



## **Capstone Project Report**

# **TripSharing**

Group			
	Hà Văn Thái – SE04801		
	Nguyễn Văn Phong – SE05051		
Group Members	Trần Văn Phong – SE05048		
	Lê Xuân Trường – SE04616		
	Lý Phúc Linh – SE04693		
Supervisor	Đào Trọng Duy		
Capstone Project Code	TripSharing		

### **Chapter 1: Introduction**

#### 1.1 Purpose

This chapter provide an overview of the project include background information, a literature review of existing system and raising a proposal for ideas of improvement.

#### 1.2 Project Information

• Project name: **TripSharing** 

• Project code: TRIPSHARING

• Project group name: SWP491\_G26

• Project type: Web Application

• Timeline: From 13th May 2019 to 30th August 2019

#### 1.3 The People

#### 1.3.1 Supervisors

	Full name	Phone	E-mail	Title
Supervisor	Dao Trong Duy	0983204196	duydt@fe.edu.vn	Lecturer

Table 1-1: Supervisors' information

#### 1.3.2 Team Members

	Full name	Phone	E-mail	Role in Group
1	Hà Văn Thái	0349940158	thaihvse04801@fpt.edu.vn	Leader
2	Nguyễn Văn Phong	0978296187	phongnvse05051@fpt.edu.vn	Member
3	Trần Văn Phong	0987489397	phongtvse05048@fpt.edu.vn	Member
4	Lê Xuân Trường	0964038801	truonglxse04616@fpt.edu.vn	Member
5	Lý Phúc Linh	0362442818	linhlpse04693@fpt.edu.vn	Member

Table 1-2: Team member's information

#### 1.4 Background

Along with the development of technology, tourism demand is getting higher, especially young people. Nowadays, people mostly find information about where they want to go on the internet and social network like Facebook, TripAdvisor, Gody.vn, etc. But many websites only

provide general information about the destination and only focus on advertising and support booking hotel, restaurant, travel tour.... We can find such post on Facebook but it scattered on many pages and there are many posts created for advertising purpose may make people concern about the correctness of the information.

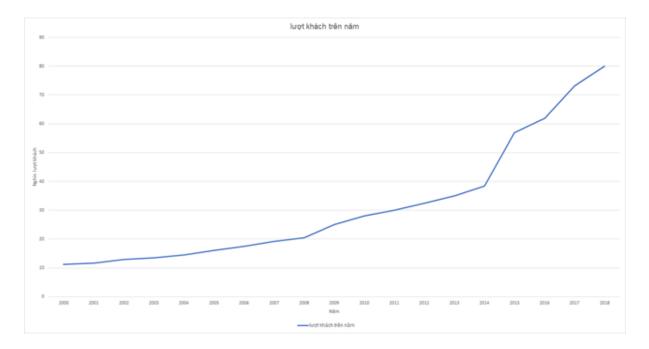


Figure 1-1: Number of local tourists reach 80 million in 2018<sup>1</sup>

Among young people, tourism for exploring and experience is becoming a new trend, and people usually want to share their experience online:

"Khảo sát về xu hướng du lịch toàn cầu trong năm 2018 do Visa thực hiện với sự tham gia của hơn 15.000 người đến từ 27 quốc gia, trong đó có Việt Nam đã chỉ ra rằng khách du lịch hiện nay thường mong muốn đạt được cả hai mục tiêu "khám phá" và "tận hưởng" trong những chuyến đi của mình. Kết quả khảo sát đã đưa ra ba nhóm động lực chính cho những chuyến du lịch là: gắn kết gia đình, bạn bè (33%), thư giãn (11%) và trải nghiệm (10%). Ranh giới giữa những động lực thúc đẩy người dân đi du lịch đang dần bị xóa nhòa. Những người du lịch vì cảm giác "tận hưởng" thường đi để gắn kết với bạn bè, người thân hay đơn giản là tận hưởng thời gian nghỉ dưỡng của riêng mình. Riêng những du khách đi du lịch để "khám phá" có xu hướng trải nghiệm nhiều hơn với các nền văn hóa mới và thăm quan những điểm đến hấp dẫn.

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<sup>&</sup>lt;sup>1</sup> http://vietnamtourism.gov.vn/index.php/items/13460

63% người được hỏi trả lời rằng họ đi du lịch vì cả hai lý do này, tỉ lệ tương ứng tại Việt Nam là 72%."<sup>2</sup>



Figure 1-2: Sharing travel information on social media<sup>3</sup>

# 1.4.1 The exist sharing travel experience systems are focus on famous travel destination and booking services

Our study shows that travel guides, travel destinations reviews websites are focusing too much on advertising and booking for travel destination than the travel experience of users. Example on Tripadvisor.com and Toidi.net are 2 big websites, but they don't provide enough interaction between users, Toidi.net is more like a blog then the posts are subjective, on Tripadvisor.com people can post photo or review for a destination but there is no comment

<sup>&</sup>lt;sup>2</sup> http://flcholiday.com/tin-tuc/xu-huong-du-lich-2018-kham-pha-va-tan-huong-cuoc-song-117.htm

 $<sup>^{3} \ \</sup>underline{\text{http://www.younetmedia.com/insights/infographic-xu-huong-du-lich-cua-gioi-tre-qua-phan-tich-tren-social-media.html}$ 

section for other to interact with each other. The creation of this project is aiming to improve the lack of interaction between users and focus more on sharing experiences through the trip.

#### 1.4.2 TripAdvisor's Advantages and Disadvantages

#### 1.4.2.1 TripAdvisor's Advantages

- They already have a booking system.

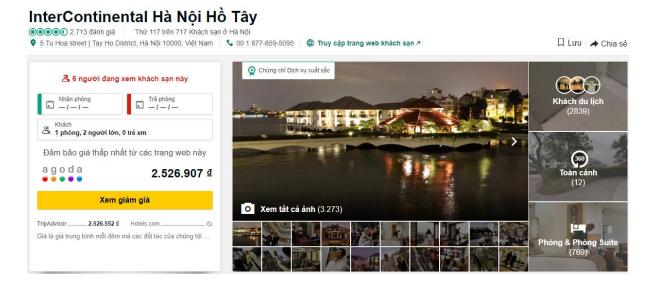


Figure 1-3: Booking function on TripAdvisor

- User can create a virtual trip

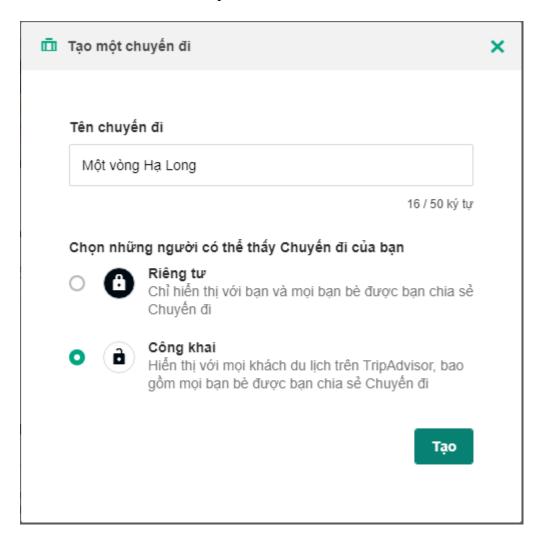


Figure 1-4: Creating a virtual trip function on TripAdvisor

#### 1.4.2.2 TripAdvisor's Disadvantages

- User can't comment on other's posts or photos so they are lack of interaction between users.
- Don't support users for writing a long sharing experience post, like blog.

#### 1.5 Proposal of System

#### 1.5.1 Our Proposal System

After reviewing all properties of the existing systems as well as the travel trend of young people in Viet Nam, we have come to decision to develop a travel sharing system which allows

travelers to share their travel experiences by images, articles or blogs. It will make easier for other travelers to prepare their plans. The purpose of the system is creating a travel community to exchange information. The system is going to encourage travelers to share their experiences by recording their contributions as points and rank all contributors. If contributors have a high rank, they will receive many incentives from the system.

The system does not focus on booking services. A common trip includes three stages. The first stage is planning, the second is experiencing, and the last is sharing. Our system is going to focus on the sharing stage.

#### 1.5.1.1 System Functions

- ❖ Allow users to register/sign in with email address.
- ❖ Allow users to create/edit their own profile.
- ❖ Allow users to search travel destination.
- ❖ Allow users to choose interesting topic.
- ❖ Allow users to create/edit/delete their post.
- ❖ Allow users to like/unlike a post.
- ❖ Allow users to share a post to social media.
- Allow users to bookmark a post.
- Allow users to comment to a post.
- ❖ Allow users to report a post/comment.
- ❖ Allow users to create/edit/delete their virtual trips.
- ❖ Allow users to follow/unfollow other users.
- ❖ Allow users to block/unblock other users.
- ❖ Allow users to create/edit/delete their finding companion posts.
- ❖ Allow users to join a finding companion group.
- ❖ Allow users to send/receive messages to other users.
- ❖ Allow Administrators to manage users' account, users' posts, users' comments.

#### 1.5.1.2 The TripSharing User Process



Figure 2-1: User reads and interacts with a post

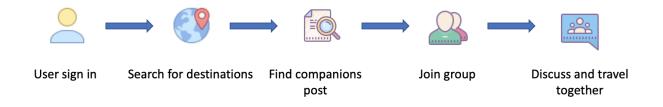


Figure 1-2: Users use Finding Companions function

#### **1.5.1.3** Out of Scope Functions

- ❖ Manage group of people who use Finding Companions function.
- ❖ Manage travel places obtained from Google Map.

#### 1.5.1.4 Special Approaches

- ❖ Using Microservices architecture for application's deployment.
- ❖ Using Docker to compose the project into containers to deploy on Google Cloud.

- Using Google Cloud Kubernetes Engine as deployment host for scaling and load balancing.
- ❖ Use Git as source code version control, hosted on Github.
- ❖ Having a separate background service to handle heavy tasks.
- ❖ Using Google Pub Sub for communicating between microservices.
- Using Google Cloud Storage for images.
- For web frontend system:
  - Using Angular 7 for web component rendering.
  - Using Angular Material to create all web form components.

### **Chapter 2: Project plan**

#### 2.1 Purpose

This chapter provides an overview of the project plan includes project organization and project management plan

#### 2.2 Project Organization

#### 2.2.1 Software Development Process



Figure 2-1: Iterative and Incremental Software Development Process<sup>4</sup>

TripSharing project uses the Iterative and Incremental Software Process Model as show in the figure above, which describes the overall lifecycle process.

The Iterative and Incremental Software Process Model is mostly used when the scope of the project is big, the major requirements are defined clearly, some more details will be added later. By using this process model, we break down the developing system tasks into series of smaller tasks which will complete separately, evaluated, and subsequently re-worked until the system perform adequately. In addition, the iterative model is easier than other models when

<sup>&</sup>lt;sup>4</sup> https://www.topsinfosolutions.com/methodology/

the issues are discovered. The feedbacks are immediately given, and solutions are proposed right on the spot.

### 2.2.2 Role and Responsibilities

Role	Responsibilities
	Planning, developing schedules, coordinating communication,
Project Manager	generally responsible for keeping the team's focus on the main
	goal
Business Analysis	Responsible for managing Business Analyst team and working with
Leader	them in Analyzing an organization or business domain.
Business Analyst	Analyzes an organization or business domain and documents its
Business Analyst	business or processes or systems.
Design Leader	Responsible for managing Design team and working with them to
Design Leader	create a best user interface design for our product.
Designer	Involve to design product's user interface.
	Responsible for choosing and deciding what technologies should
Technical Leader	be used, as well as for overseeing the work being done by other
	developers.
Developer	Involve to code the product and review code of other developers.
	Responsible for choosing and deciding what testing tools and
Test Leader	techniques should be used, as well as keep the progress of test team on
	track.
Tester	Involve testing the product.

Table 2-1: Role and Responsibilities

### 2.2.3 Organization Structure

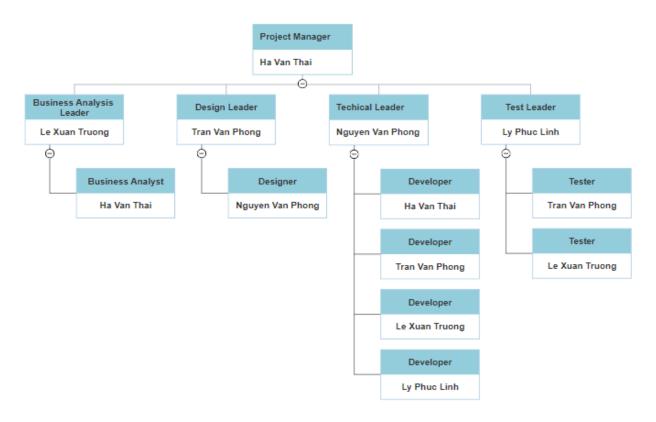


Figure 2-2: Organization Structure

### 2.2.4 Project Team Member

Team Member	Role
Ha Van Thai	Project manager, business analyst, developer
Nguyen Van Phong	Technical leader, designer
Tran Van Phong	Design leader, developer, tester
Le Xuan Truong	Business analysis leader, developer, tester
Ly Phuc Linh	Test leader, developer

Table 2-2: Project Team Member

### 2.2.5 Tools and Techniques

<b>Programing Languages:</b>	C#, JavaScript
Frameworks:	Angular 7, Angular material
Software Architecture:	Microservices
Version control:	Git
IDEs / Editors:	Visual studio, Visual studio code
UML Tools:	Astah UML
Web Server:	Nginx
DBMS:	MongoDB
Deployment Server:	Google cloud
<b>Project Management Tools:</b>	Microsoft Project 2013
Process Model:	Iterative and Incremental Software Process Model
<b>Development Process:</b>	Behavior-driven development, Test-driven development, Continuous integration, Continuous delivery
CI, CD Tools:	Travis-CI

Table 2-3: Tools and Techniques

### 2.3 Project Management Plan

### 2.3.1 Tasks

### 2.3.2 Meeting Minutes

All meeting minutes will be written following this template:

Meeting/Project	
Name:	TripSharing

Date of	06/06/2019	Time: (Type)	3 hours
Meeting:	00/00/2019	Time. (Type)	(face-to-face)
Meeting Called by:	ThaiHV	Location:	HB206L
Note Taker:	PhongTV	Time Keeper:	PhongNV

### 1. Meeting Objective

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#### 2. Attendance

Name	Role	Email	Phone	
	Project Manager		0349940158	
ThaiHV	Developer	thaihvse048010@fpt.edu.vn		
	Business Analyst			
PhongNV	Technical Leader	phongnvse05051@fpt.edu.vn	0978296187	
	Designer	phongseessesig (phicaditi)	03/823018/	
PhongTV	Design Leader		0987489397	
	Developer	phongtvse05048@fpt.edu.vn		
	Tester			
	Business Analysis			
TruongLX	Leader	truonglxse04616@fpt.edu.vn	0964038801	
	Developer	traongmoed to tog the caaren		
	Tester			
LinhLP	Test Leader	linhlpse04693@fpt.edu.vn	0362442818	
	Developer	, in the second		

### 3. Content

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### 4. Note

#### 2.3.3 Code Conventions

We strictly follow Google JavaScript Style Guide and Microsoft C# Programing Guide as the coding convention for the project. Specific convention rules can be found on these pages.

JavaScript: <a href="https://google.github.io/styleguide/jsguide.html">https://google.github.io/styleguide/jsguide.html</a>

C#: <a href="https://docs.microsoft.com/en-us/dotnet/csharp/programming-guide/inside-a-program/coding-conventions">https://docs.microsoft.com/en-us/dotnet/csharp/programming-guide/inside-a-program/coding-conventions</a>

#### Google JavaScript Style Guide

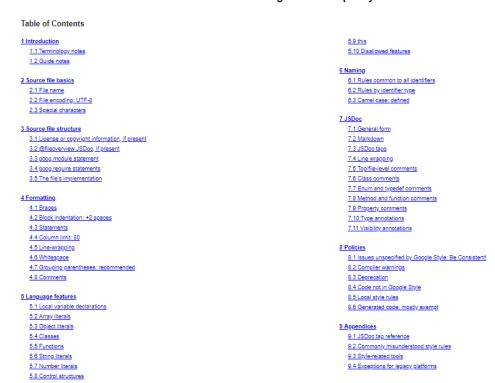


Figure 2-3: Google JavaScript Style Guide

#### 2.3.4 Risk Management Plan

No	Name	Prevention	Correction	Status
R 1	Miscommunication	Any problem raised has to	Miscommunication	Closed
IXI	R1 Miscommunication	be documented or filed.	must be resolved early.	Closed

R2	New technology	Team members should express their opinion clearly.  Choosing technology carefully and based on team member's qualification. All member must develop self-learning skill.	The technology choice should be consider carefully, well explained and training for member if necessary.	Closed
R3	Member idea conflict	Member is free to express their idea and discuss with others to find the most suitable solution.	Analyze any idea carefully and base on reality and possibility, solve conflict as soon as possible.	Closed
R4	Business problem	Understand business of project, consider if its fit applicability, reality and technology possibility. Ask supervisor if needed.	Project business must be tight and realistic.	Closed
R5	Illness or absence of team members	Member must notice to the team about absence period and the plan of how to keep up with the work process.	Ensure that the absence of a member won't affect others and always have plans to deal with this problem.	Closed
R6	Resources were lost or deleted	Team must have several online and offline back up copy of project.	At least 3 back up way such as Github, Google Drive, etc. and offline copy on each member computer.	Closed
R7	Illness or absence of team members	Member must notice to the team about absence period	Ensure that the absence of a member won't	Closed

and the plan of how to	affect others and	
keep up with the work	always have plans to	
process.	deal with this problem.	

Table 2-5: Risk Management Plan

#### 2.3.5 Communication Plan

Weekly meeting schedule: We follow the Iterative and Incremental Process Model, and we separate the project into two main team, back-end API team and front-end web app team. Each team will do the tasks the task assigned to team members by the Team Leader and depending on difficulty the Technical Leader will assign deadlines for each task. We have a meeting every Thursday to update all team members about what has been done during last week.

**Daily meeting schedule:** Each sub team has one development team with different schedule and deadlines. Before the daily meetings, each member will be telling:

- What he has completed.
- What he is working on.
- When he will finish.
- What issues he is encountering, or if he needs assistance.
- What he will be doing after finishing the task.

**Unscheduled meeting:** Assuming someone has encountered a serious problem that he wants to solve immediately, we will have a meeting via some online channel: Skype, or Phone. Face to face meeting in any emergency cases.

**Communication channel:** Our main communication channel is Skype and Facebook group. We use TeamViewer for assisting team member when he meets technical issues.

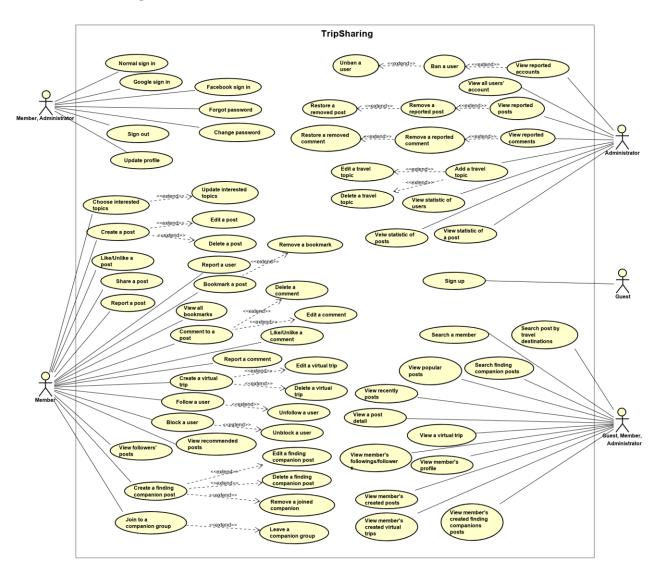
### **Chapter 3: Software Requirement Specification**

#### 3.1 Purpose

This chapter contains details about functional and non-functional requirements the website. Constraints and detailed requirements are specifically described for developers to follow when completing the tasks.

#### **3.2 Functional Requirements**

#### 3.2.1 Use Case Diagram



### 3.2.2 Business Rules

No	Description		
B1	The email must not be empty and valid.		
B2	The confirm password must be matched with the new password.		
В3	Username must not be empty and not be longer than 100 characters		
B4	Image file's mime type must be: "image/png" or "image/jpeg".		
B5	Maximum file size allowed is 10Mb		
B6	Every user has one of the following roles: Member or Administrator.		
B7	The root Administrator has the highest privilege.		
В8	An Administrator can: ban/unban users, remove/restore posts, remove/restore comments.		
B9	A banned user can't post articles, comment to a post or chat with other users.		
B10	When user sign out, his/her current access token is blacklisted.		
B11	An article title must not be empty and not be longer than 1000 characters.		
B12	An article content must not be empty and not be longer than 100,000 characters.		
B13	An article must be tagged to at least one travel place.		
B14	An article must be tagged to at least one travel topic.		
B15	If an he/she has be blocked by another user, then the blocked user can't she any post, comment or other activities of him/her.		
B16	A comment must not be empty and not be longer than 10,000 characters.		
B17	A chat message must not be empty and not be longer than 10,000 characters.		
B18	Authors can delete any comment on his/her posts.		
B19	When a finding companion post is expired, users can't join to that companion group.		
	Contribution points formula:		
	- Post an article: +5 (points)		
	- Each five likes on an article: +1 (point)		
B20	- Create a virtual trip: +3 (points)		
	- Create a finding companion post: +3 (points)		
	- Comment to article: +1 (point)		

Each five likes on a comment: +1 (point)
Report a user/an article/a comment correctly: +3 (points)
Users were reported: -10 (points)

#### 3.2.3 Use Cases

Actor	Description
Guest	Anyone who visits the website and doesn't have an account yet.
Member	Those who has registered an account on TripSharing.
Administrator	Those who has the highest the permission level and has responsible for managing the entire website.

ID	Actor	Name
UC-001	Guest	Sign up
UC-002	Member, Administrator	Google sign in
UC-003	Member, Administrator	Facebook sign in
UC-004	Member, Administrator	Normal sign in
UC-005	Member, Administrator	Forgot password
UC-006	Member, Administrator	Sign out
UC-007	Member, Administrator	Change password
UC-008	Member, Administrator	Update profile
UC-009	Member	Choose interested topic
UC-010	Member	Update interested topic
UC-011	Member	Create a post
UC-012	Member	Edit a post
UC-013	Member	Delete a post
UC-014	Member	Like/Unlike a post
UC-015	Member	Share a post
UC-016	Member	Report a post
UC-017	Member	Bookmark a post

UC-018	Member	View all bookmarks
UC-019	Member	Remove a bookmark
UC-020	Member	Comment to a post
UC-021	Member	Edit a comment
UC-022	Member	Delete a comment
UC-023	Member	Like/Unlike a comment
UC-024	Member	Report a comment
UC-025	Member	Create a virtual trip
UC-026	Member	Edit a virtual trip
UC-027	Member	Delete a virtual trip
UC-028	Member	Follow an user
UC-029	Member	Unfollow an user
UC-030	Member	Block an user
UC-031	Member	Unblock an user
UC-032	Member	Report an user
UC-033	Member	Create a finding companions post
UC-034	Member	Edit a finding companions post
UC-035	Member	Delete a finding companions post
UC-036	Member	Join to a companion group
UC-037	Member	Leave a companion group
UC-038	Member	Remove a joined companion
UC-039	Member	Send/receive messages
UC-040	Member	View followers' posts
UC-041	Member	View recommended posts
UC-042	Administrator	View all users' account
UC-043	Administrator	View reported accounts
UC-044	Administrator	Ban an user
UC-045	Administrator	Unban an user
UC-046	Administrator	View reported posts
UC-047	Administrator	Remove a reported post
UC-048	Administrator	Restore a removed post

UC-049	Administrator	View reported comments
UC-050	Administrator	Remove a reported comment
UC-051	Administrator	Restore a removed comment
UC-052	Administrator	Add a travel topic
UC-053	Administrator	Edit a travel topic
UC-054	Administrator	Delete a travel topic
UC-055	Administrator	View statistic of users
UC-056	Administrator	View statistic of posts
UC-057	Guest, Member, Administrator	Search post by travel destinations
UC-058	Guest, Member, Administrator	Search a member
UC-059	Guest, Member, Administrator	Search finding companion posts
UC-060	Guest, Member, Administrator	View popular posts
UC-061	Guest, Member, Administrator	View recently posts
UC-062	Guest, Member, Administrator	View a post detail
UC-063	Guest, Member, Administrator	View a virtual trip
UC-064	Guest, Member, Administrator	View member's profile
UC-065	Guest, Member, Administrator	View member's followings/followers
UC-066	Guest, Member, Administrator	View member's created posts
UC-067	Guest, Member, Administrator	View member's created virtual trips
UC-068	Guest, Member, Administrator	View member's created finding companions posts

### 3.2.3.1 Guest

### 3.2.3.1.1 Sign up

UC ID and Name:	UC-001 Sign Up		
Created by:	PhongTV	Date created:	05/06/2019
Primary Actor:	Guest	Secondary Actor:	
Trigger:	N/A		

Description:	User creates an account to sign in to the website.		
Dunganditions	PRE-1.1. User hasn't registered an account		
Preconditions:	<b>PRE-1.2.</b> User can not signed in the website		
Post conditions:	POST-1.1. User has signed up successfully		
1 Ost Conditions.	<b>POST-1.2.</b> User icon is displayed in the top bar.		
	1.0 Sign up		
	1. User visits website.		
	2. System displays Welcome page.		
	3. User clicks "Đăng nhập" button in navbar at the top of the web		
	page.		
Normal Flow:	4. System display Login form		
	5. User clicks "Đăng ký" button on the login form.		
	6. Browser displays another window that contains sign up form.		
	7. User enters his/her name, email, password and repassword.		
	8. System verifies information and closes the popup.		
	9. 9. System directs to home page.		
Alternative Flows:	N/A		
Emandiana	1.0-E1 – Cannot communicate with API server		
Exceptions:	1. Web page displays error message.		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	N/A		
Other Information:			
Assumptions:	N/A		

### 3.2.3.2 Member, Administrator

### 3.2.3.2.1 Google sign in

UC ID and Name:	UC-002 Google sign in			
Created by:	PhongTV	Date created:	05/06/2019	
Primary Actor:	Member	Secondary Actor:	Administrator	
Trigger:	N/A			
Description:	Use a Google account to sign in to the website.			
Preconditions:	PRE-2.1. User has reg	istered an account		
1 reconditions.	PRE-2-2. User has no	t signed in the website		
Post conditions:	POST-2.1. User has si	igned in successfully		
1 Ost conditions.	<b>POST-2.2.</b> User icon	is displayed in the top l	bar.	
	2.0 Google sign in			
	1. User visits website.			
	2. System displays Welcome page.			
	3. User clicks "Đăng nhập" button in navbar at the top of the web			
	page.			
Normal Flow:	4. System display Login form			
Tromiai i low.	5. User clicks "Đăng nhập với Google" button on the login form.			
	6. Browser displays another window that contains Google sign in			
	form.			
	7. User enters his/her Google account and Password			
	8. Google verifies login and closes the popup.			
	9. System directs to home page.			
Alternative Flows:	N/A			
Exceptions:	2.0-E1 – Cannot communicate with API server			
Exceptions.	1. Web page displays error message.			
Priority:	High			
Frequency of Use:	Medium			
Business Rules:	N/A			
Other Information:				

Assumptions:	N/A

### 3.2.3.2.2 Facebook sign in

UC ID and Name:	UC-003 Facebook sign in			
Created by:	PhongTV	Date created:	05/06/2019	
Primary Actor:	Member	Secondary Actor:	Administrator	
Trigger:	N/A			
Description:	Use a Facewbook acco	ount to sign in to the w	ebsite.	
Preconditions:	PRE-3.1. User has reg	sistered an account		
reconditions.	PRE-3.2. User has not	t signed in the website		
Post conditions:	POST-3.1. User has si	igned in successfully		
Tost conditions.	<b>POST-3.2.</b> User icon is displayed in the top bar.			
	3.0 Facebook sign in			
	1. User visits website.			
	2. System displays Welcome page.			
	3. User clicks "Đăng nhập" button in navbar at the top of the web			
	page.			
	4. System display Login form			
Normal Flow:	5. User clicks "Đăng nhập với Facebook" button on the login			
	form.			
	6. Browser displays another window that contains Facebook sign			
	in form.			
	7. User enters his/her Email or phone number and password			
	8. Facebook verifies login and closes the popup.			
	9. System directs to home page.			
Alternative Flows:	N/A			
Exceptions:	3.0-E1 – Cannot com	municate with API se	erver	

	1. Web page displays error message.
Priority:	High
Frequency of Use:	Medium
Business Rules:	N/A
Other Information:	
Assumptions:	N/A

### 3.2.3.2.3 Normal sign in

UC ID and Name:	UC-004 Normal sign in		
Created by:	PhongTV	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	Administrator
Trigger:	N/A		
Description:	Use a normal account	to sign in to the website	e.
Preconditions:	PRE-4.1. User has registered an account PRE-4.2. User has not signed in the website		
Post conditions:	POST-4.1. User has signed in successfully POST-4.2. User icon is displayed in the top bar.		
	4.0 Normal sign in		
	1. User visits website.		
	2. System displays Welcome page.		
	3. User clicks "Đăng nhập" button in navbar at the top of the web		
Normal Flow:	page.		
	4. System display login form		
	5. User enters his/her Email and Password		
	6. User click "Đăng nhập" button on login form		
	7. System verifies username, password and close the popup.		

	8. System directs to home page.
Alternative Flows:	N/A
Exceptions:	4.0-E1 – Cannot communicate with API server  1. Web page displays error message.
Priority:	High
Frequency of Use:	Medium
Business Rules:	N/A
Other Information:	
Assumptions:	N/A

### 3.2.3.2.4 Forgot password

UC ID and Name:	UC-005 Forgot Password		
Created by:	PhongTV	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	Administrator
Trigger:	N/A		
Description:	User forgot password to sign in to the website.		
Preconditions:	PRE-5.1. User has signed up with a account successfully PRE-5.2. User forgot password to sign in to the website.		
Post conditions:	POST-5.1. User have a new password and signed in successfully		
Normal Flow:	<ul><li>5.0 Forgot Password</li><li>1. User visits website.</li><li>2. User clicks "Đăng nhập" button in navbar at the top of the web page.</li></ul>		

	3. System display Login Form	
	4. User clicks "Quên mật khẩu" link on login form	
	5. Systemm display forgot password form	
	6. User enter email registered account	
	7. Click "Tạo lại mật khẩu" button on the form	
	8. Display success message and user open mail to get new	
	password	
Alternative Flows:	N/A	
Executions	5.0-E1 – Cannot communicate with API server	
Exceptions:	1. Web page displays error message.	
Priority:	High	
Frequency of Use:	Medium	
Business Rules:	N/A	
Other Information:		
Assumptions:	N/A	

### 3.2.3.2.5 Sign out

UC ID and Name:	UC-006 Sign out		
Created by:	PhongTV	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	Administrator
Trigger:	N/A		
Description:	User sign out the website		
Preconditions:	PRE-6.1. User has signed in with a account successfully PRE-6.2. User icon is display in the top bar.		
Post conditions:	POST-6.1. User has signed out the website POST-6.2. User icon isn't display in the top bar.		

	6.0 Sign out		
	1. User visits website.		
	2. User clicks user icon button in navbar at the top of the web		
Normal Flow:	page.		
	3. System display a list options		
	4. User clicks option "Đăng xuất" on the navbar		
	5. User sign out the website		
Alternative Flows:	N/A		
Exceptions:	6.0-E1 – Cannot communicate with API server		
Exceptions.	1. Web page displays error message.		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	N/A		
Other Information:			
Assumptions:	N/A		

### 3.2.3.2.6 Change password

UC ID and Name:	UC-007 Change password		
Created by:	PhongTV Date created: 01/06/2019		
Primary Actor:	Member	Secondary Actor:	Administrator
Trigger:	N/A		
Description:	User wants to change password.		
Preconditions:	PRE-7.1. User has signed up and signed in with a account successfully		
Post conditions:	POST-7.1. User change new password		

	7.0 Change password			
	1. User visits website.			
	2. User clicks user icon button in navbar at the top of the web			
	page.			
	3. System display a list options			
Normal Flow:	4. User clicks option "Thay đổi mật khẩu" on the navbar			
Normai Piow.	5. Display change password page.			
	6. User enter old password after enter new password and			
	repassword.			
	7. After complete, user click "Luu" button			
	8. System will display message confirm and change new			
	password			
Alternative Flows:	N/A			
Exceptions:	7.0-E1 – Cannot communicate with API server			
Exceptions.	1. Web page displays error message.			
Priority:	Medium			
Frequency of Use:	Medium			
Business Rules:	N/A			
Other Information:				
Assumptions:	N/A			

### 3.2.3.2.7 Update profile

UC ID and Name:	UC-008 Update profile		
Created by:	PhongTV Date created: 05/06/2019		
Primary Actor:	Member	Secondary Actor:	Administrator
Trigger:	N/A		
Description:	User want to update profile		

Preconditions:	<b>PRE-8.1.</b> User has signed up an account successfully and provide information for system		
Freconditions.			
Post conditions:	POST-8.1. User update new information in profile		
	8.0 Update profile		
	1. User visits website.		
	2. User clicks user icon button in navbar at the top of the web		
	page.		
Normal Flow:	3. System display a list options		
Normal Flow.	4. User clicks option "Thông tin tài khoản" on the navbar		
	5. Display "Thông tin tài khoản" page with a lot of text field		
	6. User enter information that they want edit on text field		
	7. Click "Luu" button after edit complete		
	8. Display popup with message "Đã lưu thay đổi"		
Alternative Flows:	N/A		
Exceptions:	8.0-E1 – Cannot communicate with API server		
Exceptions.	1. Web page displays error message.		
Priority:	Medium		
Frequency of Use:	Medium		
Business Rules:	N/A		
Other Information:			
Assumptions:	N/A		

### **3.2.3.3** Member

### 3.2.3.3.1 Choose interesting topic

UC ID and Name:	UC-009 Choose interesting topic		
Created by:	PhongTV Date created: 05/06/2019		

Primary Actor:	Member	Secondary Actor:		
Trigger:	N/A			
Description:	User want to choose in	teresting topic		
Preconditions:	PRE-9.1. User has reg	istered an account		
Post conditions:	POST-9.1. User can read topics in home page			
	9.0 Choose interesting topic			
	1. User visits web	site.		
	2. System display	s Welcome page.		
	3. User clicks "Đã	íng nhập" button in navb	ar at the top of the web	
	page.			
	4. System display Login form			
N 1F1	5. User clicks "Đăng ký" button on the login form.			
Normal Flow:	6. Browser displays another window that contains sign up form.			
	7. User enters his/her name, email, password and repassword.			
	8. System verifies	information and closes t	the popup.	
	9. System display interesting topic popup			
	10. User choose one or more topic			
	11. User clicks "Luu" button on the popup.			
	12. System directs to home page.			
	9.0 Choose interesting topic			
	1. User clicks use	r icon button in navbar at	t the top of the web	
	page.			
	2. System display a list options			
Alternative Flower	3. User clicks "Trang cá nhân" option.			
Alternative Flows:	4. System display profile page			
	5. User click "Cập	5. User click "Cập nhật chủ đề mà bạn quan tâm" button		
	6. Display interest	6. Display interesting topic popup		
	7. User choose one or more topic			
	8. User clicks "Luru" button on the popup.			

	9. Display message "Cập nhật thông tin thành công"
Exceptions:	9.0-E1 – Cannot communicate with API server  1. Web page displays error message.
Priority:	Medium
Frequency of Use:	Medium
Business Rules:	N/A
Other Information:	
Assumptions:	N/A

### 3.2.3.3.2 Update interested topic

UC ID and Name:	UC-010 Update interested topic			
Created by:	PhongTV	Date created:	05/06/2019	
Primary Actor:	Member	Secondary Actor:		
Trigger:	N/A	N/A		
Description:	User want to update interested topic			
Preconditions:	PRE-10.1. User has signed in with a account successfully			
Post conditions:	POST-10.1. User can update interested topic			
	10.0 Update interested topic			
Normal Flow:	1. User visits website.			
	2. User clicks user icon button in navbar at the top of the web			
	page.			
	3. System display a list options			
	4. User clicks "Trang cá nhân" option.			
	5. Display profile page			

	6. User click "Cập nhật chủ đề mà bạn quan tâm" button		
	7. Display interesting topic popup		
	8. User choose one or more topic		
	9. User clicks "Luru" button on the popup.		
	2. 10. Display message "Cập nhật thông tin thành công"		
Alternative Flows:	N/A		
Exceptions:	10.0-E1 – Cannot communicate with API server		
	1. Web page displays error message.		
Priority:	Medium		
Frequency of Use:	Medium		
Business Rules:	N/A		
Other Information:			
Assumptions:	N/A		

### 3.2.3.3.3 Create a post

UC ID and Name:	UC-011 Create a post		
Created by:	PhongTV	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	
Trigger:	N/A		
Description:	User want to create a post		
Preconditions:	PRE-11.1. User has signed in with a account successfully		
Post conditions:	POST-11.1. User can write and post on profile		

	11.0 Create a post		
	1. User visits website.		
	2. User clicks "Viết ngay" button navbar at the top of the web		
	page.		
	3. System shows a list options.		
Normal Flow:	4. User clicks "Chia se bài viết" option.		
	5. System display post page		
	6. User can add image, add title, add centent, add link,, tags		
	location, and add category of posts		
	7. After completed, user click "Đăng bài" button.		
Alternative Flows:	N/A		
Exceptions:	11.0-E1 – Cannot communicate with API server		
	1. Web page displays error message.		
Priority:	Medium		
Frequency of Use:	Medium		
Business Rules:	N/A		
Other Information:			
Assumptions:	N/A		

### 3.2.3.3.4 Edit a post

UC ID and Name:	UC-012 Edit a post		
Created by:	PhongTV	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	
Trigger:	N/A		
Description:	User want to edit a post		

Preconditions:	PRE 12-1.User has signed in with a account successfully			
Post conditions:	POST 12-1. User can edit and post on profile			
	12.0 Edit a post			
	1. User visits website.			
	2. User clicks user icon button in navbar at the top of the web			
	page.			
	3. Display more options			
	4. User clicks "Trang cá nhân" option.			
Normal Flow:	5. Display profile page			
Normal Flow.	6. User can find a post that they want to edit			
	7. Click ellipsis button at right of post			
	8. Display more options			
	9. User click "Sửa bài đăng" option			
	10. User can edit image, edit title, edit centent, edit link,, tags			
	location, and edit category of posts			
	11. After completed, user click "Luru bài viết" button.			
Alternative Flows:	N/A			
Evantions	12.0-E1 – Cannot communicate with API server			
Exceptions:	1. Web page displays error message.			
Priority:	Medium			
Frequency of Use:	Medium			
Business Rules:	N/A			
Other Information:				
Assumptions:	N/A			

# 3.2.3.3.5 Delete a post

UC ID and Name:	UC-013 Delete a post			
Created by:	PhongTV	Date created:	05/06/2019	
Primary Actor:	Member	Secondary Actor:		
Trigger:	N/A			
Description:	User can delete a pos	t		
Preconditions:	PRE-13.1.User has s	igned in with a account	t successfully	
Post conditions:	PRE-13.1 User can d	lelete a post on profile		
	13.0 Delete a post			
	1. User visits we	ebsite.		
	2. User clicks user icon button in navbar at the top of the web			
	page.			
	3. Display more options			
Normal Flow:	4. User clicks "Trang cá nhân" option.			
Normal Flow:	5. Display profile page			
	6. User can find a post that they want to edit			
	7. Click ellipsis button at right of post			
	8. Display more	options		
	9. User click "X	óa bài đăng" option		
	10. Show confirm	n message with user		
Alternative Flows:	N/A			
	13.0-E1 – Cannot co	ommunicate with API	server	
Exceptions:	1. Web page displays error message.			
Priority:	Medium			
Frequency of Use:	Medium			
Business Rules:	N/A			

Other Information:	
Assumptions:	N/A

### 3.2.3.3.6 Like/Unlike a post

UC ID and Name:	UC-014 Like/Unlike a post			
Created by:	PhongTV Date created: 05/06/2019			
Primary Actor:	Member	Secondary Actor:		
Trigger:	N/A			
Description:	User want to like/unli	ke a post		
Preconditions:	PRE-14.1. User has s	igned in with a account	successfully	
Post conditions:	POST-14.1. User can	like/unlike a post		
	14.0 Like/Unlike a po	ost		
	1. User visits website.			
	2. User can see a lot of posts in home page.			
Normal Flow:	3. User can find a post to like/unlike			
	4. User clicks "Thích" button in below the post.			
	5. Number of like	e of post is increase/dec	rease and "Thích" button	
	change color			
Alternative Flows:	N/A			
Exceptions:	14.0-E1 – Cannot communicate with API server			
Exceptions.	1. Web page displays error message.			
Priority:	Medium			
Frequency of Use:	Medium			
Business Rules:	N/A			
Other Information:				
Assumptions:	N/A			

### 3.2.3.3.7 *Share a post*

UC ID and Name:	UC-015 Share a post			
Created by:	PhongTV	Date created:	05/06/2019	
Primary Actor:	Member	Secondary Actor:		
Trigger:	N/A			
Description:	User want to share a p	post		
Preconditions:	PRE-15.1. User has s	igned in with a account	t successfully	
Post conditions:	POST-15.1. User can	share a post		
	15.0 Share a post			
	1. User visits website.			
	2. User can see a lot of posts in home page.			
Normal Flow:	3. User can find a post to share			
	4. User clicks "Chia se" button in below the post.			
	<ol> <li>Click "Chia se bằng Facebook" button or "Chia se bằng Google+" button</li> </ol>			
Alternative Flows:	N/A			
Exceptions:	15.0-E1 – Cannot co	mmunicate with API	server	
Exceptions.	1. Web page displays error message.			
Priority:	Medium			
Frequency of Use:	Medium			
Business Rules:	N/A			
Other Information:				
Assumptions:	N/A			

UC ID and Name:	UC-016 Report a post			
Created by:	PhongTV	Date created:	05/06/2019	
Primary Actor:	Member	Secondary Actor:		
Trigger:	N/A	1		
Description:	User want to report a	post		
Preconditions:	PRE-16.1.User has sign	PRE-16.1.User has signed in with a account successfully		
Post conditions:	POST-16.1. User can	report a post		
	16.0 Report a post			
	1. User visits wel	osite.		
	2. User can see a lot of posts in home page.			
	3. User can find a post to report if it violate of rules			
	4. Click ellipsis button at right of post			
Normal Flow:	5. Display more options			
	6. User click "Báo cáo bài đăng này" option			
	7. System will display reason popup to user choice			
	8. User can choice one or more reason			
	9. User click "Gửi" button in below the popup.			
	10. System shows message success.			
Alternative Flows:	N/A			
D	16.0-E1 – Cannot con	nmunicate with API	server	
Exceptions:	1. Web page displays error message.			
Priority:	High			
Frequency of Use:	Medium			
Business Rules:	N/A			
Other Information:				
Assumptions:	N/A			

# 3.2.3.3.9 Bookmark a post

UC ID and Name:	UC-017 Bookmark a post			
Created by:	PhongTV Date created: 05/06/2019		05/06/2019	
Primary Actor:	Member	Secondary Actor:		
Trigger:	N/A		1	
Description:	User want to bookmar	k a post		
Preconditions:	PRE-17.1. User has si	gned in with a account	successfully	
Post conditions:	PRE-17.0 User can be	ookmark a post		
	17.0 Bookmark a pos	t		
	1. User visits website.			
Normal Flow:	2. User can see a lot of posts in home page.			
Tromai i iow.	3. User can find a post to bookmark			
	4. Click bookmark icon in below the post			
	5. Bookmark icon change color to "blue" color			
	17.1 User can find a post to bookmark (Step 3)			
Alternative Flows:	1. User click on title and go to detail page of post			
7 Hermative 1 10 ws.	2. Click bookmark icon in left of the post			
	3. Bookmark icon and change color to "blue" color			
Exceptions:	17.0-E1 – Cannot communicate with API server			
Zaceptions.	1. Web page displays error message.			
Priority:	Medium			
Frequency of Use:	Medium			
Business Rules:	N/A			
Other Information:				

Assumptions:	N/A

#### 3.2.3.3.10 View all bookmark

UC ID and Name:	UC-018 View all bookmarks		
Created by:	PhongTV	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	
Trigger:	N/A		1
Description:	User want to view all	bookmarks	
Preconditions:	PRE-18.1. User has s	signed in with a accour	nt successfully
Post conditions:	POST-18.1. User car	view all bookmark in	profile
Normal Flow:	<ol> <li>18.0 View all bookmarks</li> <li>User visits website.</li> <li>User clicks user icon button in navbar at the top of the web page.</li> <li>Display more options</li> <li>User clicks "Trang cá nhân" option.</li> <li>Display profile page</li> <li>User click bookmark icon on the navbar in the top of page</li> <li>Display list all posts that user bookmarked.</li> </ol>		
Alternative Flows:	N/A		
Exceptions:	18.0-E1 – Cannot communicate with API server  1. Web page displays error message.		
Priority:	Medium		
Frequency of Use:	Medium		
Business Rules:	N/A		

Other Information:	
Assumptions:	N/A

#### *3.2.3.3.11 Remove a bookmark*

UC ID and Name:	UC-019 Remove a bookmark			
Created by:	PhongTV	Date created:	05/06/2019	
Primary Actor:	Member	Secondary Actor:		
Trigger:	N/A			
Description:	User want to rem	ove a bookmark		
Preconditions:	<b>PRE-19.1.</b> User l	has signed in with a accoun	nt successfully	
Post conditions:	POST-19.1. User can remove a bookmark			
	19.0 User remove a bookmark			
	1. User visits website.			
Normal Flow:	2. User can see one or more the post that they bookmarked			
	3. Click bookmark icon in below the post			
	4. Bookmark icon change color from "blue" color to defaul colo			
Alternative Flows:	N/A			
Exceptions:	19.0-E1 – Cannot communicate with API server			
Exceptions.	1. Web page displays error message.			
Priority:	Medium			
Frequency of Use:	Medium			
Business Rules:	N/A			
Other Information:				
Assumptions:	N/A			

### 3.2.3.3.12 *Comment to a post*

### Use Case Specification

UC ID and Name:	UC-20 Comment to a post			
Created by:	PhongNV	Date created:	02/06/2019	
Primary Actor:	Member	Secondary Actors:		
Trigger:	N/A	1	1	
Description:	User wants to comment to	o a post		
Preconditions:	PRE-20.1. User is logged	l in.		
r reconditions.	PRE-20.2. User is not ba	nned.		
Post conditions:	<b>POST-1.</b> View detail pos	t page is displayed.		
	20.0 Comment to a post	•		
	1. User visits website.			
	2. User chooses specific a post to read.			
Normal Flow:	3. View detail post page is displayed.			
Normal Flow.	4. User scrolls to the end of the page then select to the input box.			
	5. User inputs comment.			
	6. User presses key enter or click button "comment" below input			
	box to post comment.			
Alternative Flow:	N/A			
Exceptions:	25.0-E1 – Cannot communicate with API server.			
Exceptions.	1. An error message	is displayed.		
Priority:	High			
Frequency of Use:	High			
Business Rules:	N/A			
Other Infromations:				
Assumptions	N/A			

### 3.2.3.3.13 Edit a comment

UC ID and Name:	UC-21 Edit a comment			
Created by:	PhongNV	Date created:	02/06/2019	
Primary Actor:	Member	Secondary Actors:		
Trigger:	N/A		•	
Description:	User wants to update their	comment.		
	PRE-21.1. User is logged	in.		
Preconditions:	PRE-21.2. User is not bar	nned.		
	PRE-21.3. User's comment is not deleted.			
Post conditions:	POST-1. View detail post	t page is displayed.		
	21.0 Edit a comment.			
	1. User visits website.			
	2. User chooses specific a post to read.			
	3. View detail post page is displayed.			
	4. User scrolls to the end of the page to read comments.			
Normal Flow:	5. User clicks on icon "" in the top right hand of the comment.			
	6. A popup is displayed			
	7. User clicks on "edit" option in popup.			
	8. User updates comment.			
	9. User presses key enter or click button below input box to update			
	comment.			
Alternative Flow:	N/A			
Exceptions:	21.0-E1 – Cannot commi	unicate with API server.		
Exceptions.	1. An error message	is displayed.		
Priority:	Low			
Frequency of Use:	Low			
Business Rules:	N/A			
Other Infromations:				
Assumptions	N/A			

### 3.2.3.3.14 Delete a comment

UC ID and Name:	UC-22 Delete a commen	t		
Created by:	PhongNV	Date created:	02/06/2019	
Primary Actor:	Member	Secondary Actors:		
Trigger:	N/A			
Description:	User wants to delete their	comments		
Preconditions:	PRE-22.1. User is logged in.			
rieconditions.	PRE-22.2. User is not banned.			
Post conditions:	POST-1. View detail pos	t page is displayed.	_	
	22.0 Create virtual trip.			
	1. User visits website	2.		
	2. User chooses specific a post to read.			
	3. View detail post page is displayed.			
	4. User scrolls to the end of the page to read comments.			
Normal Flow:	5. User clicks on icon "" in the top right hand of the comment.			
	6. A popup is display	ved		
	7. User clicks on "delete" option in popup.			
	8. Popup confirm is displayed.			
	9. User select "ok" button to confirm delete a comment.			
Alternative Flow:	N/A			
Evantions	22.0-E1 – Cannot comm	unicate with API server.		
Exceptions:	1. An error message is displayed.			
Priority:	Low			
Frequency of Use:	Low			
Business Rules:	N/A			
Other Infromations:				
Assumptions	N/A			

### 3.2.3.3.15 Like/Unlike a comment

UC ID and Name:	UC-23 Like/Unlike a comment			
Created by:	PhongNV	Date created:	02/06/2019	
Primary Actor:	Member	Secondary Actors:		
Trigger:	N/A			
Description:	User wants to like/unlike	a comments		
Preconditions:	PRE-23.1. User is logged	in.		
1 reconditions.	<b>PRE-23.2.</b> User is not bar	nned.		
Post conditions:	<b>POST-1.</b> View detail post	t page is displayed.		
	24.0 Like a comment.			
	1. User visits website	2.		
	2. User chooses specific a post to read.			
	3. View detail post page is displayed.			
	4. User scrolls to the end of the page to read comments.			
	5. User click icon "like" below each comment to like a comment like			
	icon to be highlighted.			
Normal Flow:	23.1 Unlike a comment.			
	1. User visits website.			
	2. User chooses specific a post to read.			
	3. View detail post page is displayed.			
	4. User scrolls to the end of the page to read comments.			
	5. User click icon "like" below each comment to like a comment, the			
	like icon to be unh	ighlighted.		
Alternative Flow:	N/A			
Exceptions:	23.0-E1 – Cannot communicate with API server.			
	1. An error message is displayed.			
Priority:	Low			
Frequency of Use:	Low			

Business Rules:	N/A
Other Infromations:	
Assumptions	N/A

# 3.2.3.3.15 Report a comment

UC ID and Name:	UC-24 Report a comment		
Created by:	PhongNV	Date created:	02/06/2019
Primary Actor:	Member	Secondary Actors:	
Trigger:	N/A		
Description:	User wants to report a	comments	
Preconditions:	PRE-24.1. User is log	ged in.	
ricconditions.	PRE-24.2. User is not	t banned.	
Post conditions:	POST-1. View detail	post page is displayed.	
	24.0 Report a commo	ent.	
	1. User visits website.		
	2. User chooses specific a post to read.		
	3. View detail post page is displayed.		
	4. User scrolls to the end of the page to read comments.		
Normal Flow:	5. User clicks on icon "" in the top right hand of comment.		
Normai Flow.	6. A popup is displayed.		
	7. User clicks on "report" option in popup.		
	8. Popup Report comment is displayed.		
	10. User selects reason to report or write other reason by input to		
	other's input box.		
	11. User clicks to button "report" to send report.		
Alternative Flow:	N/A		
Exceptions:	24.0-E1 – Cannot communicate with API server.		
Exceptions.	1. An error messa	age is displayed.	

Priority:	Low
Frequency of Use:	Low
Business Rules:	N/A
Other Infromations:	
Assumptions	N/A

### 3.2.3.3.16 Comment to a post

UC ID and Name:	UC-25 Create virtua	l trip	
Created by:	PhongNV	Date created:	2/06/2019
Primary Actor:	Member	Secondary Actors:	
Trigger:	N/A		
Description:	User wants to create h	is/her own trip	
Preconditions:	PRE-25.1. User is logged in. PRE-25.2. User is not banned.		
Post conditions:	POST-1. Create virtu	al page is displayed.	
Normal Flow:	<ol> <li>User visits website.</li> <li>User click the "Chuyến đi" icon on the navigation bar.</li> <li>View user's created virtual trips page display.</li> <li>User click the circle plus ion "Tạo chuyến đi" on the blank box.</li> <li>Dialog create a virtual trip displayed, user iput trip's title and select radio button to choose privacy (public/ private) then click "Ok" button.</li> <li>Create virtual page is displayed.</li> <li>Use input search bar to choose the location.</li> </ol>		
Alternative Flow:	<ol> <li>25.1 Create virtual trip at "personal page".</li> <li>User visits website.</li> <li>User click the "avatar" icon on the navigation bar.</li> </ol>		on bar.

	3. View presonal page is displayed.
	4. User select tab created virtual trips on the tab bar.
	5. View user's created virtual trips page display.
	6. User click the circle plus ion "Tạo chuyến đi" on the blank box.
	7. Dialog create a virtual trip displayed, user iput trip's title and
	select radio button to choose privacy (public/ private) then click
	"Ok" button.
	8. Create virtual page is displayed.
	9. Use input search bar to choose the location.
T	25.0-E1 – Cannot communicate with API server.
Exceptions:	1. An error message is displayed.
Priority:	High
Frequency of Use:	High
Business Rules:	N/A
Other Infromations:	
Assumptions	N/A

### 3.2.3.3.17 Edit a virtual trip

UC ID and Name:	UC-26 Edit a virtual trip		
Created by:	PhongNV	Date created:	02/06/2019
Primary Actor:	Member	Secondary Actors:	
Trigger:	N/A		
Description:	User wants to update their created virtual trip.		
Preconditions:	PRE-26.1. User is logged in.		
	PRE-26.2. User is not banned.		
Post conditions:	POST-1. View created virtual trips page is displayed.		
Normal Flow:	26.0 Edit a virtu	al trip.	
	1. User visits	s website.	

	2. User clicks the "Chuyến đi" icon on the navigation bar.		
	3. View user's created virtual trips page display.		
	4. User selects a specify created virtual trip to edit.		
	5. Detail virtual trip page is displayed.		
	6. User updates for the virtual trip.		
Alternative Flow:	N/A		
Exceptions:	26.0-E1 – Cannot communicate with API server.		
Exceptions.	1. An error message is displayed.		
Priority:	Low		
Frequency of Use:	Low		
Business Rules:	N/A		
Other Infromations:			
Assumptions	N/A		

# 3.2.3.3.18 Delete a virtual trip

UC ID and Name:	UC-27 Delete a virtual trip			
Created by:	PhongNV	Date created:	02/06/2019	
Primary Actor:	Member	Secondary Actors:		
Trigger:	N/A	N/A		
Description:	User wants to delet	e their created virtual trip.		
Preconditions:	PRE-27.1. User is logged in.			
	PRE-27.2. User is not banned.			
Post conditions:	POST-1. View created virtual trips page is displayed.			
	27.0 Delete a virtu	al trip.		
	1. User visits website.			
Normal Flow:	2. User clicks the "Chuyến đi" icon on the navigation bar.			
	3. View user's created virtual trips page display, the list created			
	virtual trip displayed by list boxes			

	4. User clicks on icon "" on the top right hand of the specific created virtual trip box.
	5. Popup optional displayed.
	6. User chooses option "delete" to delete the virtual trip.
Alternative Flow:	N/A
Exceptions:	27.0-E1 – Cannot communicate with API server.  1. An error message is displayed.
Priority:	Low
Frequency of Use:	Low
Business Rules:	N/A
Other Infromations:	
Assumptions	N/A

#### 3.2.3.3.19 Follow a user

UC ID and Name:	UC-28 Follow a user			
Created by:	Phong	gNV	Date created:	02/06/2019
Primary Actor:	Memb	er	Secondary Actors:	
Trigger:	N/A			
Description:	User wants to follow the posts of a member			
Preconditions:	PRE-28.1. User is logged in. PRE-28.2. User is not banned.			
Post conditions:				
	27.0	Edit a virtual tri	p.	
	1. User visits website.			
Normal Flow:	2. User clicks the "Chuyến đi" icon on the navigation bar.			
	3. View user's created virtual trips page display, the list created			
		virtual trip displayed by list boxes		

	<ul> <li>4. User clicks on icon "" on the top right hand of the specific created virtual trip box.</li> <li>5. Popup optional displayed.</li> <li>6. User chooses option "delete" to delete the virtual trip.</li> </ul>
Alternative Flow:	N/A
Exceptions:	28.0-E1 – Cannot communicate with API server.  7. An error message is displayed.
Priority:	Low
Frequency of Use:	Low
Business Rules:	
Other Infromations:	
Assumptions	N/A

### 3.2.3.3.20 Unfollow a user

UC ID and Name:	UC-28 Unfollow a	a user		
Created by:	PhongNV	Date created:	02/06/2019	
Primary Actor:	Member	Secondary Actors:		
Trigger:	N/A			
Description:	User wants to follow the posts of a member			
Preconditions:	PRE-28.1. User is logged in. PRE-28.2. User is not banned.			
Post conditions:				
	28.0 Edit a virt	ual trip.		
	8. User visits website.			
Normal Flow:	9. User clicks the "Chuyến đi" icon on the navigation bar.			
	10. View user's created virtual trips page display, the list created			
	virtual trip	virtual trip displayed by list boxes		

	<ul><li>11. User clicks on icon "" on the top right hand of the specific created virtual trip box.</li><li>12. Popup optional displayed.</li></ul>
	13. User chooses option "delete" to delete the virtual trip.
Alternative Flow:	N/A
Exceptions:	30.0-E1 – Cannot communicate with API server.  14. An error message is displayed.
Priority:	Low
Frequency of Use:	Low
Business Rules:	N/A
Other Infromations:	
Assumptions	N/A

#### 3.2.3.3.21 Block a user

UC ID and Name:	UC-30 Block a user			
Created by:	PhongNV	Date created:	02/06/2019	
Primary Actor:	Member	Secondary Actors:		
Trigger:	N/A			
Description:	User wants to block a user			
Preconditions:	PRE-30.1. User is logged in.			
Preconditions.	PRE-30.2. User is not banned.			
Post conditions:				
	30.0 Block a user.			
	1. User visits website.			
Normal Flow:	2. User selects input search box in navbar.			
Normal Flow:	3. User inputs member's name wants to block.			
	4. Press key enter or click button "search" to search member.			
5. The search result page is displayed.				

	6. User selects tap "peoples" on navbar tap.
	7. User click on avatar or member's name.
	8. Redirect to member's personal page.
	9. User click on icon "lock" on top right hand below cover image.
	10. Dialog confirm is displayed.
	11. User select "ok" button to block the member.
	30.1 Block a user (redirect to personal page through member's posts).
Alternative Flow:	30.2 Block a user (redirect to personal page through member's
	comments).
Eventions	30.0-E1 – Cannot communicate with API server.
Exceptions:	1. An error message is displayed.
Priority:	Low
Frequency of Use:	Low
Business Rules:	N/A
Other Infromations:	
Assumptions	N/A

### 3.2.3.3.22 Unblock a user

UC ID and Name:	UC-31 Unblock a user		
Created by:	PhongNV	Date created:	02/06/2019
Primary Actor:	Member	Secondary Actors:	
Trigger:	N/A		
Description:	User wants to unblock a user		
	PRE-31.1. User is	s logged in.	
Preconditions: <b>PRE-31.2.</b> User is not banned.			
	<b>PRE-31.3.</b> The member has blocked by the user.		
Post conditions:			
Normal Flow:	31.0 Unblock a u	ser.	

	1. User visits website.
	2. User clicks on item "avatar" on navbar menu.
	3. Redirect to user's personal page.
	4. User selects tab Blocked on navbar tab.
	5. List members blocked is displayed by list box view.
	6. User clicks on item "x" on the top-right of each box to unblock
	member.
	7. Dialog confirm is displayed.
	8. User selcets "ok" button to confirm.
Alternative Flow:	N/A
Encontinuo	31.0-E1 – Cannot communicate with API server.
Exceptions:	1. An error message is displayed.
Priority:	Low
Frequency of Use:	Low
Business Rules:	N/A
Other Infromations:	
Assumptions	N/A

### 3.2.3.3.23 Report a user

UC ID and Name:	UC-32 Report a user		
Created by:	PhongNV	Date created:	02/06/2019
Primary Actor:	Member	Secondary Actors:	
Trigger:	N/A		
Description:	User wants to unblock a user		
Preconditions:	PRE-32.1. User is logged in. PRE-31.2. User is not banned. PRE-32.2. The user isn't blocked.		
Post conditions:			

	32.0 Report a user.		
	1. User visits website.		
	2. User selects input search box in navbar.		
	3. User inputs member's name wants to report.		
	4. Press key enter or click button "search" to search member.		
	5. The search result page is displayed.		
Normal Flow:	6. User selects tap "peoples" on navbar tap.		
	7. User clicks on avatar or member's name.		
	8. Redirect to member's personal page.		
	9. User clicks on icon "" on top-right below the cover image.		
	10. The Dialog report is displayed.		
	11. User selects reasons and inputs message to report.		
	12. User click button "report" to send report.		
Alternative Flow:	N/A		
Evantions	32.0-E1 – Cannot communicate with API server.		
Exceptions:	1. An error message is displayed.		
Priority:	Low		
Frequency of Use:	Low		
Business Rules:	N/A		
Other Infromations:			
Assumptions	N/A		

# 3.2.3.3.24. Create a finding companions post

UC ID and Name:	UC-33 Create a finding companions post		
Created by:	PhongNV	Date created:	02/06/2019
Primary Actor:	Member	Secondary Actors:	
Trigger:	N/A		
Description:	User wants to create a finding companions post		

D 11.1	PRE-33.1. User is logged in.		
Preconditions:	PRE-33.2. User is not banned.		
Post conditions:	POST-1. Create a finding companions post page is displayed.		
	33.0 Create a finding companions post.		
	1. User visits website.		
	2. User clicks icon "+" on navbar menu.		
	3. A popup optinal is displayed.		
	4. User selects option "Tìm bạn đồng hành".		
	5. Redirect to create a finding companions post page.		
	6. User input title for post.		
	7. User fills the form.		
Normal Flow:	8. User clicks on icon "+" to set schedule for the trip.		
	9. Popup schedule is displayed.		
	10. User fills the schedule form and submit.		
	11. User clicks on button "Đăng bài viết".		
	12. Popup step 1 chooes the location is displayed.		
	13. User input the location for the post.		
	14. Popup step 2 choose the intersting topics is displayed.		
	15. User selects on interesting topics for the post.		
Alternative Flow:	N/A		
Exceptions:	33.0-E1 – Cannot communicate with API server.		
Exceptions.	1. An error message is displayed.		
Priority:	Low		
Frequency of Use:	Low		
Business Rules:	N/A		
Other Infromations:			
Assumptions	N/A		

# 3.2.3.3.25 Edit a finding companions post

UC ID and Name:	UC-34 Edit a finding companions post		
Created by:	PhongNV	Date created:	02/06/2019
Primary Actor:	Member	Secondary Actors:	
Trigger:	N/A		
Description:	User wants to update a fin	ding companions post.	
Preconditions:	PRE-34.1. User is logged PRE-34.2. User is not ban		
Post conditions:	POST-1. Finding compan	ion posts page is displayed.	
Normal Flow:	<ol> <li>34.0 Edit a finding companions post.</li> <li>User visits website.</li> <li>User clicks on icon avatar on navbar menu.</li> <li>User clicks on tab "Tim ban đồng hành" in tab menu.</li> <li>Redirect to finding companions posts list page by list boxes.</li> <li>User clicks on icon "" on the top-right of the specific post box.</li> <li>Popup optional is displayed.</li> <li>User selects "edit" option.</li> <li>User updates the companion post and saved.</li> </ol>		
Alternative Flow:	N/A		
Exceptions:	34.0-E1 – Cannot communicate with API server.  1. An error message is displayed.		
Priority:	Low		
Frequency of Use:	Low		
Business Rules:	N/A		
Other Infromations:			
Assumptions	N/A		

UC ID and Name:	UC-35 Delete a finding companions post		
Created by:	PhongNV	Date created:	02/06/2019
Primary Actor:	Member	Secondary Actors:	
Trigger:	N/A		
Description:	User wants to delete a find	ding companion post.	
Preconditions:	PRE-35.1. User is logged	in.	
110001101101101	PRE-35.2. User is not bar	nned.	
Post conditions:	POST-1. Finding compar	ion posts page is displayed	l.
	35.0 Delete a finding con	npanions post.	
	1. User visits website.		
	2. User clicks on icon avatar on navbar menu.		
	3. User clicks on tab "Tìm bạn đồng hành" in tab menu.		
Normal Flow:	4. Redirect to created finding companion posts list page.		
Normal Flow:	5. User clicks on icon "" on the top-right of the specific post box.		
	6. Popup optional is displayed.		
	7. User selects "delete" option.		
	8. Popup confirm is o	lisplayed	
	9. User clicks "Xoá"	button to delete the finding	g companion post.
Alternative Flow:	N/A		
Exceptions:	35.0-E1 – Cannot commu	ınicate with API server.	
Exceptions.	1. An error message is displayed.		
Priority:	Low		
Frequency of Use:	Low		
Business Rules:	N/A		
Other Infromations:			
Assumptions	N/A		

# 3.2.3.3.27 Join to a companion group.

UC ID and Name:	UC-36 Join to a companion group		
Created by:	PhongNV	Date created:	02/06/2019
Primary Actor:	Member	Secondary Actors:	
Trigger:	N/A		<b>-</b>
Description:	User wants to join to a co	mpanion group.	
	PRE-36.1. User is logged in. PRE-36.2. User is not banned.		
Preconditions:			
	PRE-36.3. User is not blo	ocked.	
Post conditions:	POST-1. The Detail find	ing companion posts page i	s displayed.
	36.0 Join to a companio	n group	
	1. User visits websit	e.	
	2. User clicks on the icon "Tìm bạn đồng hành" in navbar menu.		
	3. List finding companion posts recently is displayed.		
Normal Flow:	4. User chooses a post to read detail post.		
Normai Flow.	5. Redirect to detail the finding companion post.		
	6. User clicks on the icon "Tham gia" on the top-right nexto title's		
	post.		
	7. Popup confirm is	displayed.	
	8. User clicks "ok" b	outton to send request.	
Alternative Flow:	N/A		
Exceptions:	36.0-E1 – Cannot comm	unicate with API server.	
Exceptions.	1. An error message	is displayed.	
Priority:	Low		
Frequency of Use:	Low		
Business Rules:	N/A		
Other Infromations:			
Assumptions	N/A		

# 3.2.3.3.28 Leave a compation group.

UC ID and Name:	UC-37 Leave a companion group		
Created by:	PhongNV Date created: 02/06/2019		
Primary Actor:	Member	Secondary Actors:	
Trigger:	N/A		
Description:	User wants to leave a companion group.		
	PRE-37.1. User is logged in. PRE-37.2. User is not banned.		
Preconditions:			
	<b>PRE-37.3.</b> User is joined	the group.	
Post conditions:	POST-1. The Group chat	companion page is display	yed.
	37.0 Leave to a compani	ion group	
	1. User visits website	e.	
	2. User clicks on the icon "Tìm bạn đồng hành" in navbar menu.		
	3. Finding companions posts page is displayed.		
Normal Flow:	4. User clicks on tab "Nhóm hoạt động" in tab menu.		
Normal Flow:	5. Groups Active is displayed.		
	6. On block Joined groups, user selects the group want to leave.		
	7. Group chat companion page is displayed.		
	8. User click on the item "rời nhóm" to leave the group.		
	9. A popup confirm	is displayed, user confirm	to leave the group.
Alternative Flow:	N/A		
Evantions	37.0-E1 – Cannot comm	unicate with API server.	
Exceptions:	1. An error message	is displayed.	
Priority:	Low		
Frequency of Use:	Low		
Business Rules:	N/A		
Other Infromations:			
Assumptions	N/A		

### 3.2.3.3.29 Remove a joined companion

UC ID and Name:	UC-38 Remove a joined companion		
Created by:	PhongNV	Date created:	02/06/2019
Primary Actor:	Member	Secondary Actors:	
Trigger:	N/A		
Description:	User wants to remove a joined companion in group.		
	PRE-38.1. User is logged in. PRE-38.2. User is not banned.		
Preconditions:			
	<b>PRE-38.3.</b> User is joined	the group.	
Post conditions:	POST-1. The Group chat	companion page is displayed	l.
	38.0 Leave to a compani	on group	
	1. User visits website	2.	
	2. User clicks on the icon "Tìm bạn đồng hành" in navbar menu.		
	3. Finding companions posts page is displayed.		
	4. User clicks on tab "Nhóm hoạt động" in tab menu.		
Normal Flow:	5. Groups Active is displayed.		
Normai i iow.	6. On block created group, user chooses group want to manage.		
	7. Group chat companion page is displayed.		
	8. User click on the item "x" to remove a joined companions on list		
	companions on left.		
	9. A popup confirm i	s displayed, user confirm to r	remove the
	companion.		
Alternative Flow:	N/A		
Exceptions:	38.0-E1 – Cannot commu	ınicate with API server.	
Exceptions.	1. An error message is displayed.		
Priority:	Low		
Frequency of Use:	Low		
Business Rules:	N/A		
Other Infromations:			

Assumptions	N/A

### 3.2.3.3.30 Send/recieve a message.

UC ID and Name:	UC-39 Send/recieve a message		
Created by:	PhongNV Date created: 02/06/2019		
Primary Actor:	Member	Secondary Actors:	
Trigger:	N/A		
Description:	User wants to send ar	nd reciecve a message.	
	PRE-39.1. User is log	gged in.	
Preconditions:	PRE-39.2. User is no	t banned.	
	PRE-39.3. User is no	t blocked.	
Post conditions:			
	39.0 Send a message		
	1. User visits website.		
	2. User clicks on the member's avatar.		
	3. User clicks on the item "Tin nhắn" in left box member detail.		
	4. User inputs m	essage in message box.	
Normal Flow:	5. User presses e	enter key or clicks on "gửi" bu	tton to send message.
	39.1 Recieve a messa	nge	
	1. User visits we	bsite.	
	2. User clicks on the icon "tin nhắn".		
	3. User selects the	ne notify message.	
	4. User reads and	d reply message.	
Alternative Flow:	N/A		
Exceptions:	39.0-E1 – Cannot con	mmunicate with API server.	
Exceptions.	1. An error mess	age is displayed.	
Priority:	High		
Frequency of Use:	High		

Business Rules:	N/A
Other Infromations:	
Assumptions	N/A

# 3.2.3.3.31 View followers' posts

# Use Case Specification

UC ID and Name:	UC-40 View followers' posts			
Created by:	PhongNV	Date created:	02/06/2019	
Primary Actor:	Member	Secondary Actors:		
Trigger:	N/A		1	
Description:	User wants to view follo	owers' posts.		
	PRE-40.1. User is logge	ed in.		
Preconditions:	PRE-40.2. User is not b	anned.		
	PRE-40.3. User is not b	locked.		
Post conditions:				
	40.0 Send a message			
Normal Flow:	1. User visits website.			
Normai Flow.	2. User clicks on the "Followers' posts" tab in navbar tab.			
	3. Followers' posts is displayed			
Alternative Flow:	N/A			
Exceptions:	40.0-E1 – Cannot com	nunicate with API server.		
Exceptions.	1. An error messag	e is displayed.		
Priority:	High	High		
Frequency of Use:	Low	Low		
Business Rules:	N/A			
Other Infromations:				
Assumptions	N/A			

# 3.2.3.3.2 View recommended posts

### Use Case Specification

UC ID and Name:	UC-41 View recommended posts			
Created by:	PhongNV	Date created:	02/06/2019	
Primary Actor:	Member	Secondary Actors:		
Trigger:	N/A			
Description:	User wants to view reco	mmended posts.		
	PRE-41.1. User is logge	ed in.		
Preconditions:	<b>PRE-41.2.</b> User is not b	anned.		
Post conditions:				
	41.0 View recommended posts			
Normal Flow:	1. User visits website.			
Normai Piow.	2. User clicks on the "Đề xuất cho bạn" tab in navbar tab.			
3. Follower's posts is displayed				
Alternative Flow:	N/A			
Exceptions:	40.0-E1 – Cannot communicate with API server.			
Exceptions.	1. An error message	e is displayed.		
Priority:	High			
Frequency of Use:	Low			
Business Rules:	N/A			
Other Infromations:				
Assumptions	N/A			

#### 3.2.3.4 Administrator

### 3.2.3.4.1 View all users' account

UC ID and Name:	UC-042 View all users' account		
Created by:	LinhLP	Date created:	04/06/2019

Primary Actor:	Administrator	Secondary Actor:	
Trigger:	N/A		
Description:	View all users' accoun	t	
Preconditions:	PRE-42.1. Admin has	successfully logged in th	ne system
Post conditions:	POST-42.1. Admin ha	as a list of user account	
Normal Flow:	42.0 View all user's account  1. Admin click on "Quản lý account" tab  2. A list of user account is displayed		
Alternative Flows:	N/A		
Exceptions:	42.0-E1 – Cannot communicate with API server.  1. Display an error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		
Other Information:	N/A		
Assumptions:	N/A		

### 3.2.3.4.2 View reported accounts

UC ID and Name:	UC-043 View reported accounts	

Created by:	LinhLP	Date created:	05/06/2019
Primary Actor:	Administrator	Secondary Actor:	
Trigger:	N/A		
Description:	View reported accounts		
Preconditions:	PRE-43.1. Admin has successfully logged in the system		
Post conditions:	POST-43.1. Reported accounts is displayed to admin		
43.0 View reported accounts			
Normal Flow:	1. Admin click on "Báo cáo" tab		
Normai Flow:	2. Then admin click on "Quản lý tài khoản bị báo cáo" tab		
	3. A list of reported account is displayed		
Alternative Flows:	N/A		
Exceptions:	43.0-E1 – Cannot communicate with API server.		
	1. Display an error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		
Other Information:	N/A		
Assumptions:	N/A		

#### 3.2.3.4.3 Ban a user

UC ID and Name:	UC-044 Ban a user			
Created by:	LinhLP	Date created:	05/06/2019	
Primary Actor:	Administrator	Secondary Actor:		
Trigger:	N/A			
Description:	Ban an user			
Preconditions:	PRE-44.1. Admin has successfully logged in the system			
Post conditions:	POST-44.1. Reported account is suspended			
Normal Flow:	<ol> <li>44.0 Ban a user</li> <li>Admin click on "Báo cáo" tab</li> <li>Admin click on "Quản lý tài khoản bị báo cáo" tab</li> <li>A list of user account is displayed</li> <li>Admin click on option on top right of account</li> <li>A list of options is displayed</li> <li>Admin click "đình chỉ" button</li> <li>Then confirm popup dialog</li> </ol>			
Alternative Flows:	N/A			
Exceptions:	44.0-E1 – Cannot communicate with API server.  1. Display an error message.			
Priority:	High			
Frequency of Use:	High			

Business Rules:	N/A
Other Information:	N/A
Assumptions:	N/A

#### 3.2.3.4.4 Unban a user

UC ID and Name:	UC-045 Unban a user		
Created by:	LinhLP	Date created:	05/06/2019
Primary Actor:	Administrator	Secondary Actor:	
Trigger:	N/A		
Description:	Unban an user		
Preconditions:	PRE-45.1. Admin has successfully logged in the system		
Post conditions:	POST-45.1. Suspended account is unbanned		
Normal Flow:	<ol> <li>45.0 Unban a user</li> <li>Admin click on "Báo cáo" tab</li> <li>Admin click on "Quản lý tài khoản bị báo cáo" tab</li> <li>A list of user account is displayed</li> <li>Admin click on "Đình chỉ" tab</li> <li>Admin click on option button top right of suspended account</li> <li>A list of options is displayed</li> <li>Admin click on button "Khôi phục"</li> </ol>		
Alternative Flows:	N/A		

Exceptions:	45.0-E1 – Cannot communicate with API server.		
	Display an error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		
Other Information:	N/A		
Assumptions:	N/A		

### 3.2.3.4.5 View reported posts

UC ID and Name:	UC-046 View reported posts		
Created by:	LinhLP	Date created:	05/06/2019
Primary Actor:	Administrator	Secondary Actor:	
Trigger:	N/A		
Description:	View reported posts		
Preconditions:	PRE-46.1. Admin has successfully logged in the system		
Post conditions:	POST-46.1. A list of reported post is displayed		
	46.0 View reported posts		
Normal Flow:	1. Admin click on "Báo cáo" tab		
	2. Admin click on "Quản lý bài đăng bị báo cáo" tab		
	3. A list of reported post is displayed		
Alternative Flows:	N/A		

Exceptions:	<ul><li>46.0-E1 – Cannot communicate with API server.</li><li>1. Display an error message.</li></ul>
Priority:	High
Frequency of Use:	High
Business Rules:	N/A
Other Information:	N/A
Assumptions:	N/A

## 3.2.3.4.6 Remove a reported post

UC ID and Name:	UC-047 Remove a reported post		
Created by:	LinhLP	Date created:	05/06/2019
Primary Actor:	Administrator	Secondary Actor:	
Trigger:	N/A		
Description:	Remove a reported post		
Preconditions:	PRE-47.1. Admin has successfully logged in the system		
Post conditions:	POST-47.1. Reported post is removed		
	47.0 Remove a reported post		
1. Admin click on "Báo cáo" tab			
N 1 El	2. Admin click on "Quản lý bài đăng bị báo cáo" tab		
Normal Flow:	3. A list of reported post is displayed		
	4. Admin click on "Xem chi tiết" link		
	5. Reported post detail is displayed to admin		
	6. Admin click on "Gỡ bài đăng"		

	7. Then confirm popup dialog
Alternative Flows:	N/A
Exceptions:	<ul> <li>47.0-E1 – Cannot communicate with API server.</li> <li>1. Display an error message.</li> </ul>
Priority:	High
Frequency of Use:	High
Business Rules:	N/A
Other Information:	N/A
Assumptions:	N/A

# 3.2.3.4.7 Restore a removed post

UC ID and Name:	UC-048 Restore a removed post		
Created by:	LinhLP	Date created:	05/06/2019
Primary Actor:	Administrator	Secondary Actor:	
Trigger:	N/A		
Description:	Restore a removed post		
Preconditions:	PRE-48.1. Admin has successfully logged in the system		
Post conditions:	POST-48.1. Removed post is restored		

	48.0 Remove a reported post		
	1. Admin click on "Báo cáo" tab		
	2. Admin click on "Quản lý bài đăng bị báo cáo" tab		
Normal Flow:	3. A list of reported post is displayed		
	4. Admin click on "Đã xoá" tab		
	5. A list of removed posts is displayed		
	6. Admin click on "Khôi phục" button		
Alternative Flows:	N/A		
Exceptions:	48.0-E1 – Cannot communicate with API server.		
	1. Display an error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		
Other Information:	N/A		
Assumptions:	N/A		

## 3.2.3.4.8 View reported comments

UC ID and Name:	UC-049 View reported comments			
Created by:	LinhLP Date created: 05/06/2019			
Primary Actor:	Administrator	Secondary Actor:		
Trigger:	N/A			

Description:	Restore a removed post		
Preconditions:	PRE-49.1. Admin has successfully logged in the system		
Post conditions:	POST-49.1. A list of reported comments is displayed		
	49.0 View reported comments		
Normal Flow:	1. Admin click on "Báo cáo" tab		
	2. Admin click on "Quản lý bình luận bị báo cáo" tab		
	3. A list of reported comments is displayed		
Alternative Flows:	N/A		
Exceptions:	49.0-E1 – Cannot communicate with API server.		
	1. Display an error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		
Other Information:	N/A		
Assumptions:	N/A		

## 3.2.3.4.9 Remove a reported comment

UC ID and Name:	UC-050 Remove a reported comment		
Created by:	LinhLP	Date created:	05/06/2019
Primary Actor:	Administrator	Secondary Actor:	
Trigger:	N/A	,	,

Description:	Restore a removed post		
Preconditions:	PRE-50.1. Admin has successfully logged in the system		
Post conditions:	POST-50.1. Reported comment is removed from post		
	50.0 Remove a reported comment		
	1. Admin click on "Báo cáo" tab		
	2. Admin click on "Quản lý bình luận bị báo cáo" tab		
Normal Flow:	3. A list of reported comments is displayed		
	4. Admin click "Xem chi tiết"		
	5. Reported comment detail is displayed		
	6. Admin click "Gỡ bình luận"		
	7. Then confirm popup dialog		
Alternative Flows:	N/A		
Exceptions:	50.0-E1 – Cannot communicate with API server.		
	1. Display an error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		
Other Information:	N/A		
Assumptions:	N/A		

## 3.2.3.4.10 Restore a removed comment

UC ID and Name:	UC-051 Restore a removed comment

Created by:	LinhLP	Date created:	05/06/2019		
Primary Actor:	Administrator	Secondary Actor:			
Trigger:	N/A	N/A			
Description:	Restore a removed of	comment			
Preconditions:	PRE-51.1. Admin h	as successfully logged i	n the system		
Post conditions:	POST-51.1.Remove	ed comment is restored			
	51.0 Restore a rem	oved comment			
	1. Admin click	on "Báo cáo" tab			
	2. Admin click on "Quản lý bình luận bị báo cáo" tab				
Normal Flow:	3. Admin click "Đã xoá" tab				
	4. A list of removed comments is displayed				
	5. Admin click "Xem chi tiết"				
	6. Reported comment detail is displayed				
	7. Admin click "khôi phục"				
Alternative Flows:	N/A				
Exceptions:	51.0-E1 – Cannot communicate with API server.  1. Display an error message.				
Priority:	High				
Frequency of Use:	High				
Business Rules:	N/A	N/A			
Other Information:	N/A				
Assumptions:	N/A				

## 3.2.3.4.11 Add a travel topic

UC ID and Name:	UC-052 Add a travel topic			
Created by:	LinhLP	Date created:	05/06/2019	
Primary Actor:	Administrator	Secondary Actor:		
Trigger:	N/A			
Description:	Add a travel topic			
Preconditions:	PRE-52.1. Admin h	as successfully logged i	n the system	
Post conditions:	POST-52.1. A trave	POST-52.1. A travel topic is added to the system		
Normal Flow:	<ol> <li>52.0 Add a travel topic</li> <li>Admin click "Quản lý topic"</li> <li>A list of topic is displayed</li> <li>Admin click "Tạo mới" button</li> <li>Admin fill the form and click save</li> </ol>			
Alternative Flows:	N/A			
Exceptions:	52.0-E1 – Cannot communicate with API server.  1. Display an error message.			
Priority:	High			
Frequency of Use:	High			
Business Rules:	N/A			
Other Information:	N/A			
Assumptions:	N/A			

## 3.2.3.4.12 Edit a travel topic

UC ID and Name:	UC-053 Edit a travel topic			
Created by:	LinhLP	Date created:	05/06/2019	
Primary Actor:	Administrator	Secondary Actor:		
Trigger:	N/A			
Description:	Edit a travel topic			
Preconditions:	PRE-53.1. Admin has successfully logged in the system			
Post conditions:	POST-53.1. Edited	travel topic is updated o	n system	
	53.0 Add a travel to	opic		
	1. Admin click "Quản lý topic"			
Normal Flow:	2. A list of topic is displayed			
	3. Admin click "Chinh sửa" button			
	4. Admin fill th	e form and click save		
Alternative Flows:	N/A			
P	53.0-E1 – Cannot o	ommunicate with API	server.	
Exceptions:	1. Display an e	rror message.		
Priority:	High			
Frequency of Use:	High			
Business Rules:	N/A			
Other Information:	N/A			

Assumptions:	N/A

## 3.2.3.4.13 Delete a travel topic

UC ID and Name:	UC-054 Edit a travel topic			
Created by:	LinhLP	Date created:	05/06/2019	
Primary Actor:	Administrator	Secondary Actor:		
Trigger:	N/A			
Description:	Delete a travel topic	;		
Preconditions:	PRE-54.1. Admin h	PRE-54.1. Admin has successfully logged in the system		
Post conditions:	POST-54.1. A topic	e is remove from system		
Normal Flow:	<ol> <li>54.0 Add a travel topic</li> <li>1. Admin click "Quản lý topic"</li> <li>2. A list of topic is displayed</li> <li>3. Admin click "Xoá" button</li> <li>4. Then confirm popup dialog</li> </ol>			
Alternative Flows:	N/A			
Exceptions:	54.0-E1 – Cannot communicate with API server.  1. Display an error message.			
Priority:	High			
Frequency of Use:	High			
Business Rules:	N/A			

Other Information:	N/A
Assumptions:	N/A

## 3.2.3.4.14 View statistic of users

UC ID and Name:	UC-055 View statistic of users		
Created by:	ThaiHV	Date created:	05/06/2019
Primary Actor:	Administrator	Secondary Actor:	
Trigger:	N/A		
Description:	View statistic of new	registered user in days	, months, years
Preconditions:	PRE-55.1. User has signed in as Administrator		
Post conditions:	POST-55.1. Chart of users' statistic is displayed.		
	<ol> <li>View statistic of users</li> <li>User visits admin site.</li> <li>A Chart of users' statistic is displayed</li> </ol>		
Normal Flow:			
Alternative Flows:	N/A		
Exceptions:	55-E1 – Cannot communicate with API server.		erver.
Exceptions.	1. An error mes	sage is displayed.	
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		
Other Information:			
Assumptions:	N/A		

## 3.2.3.4.15 View statistic of posts

### Use Case Specification

UC ID and Name:	UC-056 View statistic of posts		
Created by:	ThaiHV	Date created:	05/06/2019
Primary Actor:	Administrator	Secondary Actor:	
Trigger:	N/A	,	,
Description:	View statistic of new	post user in days, mon	ths, years
Preconditions:	PRE-56.1. User has	signed in as Administra	tor
Post conditions:	POST-56.1. Chart of posts' statistic is displayed.		
	56. View statistic of users		
Normal Flow:	<ol> <li>User visits admin site.</li> <li>A Chart of posts' statistic is displayed</li> </ol>		
Alternative Flows:	N/A		
Evantions	56-E1 – Cannot communicate with API server.		
Exceptions:	1. An error mes	sage is displayed.	
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		
Other Information:			
Assumptions:	N/A		

### 3.2.3.5 Guest, Member, Administrator

3.2.3.5.1 Search post by travel destination

UC ID and Name:	UC-057 Search post by travel destinations			
Created by:	LinhLP	Date created:	05/06/2019	
Primary Actor:	Member	Secondary Actor:	Guest, Administrator	
Trigger:	N/A			
Description:	Search post by trave	l destinations		
Preconditions:	N/A			
Post conditions:	POST-57.1. Posts re	POST-57.1. Posts related to destination is displayed		
Normal Flow:	label 2. user chose de	travel destination  tination in search box be  estination from drop dow		
Alternative Flows:	N/A			
Exceptions:	<ol> <li>57.0-E1 – Cannot c</li> <li>1. Display an er</li> </ol>	ommunicate with API stror message.	server.	
Priority:	High			
Frequency of Use:	High			
Business Rules:	N/A			
Other Information:	N/A			
Assumptions:	N/A			

#### 3.2.3.5.2 Search a member

UC ID and Name:	UC-058 Search a member		
Created by:	LinhLP	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	Guest, Administrator
Trigger:	N/A		
Description:	Search a member		
Preconditions:	N/A		
Post conditions:	POST-58.1. Member	search result is displaye	ed
Normal Flow:	<ol> <li>User type name, keyword into search box top-right of screen and hit enter</li> <li>Result is displayed</li> <li>User click "Moi người" tab</li> <li>A list of member related to search name is displayed</li> </ol>		
Alternative Flows:	N/A		
Exceptions:	58.0-E1 – Cannot co	ommunicate with API store message.	server.
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		
Other Information:	N/A		
Assumptions:	N/A		

## 3.2.3.5.3 Search finding companion posts

UC ID and Name:	UC-059 Search finding companion posts		
Created by:	LinhLP	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	Guest, Administrator
Trigger:	N/A		
Description:	Search finding com	panion posts	
Preconditions:	N/A		
Post conditions:	POST-59.1. Finding	ng companion posts result	is displayed
	<ol> <li>59.0 Search finding companion posts</li> <li>User click "Tim ban phuot" tab</li> <li>User fill the form on top of result list and click search</li> </ol>		
Normal Flow:			
	3. Finding con	npanion posts search resul	t is displayed to user
Alternative Flows:	N/A		
Exceptions:	59.0-E1 – Cannot	communicate with API s	server.
	1. Display an	error message.	
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		
Other Information:	N/A		

Assumptions:	N/A

### 3.2.3.5.4 View popular posts

UC ID and Name:	UC-060 View popular	r posts	
Created by:	TruongLX	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	Guest, Administrator
Trigger:	N/A		
Description:	View popular posts		
Preconditions:	PRE-60.1. Guest visit in	the website or member	/administrator is logged
Post conditions:	POST-60.1. Home pag	ge display a tab name "	phổ biến"
Normal Flow:	<ol> <li>User view popular posts</li> <li>User visit website</li> <li>User click on "phổ biến" tab on home page</li> <li>Display popular posts</li> </ol>		
Alternative Flows:	N/A		
Exceptions:	60.0-E1 – Cannot con  1. Display an erro		erver.
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		
Other Information:	N/A		

Assumptions:	N/A

## 3.2.3.5.5 View recently posts

UC ID and Name:	UC-061 View recently posts		
Created by:	TruongLX	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	Guest, Administrator
Trigger:	N/A		
Description:	View recently added posts		
Preconditions:	<b>PRE-61.1.</b> Guest visit the website or member/administrator is logged in		
Post conditions:	POST-61.1. Home page display a tab name "mới nhất"		
Normal Flow:	<ol> <li>User view recently posts</li> <li>User visit website</li> <li>User click on "mói nhất" tab on home page</li> <li>Display recently added posts</li> </ol>		
Alternative Flows:	N/A		
Exceptions:	61.0-E1 – Cannot communicate with API server.  1. Display an error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		
Other Information:	N/A		

Assumptions:	N/A

## 3.2.3.5.6 View a post detail

UC ID and Name:	UC-062 View a post detail		
Created by:	TruongLX	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	Guest, Administrator
Trigger:	N/A		
Description:	View a post detail		
Preconditions:	PRE-62.1. Guest visit the website or member/administrator is logged in PRE-62.2. User click on a post		
Post conditions:	POST 62-1. A post detail displayed		
Normal Flow:	62.0 User view popular posts  1. User visit website  2. User clicks on a post  3. Display a detail post screen		
Alternative Flows:	N/A		
Exceptions:	62.0-E1 – Cannot communicate with API server.  1. Display an error message.		
Priority:	High		
Frequency of Use:	High		
Business Rules:	N/A		

Other Information:	N/A
Assumptions:	N/A

## 3.2.3.5.7 View a virtual trip

UC ID and Name:	UC-063 View a virtual trip			
Created by:	TruongLX	Date created:	05/06/2019	
Primary Actor:	Member	Secondary Actor:	Guest, Administrator	
Trigger:	N/A			
Description:	View a virtual trip	View a virtual trip.		
Preconditions:	PRE-63.1. Guest visit the website or member/administrator is logged in PRE-63.2. User click on tab "chuyến đi" on member's profile page.			
Post conditions:	POST 63-1. Detail of virtual trip displayed.			
Normal Flow:	<ol> <li>63.0 View member's virtual trip</li> <li>User visit website.</li> <li>User click on member's name or avatar.</li> <li>System display member's profile page.</li> <li>User clicks on "chuyến đi" tab on profile page.</li> <li>List of virtual trips display on profile page.</li> <li>User click on trip name or image.</li> <li>System display detail information about that trip.</li> </ol>			
Alternative Flows:	<ol> <li>View member's virtual trip</li> <li>User search something.</li> <li>System display a member.</li> <li>(Continue from step 3 as normal flow).</li> </ol>			

Exceptions:	63.0-E1 – Cannot communicate with API server.  1. Display an error message.
Priority:	High
Frequency of Use:	High
Business Rules:	N/A
Other Information:	N/A
Assumptions:	N/A

## 3.2.3.5.8 View member's profile

UC ID and Name:	UC-064 View member's profile		
Created by:	TruongLX	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	Guest, Administrator
Trigger:	N/A		
Description:	View a member's profile.		
Preconditions:	PRE-64.1. Guest visit the website or member/administrator is logged in. PRE-64.2. User click on member's name or avatar.		
Post conditions:	POST-64.1. A profile page of member displayed.		
Normal Flow:	<ol> <li>64.0 View member's profile</li> <li>1. User visit website.</li> <li>2. User click on member's name or avatar.</li> <li>3. System display member's profile page.</li> </ol>		

	64.1 View member's profile
	1. User search some thing.
Alternative Flows:	2. System display a member.
	3. User click on member's name or avatar.
	4. System display member's profile page.
Exceptions:	64.0-E1 – Cannot communicate with API server.  1. Display an error message.
Priority:	High
Frequency of Use:	High
Business Rules:	N/A
Other Information:	N/A
Assumptions:	N/A

# 3.2.3.5.9 View member's followings/followers

UC ID and Name:	UC-065 View member's followings/followers			
Created by:	TruongLX	Date created:	05/06/2019	
Primary Actor:	Member	Secondary Actor:	Guest, Administrator	
Trigger:	N/A			
Description:	View a member's followings/followers.			
Preconditions:		PRE-65.1. User visit member's profile page. PRE-65.2. User click on "Followers" link on left side information panel.		
Post conditions:	POST-65.1. A list of followers is displayed.			

	65.0 View member's followers	
Normal Flow:	1. System display member's profile page.	
Normal Flow.	2. User click on "Followers" link on the left side panel.	
	3. A list of followers displayed.	
	65.1 View member's following	
Altamativa Elavya	1. System display member's profile page.	
Alternative Flows:	2. User click on "Followings" link on the left side panel.	
	3. A list of followings displayed.	
Exceptions:	<ul><li>65.0-E1 – Cannot communicate with API server.</li><li>1. Display an error message.</li></ul>	
Priority:	High	
Frequency of Use:	High	
Business Rules:	N/A	
Other Information:	N/A	
Assumptions:	N/A	

## 3.2.3.5.10 View member's created posts

UC ID and Name:	UC-066 View member's created posts		
Created by:	TruongLX	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	Guest,
Primary Actor:	Wiember	Secondary Actor.	Administrator
Trigger:	N/A		
Description:	View a member's created posts.		
Preconditions:	PRE-66.1. User visit member's profile page.		

Post conditions:	POST-66.1. A list of created posts is displayed.	
Normal Flow:	<ol> <li>View member's created posts</li> <li>User visit member's profile page.</li> <li>A list of created posts is displayed at the middle (with title, image, short description).</li> </ol>	
Alternative Flows:		
Exceptions:	66.0-E1 – Cannot communicate with API server.  1. Display an error message.	
Priority:	High	
Frequency of Use:	High	
Business Rules:	N/A	
Other Information:	N/A	
Assumptions:	N/A	

## 3.2.3.5.11 View member's created virtual trips

UC ID and Name:	UC-067 View member's created virtual trips		
Created by:	TruongLX	Date created:	05/06/2019
Primary Actor:	Member	Secondary Actor:	Guest, Administrator
Trigger:	N/A		
Description:	View a member's created virtual trips.		
Preconditions:	PRE-67.1. User visit member's profile page.		

Post conditions:	POST-67.1. A list of created virtual trips is displayed.
Normal Flow:	<ol> <li>View member's created virtual trip</li> <li>User visit member's profile page.</li> <li>User click "chuyến đi" tab on profile page.</li> <li>List of created virtual trips display on profile page.</li> </ol>
Alternative Flows:	N/A
Exceptions:	67.0-E1 – Cannot communicate with API server.  1. Display an error message.
Priority:	High
Frequency of Use:	High
Business Rules:	N/A
Other Information:	N/A
Assumptions:	N/A

## 3.2.3.5.12 View member's created finding companions posts

UC ID and Name:	UC-068 View member's created finding companions posts			
Created by:	TruongLX	Date created:	05/06/2019	
Primary Actor:	Member	Secondary Actor:	Guest, Administrator	
Trigger:	N/A			
Description:	View member's created finding companions posts.			
Preconditions:	PRE-68.1. User visit member's profile page.			

Post conditions:	POST-68.1. A list of created finding companions posts displayed.
	68.0 View member's created finding companions posts
	1. User visit member's profile page.
Normal Flow:	2. User click "tìm bạn phượt" tab on profile page.
	3. List of created finding companion posts display on profile
	page.
Alternative Flows:	N/A
Exceptions:	68.0-E1 – Cannot communicate with API server.  1. Display an error message.
Priority:	High
Frequency of Use:	High
Business Rules:	N/A
Other Information:	N/A
Assumptions:	N/A

#### 3.3 Non-Functional Requirements

#### **3.3.1 Security**

- ✓ Token-Based Authentication, relies on a signed token that is sent to the server on each request.
- ✓ Because we use Token-Based Authentication, so all request must be made on the correct frontend website otherwise it will be rejected, which made Cross-Site Request Forgery (CSRF) is impossible.
- ✓ All query made to MongoDB must be escaped so no NoSQL Injection.
- ✓ Apply SSL encryption to restrict user access and prevent man-in-the-middle attacking.
- ✓ All passwords are encrypted by PBKDF2 algorithm with salt.

# ✓ The security matrix is as following table:

Function	Guest	Member	Administrator
Sign up	✓		
Google sign in		<b>✓</b>	✓
Facebook sign in		<b>✓</b>	✓
Normal sign in		<b>✓</b>	✓
Forgot password		<b>✓</b>	✓
Sign out		<b>✓</b>	✓
Change password		✓	✓
Update profile		<b>✓</b>	✓
Choose interested topic		<b>√</b>	
Update interested topic		<b>√</b>	
Create a post		<b>√</b>	
Edit a post		✓	
Delete a post		<b>✓</b>	
Like/Unlike a post		<b>✓</b>	
Share a post		<b>√</b>	
Report a post		<b>✓</b>	
Bookmark a post		<b>✓</b>	
View all bookmarks		<b>✓</b>	
Remove a bookmark		<b>✓</b>	
Comment to a post		<b>✓</b>	
Edit a comment		<b>✓</b>	
Delete a comment		<b>✓</b>	
Like/Unlike a comment		<b>✓</b>	
Report a comment		<b>✓</b>	
Create a virtual trip		<b>√</b>	
Edit a virtual trip		<b>√</b>	
Delete a virtual trip		<b>√</b>	
Follow a user		<b>✓</b>	

Unfollow a user		✓	
Block a user		✓	
Unblock a user		✓	
Report a user		✓	
Create a finding companions post		✓	
Edit a finding companions post		✓	
Delete a finding companions post		✓	
Join to a companion group		✓	
Leave a companion group		✓	
Remove a joined companion		✓	
Send/receive messages		✓	
View followers' posts		✓	
View recommended posts		✓	
View all users' account			✓
View reported accounts			✓
Ban a user			✓
Unban a user			✓
View reported posts			✓
Remove a reported post			✓
Restore a removed post			<b>√</b>
View reported comments			<b>√</b>
Remove a reported comment			✓
Restore a removed comment			<b>√</b>
Add a travel topic			✓
Edit a travel topic			<b>√</b>
Delete a travel topic			<b>✓</b>
View statistic of users			<b>√</b>
View statistic of posts			<b>√</b>
Search post by travel destinations	<b>✓</b>	<b>√</b>	<b>✓</b>
Search a member	<b>✓</b>	✓	<b>√</b>

Search finding companion posts	✓	✓	✓
View popular posts	<b>√</b>	✓	✓
View recently posts	<b>√</b>	✓	✓
View a post detail	✓	✓	✓
View a virtual trip	✓	✓	✓
View member's profile	✓	✓	✓
View member's followings/followers	✓	✓	<b>√</b>
View member's created posts	✓	✓	✓
View member's created virtual trips	✓	✓	✓
View member's created finding companions' posts	<b>✓</b>	✓	<b>√</b>

#### 3.3.2 Maintainability & Extensibility

- Microservices architecture for backend.
- ➤ Unit Tests and Integration Tests are written using Karma and NUnit.
- ➤ Using TSLint for a consistent coding convention.
- ➤ Maintainable source code and easy deployment since we follow a single coding convention & a highly maintainable architecture design.
- Object Oriented Programming paradigm is applied in order to ensure scalability & maintainability.

#### 3.3.3 Availability and Scalability

- ➤ Google Cloud service for automatic horizontal scalability.
- ➤ Third-party services for convenient development:
  - o SendGrid for sending emails.
  - o Google storage for storing images.

#### 3.3.4 Performance

➤ Web front-end is a Single Page Application with the goal of providing a more fluid user experience similar to a desktop application.

- ➤ Backend system uses background job for external requests, heavy processing requests such as:
  - o Sending email
  - o Training recommendations model

#### 3.3.5 Usability

- ➤ The interface should be elegant and simple.
- Alt attributes are provided for non-text elements, such as images and maps.
- Links, buttons and checkboxes are easily clickable, for example a user can select a checkbox by clicking the text, not just the checkbox.
- > Search box is wide enough, so that users can see what they've typed.
- > Search is available on every page, not just the homepage.
- Links are easily recognizable. They look clickable. Items that aren't links don't look clickable, for example underlining text is avoided.
- > Important commands are displayed as buttons, not links. For example, "Apply" or "Save" is a button, not a link.