SW Engineering CSC648/848 Summer 2021

FitHub

Project Application And Name: Find a fitness partner - "FitHub"

Team Info: Team 07 | Error 404

Team Members:

1. Vidhi Vora (Team Lead and GitHub Master) - vvora@sfsu.edu

2. Roberto Simental (Front-End Lead) - rsimental@mail.sfsu.edu

3. Johnson Nguyen (Back-End Lead) - Jnguyen63@mail.sfsu.edu

4. Zhinan Zhao

5. Eduardo Hernandez

6. Ziming Wang

7. Michael Satumba

Milestone: Milestone 4

Date: 30 July 2021

History:

Version	Date
M4V1	30 July 2021
M3V2	30 July 2021
M3V1	22 July 2021
M2V2	22 July 2021
M2V1	08 July 2021
M1V2	13 July 2021
M1V1	22 June 2021

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1. Product summary

- Name of the product: Fithub
- Final P1 (Mandatory):

Registered User:

- 1. Registered users shall be able to access About us page
- 2. Registered users shall be able to access Contact us page
- 3. Registered users shall be able to access Support Page
- 4. Registered users shall be able to send workout invites to other users.
- 5. Registered users shall be able to select their interests
- 6. Registered users shall be able to edit their information
- 7. Registered users shall be able to update their profile picture
- 8. Registered users shall be able to delete their profile picture
- 9. Registered users shall be able to change their account passwords
- 10. Registered users shall be able to delete their account from Fithub
- 11. Registered users shall be able to access About us page
- 12. Registered users shall be able to access homepage

Searching People:

- 13. Registered users shall be able search for buddies with similar interest
- 14. Registered users shall be able search for buddies nearby
- 15. Registered users shall be able to filter search options based on their interests.

Friends:

- 16. Registered users shall be able to find friends to exercise with.
- 17. Registered users shall DM (direct message) other registered users only if they are friends
- 18. Registered users shall view friend's event postings

Events:

- 19. Registered users shall be able to create events
- 20. Registered users shall be able to delete events they created
- 21. Registered users shall be able to edit the events they created
- 22. Registered users shall be able to join an event
- 23. Registered users shall be able to exit from an event
- 24. Registered users shall be able to rejoin an event
- 25. Registered users shall invite people to events they created

Chats:

26. Registered users shall be able to create a private chat

Web Application:

- 27. Web Application shall have About us Page
- 28. Web Application shall have Contact us page
- 29. Web Application shall ask user to log in
- 30. Web Application shall display user's profile
- 31. Web Application shall show notifications to the user
- 32. Web Application shall allow user to check their messages
- 33. Web Application shall allow user to check event dates they are planning to go
- 34. Web Application shall allow user to change password of their account
- 35. Web Application shall allow user to deactivate their account
- 36. Web application shall show events occurring nearby
- 37. Web Application shall show people recommendation with similar interest
- 38. Web Application shall allow user to log out
- 39. Web Application shall allow user to delete the account
- 40. Web Application shall allow user to search for people using various filter options
- 41. Web Application shall show people recommendation with similar interest
- 42. Web application has admin account to approve events

The unique points of Fithub:

- 1. Compared to many social platforms that already exist on the market, Fithub has clear user targeting: people who enjoy group exercise. So we combined group exercise events posting with social media. There will be no ads because we use paid membership.
- 2. Fithub has straightforward social features and User UI. White background with a clean navigation bar will give our users an experience of comfort and great efficiency.
- 3. For the best user experience, we only use ads specific to the interests of our users and related to working out. We also provide a premium subscription with unique benefits and perks for our users.
- Url: http://100.26.92.104:3000/

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2. Usability test plan

Send Workout Request

Test objectives: Users should be able to view profiles of other people and send workout

requests to them so they can pair up. The workout request has to be accepted by the other

user so they can begin messaging each other. The user can send requests to multiple

different users. It is important that the requests are received quickly so that users can

respond and pair up. Users can also deny work out requests if they choose to.

Test description:

System Setup: Tester creates an account with their information and preferences to

become a registered user. There are 5 users testing the system. Testers are not students

and have only an average understanding of computers and software.

Starting Point: Tester begins the test from the logged in Homepage. From there they

navigate to the appropriate page to begin testing.

Intended user: The target audience for Fithub are young people looking to make

friends or simply work out with others. Young people are more likely to be active or trying to

become more fit. They are also more likely to be using Social Media for the purpose of

meeting new people.

Test Measurements: The test will measure how intuitive the Find a Buddy page is

for new users. It will also test if the concept of our product is appealing to users.

URL: http://100.26.92.104:3000/html/matching.html

Usability Test Table

Send Workout Request

Skip a profile if it doesn't match interests

Description	Test	% Completed	Errors	Comments	Time in seconds
Find a buddy shows a workout buddy	Clicked on "Find a Buddy Tab"	100%	none	Default buddy	0
Skip a profile if it doesn't match interest	the X and it	0%	Skip/reject doesn't work	none	5
Workout request sent	Clicked on the Checkmark	100%	none	Change confirmation prompt	3
User receives the work out request		0%	Work out requests not received	none	0

User Questionnaire

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Matching with a buddy is simple.	0	0	3	2	0
The UI for matching buddy profiles is easy to understand	0	4	1	0	0
After matching you want to continue looking at other profiles to match with.	0	0	2	3	0

Posting Events

Test Objective: Users should be able to create events. The event will then appear under

the Events page. Users should be able to click on the event to show the event details. From

there they can join or leave the event. Events are important for users that are looking for a

group experience instead of a one on one workout. There are also many activities that can

only be done in groups like playing sports like soccer or basketball. Events also allows for

organizations to promote their own workout events. The join and leave feature is important

to know how many people will be attending the event, so organizers can plan accordingly.

Test description:

System Setup: Tester creates an account with their information and preferences to

become a registered user. There are 5 users testing the system. Testers are not students

and have only an average understanding of computers and software.

Starting Point: Tester begins the test from the logged in Homepage. From there they

navigate to the appropriate page to begin testing.

Intended user: Any user can post an event but most events will be most likely made

by organizers of some sort. Usually clubs or gyms that want to promote their events.

Test Measurements: The test will measure how easy it is to create an event and if

our events page does a good job of promoting the events that are posted. Events should be

appealing and so we must offer enough freedom for event creators to properly show off their

event.

URL: http://100.26.92.104:3000/html/events.html

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Usability Task Table

Posting/Viewing Events

Description	Test	% Completed	Errors	Comments	Time in secon ds
Event is Created	Created an Event	100%	none	Change confirmation	20
Event is viewable under Events page	Tried to view my event under event's page	0%	Even does not show up	Only other events appear	5
Event details appear when you click on Event	Prior events appeared on the page but not mine	100%	none	Visuals can be improved	3
Event is joinable	Tried to join an event	0%	Cannot join	Buttons are there but no confirmation	4
Event is leavable	Tried to leave an event	0%	Cannot leave	Buttons are there but no confirmation	3

Questionnaire

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Creating an event with all the necessary details is simple.	0	0	1	4	0
Events are enticing to click on.	0	2	1	2	0
Event profiles are interesting and make you want to join.	1	3	1	0	0

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Sending Messages

Test Objective: Users should be able to message each other after pairing up. This allows

them to plan their meeting and work out. Messages have to be received immediately so that

users can reply back in a timely manner. We are testing if messages are properly going from

one user to another reliably. Also it is important that our chat system can compete with other

websites so that users don't feel compelled to switch to a different website to continue their

conversations there.

Test description:

System Setup: Tester creates an account with their information and preferences to

become a registered user. There are 5 users testing the system. Testers are not students

and have only an average understanding of computers and software.

Starting Point: Tester begins the test from the logged in Homepage. From there they

navigate to the appropriate page to begin testing.

Intended user: All users will make use of the message feature to be able to

coordinate with any buddies they pair up. Using our message system allows people to get to

know each other before giving away private information like their phone number or social

media account.

Test Measurements: This test measures the user satisfaction of sending messages

on Fithub versus other social media sites. It will compare our messaging features to sites

that users are already familiar with.

URL: http://100.26.92.104:3000/html/matching.html

Usability Task Table

Sending User Messages

Description	Test	% Completed	Errors	Comments	Time in secon ds
Send a message	Tried to send a message	0%	Does not send message	Not ready	0
Other user receives the message	Tried to view message from other perspective	0%	Does not send message	Not ready	0
Other user replies	Tried to type in a reply	0%	Does not send or receive messages	Not ready	0
Message is received	Tried to look for a message sent by a user	0%	Does not send message	Not ready	0

Questionnaire

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
It is easy to send a message to another user.	5	0	0	0	0
The chat system has all the features you want.	5	0	0	0	0
The chat system is appealing to look at.	5	0	0	0	0

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Edit Profile

Test Objective: Users should be able to change their profile information. A user's profile

should be up-to-date as much as possible so they can find events and buddies that match

their location and preferences. We are testing that changes are easy to make and update

the profile of the user.

Test description:

System Setup: Tester creates an account with their information and preferences to

become a registered user. There are 5 users testing the system. Testers are not students

and have only an average understanding of computers and software.

Starting Point: Tester begins the test from the logged in Homepage. From there they

navigate to the appropriate page to begin testing.

Intended user: Most users will want to have a detailed profile page. That way it is

easier for them to find like minded people to workout with. Users should frequently update

their profile page to improve their experience and that of other users.

Test Measurements: The test measures how long it takes for users to be able to

make the desired changes to their profile. Also if we provide enough customization for the

user profiles so that they are a good reflection of the individual user.

URL: http://100.26.92.104:3000/html/myProfile.html

Usability Task Table

Edit Profile

Description	% Completed	Errors	Comments	Time in seconds
Account settings are selected	90%	none	Hard to find	13
Profile Changes are made	90%	none	Can't change username	20
Profile changes are saved	50%	Profile doesn't update	No way to verify	8
My Profile shows updated changes	0%	Data doesn't show	none	5

Questionnaire

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
You can quickly find the profile settings you want to edit.	0	0	0	4	1
Your profile has enough preference options to match your personality.	0	0	0	2	3
The edit profile module is easy to understand.	0	0	1	3	1

Finding a Buddy with Filters

Test Objective: Users should be able to use the different search settings to find a buddy

that matches their preferences. Search filters allow you to find like minded individuals for a

better workout experience. The profile shown for potential matches should be more generic

at the start and become more detailed as the user applies more specific search settings.

The user should be happy with potential matches because they should match the user's

interests.

Test description:

System Setup: Tester creates an account with their information and preferences to

become a registered user. There are 5 users testing the system. Testers are not students

and have only an average understanding of computers and software.

Starting Point: Tester begins the test from the logged in Homepage. From there they

navigate to the appropriate page to begin testing.

Intended user: Most users will want to make use of the filter settings to get better

matches. Location is the most important setting because if you plan on meeting up you need

to be reasonably close or else both people will feel like they wasted their time. Preferences

will also play a big part on what the actual workout will be, so it is important that users use

filter settings properly to make sure they have a good experience.

Test Measurements: This test measures how intuitive the search settings are and if

the user is happy with the amount of options they have. It also measures how well our

system is able to provide a profile that appeals to the user based on their settings.

URL: http://100.26.92.104:3000/html/matching.html

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Usability Task Table

Finding a workout buddy

Description	Test	% Completed	Errors	Comments	Time in secon ds
Change search settings by location	Inputted a new located	100%	none	none	5
Change search settings by passion	Tried to search by adding "passions"	80%	none	Pop up is cluttered	13
A profile matching the settings is shown	Could not find any matches	0%	Profile doesn't change	Shows default profile still	2

Questionnaire

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
You are able to edit your search settings easily.	0	0	0	2	3
The search settings have enough options for you to customize your ideal workout buddy.	0	0	0	4	1
The profiles shown match your expectations based on the search settings.	5	0	0	0	0

3. QA test plan

Test Objectives:

The objective of testing these functions is to make sure all of the information has passed correctly from users to our server. For all information that the users typed in when they registered, we will test if it is saved in our database in correct data form. We will mainly test if the password and email of the registrar user will be encrypted correctly. And for another key feature: event management, we will test if the searching bar and event pages are working. To make sure the registered users can see their profile, we will test the user profile page as well.

HW and SW setup

For running Fithub, the user will need a PC(tower personal computer or laptop) with stable power and Internet connection. The operating system needs to be Windows(Windows 10), Ubuntu, or IOS. The user will also need Firefox or Chrome at their latest version on the user's computer. And the user will need to paste http://100.26.92.104:3000/ to their browser to enter Fithub. The recommended HW setup is below.

Features to be tested:

- Encrypted Password:
 - Test if the user's password has been hashed by MD5 and stored in the database.
- Testing of the search bar
 Test if a registered user can use the search bar to find the desired event by tags.
- Testing the filter option on find a buddy page
 Test if a registered user can enter the buddy's profile page by clicking specific tags.
- Testing the app on Firefox, Chrome, and IE
 Test if all features of Fithub can correctly function on Firefox, Chrome, and IE.
- The application shall have the company logo visible on every pages
 Test if the company logo is shown on all of the pages of Fithub.

Test Results

No	Description	Test Input	Expected Output	Pass/Fail
1	Test user's passwords shall be hashed using Md5	testingtest@t est.test	cc03e747a6afbbcb f8be7668acfebee5	pass
1	Test user's passwords shall be stored on server	testingtest@t est.test	cc03e747a6afbbcb f8be7668acfebee5	pass
1	Test user's passwords shall be able to be checked in database	testingtest@t est.test	cc03e747a6afbbcb f8be7668acfebee5	pass
2	Test search bar by entering event tags	Running	Running as a filter for events	pass
2	Search event tags	Biking	Jump to user profile with Biking tag	pass
2	Search inexistent event profile tags	Swimming	Please type again	fail
3	Test the filter option on find a buddy page	Biking	Biking is applied as a filter	fail
3	Test the filter option on find a buddy page	Walking	Walking is applied as a filter	fail
4	Test the app on firefox	Open app in Firefox	App opens	pass
4	Test the app on chrome	Open app in chrome	App opens	pass
4	Test the app on IE	Open app in IE	App opens	pass
5	Test application shall have the company logo visible on events page	Open event page of the app	Logo appears in event page	pass

5	Test application shall have the company logo visible on user profile page	Open user profile page of the app	Logo appears in user profile page	pass
5	Test application shall have the company logo visible on find a buddy page	Open find a buddy page	Logo appears in find a buddy page	pass
5	Test application shall have the company logo visible on event profile page	Open event profile page	Logo appears in event profile page	pass

4. Code Review

- a. The coding style chosen here is:
 - Proper code commenting. Mentioning the creator and functionality of the code
 - Proper code indentation
 - Meaningful variable names to ease user readability
 - Dividing a major functionality into sub functions to enable reuse of code and simplicity in implementation

b. Peer code review:

The functionality that has been sent for code review is:

- A user, searching for users based on filters and sending workout requests to users whose profiles interest the most.
- The user sending a message to the user to whom the request has been sent.
- A user rejecting, cancelling a users request
- Review from another team member (Johnson Nguyen)
 - Documentation
 - There is no proper code commenting on the block of the code whoever wrote that block. Along with a description of what that block of code is specifically doing.
 - Coding conventions
 - The tabs indentations are accurate with proper closing brackets.
 - The Variable names are easily recognizable, accurate, and descriptive to what the variable will be used for.
 - Throughout the project, some of the functions that were written were modularized therefore it can be re-used and won't cause any redundancies.
 - With that being said, the code was readable and for the most part it had some good practices. I do agree with Darshan Shah that async call backs would have made it even greater than it already is.
- Review from external member (Darshan Shah was a CS student and currently a Google employee)











1. Proper code commenting. Mentioning the creator and functionality of the code:

The comments present are descriptive and accurate. I would recommend using code comment annotations like @Author Vidhi instead of just listing the name. The name should also be on a separate line from the description.

2. Proper code indentation:

Tabs are accurate but at points excessive. Guard clauses can be used to reduce nesting in the code. There are a few nested async callbacks in the code, these can be pulled out into separate functions to reduce confusion in the code.

3. Meaningful variable names to ease user readability:

Variable names are following js conventions and are accurate and descriptive.

4. Dividing a major functionality into sub-functions to enable reuse of code and simplicity in implementation: Overall, the functions have been descriptive and accurate. These is definitely code which is being repeated in open and close tab functions which can extracted to reduce code duplications. As mentioned above, the async callbacks could also be extracted to improve code readability.

5. Self-check on best practices for security

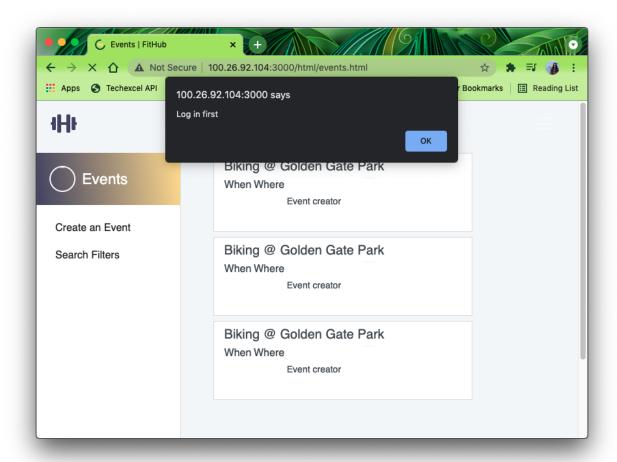
The major assets that are being protected are:

- User information: Only registered user shall be able to view information of other registered users
- User Account Password: The password is stored in the database in encrypted format. It
 is encrypted using MD5 that is a one way hash function and cannot be decrypted. Below
 is the screenshot for the same:

account_id	reg_id	username	password
1	1	vidhi1@sfsu.com	39f3fe61989747afed312c7b7465e004
2	2	users2@sfsu.com	86425c35a33507d479f71ade53a669aa
		1 1 1 0 "	T 0044 0 0070T0 0F01 EL TT0 40 1000

 Validated Data: All the input data entered by a user is adhered to basic validation for example email shall be of form xxx@xx.xx. Below is the code snippet in JS for email validation:

 Access to Unique features: Only logged in users shall be able to access the application features. When a user requests a feature of the fithub app, the app first checks if the user is registered. Below is the screenshot for the same:



6. Self-check: Adherence to original Non-functional specs

System Requirements

- 1. The application shall be able to run on the android system(Version 10).- On track
- 2. The application shall be able to run on the android system(Version 11).- On track
- 3. The application shall be able to run on Windows10(Version 1803).- On track
- 4. The application shall be able to run on Windows10(Version 1809).- On track
- 5. The application shall be able to run on Windows10(Version 1903).- On track
- 6. The application shall be able to run on Windows10(Version 2004).- On track
- 7. The application shall be able to run on Windows10(Version 20H2).- On track
- 8. The application shall be able to run on Windows10(Version 21H1).- On track
- 9. The application shall be able to run on Ubuntu 21.04. Done
- 10. The application shall be able to run on iOS 12. Done
- 11. The application shall be able to run on iOS 13. Done

Marketing

- 12. The application shall have the company logo visible on every page. On Track
- 13. The application shall have the company name visible on every page. Done
- 14. The application shall have non-intrusive space dedicated to relevant ads. Done
- 15. The application shall have meta content for SEO purpose.- On track

Legal requirements

- 16. The application shall prompt for Terms and Conditions for each new user to accept. Done
- 17. The application shall have all users verify that they're 18 years of age or older. On Track
- 18. The application shall have copyright information on every page. Done

Privacy

- 19. The application shall prompt user to accept policies when creating account Done
- 20. The application shall ensure user's data will be shared between registered users Done
- 21. The password shall be needed for log-in action. Done

- 22. The user's passwords shall be hashed using Md5. Done
- 23. The application's Network will be protected by the AWS Firewall Done
- 24. The application shall protect the privacy of users. Done
- 25. The application shall present all privacy policies appropriately to all users. Done
- 26. Users' private information should not be shared with 3rd platforms. Done
- 27. The basic security of the site shall all be tested. Done

User Interface

- 28. The application shall be aesthetically pleasing Done
- 29. The application shall have complementary colors Done
- 30. The application shall be easy to navigate for everyone Done
- 31. The application shall have a search bar Done
- 32. The application shall have a simple user interface Done
- 33. The application shall have a Filter button Done
- 34. The application shall have a Register button Done
- 35. The application shall have a Login button Done
- 36. The application shall have a Home button Done
- 37. The application shall have a Search button Done
- 38. The application shall have a Private Chat room Done
- 39. The application shall have a Terms and Condition Done
- 40. The application shall have a Home page button Done
- 41. The application shall have a User page button Done
- 42. The application shall have a Logout Button Done
- 43. The application shall have a Profile Picture of the User Done
- 44. The application shall have an Upload button Done
- 45. The application shall have a Block button Issue (feature removed from P1)
- 46. The application shall have an Unblock button Issue (feature removed from P1)
- 47. The application shall have pictures regarding to the activity Done
- 48. The application shall have a Nearby Button Issue (feature removed from P1)
- 49. The application shall have aesthetically pleasing photography Done
- 50. The application shall have smooth scrolling Done
- 51. The application shall have footer on every page Done
- 52. The application shall have header on every page Done

53. The application shall provide clear instructions on usability of features - Done

Usability

- 54. The application shall be optimized for mobile browsers. Done
- 55. The application shall store data in the chosen database Done
- 56. The user personas shall be used. Done
- 57. The application shall have a Support page Done
- 58. Users that are older than the age of 18 shall be able to use the application to post information, search events, and register after spending 5 minutes reading the support page. On track

Performance and scalability

- 59. The Response Time shall be 3 seconds Done
- 60. The Throughput shall be between 128 MiB/s and 250 MiB/s Done
- 61. The system availability shall be 99%(AWS) Done
- 62. A REST service call shall respond with 500 milliseconds, Done
- 63. A synchronous database request shall respond with 1000 milliseconds, Done
- 64. A batch process shall complete its processing within 60 minutes.- Done
- 65. The application shall be able to handle large number of users Done
- 66. The application shall be developed using microservices architecture enabling easy maintenance and launching/editing features to FitHub Done
- 67. The application shall be capable to recover from failures On track
- 68. The application shall provide user the requested data Done
- 69. The application shall be able to update the chat data in real time Done
- 70. The application shall have live updates regarding events On Track

Coding Standards

- 71. The code shall be readable Done
- 72. The code shall be well aligned and properly formatted Done
- 73. The code shall be commented wherever needed Done
- 74. The code shall be organized with one coding style Done
- 75. The code shall be accessible to all the developers Done
- 76. The code versions shall be maintained using GITHub Done

- 77. The code shall be pushed to different branches Done
- 78. The code shall be merge to the master once approved by leads and leader Done
- 79. The code shall be in the repository that the professor has created for us Done

Fault Tolerance

- 80. The application shall be able to reload itself if loading request failed Done
- 81. The application shall try reconnecting database if the request fails Done

Storage

- 82. The server shall have 16 concurrent Integrations Done
- 83. The server shall have 20 CPU Cores Done
- 84. The server shall have 12(RAID) Data Disk Done
- 85. The server shall have 8 Volume Size (GiB) Done

Expected Load

- 86. The application shall support as many users AWS can support Done
- 87. The application shall support as many user requests as AWS can support Done
- 88. The application shall support as many database connections as AWS can support Done

Portability and compatibility

- 89. The application shall be able to run on Chrome 91.0.4472. Done
- 90. The application shall be able to run on Chrome 92.0.4515. Done
- 91. The application shall be able to run on Firefox 88.0.1.- On track
- 92. The application shall be able to run on Firefox 89.0.1.- On track
- 93. The application shall be able to run on Microsoft Edge 91.0.864.37 On track
- 94. The application shall be able to run on Microsoft Edge 46.03.4.5155.- On track
- 95. The application shall be able to run on Safari 5. Done
- 96. The application shall be able to run on Safari 14. Done
- 97. The application shall be able to run with 1.8GHz or faster processor. Quad-core or better recommended. Done
- 98. The application shall run with 2 or more GB of RAM. Done

- 99. The application shall need a minimum of 1 GB up to 10 GB available space, depending on features installed. Done
- 100. The application shall be tested and deployed utilizing AWS Done
- 101. The application shall be continuously running 24/7 except for reasons of maintenance. Done

7. List of contributions to the document

Team Member	Contribution
Vidhi Vora (Team Lead)	As a Team Lead: • Ensuring all the requirements are met and adhering to the M4 guidelines • Assigning and supervising the task progress, organizing regular team meetings and the agenda • Resolving queries, discussing the concepts for the M4 As a Team Member (Milestone 2): Full Contribution to following sections: • Implementation of find buddy page features • Self-check on best practices for security Partial Contribution to following sections: • Implementation of sessions
	→ Code Review
Johnson Nguyen (Backend Lead)	Full Contribution to following sections: Partial Contribution to following sections: Implementation of sessions Usability test plan Code Review
Roberto Simental (Frontend Lead)	Full Contribution to following sections: Partial Contribution to following sections: Product summary Usability test plan Changes to feedback from M3 (prototype)
Michael Satumba (Frontend Member)	Full Contribution to following sections: Partial Contribution to following sections: QA test plan Changes to feedback from M3 (prototype)
Eduardo Hernandez (Backend Member)	Full Contribution to following sections: Implementation of the events page Partial Contribution to following sections:

	· -
Zhinan Zhao (Backend Member)	Full Contribution to following sections: Implementation of the user profile page Partial Contribution to following sections: -
Ziming Wang (Frontend Member)	Full Contribution to following sections: Partial Contribution to following sections: Usability test plan QA test plan