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 community, have a certain understanding of computer technology.

3 Functional Requirements

The system is mainly divided into two modules: user information management module and blog module.
The user management module is for the blog user's information management, including the user information to add, delete, modify and query functions.
The blog module is divided into four main submodules: Posting, Topic, Hot Share, People, and Searching. The Posting submodule is used to select topics of interest, post photos, post contexts, comment, and like posts. The functions of the Topic submodule are: to focus on Topic, to unfocus Topic, and to display posts according to Topic classification. The function of Hot Share submodule is: rank posts according to the number of views, show them from high to low. The functions of the People submodule are: follow friends, cancel follow friends and show follow friends' posts. The functions of the system are shown in the following figure:

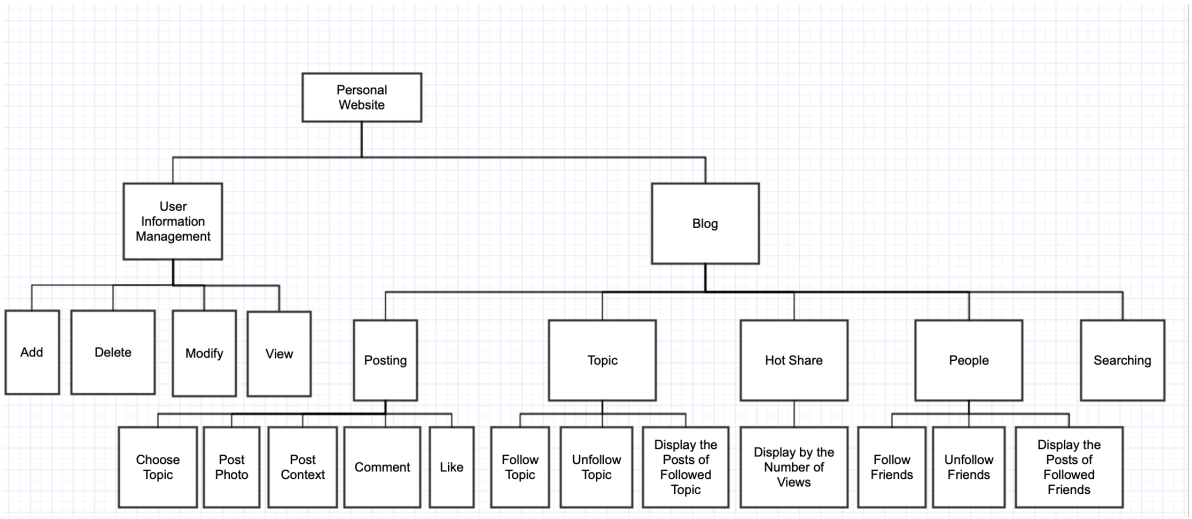

Figure 1: The functions of the system

4 System use case diagram

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

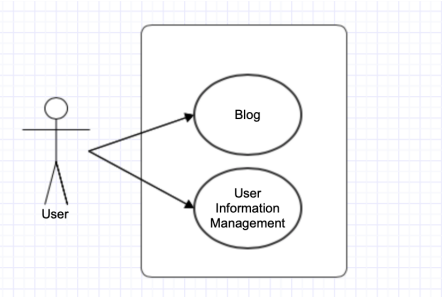

Figure 2: The system use case diagram

4.1 User information management module

Main event flow of user information management module:
Query 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
Abnormal event stream: if the input information does not exist, the system shows that the information does not exist
Preconditions: login successful

Modify 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 name/password/occupation/email/religion/birthday and selects gender
The user clicks the save button and the use case ends
Abnormal event stream: if the input information is not standard, the system display please enter legitimate information
Preconditions: login successful, user exists

Add 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 input information is not standard, the system display please enter legitimate information and if the login name entered already exists, the system display the user name is prompted to exist **Preconditions:** login successful

Delete information use case:
The user requests delete and the use case begins
User clicks the delete button
The system delete related post and the use case ends
Preconditions: login successful

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

4.2 Posting sub-module

Posting sub-module main event stream:
Post contexts use case:
The user requests a post, and the use case begins
The system displays the Posting interface
The user inputs the contexts
The user clicks the upload button and the use case ends

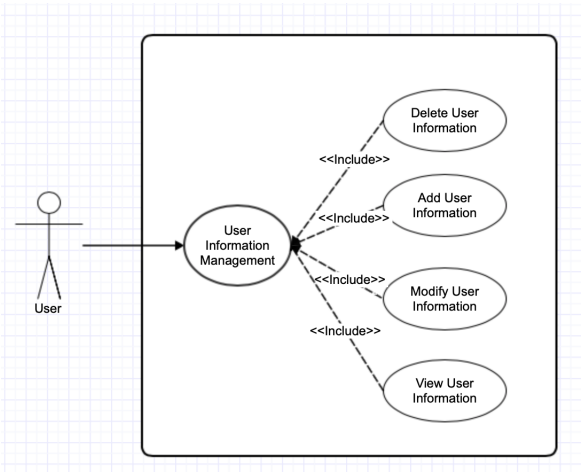

Figure 3: The user information management module use case diagram

Abnormal event stream: enter text beyond the word limit, the system displays that please reduce some words **Preconditions:** login successful
Post photo use case:
The user requests a post, and the use case begins
The system displays the Posting interface
The user selects the image locally to upload
The user clicks the upload button and the use case ends
Abnormal event stream: the uploaded file type does not match, the system displays that the uploaded file type is wrong, please upload again
Preconditions: login successful

Choose topic use case:
The user requests that the topic be selected, and the use case begins
The system displays the topics the user is interested in
The user selects the theme and the use case ends
Preconditions: login successful

Comment on 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
Like use case:
The user requests like a post, and the use case begins
The user clicks the like button and the use case ends
Preconditions: login successful, post exists

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

4.3 Topic sub-module

Main event flow of topic sub-module:
Follow/unfollow the use cases:
The user requests follow/unfollow, and the use case begins

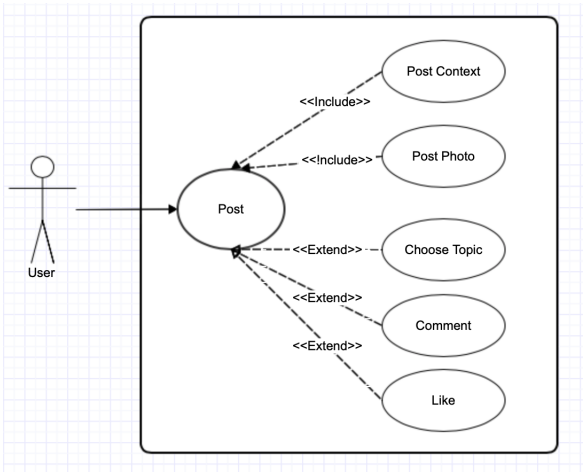

Figure 4: The posting sub-module use case diagram

The user clicks the follow/unfollow button and the use case ends
Preconditions: login successful, topics exist

Display topic use case:
The user requests the topic page and the use case begins
The system displays the posts related to the topic and the use case ends
Preconditions: login successful, topics exist

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

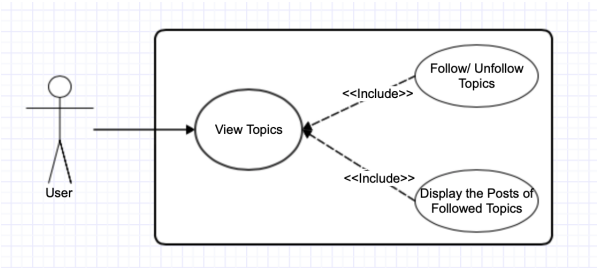

Figure 5: The topic sub-module use case diagram

4.4 Hot Share sub-module

Hot share sub-module main event stream:
Display the hot share use case:
The user requests the hot share page, and the use case begins
System according to the traffic from high to low display posts, and use case ends
Preconditions: login successful, posts exist

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

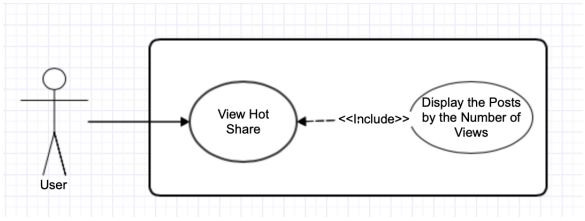

Figure 6: The hot share sub-module use case diagram

4.5 People sub-module

Main event flow of topic sub-module:
Follow/unfollow the use cases:
The user requests follow/unfollow, and the use case begins
The user clicks the follow/unfollow button and the use case ends
Preconditions: login successful

Display people use case:
The user requests the follower page and the use case begins
The system displays the posts related to the topic and the use case ends
Preconditions: login successful, friends exist
The people sub-module use case diagram are shown in the following figure:

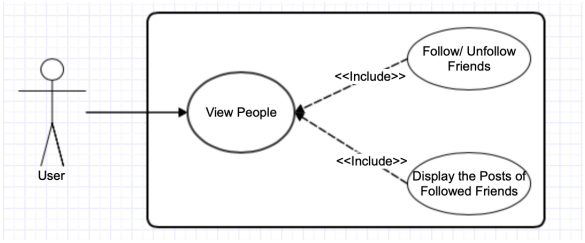

Figure 7: The people sub-module use case diagram

4.6 Searching sub-module

Main event flow of topic sub-module:

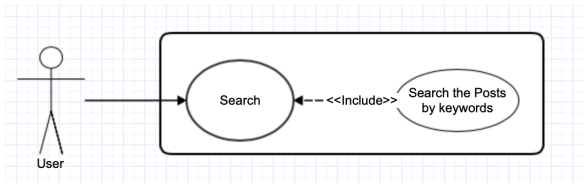

Figure 8: The searching sub-module use case diagram

The user inputs the keywords 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 shows that the information does not exist

Preconditions:login successful

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

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:

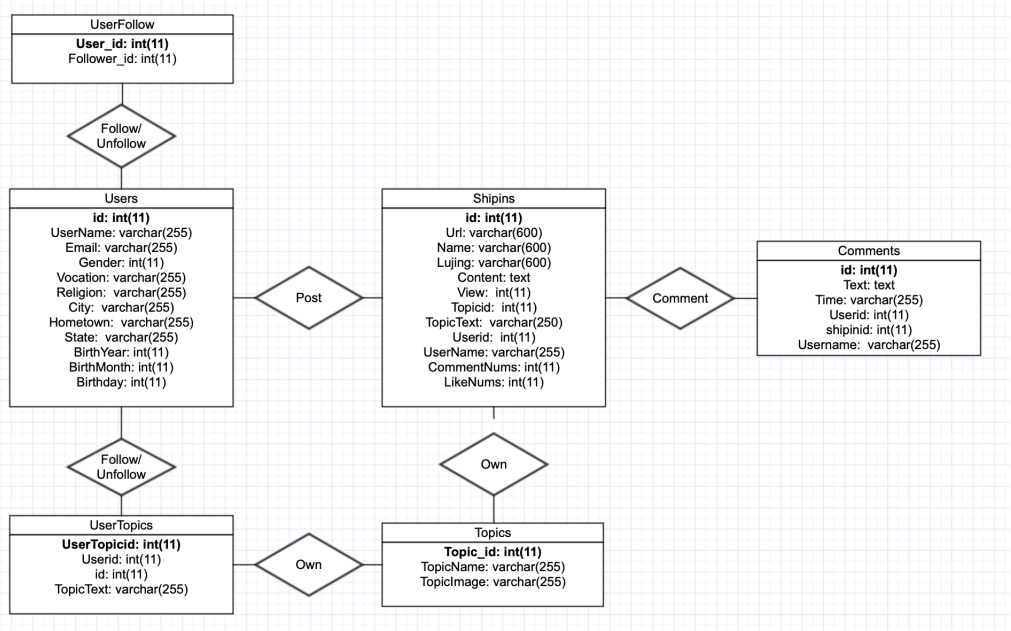

Figure 9: The searching sub-module use case diagram

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