Software Requirements Specifications

Finder Matchmaking Web Application

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1. Introduction

1.1 Purpose

The purpose of this documentation is to present a detailed description of the Matchmaking Website. It will elaborate the purpose and features of the system, interfaces, what the system will do, how the system will react to external stimuli, and the constraints under which it operates. This document is intended for the stakeholders and the developers.

1.2 Scope

This software system, Matchmaking Website, will be used by the public as a medium for socialization. The software will be designed to let users search and join small group activities based on their preference.

More specifically, the system is designed to let users find a group of people to do an activity with via the Internet. The system allows users to either host or join an activity session. Users who host activity sessions can set up a schedule with location and activity. Meanchile, users who seek to join an activity session can search for activities or have the activities recommended to them based on location and matching schedules.

1.3 References

IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.

1.4 Overview

The first section will be an overview of the software, what it needs to do, and the glossary to explain terms used in this document. The section section will give an overview of how the system works and its basic functionalities. Finally the document will go into specific requirements of the software, which include its use cases, constraints, database logics, and other system attributes.

2. Overall description

2.1 Product perspective

2.1.1 System environment

The actor that will be interacting with this system is the User. The following diagram will show how the User interacts with the system.
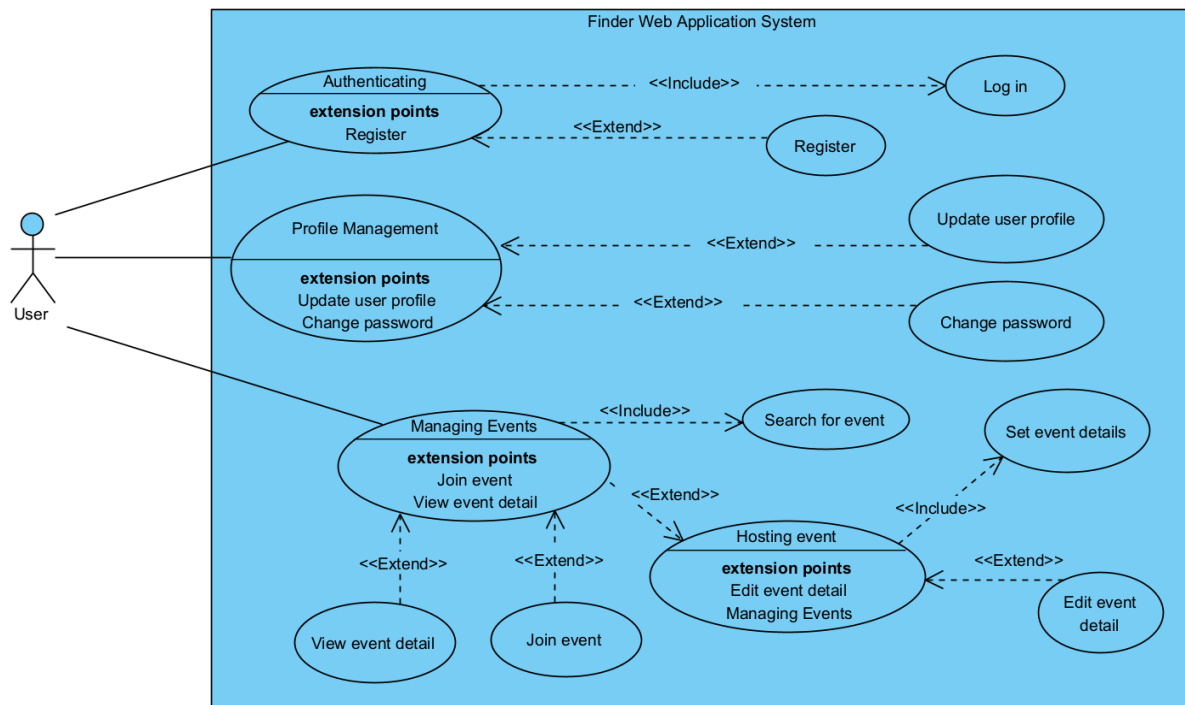
2.1.2 User interfaces

The user will access the main functionality of the website using a horizontal navigation bar at the top of the web page. The navigation bar will be the same for all web pages of the software. All components of the user interface should conform to a design system. The user interface should be easy enough for an average new user to know how to use after 15 minutes on the website.

2.2 Product functions

The Matchmaking Website software will have the following functionalities:

1. Authentication: Users can login/register into their account.
2. Changing password: Users can change their password.
3. Account management: Users can modify their personal and publicly displayed information.
4. Searching for events: Users can look up for schedules hosted by other users that suits their preference using filters.
5. Joining events: Users can choose to join events that are hosted by other people.
6. Hosting events: Users can create new events and set the event attributes such as date, time, location, and type of event to their liking to let other people join in.
7. Managing events: Users can leave an event if they joined an event as guests, or they can cancel events if they are hosts.
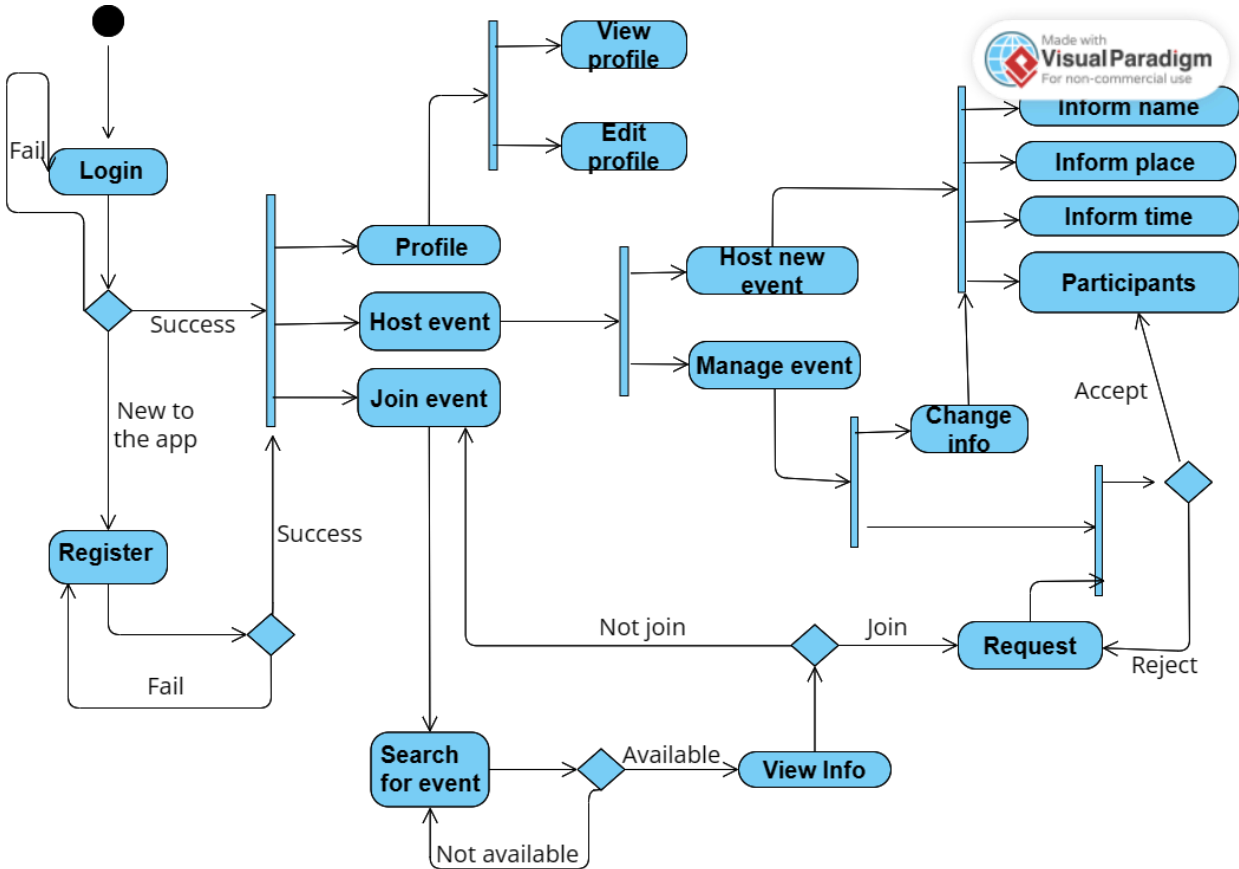
3. Specific requirements

3.1 Functional requirements

3.1.1 Login

Use case number	01		Use case name	Login
Description	User logs in to use the software's functions.			
Pre-condition	User already has an account. Clicking on the website's login button. Clicking on an event when not logged in.			
Post-condition	Users successfully log into their account.			
Basic path	No.	Performed by		Action
	1	User		Click on the login button or an event card.
	2	System		Display login function's user interface.
	3	User		Users fill in their username/email address and password.
	4	User		Request login.
	5	System		Check if all the fields are filled with the correct type of data. (Table 3.1.1.1)
	6	System		Check if the filled user credential is correct.

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	7	System	Display corresponding contents to the user if logged in successfully.
Alternative path	No.	Performed by	Action
	5a	System	System informs the user if the information data type is incorrect or a field is missing information.
	6a	System	System informs the user if the user credential filled in the fields is wrong.

Table 3.1.1.1

No.	Data field	Description	Required	Condition	Example
1	Email	Username/Email field input	Yes	Correct email format	abc@gmail.com
2	Username	Username/email field input	Yes	Correct allowed characters	User1234

3.1.2 Change password

Use case number	02	Usecase name	
Description	User can change password		
Pre-condition	User has to be logged in first.		
Post-condition	User's password changed		
Basic path	No.	Performed by	Action
	1	User	Clicks on username on navigation bar.
	2	System	Transition to a web page that display user's information.
	3	User	Click on the Change *password* button.
	5	System	Displays fields for changing password.
	6	User	Fill the old password field.
	7	User	Fill in the new password field.
	8	User	Submit password.
	9	System	Inform the user that the password has been updated.
Alternative path	No.	Performed by	Action
	8a	System	If the old password is wrong, inform the user of the wrong password error.
	8b	System	If any character that is not allowed put in the field, the system informs the user character error.

Table 3.1.2

No.	Data field	Description	Required	Condition	Example
1	Old password	Old password field input	Yes	Matches old password	AdfRLidfsdE
2	New password	New password field input	Yes	Valid characters	AFSDFDSF
3	Confirm new password	New password field input	Yes	Matches data in New password field	AFSDFDSF

3.1.3 Register

Use case number	03	Usecase name	Creating an account
Description	Let users create a new account to access the application's services.		
Pre-condition	User is not logged in.		
Post-condition	User created a new account and logged into it.		
Basic path	No.	Performed by	Action
	1	User	User clicks on any event card or the sign in button in the navigation.
	2	System	Transition to register web page.
	3	User	Fill in the required information fields. (Table 3.1.3.1)
	4	User	Submit the information.
	5	System	Check if all the required information are filled correctly.
	6	System	Create a new user account.
Alternative path	No.	Performed by	Action
	6a	System	If a required information is missing, inform the user of the error.
	6b	System	If the data type of the information is incorrect, inform the user of the error.
	6c	System	Inform the user of a mismatched password if the password field does not match with the main password field.

Table 3.1.3.1

No.	Data field	Description	Required	Condition	Example
1	Email	User email input field	Yes	Valid email format	abc@vnu.edu.vn
2	Username	User username input field	Yes	Unique username, valid and allowed characters only.	Usern1235
3	Password	User password input field	Yes	Any valid characters	Fd$ljhf@-r51
4	Confirm password	User password input field	Yes	Matches	Fd$ljhf@-r51
5	Gender	Drop down box to pick gender	Yes	Pick male, female, or other	Male
6	Date of birth	Date input text field	Yes	Valid date	01/04/2004
7	Country	Drop down box to pick country	Yes	Pick Vietnam, United States, Japan,…	Vietnam

3.1.4 Update user information

Use case number	04	Usecase name	Update user information
Description	Users can change their profile's public and private information.		

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Pre-condition	Users must be logged in first.		
Post-condition	User information is changed.		
Basic path	No.	Performed by	Action
	1	User	User clicks on their username on the navigation bar.
	2	System	Transition to a web page that displays user's information.
	3	User	User clicks on the edit profile button.
	4	System	Displayed texts turn into an editable form.
	5	User	Modify the contents of the form.
	6	User	Save changes by clicking on save button.
	7	System	Check if all the fields are filled or filled with the correct data type.
	8	System	Update user's information.
Alternative path	No.	Performed by	Action
	8a	System	Inform the user about the error if the required fields are left blank or the fields are filled with the wrong data type.

Table 3.1.4.1

No.	Data field	Description	Required	Condition	Example
1	Country	Drop down box to pick country	Yes	Pick Vietnam, United States, Japan,…	Vietnam
2	Date of birth	Date input text field	Yes	Valid date	01/04/2004
3	Gender	Drop down box to pick gender	Yes	Pick male, female, or other	Male
4	User description	Input text field	No	Valid characters, maximum length of 250 words	My name is Eughesgs, I'm looking for…
6	User contact detail	Input text field	No	Valid characters	Facebook: facebook.com/user123 My phone: 09031321321
5	User profile picture	Box to select image	No	Valid image format: png, jpg. In the range of minimum and maximum size.	

3.1.5 Searching for event

Use case number	05	Usecase name	Search for event
Description	Users can use a set of filters to search for events that they desire.		
Pre-condition	User has to be in a Join *a match* by clicking on the *Join a match* button in the top navigation bar of the web page. (User do not have to be logged in first)		
Post-condition	Display search results that match the user's filters.		
Basic path	No.	Performed by	Action

	1	System	System recommends and displays events in which the user is not the host or a participant by default.
	2	User	Users select one of the many filters (Table 3.1.5.1).
	3	User	Users modify the filter that they have chosen.
	4	User	Users repeat path No.2 and No.3 until they are satisfied.
	5	User	Users request for a result that matches their filter by clicking the *Find* button.
	6	System	Display results that have attributes that match the filter values given by the users.
Alternative path	No.	Performed by	Action
	6a	System	If there is no result that matches the user's request, the system informs the user that there is no matching event.

Table 3.1.5.1

No.	Data field	Description	Required	Condition	Example
1	Event name	Text field input	No	Valid characters	Hang out
2	Location	Text field input/Pick from map	No	Valid characters	Cau Giay, Hanoi, Vietnam
3	User capacity	Number of maximum player per event, text field.	No	Numbers only	5
4	Tags	Search and select tags	No	Search and select from a box	Sport, Study, …
5	Date	Selection box/Text field	No	Can only fill valid dates, cannot pick a date from the past.	28/03/2024
6	Time	Selection box/Text field	No	Valid time, cannot pick a time in the past	10pm

3.1.6 Viewing event detail

Use case number	06	Usecase name	Viewing event detail
Description	Users view extended information about an event.		
Pre-condition	User is in the *Find a match* web page (Use case 05). User is in the *My events* web page (Use case 10). User is in the *Host event* web page (Use case 09).		
Post-condition	Event detailed information is displayed for the user to see.		
Basic path	No.	Performed by	Action
	1	User	Users click on event cards that display brief information about the event. (Table 3.1.5.1)
	2	System	Open a webpage to display full event information.
	3	User	Users can click on the Back button to exit viewing event details.

3.1.7 Viewing other user's description

Use case number	07	Usecase name	View user description
Description	Let the current view other user's description (Table 3.1.4.1) participating an event		
Pre-condition	User must be viewing event detail (Use case 06)		
Post-condition	System shows a user's public information.		
Basic path	No.	Performed by	Action
	1	User	Inside the event detail, click on a username in the list of participants or the username of the host.
	2	System	Show an overlay that displays a user's public information.
	3	User	After having finished viewing, user can close the tab by pressing the X icon.

3.1.8 Joining events

Use case number	08	Usecase name	Joining event
Description	Users join an event, adding the event into their list of events.		
Pre-condition	Users must already be logged in (Use case 01). The event they are joining must not already be in their list of events. User is in *Find a match* tab (Use case 05).		
Post-condition	System adds the joined event into the user's list of events.		
Basic path	No.	Performed by	Action
	1	User	Users click on an event to join its details (Use case 06).
	2	System	System displays the event's detail, event detail shows the join button.
	3	User	Users click on the join button.
	4	System	Add the event into the user's list of events and inform the user that they have joined the event.
Alternative path	No.	Performed by	Action
	1a	User	Users click directly on the *Join* button on the event card without having to view its details.
	2b	System	If the user is the host of the event or already joined, *the Join* button is not displayed.
	4c	System	If the event has reached its maximum participant then inform the user that the event is full.

3.1.9 Hosting events

Use case number	09	Usecase name	Hosting event
Description	Users can create new events to let other users search and join.		
Pre-condition	User must be logged in (Use case 01)		
Post-condition	Users create a new event and add it to their list of events.		
Basic path	No.	Performed by	Action
	1	User	Users click on the Host *event* button on the top navigation bar to go to the hosting event web page.

		2	System	Display host new event web page which include a form to fill in event's information and display a list of joined events next to the form.
		3	User	Fill in the required information (Table 3.1.9.1) to create an event.
		4	User	Submit the event created.
		5	System	Check for validity of the event created.
		6	System	Create the event, add it to the user's event list and display it publicly in the *Find a match* web page for other users to join.
Alternative path		No.	Performed by	Action
		5a	System	If the event created overlaps another event's schedule then the system would not create the event then inform the error to the user.

Table 3.1.9.1

No.	Data field	Description	Required	Condition	Example
1	Event name	Name for event, text field	Yes	Valid characters	Running
2	Date	Select from calendar, fill in text field, or drop down	Yes	Valid date and characters, cannot pick dates from the past.	28/07/2024
3	Time	Select from drop down, select start time and end time	Yes	Valid time, cannot pick time from the past	10pm-11pm
4	Location	Text field input or select from map	Yes	Valid location	Hanoi, Vietnam
5	Description	Text field input	No	Limit to 250 words	This event is going to be…
6	Tag	Type of event, select from a box of events or made up tag	No	If tag is empty, the event is set to default tag *Other*	Sport, Team,…

3.1.10 Events management

Use case number	10		Usecase name	Managing events
Description	Users can see all the events they have joined in the future and past. Users can cancel events if they are the host. Users can leave the event if they are a participant.			
Pre-condition	User must already logged in (Use case 01)			
Post-condition	User's list of events modified or viewed.			
Basic path	No.		Performed by	Action
	1		User	Users go to *My events* web page by clicking on the *My events* button on the top navigation bar.
	2		System	Display a list of event cards where the user is a participant or a host. Events that have happened or canceled will be marked with lower opacity.

	3	User	User click on an event to view it's detail (Use case 06)
	4	System	System displays event details, if the user is a participant then the Leave button is displayed.
	5	User	Users click on the Leave button.
	6	System	If the user is a participant and leaves the event, the system will remove the event from that user's list of events.
Alternative path	No.	Performed by	Action
	5a	System	System displays event details, if the user is a host then the Cancel button is displayed.
	6a	User	Users click on the Cancel button.
	7a	System	If the user is a host and cancels the event, the system will mark that event as canceled in the host and participant's event list.
	4b	System	If the event has already happened or canceled, the system will display a delete button.
	5b	User	User clicks on the *Delete* button.
	6b	System	System removes the event permanently from the user's event list and database.

3.2 Performance requirements

The software should be able to handle around 50 concurrent users maximum. The maximum response time for all operations made by the user should be 2 seconds.

3.3 Design constraints

The software is built using Web technology, therefore, in order to use it, the users need to be connected to the Internet. Users also have to use Google Chrome, Mozilla Firefox, Safari, or any other web browser that supports Javascript applications.

3.4 Logical database requirements

The system shall store user account information in a MongoDB NoSQL database due to its flexibility and scalability.

3.4.1 User collection

Fields	Datatype	Description	Example
_id	String	Store user unique id	51231kjh3123khf

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username	String	Unique, publicly displayed	user1235
email	String	Private data	asdf@gmail.com
event	Array	An array of event objects	
password	String	Private data	DFSDffef#423432
profile	profile (Section 3.4.2)	User publicly displayed information	
dob	Date	Date of birth	08/03/2023

3.4.2 Profile collection

Fields	Datatype	Description	Example
description	String	Store description about user	Hello this is, my name is,...
contact	String	Store contact details for other users to see	

3.4.3 Event collection

Fields	Datatype	Description	Example
_id	String	Event id	asdf34sldkfjs
name	String	Store event name	Walking
capacity	Number	Maximum number of users	5
current_members	Number	Number of participants in the event	3
participants	Array	Store a list of participants, an array of users	
host	User	Store host object	
date	Date	Store event date	03/03/1932

time	Time	store starting time and end time	22:00:00
location	String	Store location of the event	Hanoi, Vietnam
tags	Array	Event tags	sport, study, group
description	String	Event description	This event is meant to,...

3.4 Software system attributes

3.4.1 Reliability
The software should display the events created as the user intended. The software must always detect overlapped events, events that have happened, all the events that a user joins must be valid.

3.4.2 Availability
Systems need to record user data with checkpoints to restore data in case the server needs to recover.

3.4.3 Security
1. Secured communication
   - Communication between client and server is protected by encryption protocols like SSL/TLS

2. Controlled access rights
   - Only users with certain access rights can perform certain operations like modifying, deleting, adding data.
   - System must have a function to manage access rights based on the role of the user.

3. Logging user activities
   - Log and keep records of all important activities from the users when using the system.