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**Capstone Project Report**

**TripSharing**

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

**Hanoi, May 30th, 2019**

**Chapter 1: Introduction**

* 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. **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. **The People**
     1. **Supervisors**

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

Table 1-1: Supervisors' information

* + 1. **Team Members**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Full name** | **Phone** | **E-mail** | **Role in Group** |
| 1 | Hà Văn Thái | 0349940158 | thaihvse04801@fpt.edu.vn | Leader |
| 2 | Nguyễn Văn Phong |  |  | Member |
| 3 | Trần Văn Phong |  |  | Member |
| 4 | Lê Xuân Trường |  |  | Member |
| 5 | Lý Phúc Linh |  |  | Member |

Table 1-2: Team member's information

* 1. **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: Number of local tourists reach 80 million in 2018[[1]](#footnote-1)

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. 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%.”[[2]](#footnote-2)*



Figure 1-2: Sharing travel information on social media[[3]](#footnote-3)

* + 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 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. **TripAdvisor’s Advantages and Disadvantages**
       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. **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. **Proposal of System**
     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. **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. **The TripSharing User Process**

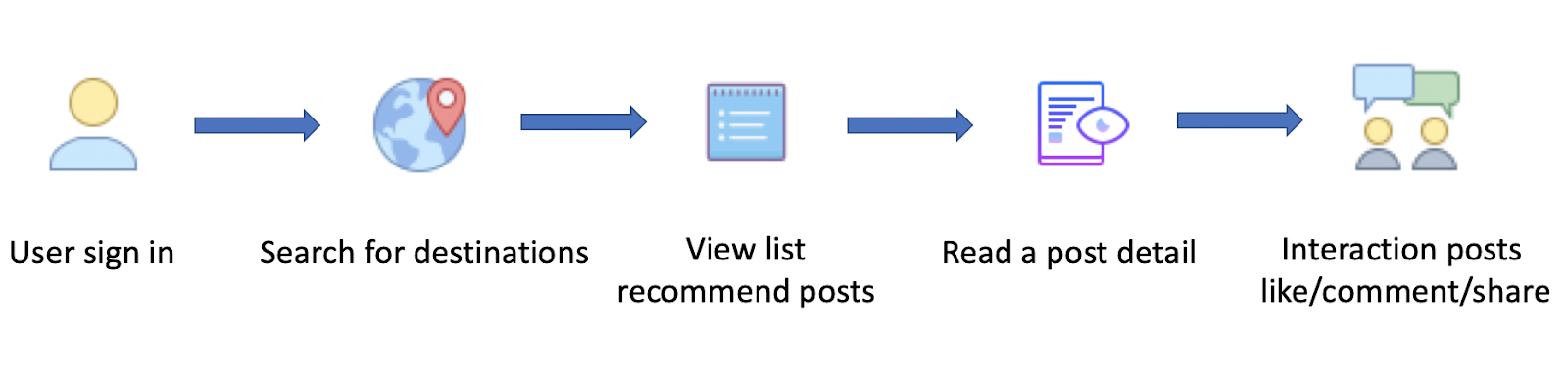
**

Figure -1: User reads and interacts with a post

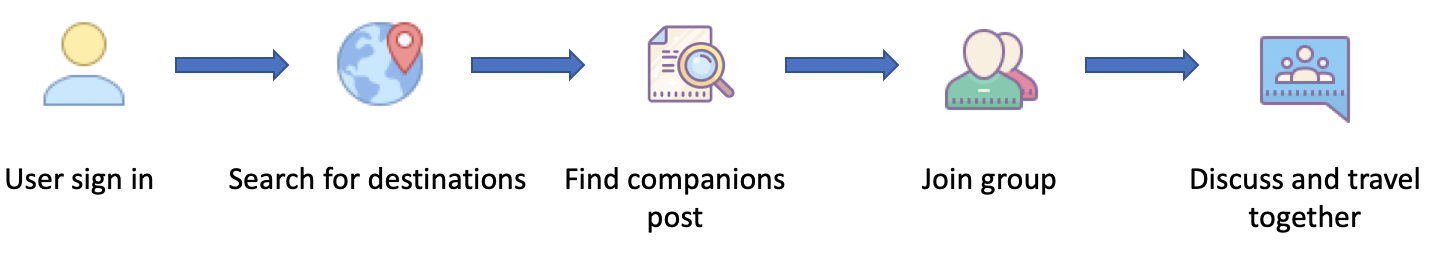
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Figure 1-2: Users use Finding Companions function

* + - 1. **Out of Scope Functions**
* Manage group of people who use Finding Companions function.
* Manage travel places obtained from Google Map.
  + - 1. **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**

* 1. **Purpose**

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

* 1. **Project Organization**
     1. **Software Development Process**

Figure 2-1: Iterative and Incremental Software Development Process[[4]](#footnote-4)

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

* + 1. **Role and Responsibilities**

|  |  |
| --- | --- |
| **Role** | **Responsibilities** |
| Project Manager | Planning, developing schedules, coordinating communication,  generally responsible for keeping the team’s focus on the main  goal |
| Business Analysis Leader | Responsible for managing Business Analyst team and working with them in Analyzing an organization or business domain. |
| Business Analyst | Analyzes an organization or business domain and documents its business or processes or systems. |
| Design Leader | Responsible for managing Design team and working with them to create a best user interface design for our product. |
| Designer | Involve to design product’s user interface. |
| Technical Leader | Responsible for choosing and deciding what technologies should  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. |
| Test Leader | Responsible for choosing and deciding what testing tools and 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

* + 1. **Organization Structure**

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Figure 2-2: Organization Structure

* + 1. **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

* + 1. **Tools and Techniques**

|  |  |
| --- | --- |
| **Programing Languages:** | 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 |
| **Project Management Tools:** | Microsoft Project 2013 |
| **Process Model:** | Iterative and Incremental Software Process Model |
| **Development Process:** | Behavior-driven development, Test-driven development, Continuous integration, Continuous delivery |
| **CI, CD Tools:** | Travis-CI, Docker 2.0 |

Table 2-3: Tools and Techniques

* 1. **Project Management Plan**
     1. **Tasks**
     2. **Meeting Minutes**

All meeting minutes will be written following this template:

|  |  |  |  |
| --- | --- | --- | --- |
| **Meeting/Project Name:** | TripSharing | | |
| **Date of Meeting:** | 06/06/2019 | **Time: (Type)** | 3 hours  (face-to-face) |
| **Meeting Called by:** | ThaiHV | **Location:** | HB206L |
| **Note Taker:** | PhongTV | **Time Keeper:** | PhongNV |
| **1. Meeting Objective** | | | |
|  | | | |
| **2. Attendance** | | | |
| **Name** | **Role** | **Email** | **Phone** |
| ThaiHV | Project Manager  Developer  Business Analyst | thaihvse048010@fpt.edu.vn | 0349940158 |
| PhongNV | Technical Leader  Designer |  |  |
| PhongTV | Design Leader  Developer  Tester |  |  |
| TruongLX | Business Analysis Leader  Developer  Tester |  |  |
| LinhLP | Test Leader  Developer |  |  |
| **3. Content** | | | |
|  | | | |
| **4. Note** | | | |
|  | | | |

Table 2-4: Meeting Minutes

* + 1. **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: <https://google.github.io/styleguide/jsguide.html>

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



Figure 2-3: Google JavaScript Style Guide

* + 1. **Risk Management Plan**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Name | Prevention | Correction | Status |
| R1 | Miscommunication | Any problem raised has to be documented or filed. Team members should express their opinion clearly. | Miscommunication must be resolved early. | Closed |
| R2 | New technology | 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  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 |

Table 2-5: Risk Management Plan

* + 1. **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.

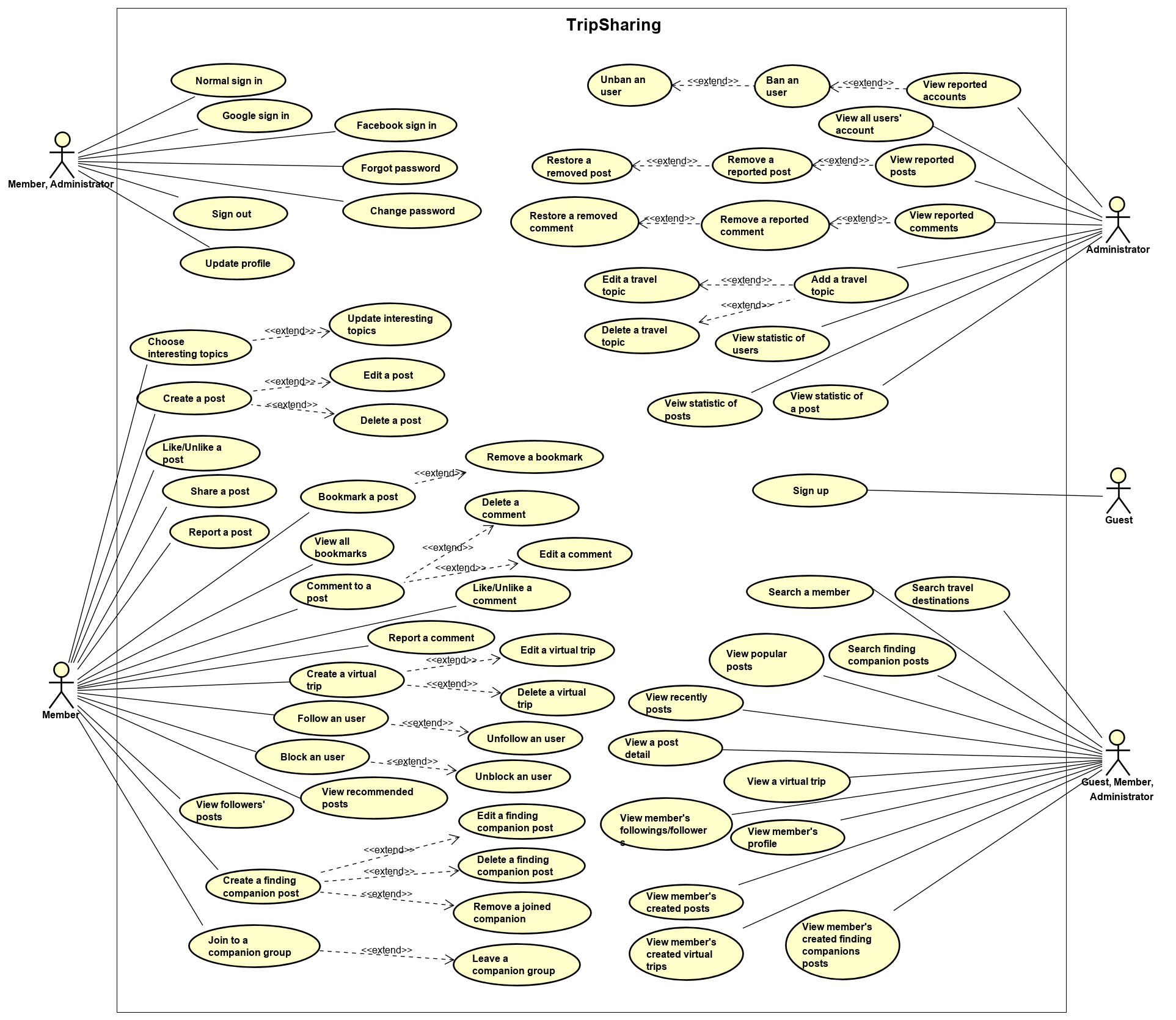
**Chapter 3: Software Requirement Specification**

**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**

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**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. |
| **B3** | 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. |
| **B8** | 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. |
| **B20** | Contribution points formula:   * Post an article: 5 (points) * Each five likes on an article: 1 (point) * 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 an user/an article/a comment correctly: 3 (points) |

**3.2.3 Use Cases**

**3.3 Non-Functional Requirements**

1. <http://vietnamtourism.gov.vn/index.php/items/13460> [↑](#footnote-ref-1)
2. <http://flcholiday.com/tin-tuc/xu-huong-du-lich-2018-kham-pha-va-tan-huong-cuoc-song-117.htm> [↑](#footnote-ref-2)
3. <http://www.younetmedia.com/insights/infographic-xu-huong-du-lich-cua-gioi-tre-qua-phan-tich-tren-social-media.html> [↑](#footnote-ref-3)
4. <https://www.topsinfosolutions.com/methodology/> [↑](#footnote-ref-4)