FORUM

SOFTWARE ENGINEERING PROJECT

REQUIREMENT SPECIFICATION

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CONTENT

1. Introduction 2

2. Use case & user story

2.1 Use case 1 3

2.2 Use case 2 4

2.3 Use case 3 5

2.4 Use case 4 6

2.5 Use case 5 7

2.6 Use case 6 8

2.7 Use case 7 9

2.8 Use case 8 10

2.9 Use case 9 11

2.10 Use case 10 12

2.11 Use case 11 13

2.12 Use case 12 14

2.13 Use case 13 15

2.14 Use case 14 16

2.15 Use case 15 17

2.16 Use case 16 18

2.17 Use case 17 19

2.18 Use case 18 20

2.19 Use case 19 21

2.20 Use case 20 22

3. Functional and Non-functional requirements 23

3.1 Functional requirement 23

3.2 Non-functional requirement 29

1. INTRODUCTION

1.1 Purpose

The purpose of document is to give a detail description of the requirement for a web forum development project. It gives all the main use cases with detail description. Furthermore, it contains the functional and non-functional requirements supplier by the customer

1.2 Scope

Create a overall view of the web forum with all use cases from all actors , so that we can understand how the forum work and the role of each actor : Visitor, User, Moderator and Administrator . Moreover, with the functional and non-functional requirements come up , we can define the attribute that this forum must has.

2. USE CASE AND USER STORY

2.1 Use case 1 :

Name: Register an account

Identifier: UC1

Inputs:

1. New username (without duplicated)
2. Password
3. Email

Outputs:

1. The homepage (with new account logged in) [If success]
2. The register page [If fail]

Basic Course

Actor: user	System
1. Click on 'Register' button	1.1. Display the register page
2. Input required information.	
3. Submit	3.1. Check the validity of information. 3.2. If succeed, notify then log in and redirect to the homepage 3.3. Else return to register page with error messages

Preconditions

The user has active email that has not already used to register to an account in the system

Post conditions

1. The user is added to database
2. The user will be automatically logged in

User story: As an user, I want to register an account so that I can use some function like post threads, send messages, etc…

2.2 Use case 2

Name: Login

Identifier: UC2

Inputs:

1. Username
2. Password

Outputs:

Forum Home Page

Basic Course

Actor: user	System
1. Click Login Button	1.1 Display Login Page
2. Input Username and Password	
3. Enter	3.1 Check Database 3.2 If Username and Password are correct, show Forum Home Page 3.3 If no, return Login Page and check number failure to Login, notify user 3.4 If number failure to Login over 5, block connection temporarily for anti-spamming

Preconditions

Members Accounts

Post conditions

Add cookies so that user can return without login

User story: As an user, I want to login to the forum to see full content of a post and rate the post

2.3 Use case 3

Name: Read Posts/Threads

Identifier: UC3

Inputs:

Posts/Threads

Outputs:

The post in the thread

Basic Course

Actor: user, visitor	System
1. Click on the category	1.1. Display the threads
2. Click on one thread	2.1. Display posts in that thread

Preconditions

1. User must login to the forum
2. User must see the thread

Post conditions

User can reply the thread

User story: As an user, I want to threads to get more information for myself

2.4 Use case 4

Name: Post Threads

Identifier: UC4

Inputs:

Posts/Threads Content

Outputs:

The post is posted

Basic Course

Actor: user	System
1. Click on the category	1.1 Display post thread
2. Click on the post thread button	2.1. Display post thread tool
3. Input Content	
4. Submit	4.1 Check the user's info. 4.2 If success, forward the thread page and update the database 4.3 Else show the error message

Preconditions

1. User must login to the forum
2. User must be able to post thread in the category

Post conditions

Users with higher flag will be able to manage the thread

User story: As an user, I want to post threads so that I can share the information to everyone

2.5 Use case 5

Name: Read Message

Identifier: UC5

Inputs:

Sender

Message

Outputs:

The message is read

Basic Course

Actor: user	System
1. Click on notifications	1.1. Dropdown menu
2. Click on private messages	2.1. Go to user's inbox
3. Click on message	3.1. Show the conversation to user 3.2. Mark the message as read

Preconditions

1. User must login to the forum
2. User must have messages in the inbox

Post conditions

1. User's notification will turn off

User story: As an user, I want to read the message so that I can know what is happening in the forum

2.6 Use case 6

Name: Send Message

Identifier: UC6

Inputs:

Receiver
Subject
Message Content

Outputs:

The message is sent

Basic Course

Actor: user	System
1. Click on other user's name	1.1. Go to that user profile
2. Click on send private message	2.1. Display the message tool
3. Input Content	
4. Submit	4.1. Check the user's info. 4.2. If success, return to user's inbox and update the database 4.3. Else show the error message

Preconditions

1. User must login to the forum
2. User must be able to send message to others

Post conditions

1. The receiver will have notification when logged in

User story: As an user, I want to send message so that my friend may know what I want

2.7 Use case 7

Name: Edit threads

Identifier: UC7

Inputs:

Thread

The information need to be changed

Outputs:

New threads information updated

Basic Course

Actor: user, moderator, administrator	System
1. Click on the thread link	1. Go to thread detail page
2. Click on 'edit' button	2. Go to the edit thread page
3. Input information that need to be changed	
4. Click on 'Save' button	4.1 Notify for successful 4.2 Update information to database 4.3 Return to the homepage

Preconditions

The account has been logged in

Post conditions

Show the thread with edited version

User story: As an user, I want to edit threads so that I can update new information in thread

2.8 Use case 8

Name: Delete Post/Thread

Identifier: UC8

Inputs:

Post/Threads

Outputs:

Post/Thread View Page

Basic Course

Actor: Post Creator or Admin, Moderator	System
1. Click Post/Thread	1.1. Display the Post/Thread
2. Click Delete button	2.1. Display Delete Dialog
3. Click Delete	3.1. Update Database 3.2. Delete Post 3.3. Return to Post/Thread View Page

Preconditions

1. Already had threads/post
2. Members Accounts

Post conditions

The thread will still be kept in database unless physical remove

User story: As an user , I want to delete posts or threads so that I can remove old information in the forum

2.9 Use case 9

Name: Delete Message

Identifier: UC9

Inputs:

Account

Message

Outputs:

Message Page

Basic Course

Actor: user	System
1. Click Message Button	1.1. Display the Message Page
2. Click Delete button	2.1. Display Delete Dialog
3. Click Delete	3.1. Delete Message 3.2. Update Database 3.3. Return to Message Page

Preconditions

Already had messages

Post conditions

None

User story: As an user, I want to delete messages so that I can clean the mail box and remove the trash message

2.10 Use case 10

Name: Rate

Identifier: UC10

Inputs:

Thread

Rate stars

Outputs:

Thread

Basic Course

Actor: user	System
1. Click Thread	1.1. Display the Thread
2. Click Rate button (Already Login)	2.1 Display Rate's Menu
3. Rate for post (Choose how many stars)	
4. Click Rate button	4.1. Update Database 4.2. Return to Thread

Preconditions

Already had threads/post

Post conditions

None

User story: As an user, I want to rate the post so that everyone can know the qualification of the post

2.11 Use case 11

Name: Report

Identifier: UC11

Inputs:

Account

Report Content

Outputs:

Post/Thread

Basic Course

Actor: user	System
1. Click Post/Thread	1.1. Display the Post/Thread
2. Click Report button (Already Login)	2.1. Display Report Page
3. Enter or choose reasons why report	
4. Click Report button	4.1. Send report to manager 4.2. Return to Thread

Preconditions

Already had threads/post

Post conditions

Admin will be notified

User story: As an user, I want to report the post or threads so that the administrator or moderator can remove that trash post/thread

2.12 Use case 12

Name: Reply Thread

Identifier: UC12

Inputs:

Account

Thread

Reply Content

Outputs:

Post/Thread

Basic Course

Actor: user	System
1. Click Post/Thread	1.1. Display the Post/Thread
2. Click Reply button	2.1. Display Reply Box
3. Input Reply Content	
4. Click Submit	3.1. Update Database 3.2. Show new posts

Preconditions

Already had threads

Post conditions

New post will be added to database.

User story: As an user, I want to use the reply post so that I can reply the question of the thread or ask for more information.

3.7 Use case 13

Name: Promote
Identifier: UC13
Inputs:

1. Admin's Username
2. Admin's Password
3. User's Account
4. User's Rank

Outputs:

User's control panel page
User's new rank

Basic Course

Actor: administrator	System
1. Input admin's username and password	
2. Enter	2.1. Show admin control panel page
3. Input member's username in search place	
4. Click Search	4.1. Check database 4.2. Show Result Page
5. Click User's account	5.1. Show user's control panel page
6. Select Rank to Promote	
7. Click Save button	7.1. Update database 7.2. Update current rank for user 7.3. Return to account control panel

Preconditions

Members Accounts

Post conditions

Promoted user will have some changes in permission

User story: As an administrator, I want to promote so that I can set up a new moderator or upgrade level of user

3.8 Use case 14

Name: Demote

Identifier: UC14

Inputs:

1. Admin's Username
2. Password
3. User's Account
4. User's Rank

Outputs:

User's Account Control Panel

Basic Course

Actor: administrator	System
1. Input admin's username and password	
2. Enter	2.1. Show Admin Control Panel Page
3. Input member's username on search place	
4. Click Search	4.1. Check database 4.2. Show Result Page
5. Click User's account	5.1. Show User's Account Page
6. Select Rank to Demote	
7. Click Save button	7.1. Update database 7.2. Update current rank for user 7.3. Return to account control panel

Preconditions

Members Accounts

Post conditions

Demoted user will have some changes in permission

User story: As an administrator, I want to demote so that I can degrade old moderator or degrade level of user

3.9 Use case 15

Name: Logout

Identifier: UC15

Inputs:

Already Login Account

Outputs:

Forum Home Page

Basic Course

Actor: user	System
1. Click Logout Button	1.1. Return to Forum Home Page

Preconditions

Members Accounts

Post conditions

Clear cookies and cache
Change current active user
Update last activity of user

User story: As an user, I want to logout so that I can exit the forum system

3.10 Use case 16

Name: View Account's Information

Identifier: UC16

Inputs:

Account

Outputs:

Account's Information Page

Basic Course

Actor: user	System
1. **Click account name**	
2. **Choose view information**	2.1. Display account's information page

Preconditions

Already had user's account

Post conditions

Update who visited this account

User story: As an user, I want to view my profile so that I can view my personal information

3.11 Use case 17

Name: Edit personal information
Identifier: UC17
Inputs:

The information need to be changed

Outputs:

New personal information updated

Basic Course

Actor: user, moderator, administrator	System
1. Click on 'your username' on navigation bar	1.1. Go to your profile page
2. Click on 'edit' button	2.1. Go to edit information page
3. Input information that need to be changed	
4. Click on 'Save' button	4.1. Notify for successful 4.2. Update information in database 4.3. Return to the homepage

Preconditions

The account has been logged in

Post conditions

Update information in every posts that posted by user.

User story: As a user, I want to edit my profile so that I can change my wrong personal information and edit my profile picture

3.12 Use case 18

Name: Search

Identifier: UC18

Inputs:

Search Keywords

Outputs:

The result page

Basic Course

Actor: guest, user, moderator, administrator	System
1. Click on 'Search' text area on navigation bar	1.1. Show the pointer to input
2. Input the searching keywords	
3. Click Search symbol	3.1. Find all problems that contain the searching keywords 3.2. Load the result page display the result in a commonly orders

Preconditions

None

Post conditions

None

User story: As an user, I want to search post/thread or search a people so that I can get the information

3.13 Use case 19

Name: View the reported list

Identifier: UC19

Inputs:

Admin's account

Outputs:

The reported list with descending order

Basic Course

Actor: moderator, administrator	System
1. Click on 'Tool' box	1. Display the list of tool
2. Click on 'View reported list'	2. Display the Reported List with details

Preconditions

The moderator has logged in his/her account

Post conditions

None

User story: As a moderator, I want to view the reported list so that I can find out the trash posts/threads and remove them.

3.14 Use case 20

Name: View the ranking list

Identifier: UC20

Inputs:

Admin's account

Outputs:

The list of users sorted descending

Basic Course

Actor: manager	System
1. Go to admin control panel	1. Display the admin page
2. Click on 'View ranking list'	2. Display the list of users sorted descending

Preconditions

The moderator has logged in his/her account

Post conditions

None

User story: As a moderator, I want to view the ranking list so that I can notify and give prizes to the highest contributor of the forum

4. FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS

3.1 FUNCTIONAL REQUIREMENT

Use case 1: Register an account

1. Functional requirements
    - Shall display the page to require account information from the user.
    - Shall check the validity of the information.
    - Shall add a new account of user into database.
    - Shall send a welcome email.
    - Shall encrypt password of user account before adding into database.
    - Shall display the successful registration message.
2. Data requirements
    - Valid account information (username not used, email is valid, captcha is true)

Use case 2: Login

1. Functional requirements
    - Shall retrieve the information of the account that is matched with the ID that user logs in from the database.
    - Shall decrypt password of user account from the database.
    - Shall check the validity of user login account.
    - Shall display the login so that user can input the information of user account.
2. Data requirements
    - The login information (username & password) must be valid.

Use case 3: Read Thread

1. Functional requirements
    - Shall display the other's posts in that thread.
    - Shall show the information of the thread. (date, author, …)
2. Data requirements

- Data is taken from the database.

Use case 4, 7, 8: Manage Thread

1. Functional requirements
    - Shall display the tool for posting/editing.
    - Shall display the additional options for the thread.
    - Shall only allow the manager to delete the thread.
2. Data requirements
    - Data must not contain HTML code.
    - Required fields must be filled.

Use case 5, 6, 9: Manage Messages

1. Functional requirements
    - Shall only allow user who registered to have access to these functionalities.
    - Shall allow user to send, delete messages.
    - Shall only allow user who is participating in the conversation to have access to see the messages.
2. Data requirements
    - Data must not contain HTML code.
    - Required fields must be filled.

Use case 10: Rate Thread

1. Functional requirements
    - Shall only allow user who registered to have access to this functionality.
2. Data requirements

    None

Use case 11: Report

1. Functional requirements
   - Shall only allow user who registered to have access to these functionalities.
   - Shall type the reason to report.
   - Shall alert the manager.
2. Data requirements

   None

Use case 12: Reply

1. Functional requirements
   - Shall display the tool for replying.
   - Shall display the advanced tool.
   - Shall only allow the manager to delete the posts.
2. Data requirements
   - Data must not contain HTML code.
   - Required fields must be filled.

Use case 13,14: Promote/Demote

1. Functional requirements
   - Shall only allow the administrator to access to these functionalities.
   - Shall only allow registered member to be promoted/demoted.
2. Data requirements
   - Data must not contain special characters and be in the accepted format for the specific fields.

Use case 15: Logout

1. Functional requirements
   - Shall only logged in user is able to logout.
2. Data requirements

   None

User case 16: View a profile

1. Functional requirements
   - Shall display the user’s personal information.
   - Shall display the statistics of user.
   - Shall display friends and contact info.
   - Shall display the last activity and join date of user.
   - Shall display the recent visitors.
   - Shall send private messages to user.
2. Data requirements
   - Data is taken from the database.

Use case 17: Edit a profile

1. Functional requirements
   - Shall display the user’s personal information.
   - Shall allow the user to edit all fields except username.
   - Shall allow notify the user to correct format if any fields are incorrect.
   - Shall allow user to edit profile picture.
2. Data requirements
   - Data must not contain special characters and be in the accepted format for the specific fields.

Use case 18: Search

1. Functional requirements
   - Shall display the search tool.
   - Shall sort the threads that match from the database.
   - Shall display the search result page.
2. Data requirements

   None

Use case 19: View reported list

1. Functional requirements
   - Shall have a report list with the following information: reason, date, reporter, thread which is reported.
2. Data requirements
   - Data is taken from the database.

Use case 20: View ranking list

1. Functional requirements
   - Shall sort the contributer who have higher reputation point.
   - Shall view the rank group.
2. Data requirements
   - Data is taken from the database.

3.2 NON-FUNCTIONAL REQUIREMENT

1. Operational requirement

   The forum must be capable with Window 7/8/10 , Ubuntu and MacOS.

   The forum website must run well on all kind of browser : Internet Explorer, Firefox, Chrome, Safari,…

   The forum website have to be scale and auto-resized on mobile device : smartphone and tablet .
2. Safety/security requirement :

   The register password should contains at least 6 characters , has both lowercase, uppercase and number.

   The system should have a function to encrypt and decrypt the password when update in database so that no one can hack another account

   All communications between the system's data server and clients must be encrypted (SSL, SSH protocol for HTTP, etc.)

   All forum data will be backup daily so that the data can keep safely

   The system should automatically send a warning email if there are many failed login to an account.
3. Performance requirement

   All tasks must be response in a fraction of seconds.

   The system must also work properly when there are more than 100 users access at the same time.

   Time to execute functionalities of the system should be quick, especially for the more complex user stories.

   The time it takes to execute queries should be fast.
4. Usability requirement

   The forum should provide informative messages of the possible causes of errors that may occur while using the system; this will help the administrator in fixing the error.

   The Web interface should be applied UX design with simple view .