users.
- Admin can view a list of all advertisers on the website, add new ones, edit or delete advertises.
- Admin can view a list of spam reports, decide they are spam or not. Spam reports include reports about images, albums, comments, questions, answers and users.
- Admin can see list of contacts from users to administrators, view detail or delete it.
- Admin can see statistics on the whole system: Registered User number, Activated User number, Place number, Comment number, Question number, Answer number, All the Time Visitor number, Today Visitor number, Online Visitor number.

Comment requirement

- A comment can't be blank and must be less than 4000 characters.
- When the number of comments is big, the comments will be displayed each time 10 comments. To see more comments users click to "Xem thêm" button
- 2 most voted up comments will be highlighted and put on top of Comment Area. These highlighted comments still can be treated as normal comments
- Each user can only post 1 comment for an image/ album each 3 minutes

Image Requirement

An Image has following information:

- Title (required)
- Description
- Image Thumbnail (required)
- AlbumID
- View count
- Upload Date
- Originally from
- Rating
- Comments
- Share Link:
 - o Album link
 - o Image link

- Forum code
- Html code
- Direct link
- Thumbnail link

Album Requirement

An Album has following information:

- Name (required – default: New Album)
- Creator
- Permission: Public – Protected - Private
- Thumbnail (required)
- Number of Images
- View Count
- Created Date
- Rating
- Rating Count
- Comments
- Embed Album html code
- Tag

Search Requirement

This is a main region on the home page and is displayed as a bar and is accessible from every page. The users will enter the keywords that they want to search in. The search area fields will be auto populated by data from the user's browser cookies if already existed. Otherwise, it will be based on the user's IP address. The result set includes:

- The Images which the title/ description contains the keywords
- The Albums which the album name/ tag field contains the keywords
- The usernames that contains the keywords

3.6.2.System Requirement Specification (Specific Requirements)

External Interface Requirements

User Interfaces

Interface need to attract the attention of users to the product image. Products are things having a lot of colors and diversity combination in order to attract users. Website should have the background simple, less color, less attention but that also shows clear boundaries between each section: photos with text, photos with

photos, and photos with the background...So color choices should be pleasing to the eye and should stimulate the user's interest.

The look and feel of this website should be based on user requirements. Page layout and navigation should be as intuitive and easy as possible.

The overuse of product images should not increase the time in which a page downloads, which has a negative impact on usability.

Hardware Interfaces

ISS website needs to run are the peripheral devices mouse and keyboard.

Software Interfaces

Products run on web application, it requires the use of programming languages supported on the browser.

Outside, the system should use the program to manage resources data, this program can be combined with the system, can change and update from the system. Data products will be exchanged between systems and external data through data management software

Software name	Version	Source
.NET Framework	4.0	Microsoft
SQL Server	R2	Microsoft
Visual Studio	2010	Microsoft
Enterprise Library		Microsoft
Microsoft Windows Server 2010		Microsoft

Communications Protocol

ISS website is implemented on the browser, using standard protocols to communicate between users and server.

In the process of communication, some important information of the user system will be encrypted using special algorithms.

Besides the design synchronize data and systems, all components of the system can access data at any time.

The system should produce nicely formatted HTML that popular social network such as Facebook, MySpace, Twitter can share information.

The web pages must be easy for search bots such as Google, Yahoo to find and cache.

System Features

Software System Attributes

Usability

GUI

- All the text, image text and help documents should be in Vietnamese.
- The interface should be elegant, simple and out-standing.
- All images must also provide alt attribute.

Usability for end-users

- Searching tool should be easy to use.
- The website must provide a help page to support novice users.
- Users can use main functionality of the system without logging in to the system.
- The system should remember information (but not confidential) that users have to provide regularly. For example: name, address...

Usability for admin and staff

- Website admin should need no more than one day of training to be productive with the system.
- Detailed help must be available for the admin and staff, both in web pages and separate documentations.

Installation

- The system must be easy to deploy. Customer can deploy successfully and learn to configure, maintain the system within one day of training.
- The documentation for installation must be included. It describes detailed steps for installing or deploying the system. The customer can follow the steps without direct help from the developing team.

Reliability

- Initial data must be collected carefully and correctly

- The database must be backed up regularly and can be recovered if necessary
- Have a good spam filter
- Rating system must be reliable
- Not conflict with other software
- Rate of fault occurrence (ROFO): a number of 0.005 is acceptable. It means that it is acceptable to have 5 failures happen in each 1000 operational time units (e.g. 5 failures per 1000 hours of operation).
- Mean Time Between Failures (MTBF): 1 month
- Mean Time To Repair (MTTR): immediately when admin finds out problem or website is attacked by someone. Average 1 day.
- Accuracy: precision of floating number should be rounded to 0.01. All currency units must be displayed (e.g. \$, VND...)
- Maximum Bugs or Defect Rate: 5 bugs/KLOC.
- Bugs or Defect Rate
 - o Minor bugs: bugs related to GUI
 - o Significant bugs: bugs related to minor business logic
 - o Critical *bugs: function can't execute correctly, completely loss of data, disconnect to the server*

Availability

- Systems have to run 24 hours 7 days
- Can be turned off when upgrading and must display an alternative maintenance page in such occasions
- Percentage of time available is about 95-97%. Because the system uses client/server protocol through Internet network, we cannot control cases of force majeure such as power failure, disconnected network...

Security

- Privacy: the system should provide protection method for protecting user information from outside or from other users. All the information of users must not be available for anyone or software that is not part of the system. User password is also invisible for the system administrator.
- The system must provide methods to prevent common security attacks. E.g. SQL injection, D-Dos...
- Transformation of confidential information must be encrypted.
- The system must provide secure methods for users to recovery their password, including the interference of system's admin.

- Secure information of customers should not be stored on customer's machine.
- Utilize certain cryptographic techniques for database
- Provide options for users to choose whether to share private information
- Restrict communications between some areas of the program
- Check data integrity for critical variables
- Must use secure connection (SSL) for transferring sensitive data

Maintainability

Coding standards and naming conventions

- Output of the project must include coding standards and naming conventions documentations. Implementation code must be easy to maintain.
- All code must be clearly commented, including class, method documentations.
- If some components are reused, the documentations of those components must also be included.

Design

- The design of the system must be loosely coupled that changes on some module will not affect others.

Logging

- All the errors should be logged, supporting for bug fixing and maintenance.
- All strange or sensitive situations should also be logged.

Email

- The system must provide an email address to receive customer feedback or send emails.

Portability

- Website can be used by any people with a browser and an Internet connection.

Performance

Load time

- Every page should be completely displayed within: average 1.5 second and maximum 5 seconds.
- Searching should return and display the result within 2 seconds.
- Comments and rating and the like should affect immediately, without reloading the web page.
- Frequently accessed data must be cached
- Reference *data must be cached*

Mailing system

- Mail server should send emails within 1 minute after associated events happen.

Capacity

- The system should serve correctly and reasonably with at least 1000 online users at a moment.
- The system can store at least 100000 images and 10000 users without affecting the loading speed.
- If the system is busy, it has to inform users about that.

Compatibility

- The system should provide elegant responses for nowadays common screen resolutions: 1024*768, 1280*800.
- The output must be compatible with all common browsers: Mozilla Firefox, Internet Explorer, Google Chrome, Apple Safari, and Opera.
- Information of the system can be accessed by searching bots.

4. Project Test Documentation

4.1. Introduction

4.1.1. System Overview

This document describes the approach and methodologies used by the testing group to plan, organize and manage the testing of this system. It describes implementation details of test cases or technical details of how the product features should work.

The system will be tested is also the system our team are currently developing. This system is developed based on MVC3 framework. It is a website using for sharing Albums between internet users. The system has similarities with other social network.

4.1.2. Test Approach

The testing for this project will consist of Unit, System/Integration (combined) and Acceptance test levels. It is hoped that there will be at least one full time independent test person for system/integration testing. Most testing will be done by the test manager with the development team's participation.

Unit Testing will be done by the developers and will be approved by the implementing team leader. All unit test information (sample, output, data printouts, and defect information...) will be managed by developers and it must be showed when team required.

System/Integration Testing will be performed by the test manager and implementing team leader with assistance from the individual developers as required.

Acceptance Testing will be performed by the test manager and development team leader. The acceptance test will be done for a period of 2 weeks after completion of the System/Integration test process. Programs will enter into Acceptance test after all critical and major defects have been corrected. A program may have one major defect as long as it does not obstruct testing of the program (There is a work around for the error). Prior to final completion of acceptance testing all open critical and major defects must be corrected.

4.2. Test Plan

4.2.1. Resources/Roles and Responsibilities

Resources/Roles

The test team will consist of:

- 1 project manager
- 1 test lead
- 3 testers

Responsibilities

Project Manager	Responsible for project schedules and overall success of the project.
Test Leader	Develop and implement test plans. Organize the meetings and Ensures the overall success of the test cycles.
Tester	Understand requirement, creating test scenarios, test scripts, preparing test data, executing test scripts and reporting defects and reporting results to test lead.
Developer	Fix all bugs after testing submitted.

4.2.2. Testing Tools and Environment

Test server configuration:

- a. Hardware
 - Intel(R) Core(TM) 2Duo CPU T8100 @ 2.10GHz
 - Memory 3072Mb Ram
- b. Software
 - Windows 7 Enterprise x64 SP2
 - Microsoft SQL 2008 R2
 - Web deployment 2.0

Test client configuration:

- Windows 7
- Chrome 21.0; Internet Explorer 9.0; Firefox 14.0

4.2.3. Features to be tested

The following is a list of areas to be focus on during testing of website

Admin – Manager Users

Test all functions in Manage Users page includes: List all users, see and update a user's info.

Admin – Manage Reported Images

Test all functions in Manage Spam - Manage Reported Images includes: list all spam reports, confirm false report, delete spam entity, view spam report detail

Admin – Manage Reported Albums

Test all functions in Manage Spam - Manage Reported Albums includes: list all spam reports, confirm false report, delete spam entity, view spam report detail

Users

Test all functions in Users includes: Login, Logout, Register, User info, Change password.

Friend

Test all functions in Friend page includes: send follow request, accept follow request, follower list and following list

Search

Test all functions in Search page includes: Search, Tag Cloud

Album

Image

4.2.4.Features not to be tested

The following is a list of the areas that will not be tested in this system:

Admin – Manage Reported Images

Admin – Statistics

Network Connection & Security

With each user, it will be different. We only ensure that this system will affect to network.

Performance

There wasn't enough time so we can't optimize source code and improve performance. We can only ensure the system work well but not at its best performance.

5. Software User's Manual

5.1. Installation Guide

5.1.1. Setting up the environment at server side

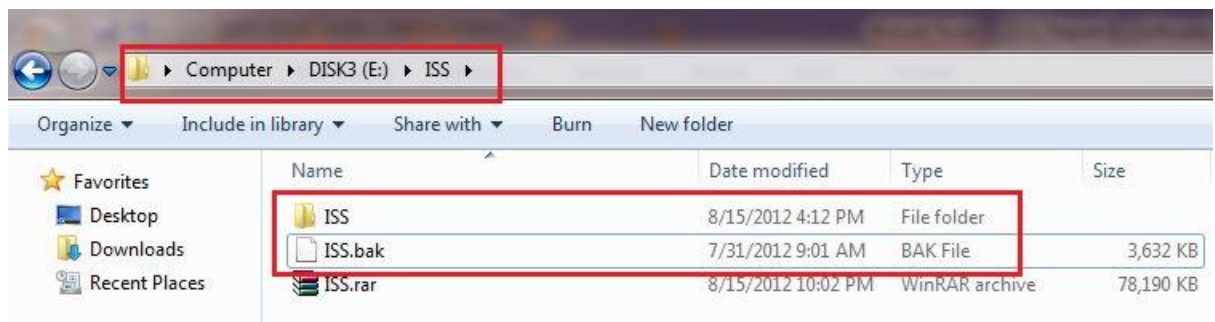
The following software must be installed into the server machine:

- Windows Server 20083 operating system or above
- Internet Information Services (IIS) 6.0 or above
- SQL Server 2008 R2
- .NET Framework 4.0

5.1.2. Deployment at server side

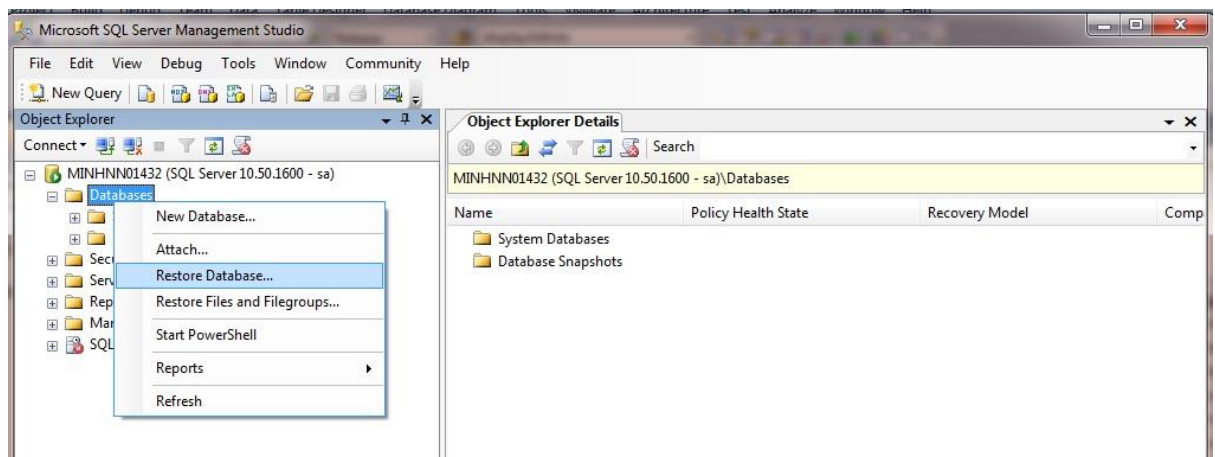
Prepare deployment package

- Extract the deployment package to a folder on the server
For example: **E:ISS**

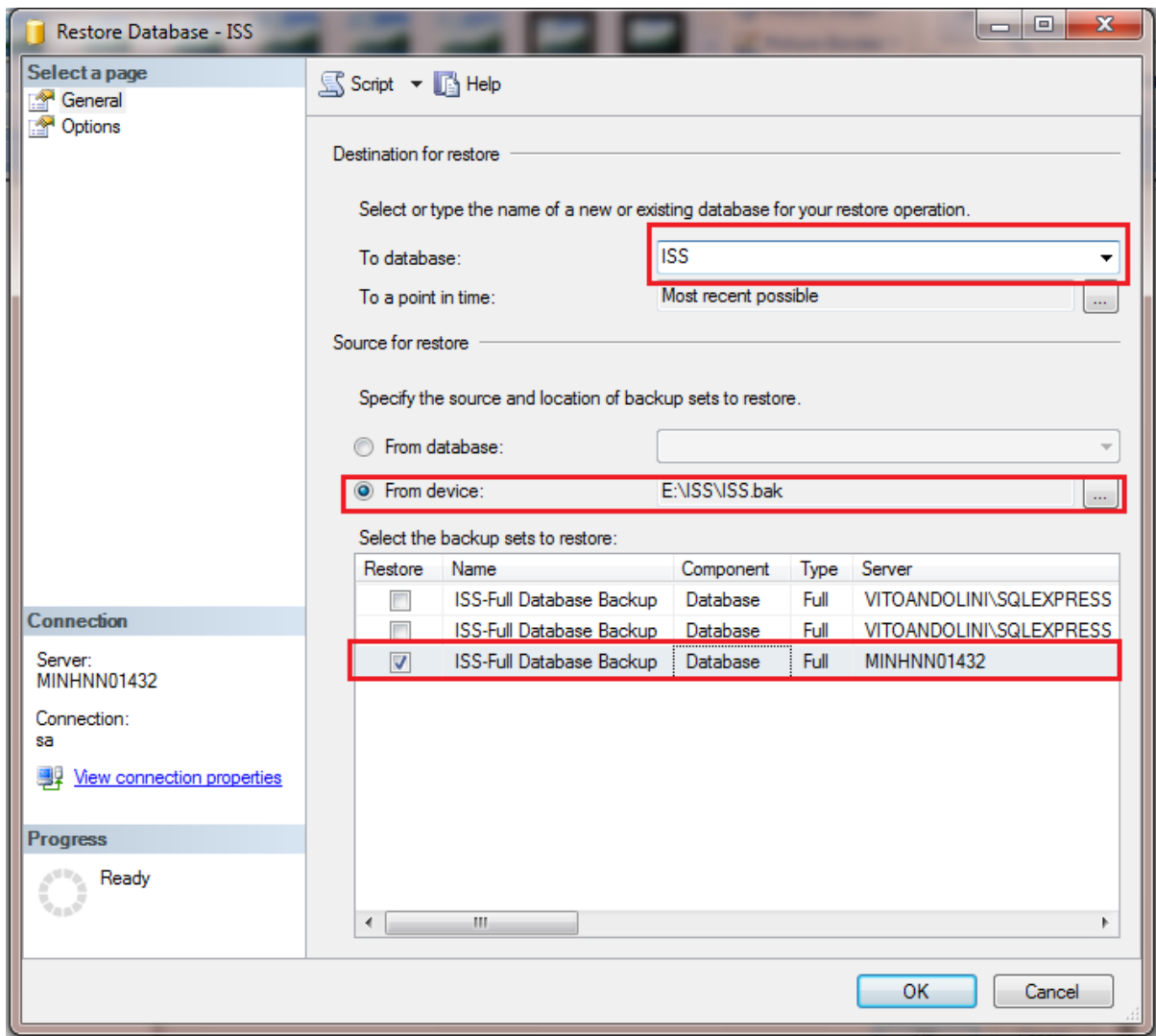


Deploy Database

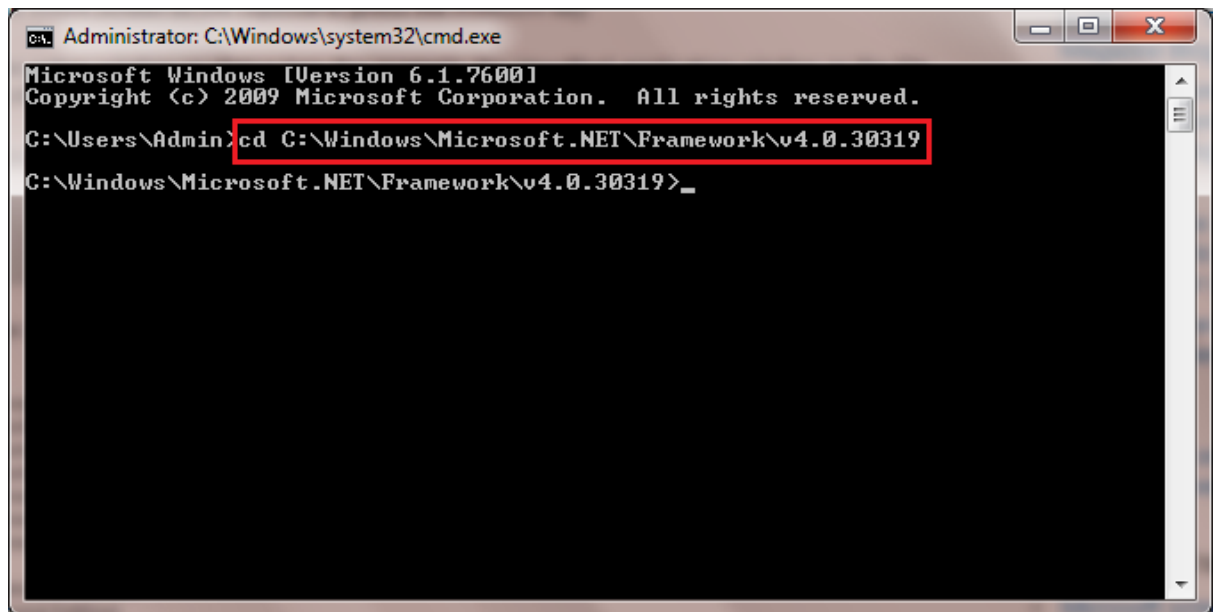
- Open Microsoft SQL Server Management Studio (SSMS)
- Step 1



- Step 2



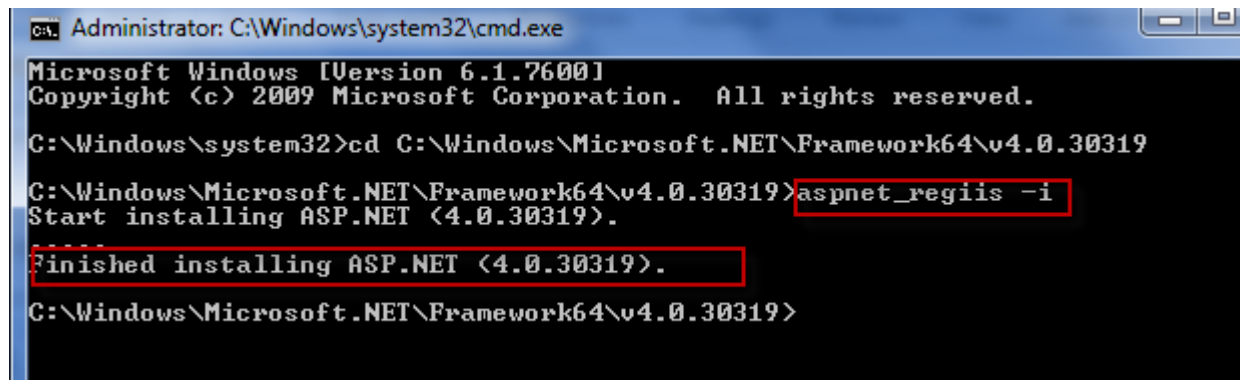
- Step 3:



```
C:\> Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Admin> cd C:\Windows\Microsoft.NET\Framework\v4.0.30319
C:\Windows\Microsoft.NET\Framework\v4.0.30319> _
```

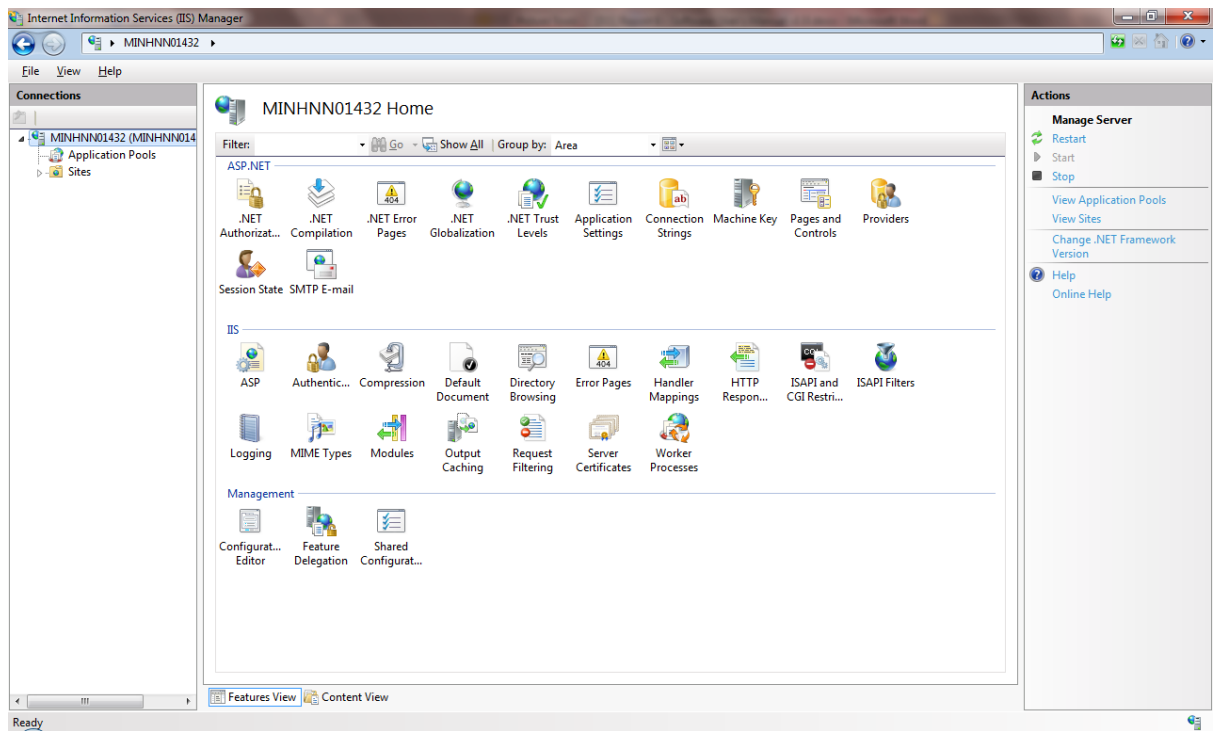
- Type `aspnet_regiis -i` and press enter to register ASP.NET 4.0 to IIS



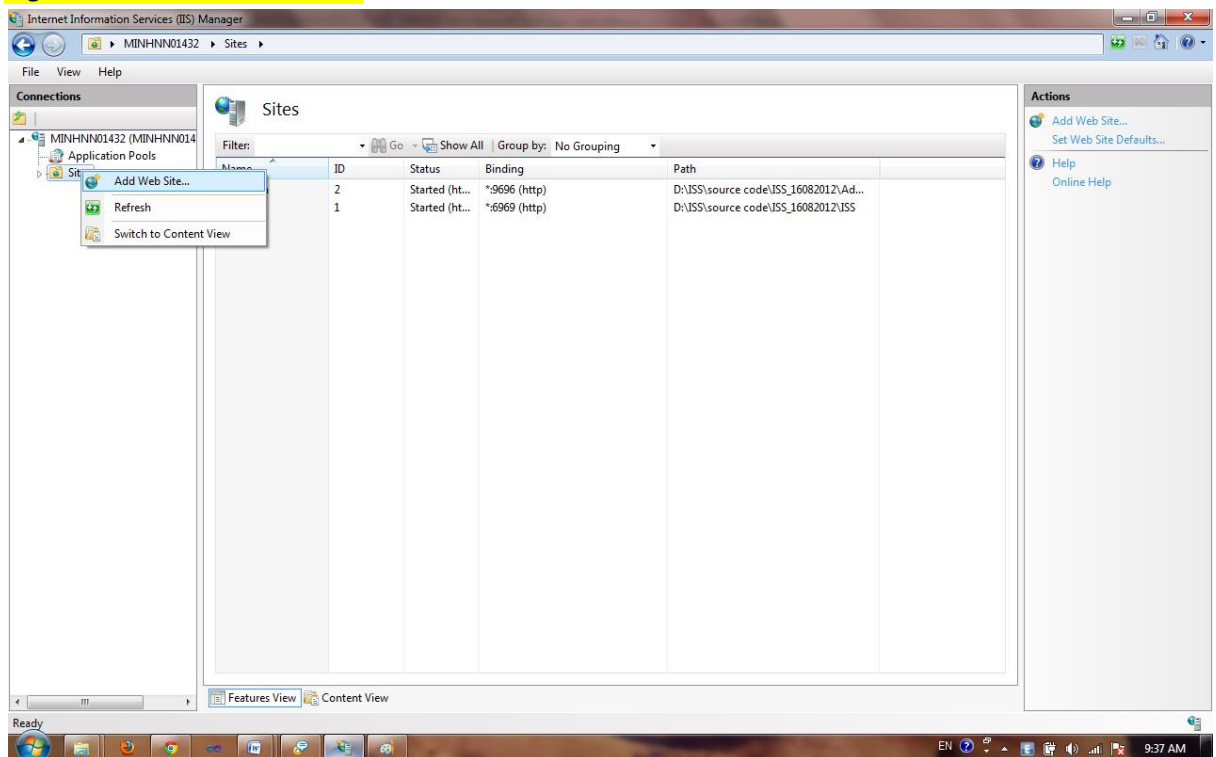
```
C:\> Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Windows\system32> cd C:\Windows\Microsoft.NET\Framework64\v4.0.30319
C:\Windows\Microsoft.NET\Framework64\v4.0.30319> aspnet_regiis -i
Start installing ASP.NET (4.0.30319).
Finished installing ASP.NET (4.0.30319).
C:\Windows\Microsoft.NET\Framework64\v4.0.30319>
```

- Open IIS by opening start menu, type `iis` and press enter



Right Click> Add New Website



Add Web Site

Site name: Application pool:

Content Directory

Physical path:

Pass-through authentication

Binding

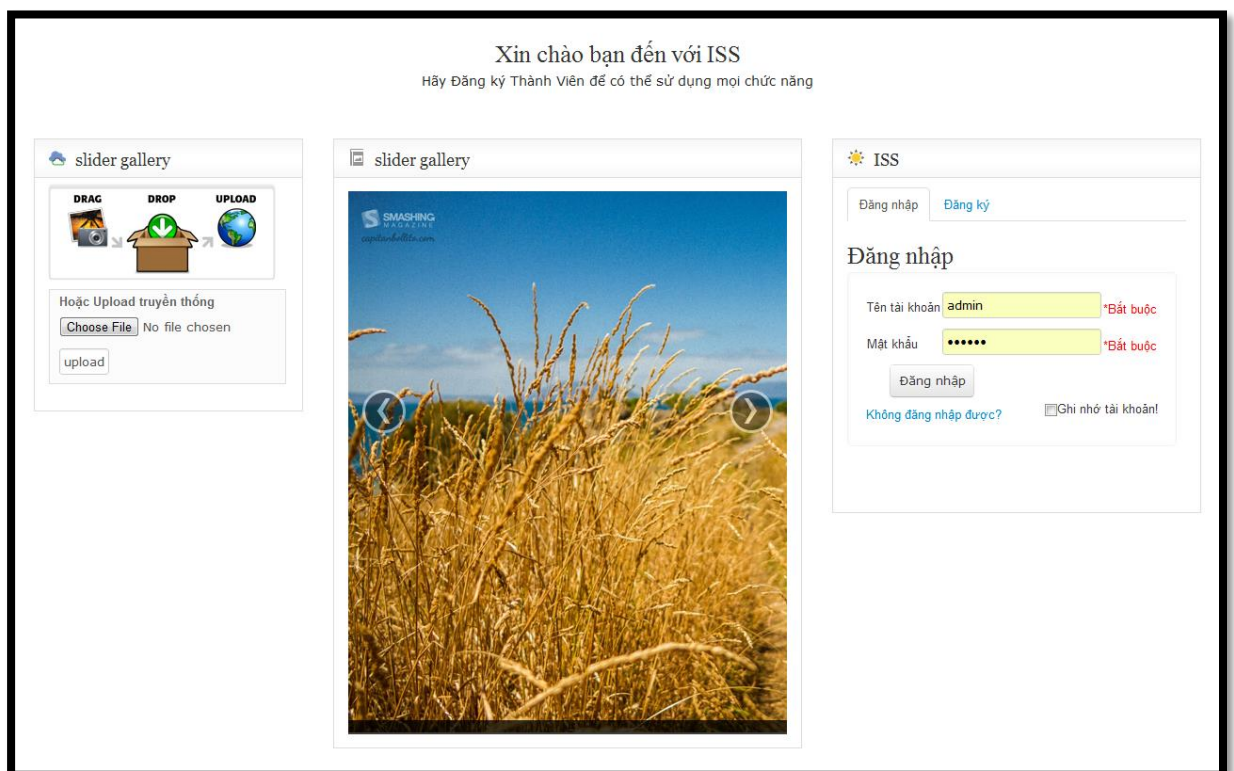
Type: IP address: Port:

Host name:

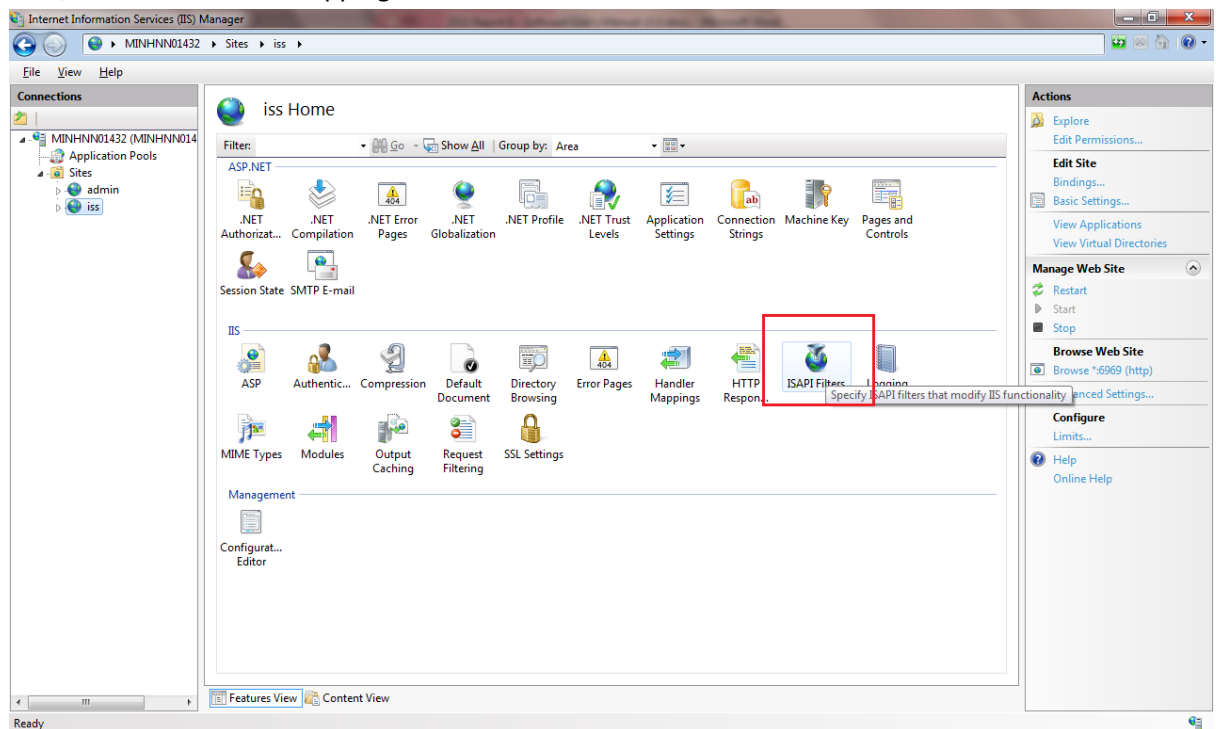
Example: www.contoso.com or marketing.contoso.com

☒ Start Web site immediately

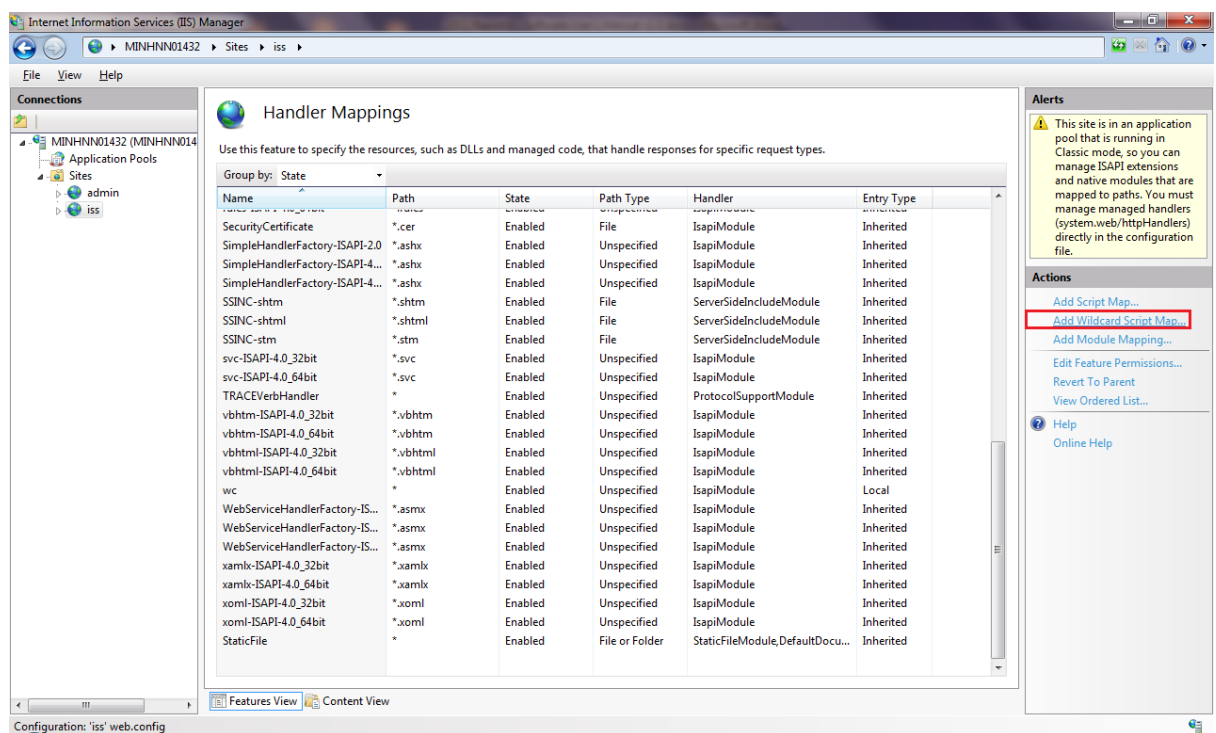
- Test the application by entering **localhost/6969/** in to address bar of the browser. The application should show up:



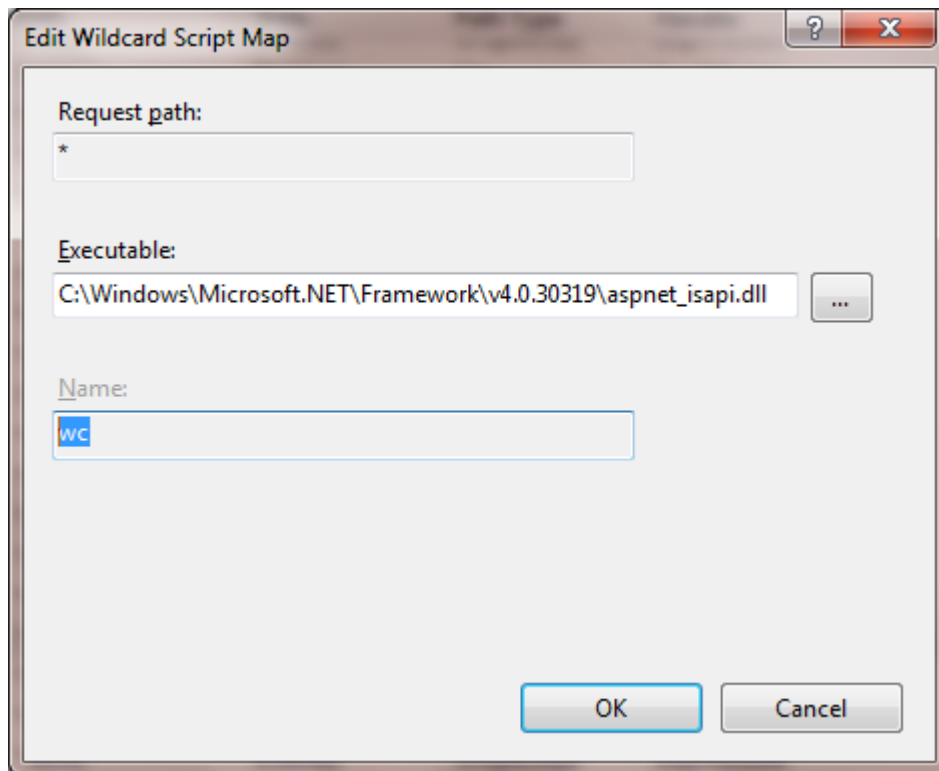
Now, add new Handler Mapping to ISS website



Choose **Add Wildcard Script Map** at the right panel.



In Executable textbox, type: **"C:\Windows\Microsoft.NET\Framework\v4.0.30319\aspnet_isapi.dll"**



- Try logging in with admin account: [admin/abc123](#). The system should log you in successfully.

Do the same to add Admin website to ISS

Change configurations

Configure the domain name for ISS website and Admin website on application setting

Step 1: open the web.config of ISS website and Admin website

Step 2: find `<appSettings>`

Step 3: type: `<add key="Domain" value="http://localhost:6969"/>`

The "Value" is the domain name of ISS website

```
<appSettings>
  <add key="webpages:Version" value="1.0.0.0"/>
  <add key="ClientValidationEnabled" value="true"/>
  <add key="UnobtrusiveJavaScriptEnabled" value="true"/>
  <add key="Domain" value="http://localhost:51062"/>
</appSettings>
```

Step 4: change the connection string to SQL server

```
<connectionStrings>
  <add name="ISSContext" connectionString="Data Source=.;Initial Catalog=ISS;Persist
Security Info=True;user id=sa;password=123456;MultipleActiveResultSets=True"
providerName="System.Data.SqlClient" />
</connectionStrings>
```

With your **user id** and **password** for SQL server

5.1.3.Setting up the environment at Client side

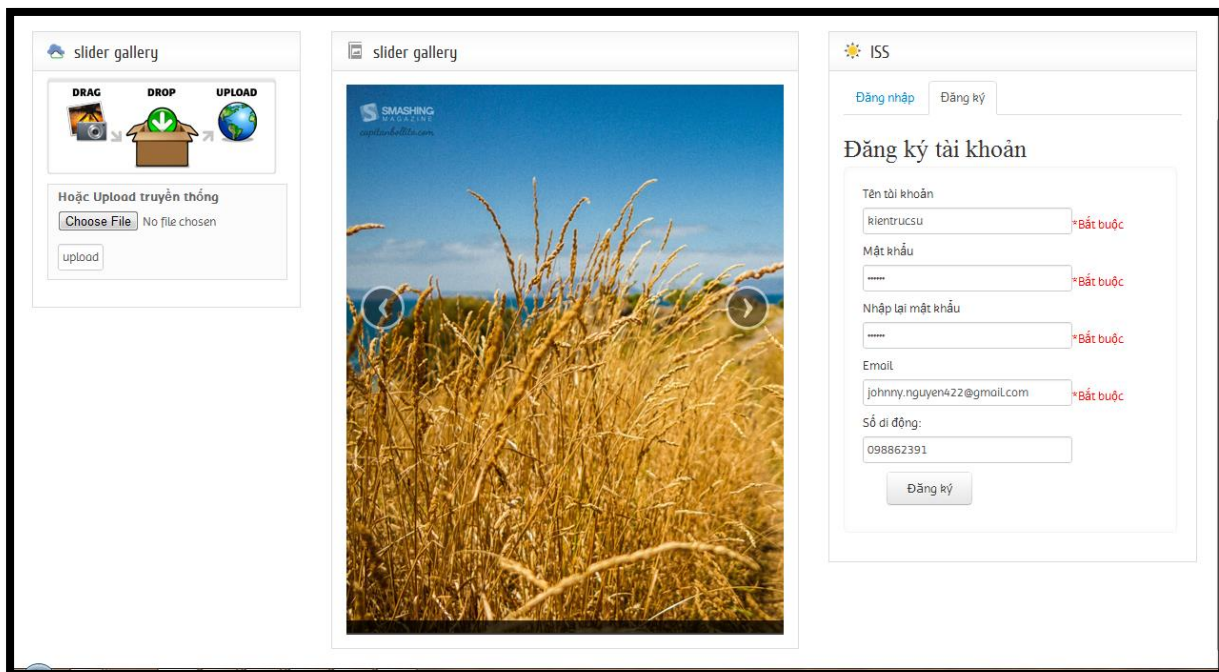
The system is accessed via web browsers. The client machine should be installed with one of the following browsers: Firefox 11 and higher, Chrome 20 and higher, Internet Explorer 9.0 and higher, Opera 11 and higher.

5.2. User's Guide

5.2.1.General Guide

Register

Step 1: Fill the info in all the text box on “Đăng ký tài khoản” form

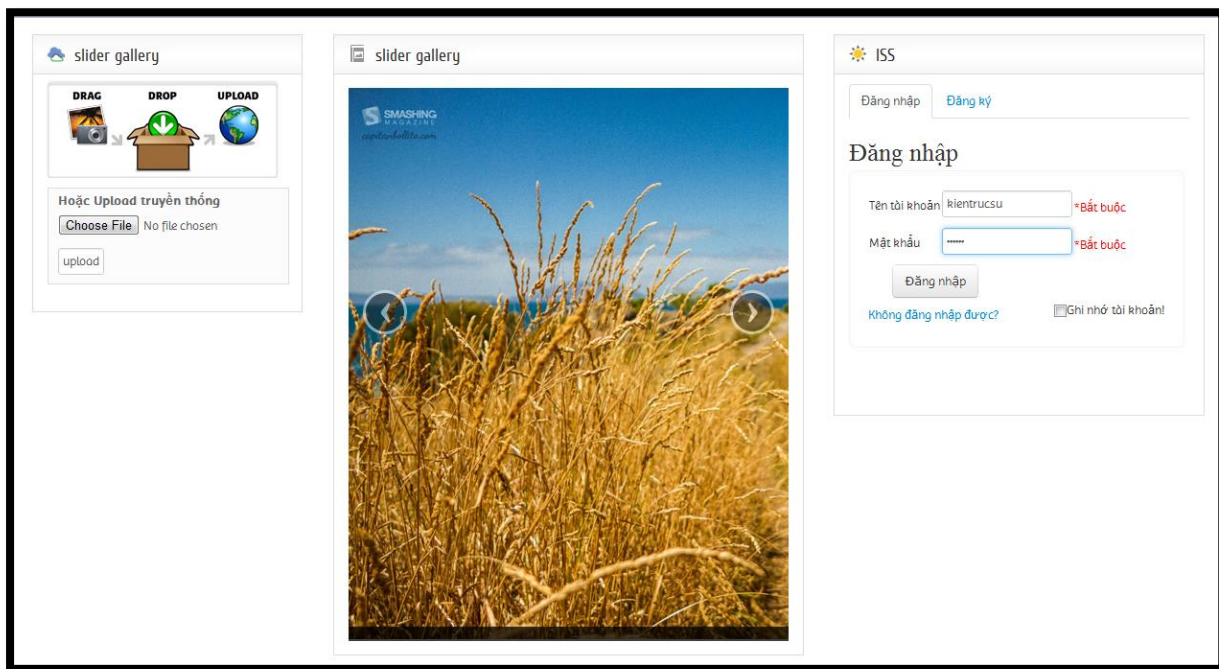


The screenshot displays a web application interface with three main sections. On the left, a 'slider gallery' panel features a file upload area with 'DRAG', 'DROP', and 'UPLOAD' instructions, a 'Choose File' button, and an 'upload' button. The middle panel shows a 'slider gallery' with a large image of golden grass and a 'SMASHING' logo. On the right, a 'Đăng ký tài khoản' (Register account) form is visible, containing fields for 'Tên tài khoản' (Username), 'Mật khẩu' (Password), 'Nhập lại mật khẩu' (Repeat password), 'Email', and 'Số di động' (Mobile number), each with a red asterisk indicating it is required. A 'Đăng ký' (Register) button is at the bottom of the form.

Step 2: An email is sent to your email address which you input. Open the email and click to the link to activate your account

Login

Fill your username and your password in the text boxes on “Đăng nhập” form.

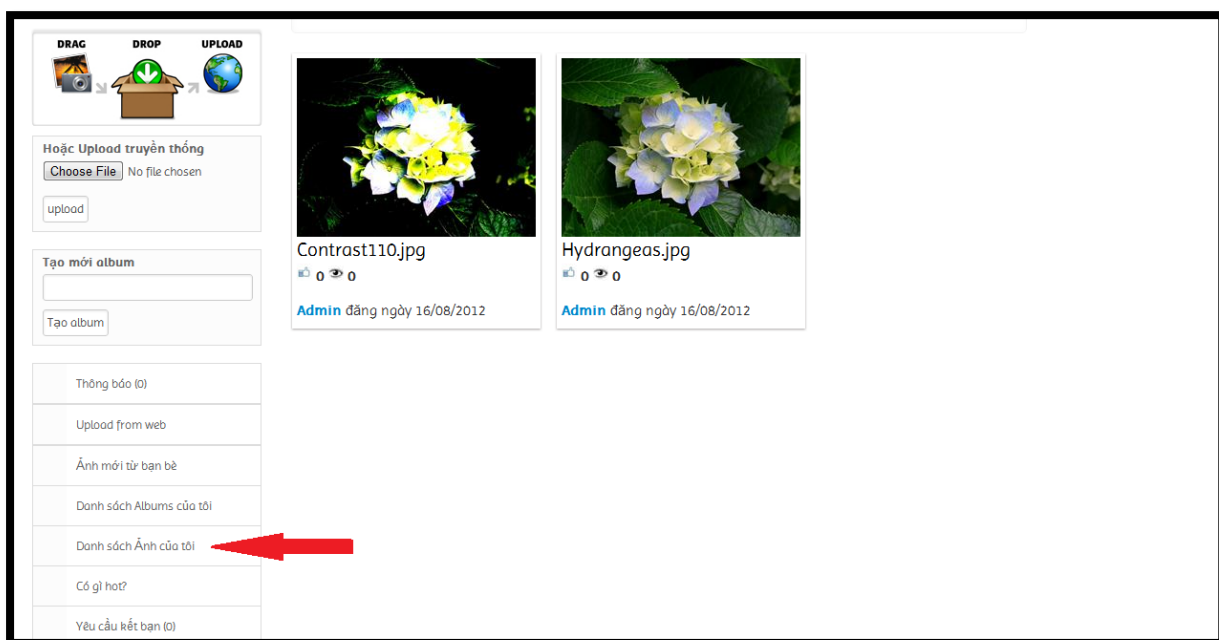


If your username and your password are right, you will be redirect to “Dashboard”

View all your Images

You must log in to the website first.

Click to “Danh sách Ảnh của tôi”

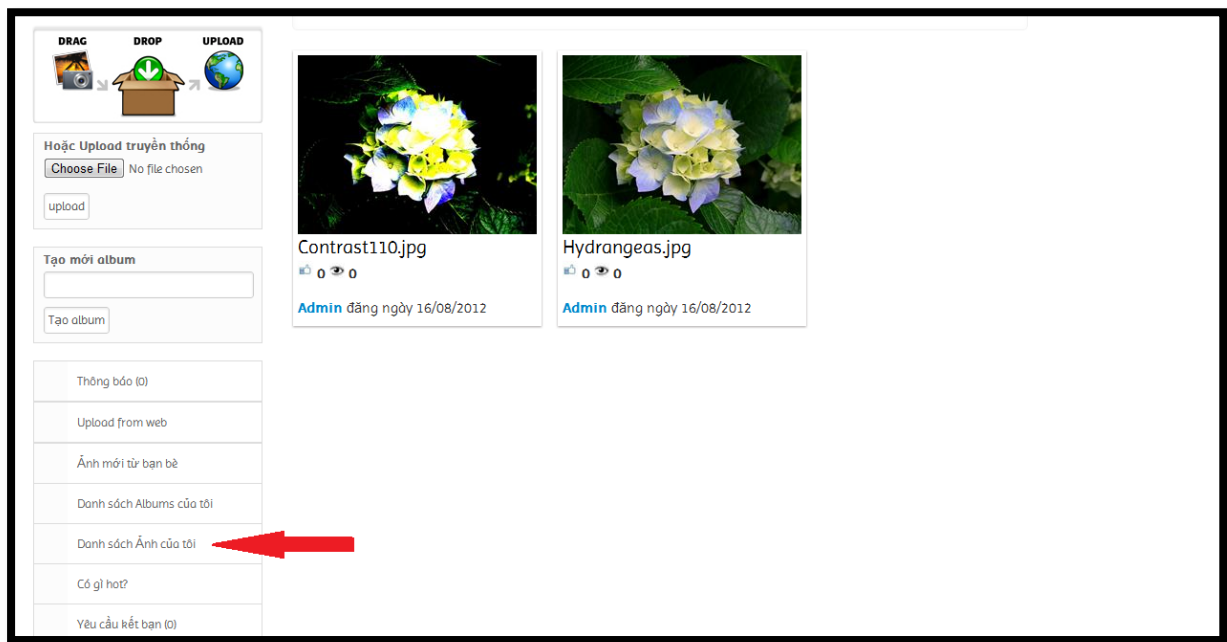


If you are not logged in. you will be redirect to “Home/Index”

View all your Albums

You must log in to the website first.

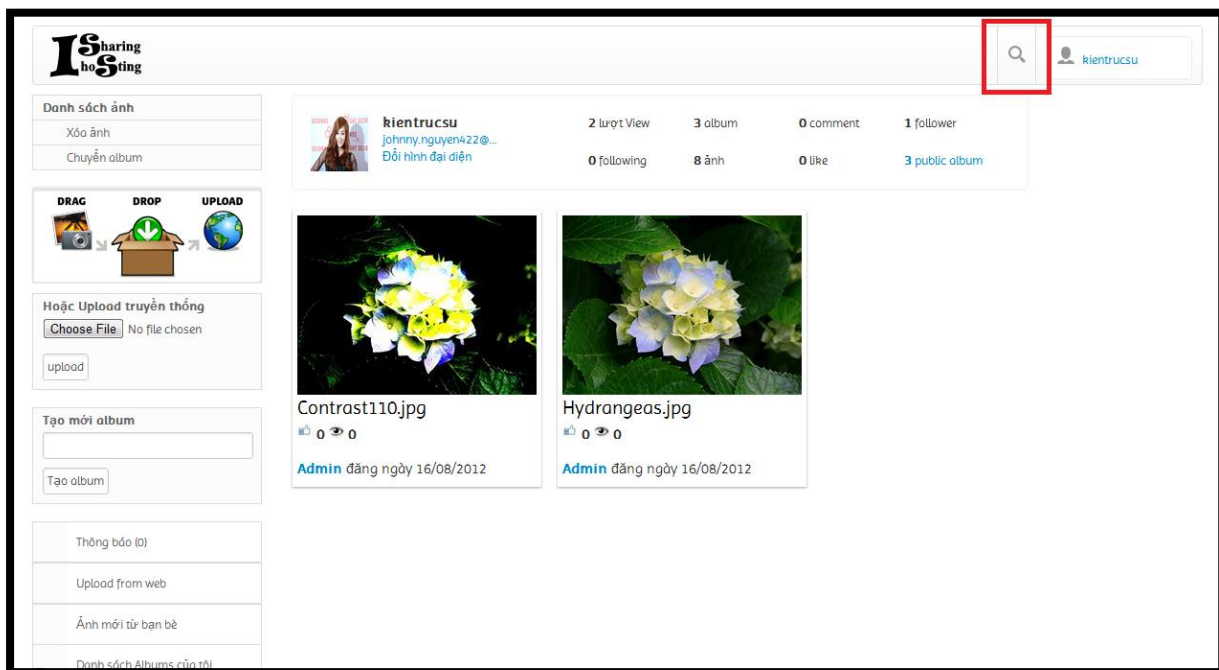
Click to “Danh sách Album của tôi”



If you are not logged in. you will be redirect to “Home/Index”

Search

Move the mouse to the Search icon. A text box will be displayed

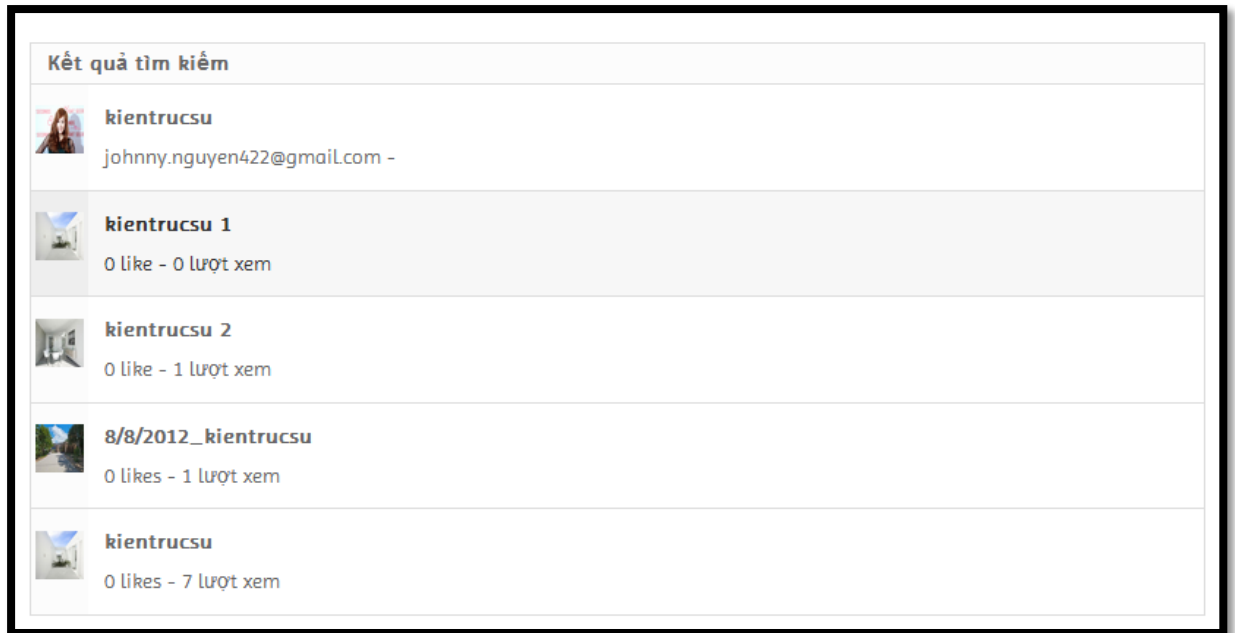


Input the keywords in search textbox and hit “Enter”



The results will be displayed include:

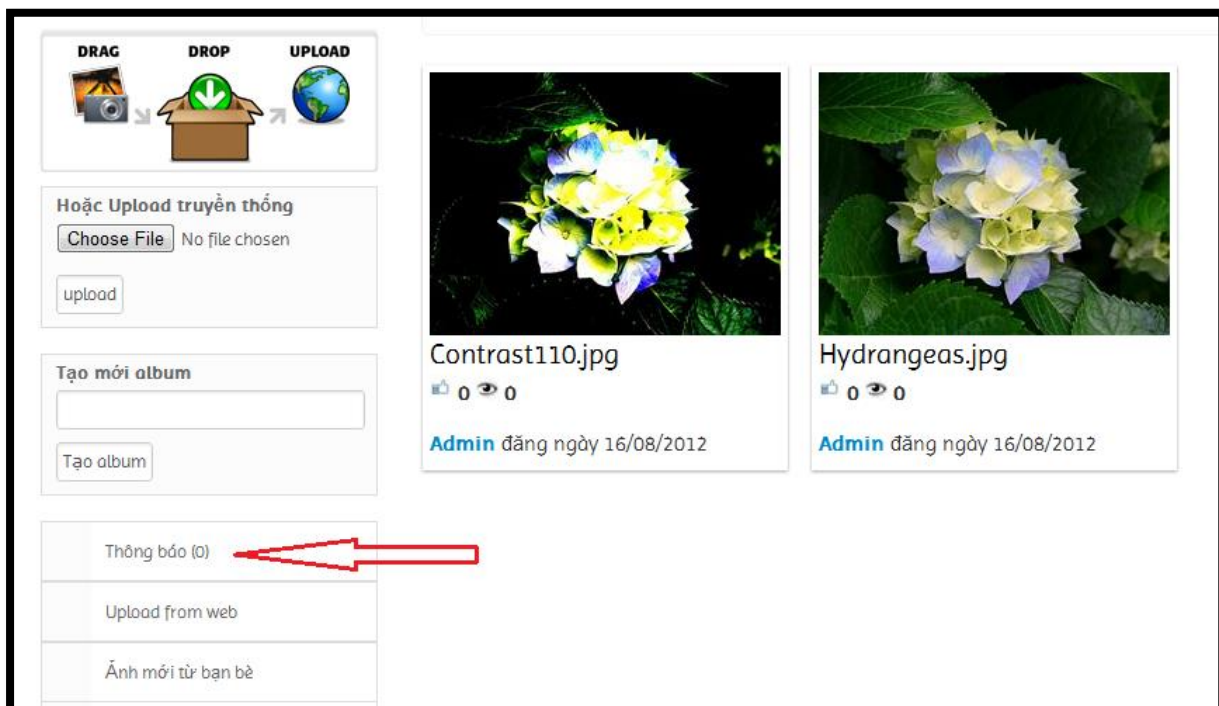
- Users whose username contains the keywords
- Image which title contains the keywords
- Album which tag or Album Name contains the keywords



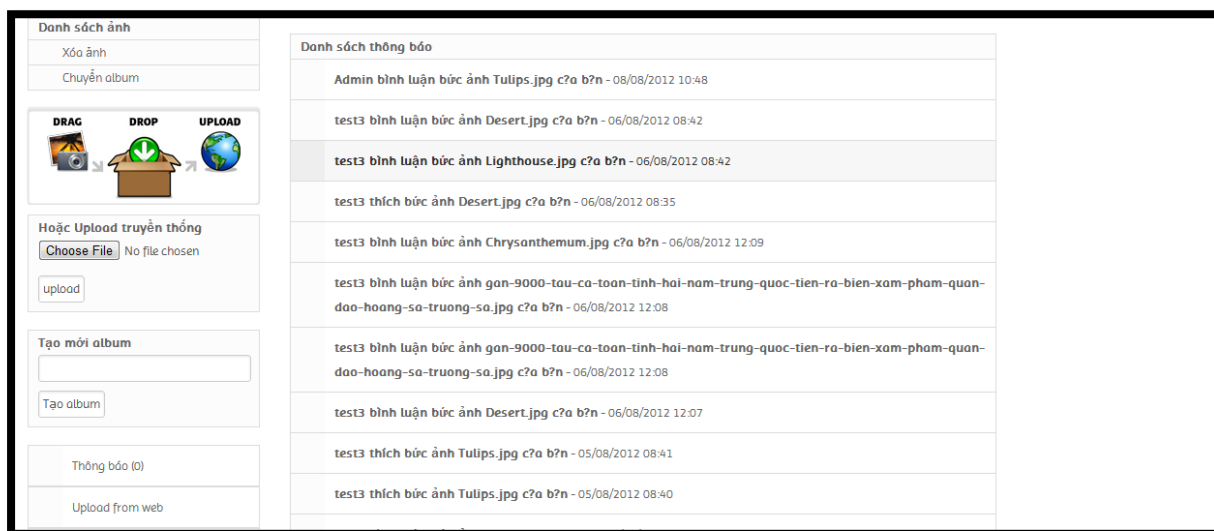
Click to each result to view full details

See notification

Click to “Thông báo”



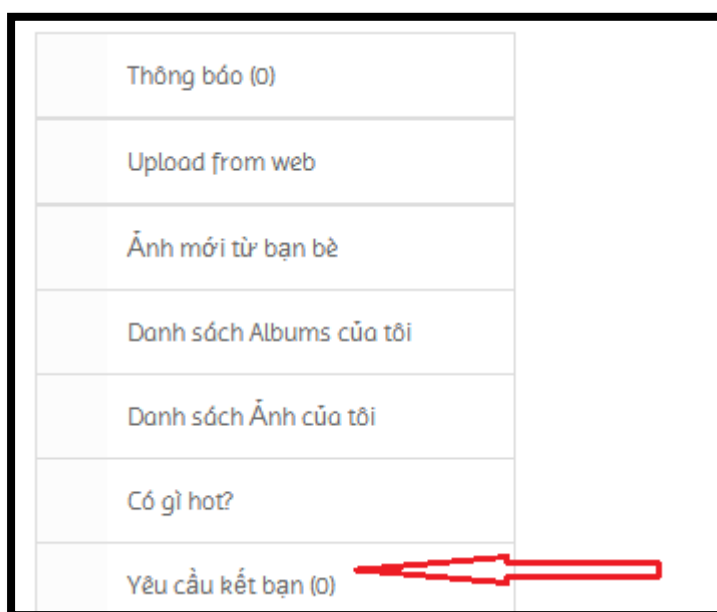
The list of notification will be displayed



You can see who like your images, your albums or comment

See Friends' request

Click to “Yêu cầu kết bạn”



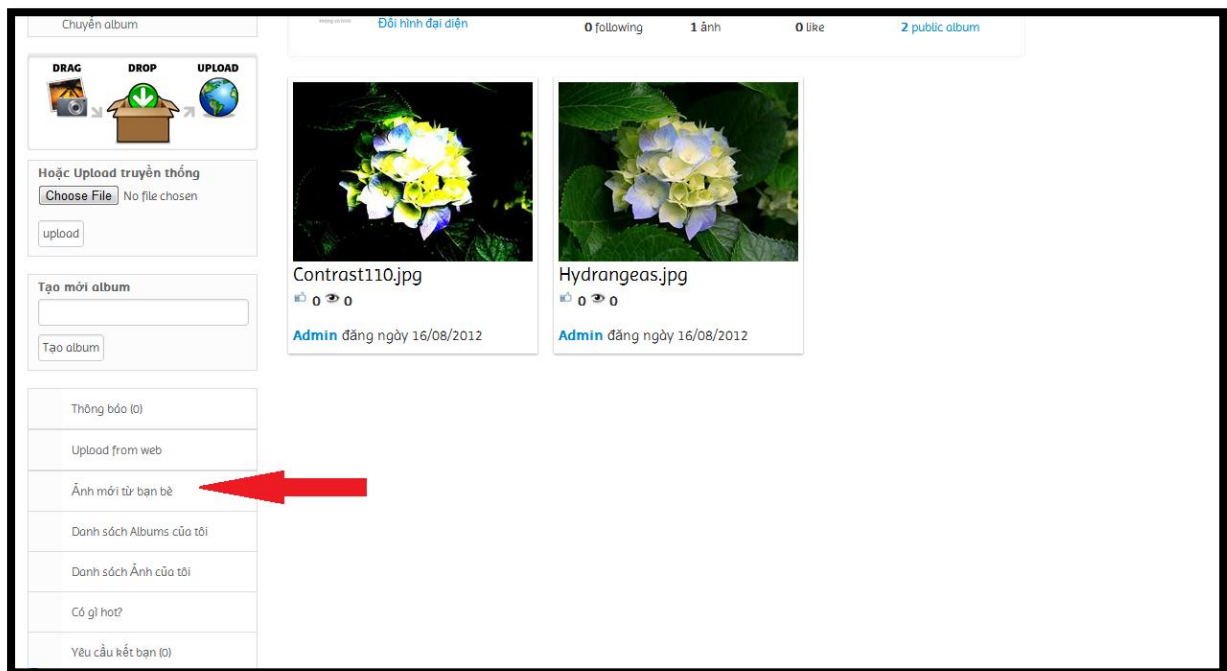
A list of friends' request from other accounts will be displayed

You can accept the request (friends will be able to see your new public update on their dashboard or your all and protected albums) or decline the request

View all friends' images

You must log in to the website first.

Click to “Ảnh mới từ bạn bè”

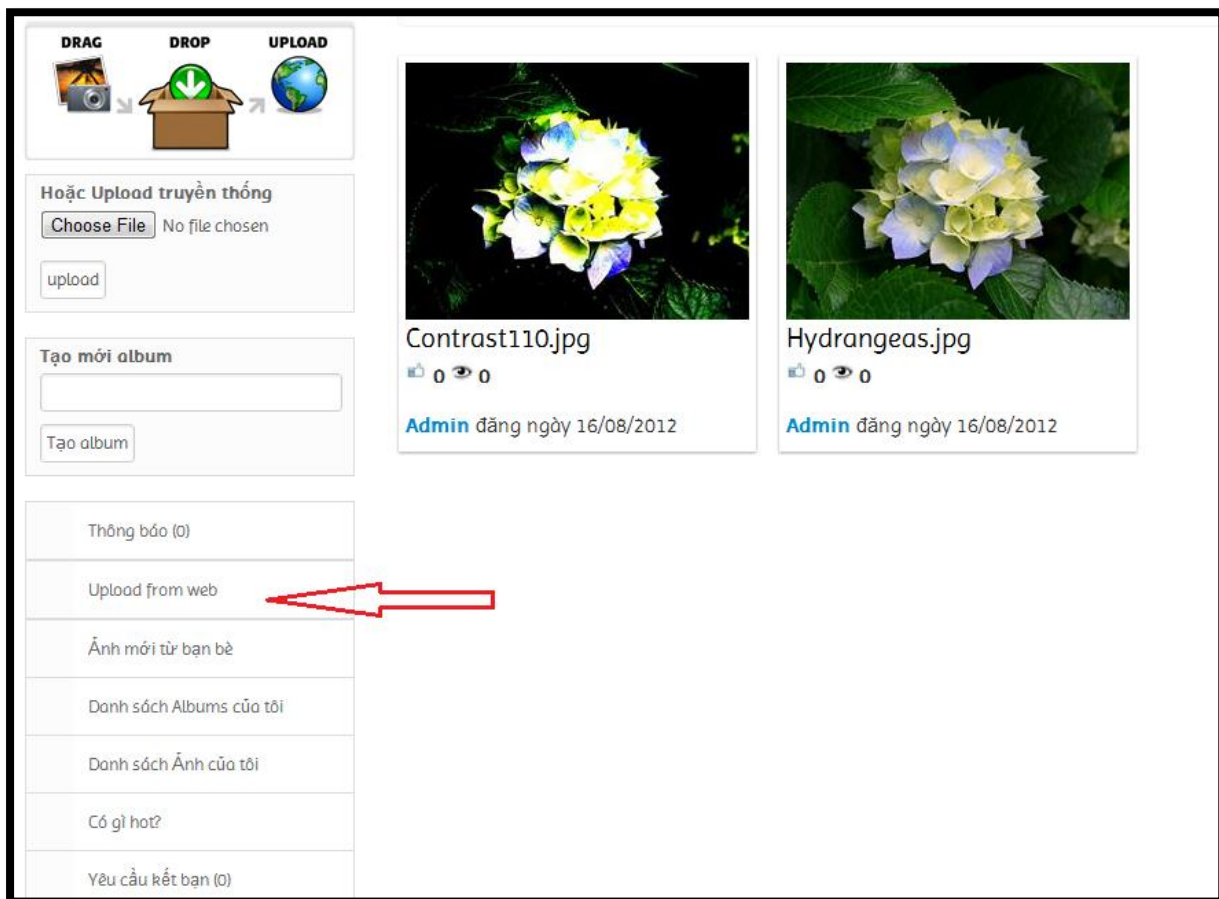


If you are not logged in. you will be redirect to “Home/Index”

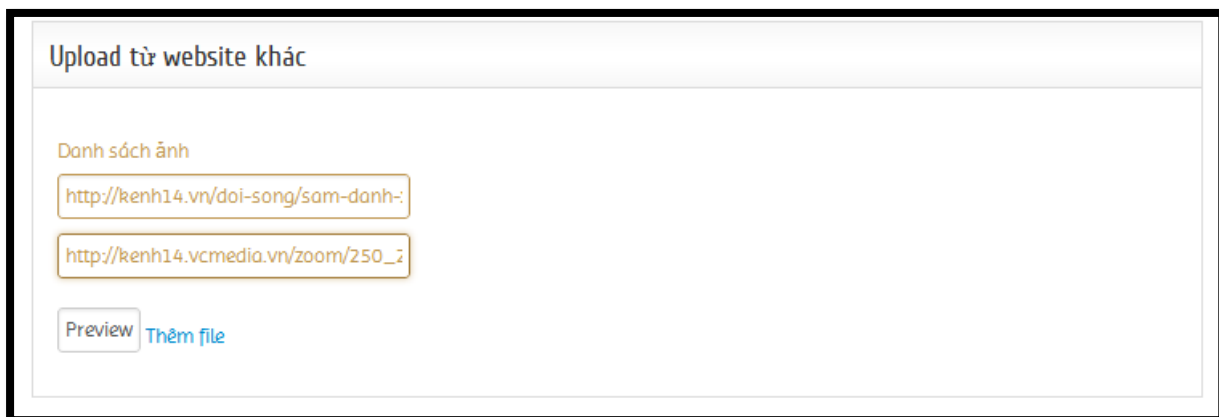
Upload Images from the web

You can now select images from the Web by entering the website URL or direct image URL to upload and share instantaneously.

Click to “Upload from the web” in the 2nd place on left menu



Submit website urls and direct image urls. You can enter multiple URLs by clicking on “Thêm file”



Once you enter website URLs, you can select which images you wish to upload, choose the album which you wish to save them to and let us do the rest 😊

Upload từ website khác

Danh sách ảnh

http://kenh14.vn/doi-song/sam-danh-

http://kenh14.vcmmedia.vn/zoom/250_2

Preview

Thêm file

Chọn album

không tên

Upload

The different between Public, Protected, Private Album:

Albums are Public by default unless you toggle to make it Private or Protected

- Public Albums – Publishes to explore, your profile and followers
- Protected Albums – only you and your friends can see the albums
- Private Albums – only you can see the albums (unless the others have direct links to the images in the album)

Image Processing

Go to “Danh sách Ảnh của tôi”

Click to “Process Image” button.

Contrast110.jpg

Sửa tiêu đề

Process Image

Hydrangeas.jpg

Sửa tiêu đề

Process Image

93 | Page

- You will be redirect to ImageProcess page. Now you can:
 - Brightness Adjustment
 - Contrast Adjustment
 - Resize
 - Rotate and Flip
 - Invest
 - Grayscale
 - And Finally save the image to your album

5.2.2.Admin Guide

Login

Fill the Username and Password of Administrators' Account and hit the "login" button to login

ISS ACP

Home Members Image Reports LogOut

Log On

Please enter your user name and password.

Account Information

User name

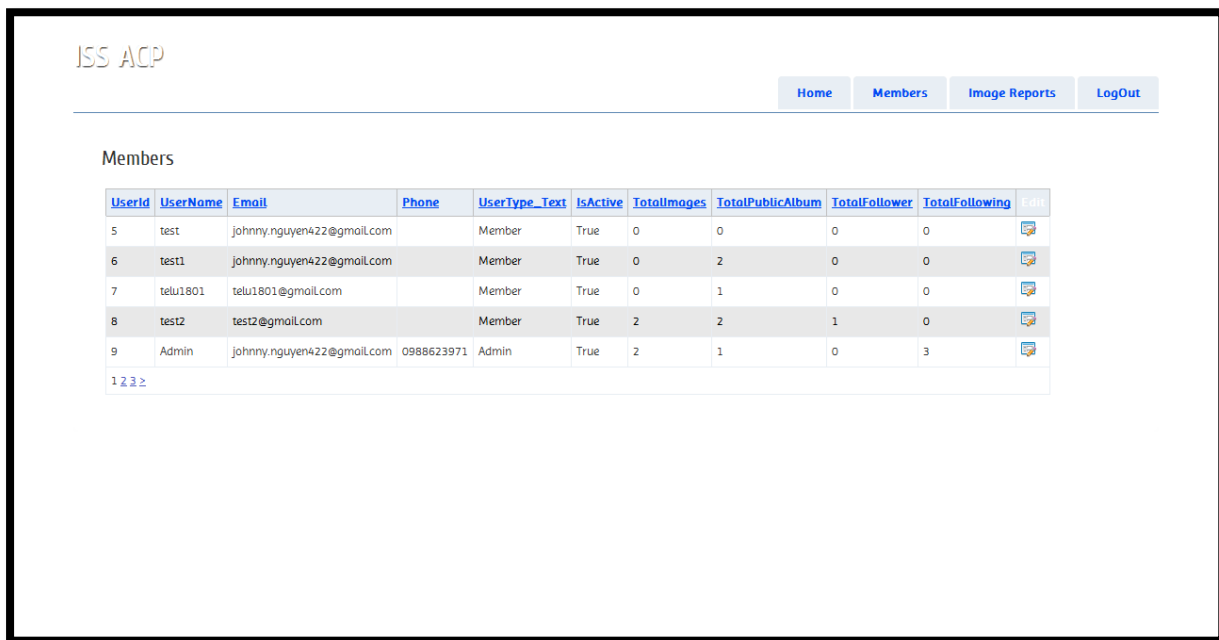
Admin

Password

Log On

Manage Members

Admin clicks to "Members" tab



A Members List will be displayed (5 members per page).

click to “Edit” icon at each row to change the member profile or account type (see Member Setting for full instruction)

Member Setting

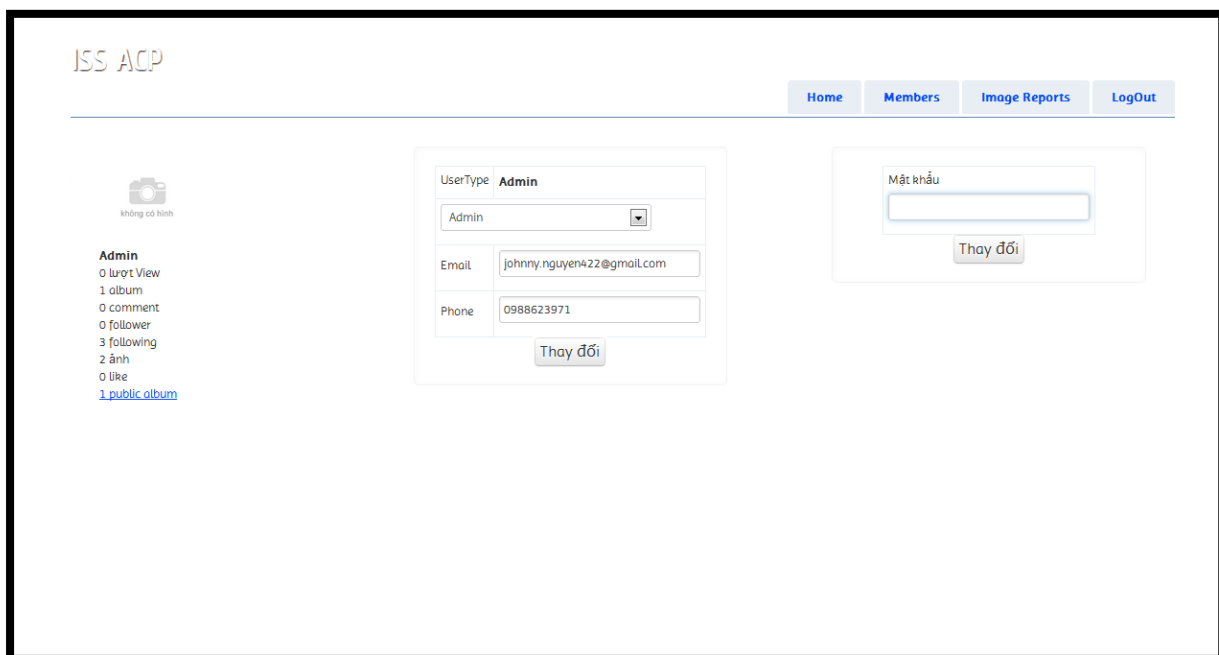


Image Report Setting

Admin clicks to “Image Reports” tab

Image Report

ReportId	ReportTime	Reporter Name	Image Owner	Image	IsBan	Delete
2	8/16/2012 4:55:13 PM	Admin	test2	Koola.jpg	False	
3	8/16/2012 4:55:59 PM	Admin	test2	Desert.jpg	False	

Admin can:

- View Reporter Profile (click to Reporter's name at each row)
- View Image Owner Profile (click to Image Owner's name at each row)
- View the Image which was reported (click to Image's name at each row)
- Ban the image (click to "True/False" at "IsBan" column)
- Delete the report (click to "delete" button)

5.3. Others

6. Appendix

6.1. References

#	Title	Notes
1	Report #1 version 0.1 – Project Description	This is the Description of ISS Project.
2	Open Stop Testing – Iterative Model	http://www.onestoptesting.com/sdlc-models/iterative-model.asp
3	.NET Naming Guidelines	http://msdn.microsoft.com/en-us/library/ms229002.aspx
4	Wikipedia, 2011, 'Use case', 8 February, viewed 10 February 2011	< http://en.wikipedia.org/wiki/Use_case >
5	Jeff Atwood, 2011, 'Suggested Edits and Edit Review' blog, February 5th, Stack Exchange, viewed 10	< http://blog.stackoverflow.com/2011/02/suggested-edits-and-edit-review >

	February 2011	
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