Software requirement specification of Personal Website

1 Introduction

1.1 Purpose of this document

The purpose of this document is to further customize the details of the software development, in the hope of making the software development work more specific. This document is for the user of the software, software developers and analysts initial rules have a common understanding, it illustrates the functions of the product requirements, performance requirements, and data requirements, clearly identify the realization process of each function, practical background and scope, provide customer solve a problem or achieve the required conditions or power, to provide a measurement and follow its benchmark.

1.2 Scope of this document

This document is intended for those involved in the project, including designers, developers, testers, etc.

2 General Description

2.1 User Stories

As a member of a student club, I want to record what happens in my life, so as to make more friends.
As a member of a student club, I want to photograph the good things in life so as to find like-minded friends.
As a member of a student club, I want to focus on the topics I am interested in, so as to enrich my life.
As a member of a student club, I want to follow my friends' news so that I can know my friends better.

2.2 User Characteristics

The user group of this system is the members of the university photography club, have a certain understanding of computer technology.

3 Functional Requirements

The system is mainly divided into two modules: the user information management module and the blog management module.

The user management module is for the blog user's information management, including the user information to add, modify, view and follow or unfollow user functions.

The blog management module is divided into three main sub-modules:posts, topic and switch language. And for functionality, the module including: add, view, comment, like or unlike the posts, follow or unfollow, choose topics, search, view follower, view hot share, and switch language functions.

The main function of adding posts is that users could post photos and contents, and could classify topics according to users' choice. The main function of query posts is that users could view the published posts, and the classification basis is the users, the number of views, the topics and likes. The main function of the comment posts is that users could comment on the published post. The main function of like or unlike the posts, is that users could like or unlike the posts that have been published. The search function is that the user could search the user's post by searching the user name. The function of view the followers is that users could view the posts of the users they follow. View hot share's function is that user could view posts in the order of high to low browsing times. The main function of the following or unfollowing the topics is the user could choose to follow or unfollow the topics he or her interested in.

The functions of the system are shown in the following figure:

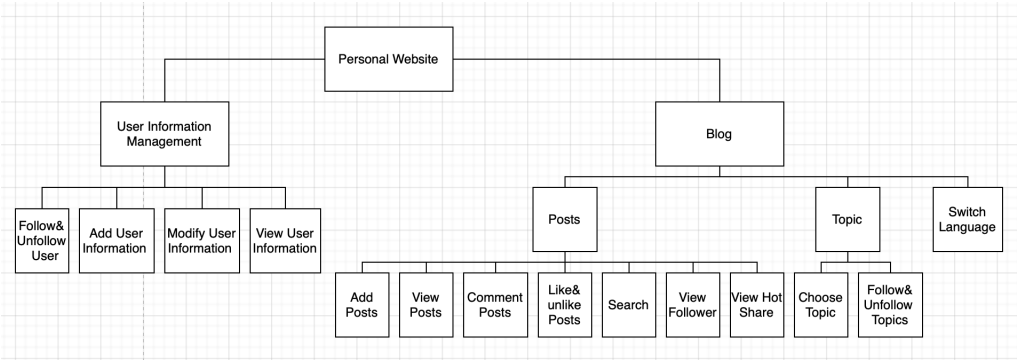

Figure 1: The functions of the system

4 System use case diagram

The system use case diagram are shown in the following figure:

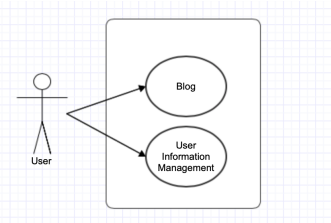

Figure 2: The system use case diagram

4.1 User information management module

4.1.1 Main event flow of user information management module:

1) **View user information use case:**
The user logs on to the system and the use case begins
The user requests to query the user information
The system displays the query information interface and query results, and the use case ends
Preconditions: login successful

2) **Modify user information use case:**
The user logs on to the system and the use case begins
The user requests to modify the user information
System display modify information interface
User inputs password/vocation/email/religion/birthday and selects gender
The user clicks the save button and the use case ends
Preconditions: login successful, user account exists

3) **Add user information use case:**
The user requests registration and the use case begins
System display registration interface
User inputs username/password/confirm password
The user clicks the register button and the use case ends
Abnormal event stream: if the login name entered already exists, the system display:" you have registered", and if the input passwords are different, the system display:" the passwords should be the same".

4) **Follow and unfollow user use case:**
The user requests follow or unfollow user and the use case begins
System display the follow or unfollow interface
User clicks the follow or unfollow button and the use case ends
Preconditions: login successful, user account exists

The user information management module use case diagram are shown in the following figure:

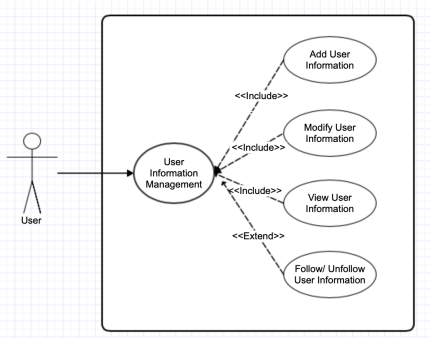

Figure 3: The user information management module use case diagram

4.2 Blog Module

4.2.1 Posts sub-module main event stream:

1) **Add posts use case:**
The user requests add the post, and the use case begins
The system displays the Posting interface
The user inputs the contexts and photos
The user clicks the upload button and the use case ends
Preconditions: login successful

2) **View posts use case:**
The user requests view the post, and the use case begins
The system displays the Posting interface and the use case ends
Preconditions: login successful

3) **Comment use cases:**
The user requests a comment, and the use case begins
The user inputs a comment, clicks the post button, and the use case ends
Preconditions: login successful, post exists

4) **Like and unlike use case:**
The user requests like or unlike a post, and the use case begins
The user clicks the like or unlike button, the system displays the number of likes currently and the use case ends
Preconditions: login successful, post exists

5) **Search use case:**
The user inputs the username and clicks the search button
The system displays the related posts and the use case ends
Abnormal event stream: if the input information does not exist, the system displays that the information does not exist
Preconditions:login successful

6) **View follower use case:**
The user requests the follower page and the use case begins
The system displays the posts related to the follower and the use case ends
Preconditions: login successful, followers exist

7) **View hot share use case:**
The user requests the hot share page, and the use case begins
System according to the browsing times from high to low display posts, and use case ends
Preconditions: login successful, posts exist

The posts sub-module use case diagram are shown in the following figure:

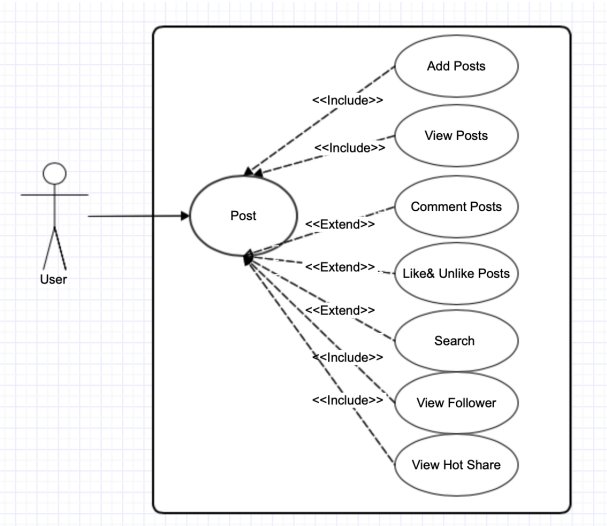

Figure 4: The posts sub-module use case diagram

4.2.2 Topic sub-module main event stream:

1) **Choose topic use case:**
The user requests that the topic be selected, and the use case begins
The system displays the topics the user followed and the use case ends
Preconditions: login successful, topic exists

2) **Follow and unfollow the use cases:**
The user requests follow or unfollow topic, and the use case begins
The user clicks the follow or unfollow button and the use case ends
Preconditions: login successful, topics exist

The topic sub-module use case diagram are shown in the following figure:

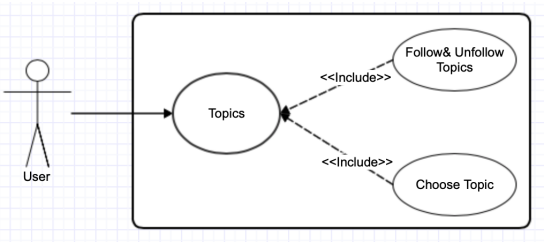

Figure 5: The topic sub-module use case diagram

4.2.3 Switch language sub-module

Switch language sub-module main event stream:

1) **Switch Chinese use cases:**
   The user requests switch Chinese, and the use case begins
   The user clicks the switch Chinese link and the use case ends

2) **Switch English sub-module the use cases:**
   The user requests switch English, and the use case begins
   The user clicks the switch English link and the use case ends
   The switch language sub-module use case diagram are shown in the following figure:

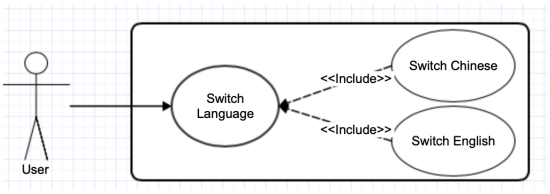

Figure 6: The switch language sub-module use case diagram

5 Database Requirements

There are six data tables required for the system, including: user table, Shipins table, Comments table, UserFollow table, UserTopics table, and Topics table. The system E-R diagram is shown in the following figure:

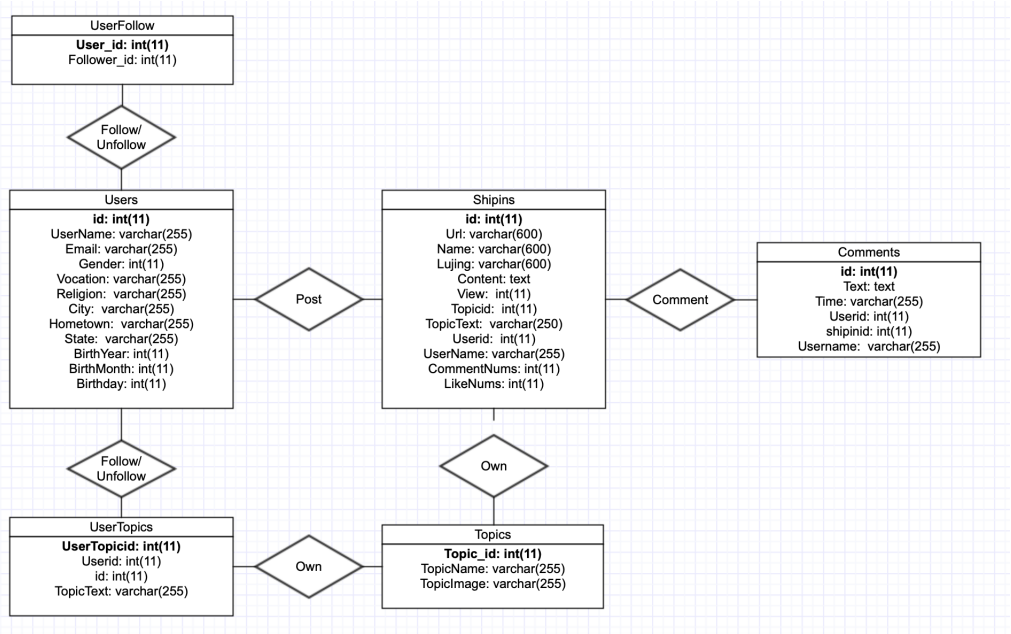

Figure 7: The searching sub-module use case diagram

6 Other non-functional attributes

6.1 User interface

Users can use the system in Windows Internet explorer 6.0 above the browser.

6.2 Performance requirements

A. Static numerical requirements include:
1) number of supported terminals: 2.5 million
2) number of users supporting parallel operations: 2 million
3) time characteristic of system response: no more than 4 seconds

B. Dynamic numerical requirements may include:
under normal circumstances, the amount of data that can be processed is about 1 million times per minute, and the processing speed is no more than 5 seconds per response time; under peak conditions, the amount of data can be processed is about 750,000 times per minute, and the processing speed is no more than 8 seconds per response time.

6.3 Hardware environment

The host memory of all clients should be more than 2G, and the host memory of server side should be more than 16GB.

6.4 Friendly

The design of each interface should be reasonable, all functions should be visible to the user at once, the design of the button should be simple and easy to understand, the jump between the interface should be achieved by buttons or hyperlinks, the error message should be given to the user prompt.

6.5 Security

User information should be kept strictly confidential.

6.6 Maintainability

The structure of the system is reasonably clear, the code understandable, and it is clearly commented so that the maintainer can modify and use it.

7 Constraints:

Recommended service life: 3 years
Assumptions: users can provide an environment to deliver tests; Users can participate in the approval of requirements;
Constraints: the last delivery date of the system is April 9, 2020;

Design and implementation constraints:
Hardware conditions: ordinary PC;
Operating environment: Windows Internet explorer 6.0 or above;
Database: MySQL 5.7.17
Funding sources: investors, crowdfunding platform, advertisers