GreetNGroup

Business Requirements Document

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Executive Summary

This document describes the GreetNGroup web application business requirements, functional requirements, and non-functional requirements. Each core and unique functionality is outlined as discussed with the client's requests and the business requirements will comply with the client's restrictions. Included with each functionality is a pass/fail criteria that will help determine if the function is correctly working or not. This document will serve as a description of our design guidelines when developing and implementing the web application.

Registration (1)

Registration is a key feature of the website as accounts are required to create identities that are recognizable, giving actions performed by these users purpose.

Business Requirements

 A. Registration will be accessible to any visitor on the site
 B. Registration is the process of creating a general account within the website, accounts with higher access of control like that of admins, are only assigned by the creators of the site itself through user management.
 C. Allow users to register an account to the website as long as they have the proper credentials and are visiting the website
 D. Duplicate accounts cannot be made on the website
 E. Registered accounts should remain on the website unless purposefully deleted, banned, or otherwise noted by the owners
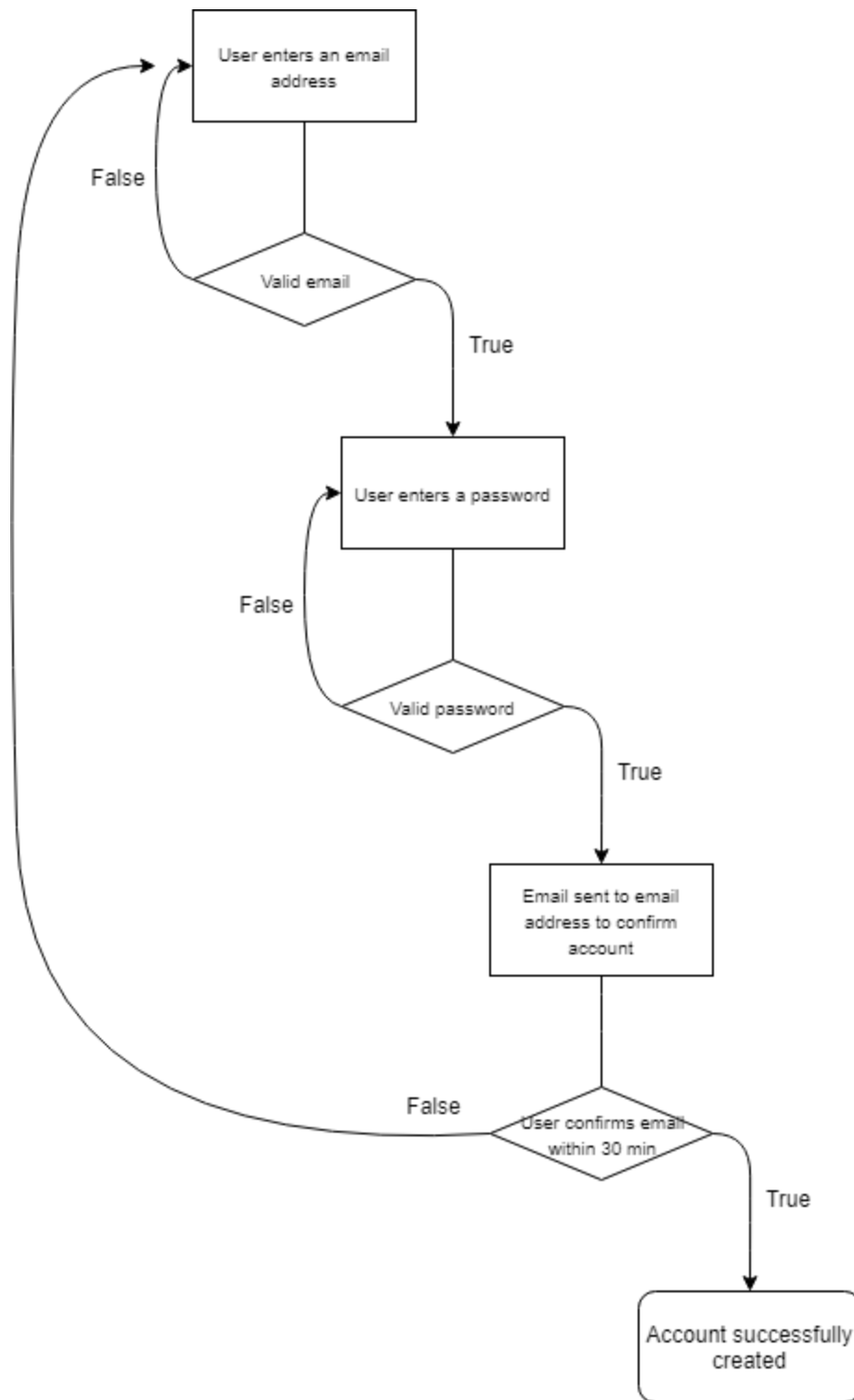 F. Access to the website is geared towards users in the US

Functional requirements

 A. Requirements for registering will be displayed visibly on the registration page
 B. Registration is divided into a multiple step process
  a. Required fields must be provided valid information to properly create the account.
   i. Login Username
    1. Email Account
   ii. Display Name
    1. Display names encouraged to be real names, First and Last
   iii. Password
   iv. Official Social Media Account

Non-Functional Requirements

 A. Usernames are email addresses
  a. Login usernames must be unique, and multiple of the same name cannot exist
 B. Minimum password length is 12

      a. Should require strong passwords by at least containing a non-alphabet character

C. Inappropriate username warrant ban or deletion of the account to ensure community standards
D. Accounts creation must be followed by email confirmation to confirm the user
E. Users will have restricted access based on their current registration status, unconfirmed accounts missing any required credentials will be left without access to the website's core features.

Registration Pass/Fail Criterias

Account Deletion Pass/Fail Criteria

User enters an email address

False

Valid email

True

User enters a password

False

Valid password

True

Email sent to email address to confirm account

False

User confirms email within 30 min

True

Account successfully deleted
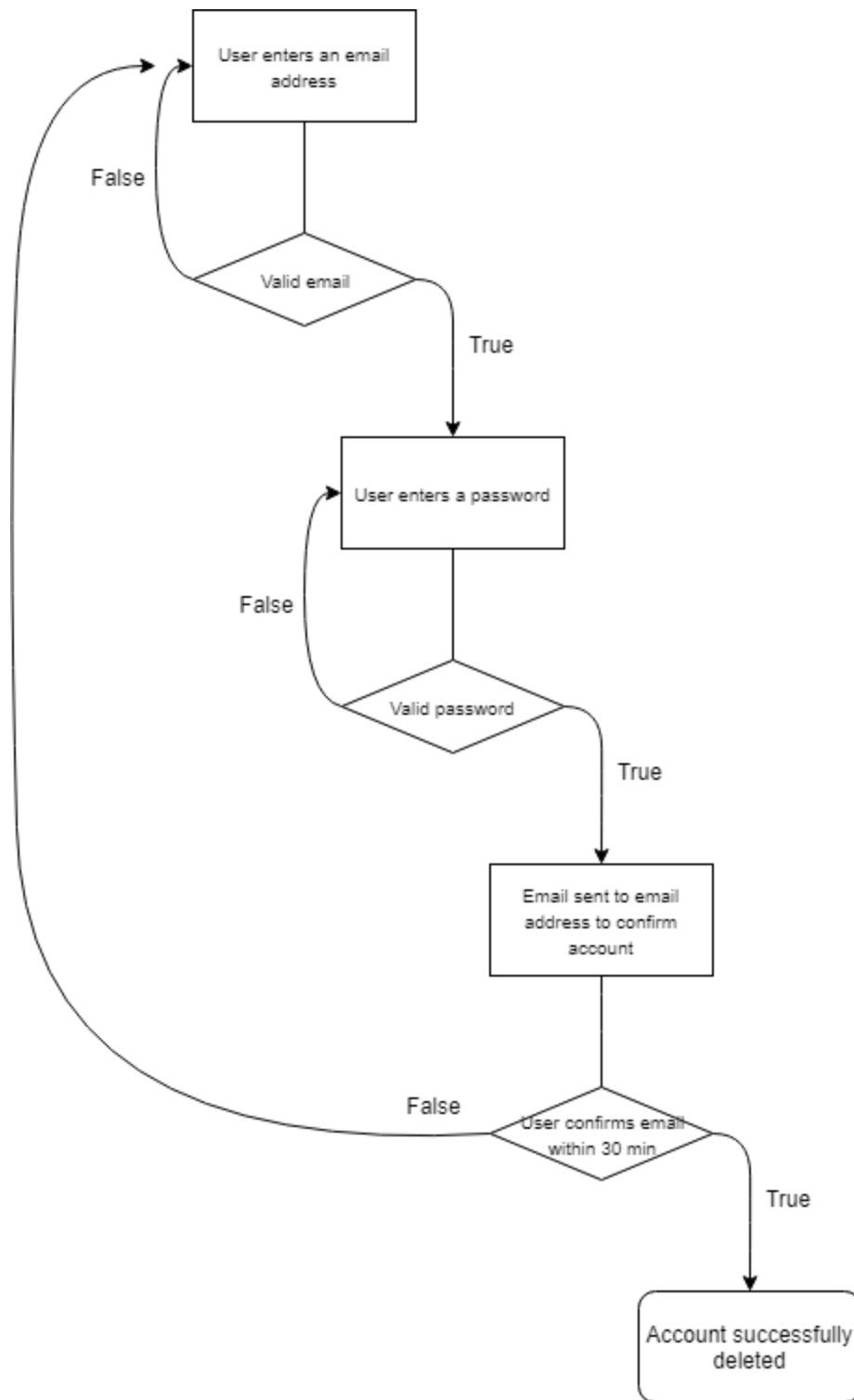
User Management (2)

User management can only exist with the creation of users which puts it at a lower priority. But when users exist, it is important to have control over them to keep the system running well.

Business Requirements

A. Only admins and website owners should have access to user management
B. User management should give allow admins to manage user access on the website
C. Users should have control over their own accounts

Functional Requirements

A. User accounts can delete their own accounts from the website if needed, after following the proper steps for deletion via confirmation of the user trying to delete it
   a. User profiles should have a visible button asking if they wish to delete their accounts, followed by a confirmation email
B. Users are allowed to change their passwords after following the proper steps of confirming their identities to allow for the change
   a. An email will be sent to the linked email address of the account to ask for user confirmation on a password change
C. Managing accounts will have access to the list of user accounts registered onto the website, allowing proper management of registered users

Non-Functional Requirements

A. Non Registered users will not have access to the main features of the site, and therefore cannot heavily affect the website, or perform changes. This also means that they are not controlled in how they simply view the webpage
B. Registered users are managed through the accounts that they own
   a. Issues in posts, profiles, and activities that work against others in the community or the website itself can warrant a ban on the user by the website admins
C. Managing accounts -- of the website, can give varied levels of access to previously normal users

Login/Logout (1)

When users exists, they must be able to login and logout to differentiate between users and non users. This makes it a top priority in keeping a user system functional.

Business Requirements

    A. Any user owning an accounts should be able to login with it
    B. Any account that is logged in should be able to log out
    C. Users without an account should not be able to login
    D. Users who are not logged in should not be able to logout

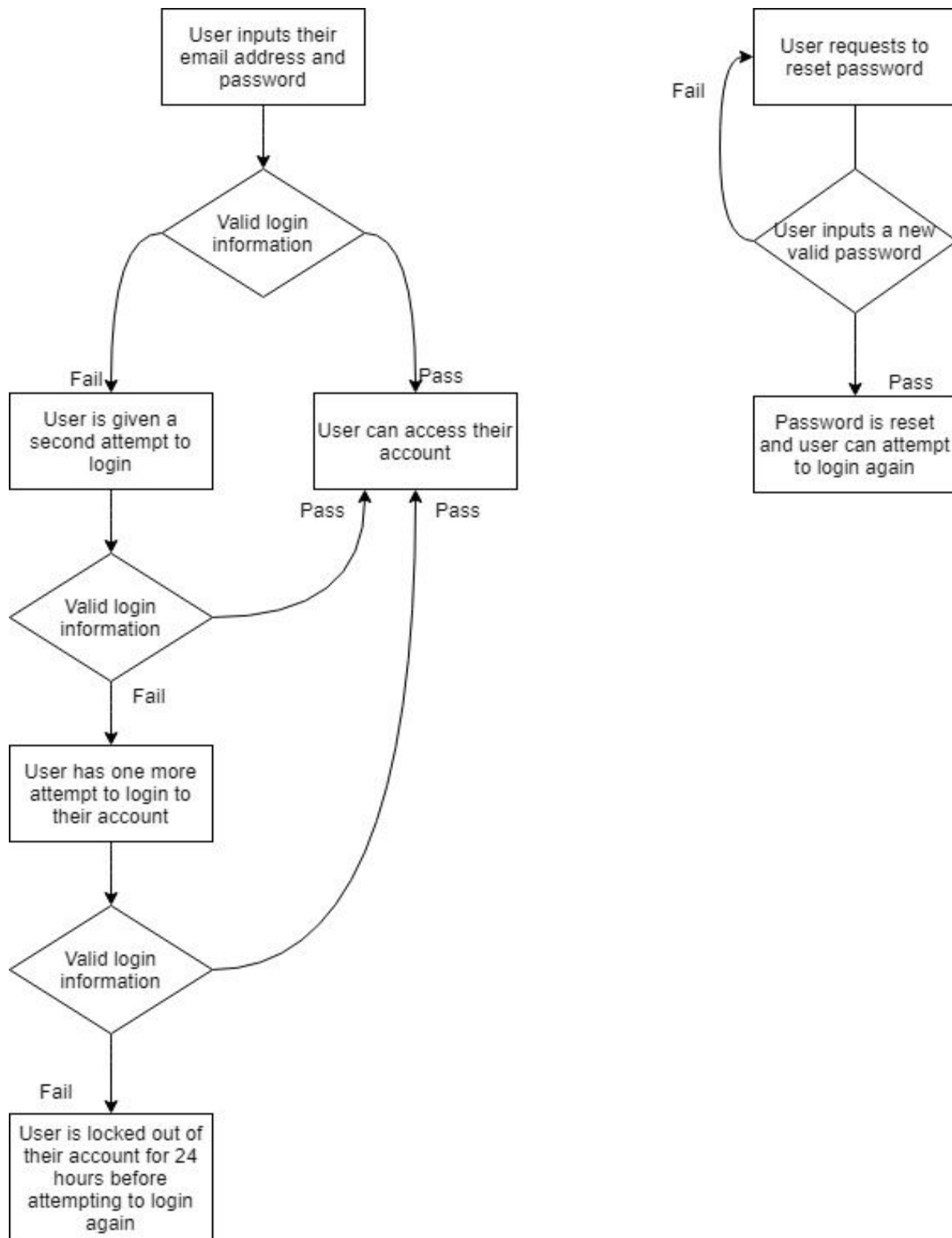## Functional Requirements

    A. Login requires correct credentials
        a. Only registered users, with corresponding username and password saved within the database can login
            i. Logins attempts are capped at 3 incorrect entries before the user attempting to log in to the account is locked out from logging in to that account
                1. This user can try to log in to a different account
                2. This user can attempt to recover their password
                    a. Upon failure of recovering the password, they will be locked out again.
                    b. On success of recovering the password, the user will be allowed access to logging into the account
    B. Logout terminates the current user session
            i. Logout is performed through a click of the logout button
                1. Also occurs on timeout

Non-Functional Requirements

    A. Login links account to proper website role, allowing the specified user to use the application with as much freedom as that specific role defines.
            ii. Members only pages on the website
    C. Login recovery will be linked to email verification to ensure secure account recovery
    D. Upon login timeout will occur upon 20 minutes of inactivity on the website

Login Pass/Fail Criteria

```
┌─────────────────────┐                                      ┌─────────────────────┐
│   User inputs their  │                               Fail→ │    User requests to  │
│  email address and   │                                     │    reset password    │
│      password        │                                     │                      │
└─────────────────────┘                                      └─────────────────────┘
          │                                                              │
          ▼                                                              ▼
      ◇ Valid login ◇                                            ◇ User inputs a new ◇
        information                                                valid password
     ╱           ╲                                                      │
  Fail           Pass                                                   ▼  Pass
   │               │                                         ┌─────────────────────┐
   ▼               ▼                                         │  Password is reset   │
┌──────────────┐ ┌──────────────────┐                       │ and user can attempt │
│ User is given │ │ User can access   │                      │   to login again     │
│ a second      │ │ their account     │                      └─────────────────────┘
│ attempt to    │ │                   │
│ login         │ └──────────────────┘
└──────────────┘   Pass        Pass
   │
   ▼
 ◇ Valid login ◇
   information
   │
  Fail
   ▼
┌──────────────────┐
│ User has one more │
│ attempt to login  │
│ to their account  │
└──────────────────┘
   │
   ▼
 ◇ Valid login ◇
   information
   │
  Fail
   ▼
┌──────────────────────┐
│ User is locked out of │
│ their account for 24  │
│ hours before          │
│ attempting to login   │
│ again                 │
└──────────────────────┘
```

User Access Control (1)

When users are created, levels of access between users must vary or else certain users would have more power over the website than they should. Being able to determine levels of access is important in keeping security and order on the website

Business Requirements

    A. There must be a distinction between controls given to different types of users
    B. Users high in the hierarchy such as admins should be able to modify lower levels of access if necessary
    C. Users should have control over available tools of their level of access

Functional Requirements

    A. Users are separated in their possible activities on the site via their level of access
        a. User authentication allows the website to determine what level the current user can access.
            i. Upon successful authentication, users will be allowed to take control of set features
            ii. Failure to authenticate means that the site should reject their connection
    B. Website access rules will be assigned per user based on assigned user role
    C. Website managers can access and manage permissions given in the website
        a. Ability to allow users to have more permission through site access
        b. Ability to remove permission by removing access to areas within the website.
            i. Interlinked with user management

Non-Functional Requirements

    A. If a user is not logged in, features of the website will be restricted from the user until they log in and authenticate
    B. Users of low level access cannot access higher levels unless purposefully assigned a higher level to maintain security
    C. Level of access should be clear to the user so their is no misunderstanding of what should be available for access

Usage Analysis Dashboard (2)

Usage by users should be analyzed by admins, to make it more convenient, it should exist on a page purely viewable by them. But the requirements of the dashboard rely on the existence of users, and thus is of a lower priority.

Business Requirements

A. Display analytics of user activity on the website
B. Make sure that data is easy to access

Functional Requirements

A. Display average successful login per month
  a. Make a comparison with the total amount of registered users showing maximum and minimum bars
B. Document and display the average session duration per month
C. Document and display failed login attempts vs successful login attempts
D. Display top 5 average time spent per page of the system
E. Display top 5 most used feature in the system
F. Document the average session duration per month over 6 months in a timeline
G. Document the number of logged in users per month over 6 months in a timeline

Non-Functional Requirements

A. Ease view of information in the usage analysis dashboard by using charts
  a. Bar charts for the for comparisons
  b. Line charts for timelines

Logging/Archiving (3)

It is convenient to document and save events that have occured within the site, to keep track of failures and success that occurs throughout the website. This helps in management and maintenance, but it is also of a lower priority because there is nothing to log if none of the other functions are active.

Business Requirements

    A. Log cases of error on the site
    B. Log cases of success on the site
    C. Archive saved information for a set amount of days

Functional Requirements

    A. System administrator will be sent a notification the moment there are 100 fail error logs
    B. All exceptions are logged on the server with the following information
        a. Date & Time of error
        b. Error message
        c. Line of Code / Target site of error
        d. User who encountered the error
        e. User request or action
    C. Telemetry data will be logged for all users unless they have chosen to opt out
        a. Date & time of login
        b. Date & time of logout
        c. Date and time of user page visit
        d. Date and time of user functionality execution
        e. Current IP address of logged in user
        f. Current location of logged in user
    D. Malicious attacks and connections from unauthorized locations will be logged
    E. When archiving fails, the system should retry after 2 hours
    F. If archiving fails more than 3 times, the archive process stops and the system administrator is notified

Nonfunctional Requirements

    A. Information that is logged will only be accessible by authorized personnel, those who do not have authorization should not be able to access this information
        a. Must be secure

B. All logs 30 days or older are grouped up and backed up

C. All logs 2 years and older are grouped up, archived, and deleted off the system

Error Handling (4)

On both client and server side, errors may occur, and a response to those errors should be sent. However, only when all areas are function can these errors be logged in the first place, therefore, priority has been set lower in preference of completing other areas.

Business Requirements

    A. Cover both client side and server side errors
    B. Make sure the error messages are not rude to clients/users
    C. Errors should not crash the system
    D. Provide solutions to issues

Functional Requirements

    A. All exceptions on the client side will result in a user friendly message when applicable, such as the following issues:
        a. Server request timeouts
        b. Invalid Server requests
        c. Server error
        d. Invalid user input
        e. Unauthorized access
        f. Contact administrator
    B. All exceptions on the server side will result in a user friendly message if returning to the client. Such as the following errors:
        a. Invalid request
        b. Server error
        c. Unauthorized access
        d. Contact administrator

Nonfunctional Requirements

    A. Exceptions and critical faults should not crash the system
    B. Solution messages should be provided along with the error message where applicable

Data Store Access (2)

Records should be viewable the moment it is stored, but higher priority goes to the information and system that stores the information than the system that allows them to be viewed. Therefore it is of priority 2.

Business Requirements

A. Give the ability to create, read, update, and delete records
B. Only allow access to those who should be able to access it
    a. Admins and system admins

Functional Requirements

A. Records will be added into the data store
    a. Duplicates will not be allowed
B. Selected data from the data store can be accessed and read
    a. Atomic unless explicitly not required
C. Existing records in the data store can be updated
D. Existing record can be deleted
    a. Atomic unless explicitly not required
E. Type of data a DAL request has access to retrieve during specific scenarios can be controlled

Nonfunctional Requirements

A. When there is no space to store more records, than no action should be taken on the data store
B. If no record is found to be read, than no action will take place on the data store
C. When trying to update, if the record does not exist, no action will be taken

Network Communication (1)

This functionality is ranked at 1 for highest priority because the website will only be usable by the public if it is able to securely send, receive, and update data via the Internet.

Business Requirements

A. A proper and secure network connection must be established between the servers, the internet, and the devices of people using the website
B. Must be able to connect to the Internet in order to send, receive, and update data being used by the website
C. Establish a secure connection to prevent data loss or corruption through SSL Certification and the activation of HTTPS

Functional Requirements

A. Web Services
   a. The domain must be under a certified web service platform for it to be deployed and accessed by the public
   b. This service will provide the IP address that is linked to the website's domain name
B. Accessible IP address
   a. The DNS must be able to return the correct IP address that is linked to the domain name of the website
   b. If the IP address of this product gets changed, the browser must be able to redirect to the correct address and reach the intended destination
C. SSL Certification
   a. This website must have its own, unique, dedicated IP address
   b. HTTPS must be activated once SSL certification is active
      i. SSL certification and HTTPS protects sensitive data being input on the website via encryption which makes it difficult for packet sniffing to occur

Non-Functional Requirements

A. The server must not take longer than 3 seconds to respond to client requests
B. Any requests on port 80 must be elevated to port 443 to ensure security

Documentation (3)

Although maintaining proper documentation throughout the development process can help ensure that the product is being made based on what the client wants as well as answer potential questions users have about usage of the website, documentation does not determine whether or not this website can function properly, hence why documentation is ranked as 3 in terms of priority.

Business Requirements

A. Documentation of the whole development process must be done
   a. Development Documents should be accessible by everyone accessing the website
   b. Development Documents intended audience are developers
B. User Manual to aid users in using the website must be created
   a. User Manual should be accessible by everyone accessing the website
   b. User Manual should not be updated by non system admins
   c. User Manual intended audience are general users
   d. User Manual should be comprehensive
C. The FAQ should be accessible by everyone accessing the website
   a. FAQ should not be updated by any user below administrative level
   b. FAQ intended audience are general users
   c. FAQ will only cover a few questions that can arise when using the website

Functional Requirements

A. Design Documentation
   a. Data structures that will be used in the website
   b. The structure of the website
   c. User interface
B. User Manual
   a. States how the website and publicly accessible functions should be used
C. FAQ
   a. Must answer questions that commonly arise amongst users quickly

Nonfunctional Requirements

A. FAQ must answer 10 common questions that arise when using the website
B. All documents must be legible and easy to read for everyone accessing these documents

Event Creation/Join (2)

This functionality is ranked 2 in priority since creating and joining events is the main purpose of this website, meaning that this function must be able to work as intended. Although it is a significant unique function, it is not given the highest priority as failing to implement this functionality does not make the website inaccessible; however, failing to implement it will result in significant loss of product value.

Business Requirements

A. Users must be able to create an event
- a. Users must not be able to create an event in the past
- b. Users must fill in information about the event name, time, location, age range of attendees, and maximum capacity of an event
- c. Users can create an unlimited amount of events as long as dates and times do not collide and that the event must not start 30 minutes from when it was created

B. Users must be able to delete an event 1 hour before the event is to occur

C. Users must be registered on the website to create, join, and delete events

D. Attendees of a cancelled event must be notified of event deletion/cancellation

E. Users can unlock more events that can be created depending on their user rating
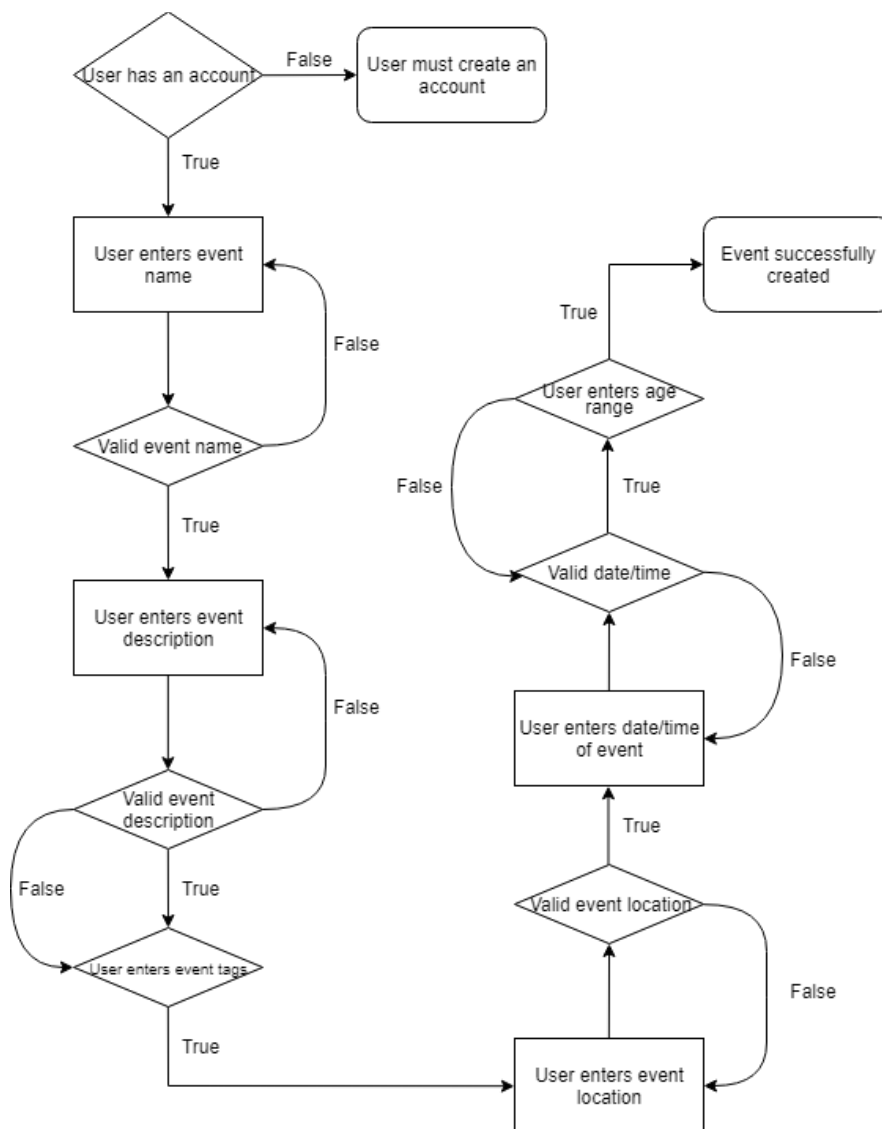
Functional Requirements

A. Users must be able to enter this information about the event
- a. Event name
- b. Event description
- c. Tags associated with the event
- d. Event location
- e. Date/Time of event
- f. Age range of event
- g. How many people can attend the event
- h. Roles attendees must pick (if any)
  - i. If users decide to add roles to their event, substitution roles must also be added

B. Users are also able to delete or cancel any events that they have created

C. If the event requires users to choose roles, three preferred roles must be picked to prevent users from leaving the group should they not receive a role they wanted

D. Age of users must be checked to see if user is able to join event or not based on event's age range

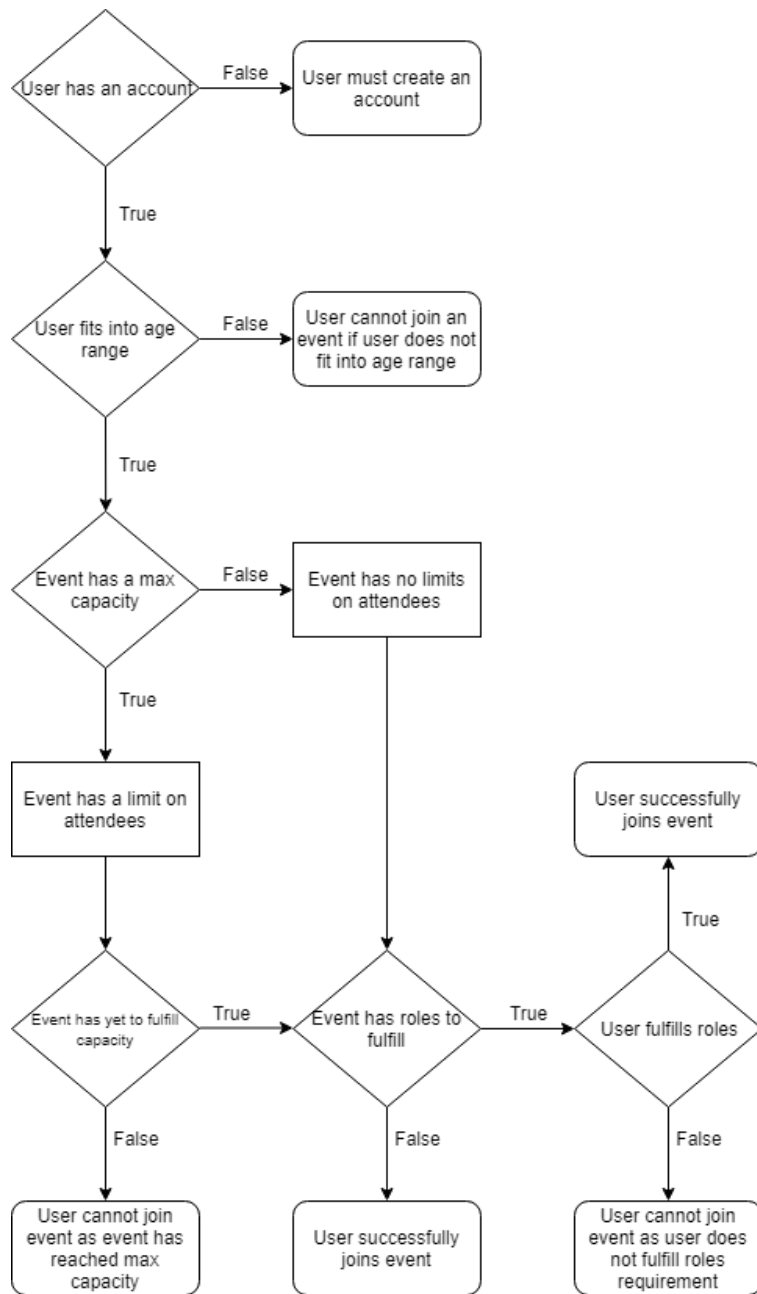## Nonfunctional Requirements

    A. Event title must not be longer than 30 characters
    B. Event location must be a valid address if a physical event
    C. Age range should not be below 18 years of age

Event Creation Pass/Fail Criterias

Event Join Pass/Fail Criterias

User has an account → False → User must create an account

User has an account → True

User fits into age range → False → User cannot join an event if user does not fit into age range

User fits into age range → True

Event has a max capacity → False → Event has no limits on attendees

Event has a max capacity → True

Event has a limit on attendees

Event has yet to fulfill capacity → True → Event has roles to fulfill

Event has yet to fulfill capacity → False → User cannot join event as event has reached max capacity

Event has roles to fulfill → True → User fulfills roles

Event has roles to fulfill → False → User successfully joins event

User fulfills roles → True → User successfully joins event

User fulfills roles → False → User cannot join event as user does not fulfill roles requirement

Search For User (3)

This functionality is ranked 3 because although the function is helpful for users, it is not the main functionality of the website. It is helpful for those who want to find people of similar interest, but most users will be searching for events rather than other users.

Business Requirements

    A. A user is able to search for any accounts registered to the site
   B. A list user will be the search result

Functional requirements

    A. Able to search for a user by their username or profile name
    B. Able to search for users by their selected tags
        a. Multiple tags can be searched at the same time to narrow down selection
    C. User can choose how the names will be organized after searching
        a. User can decide on how they want the list to be sorted,
        b. Default organization will be alphabetical by user name or profile name
        c. Can change organization of list
    D. By default, number of users shown on the page after a search will be 25
        a. User can adjust the number of users per page
    E. If no users can be found, given the search query, then a blank list will be shown
    F. Users without accounts for the website are able to use the search function
    G. Any user on the block list will automatically be removed from the list

Nonfunctional Requirements

    A. Search bar will be intuitive to use
        a. User will be able to properly use the search bar within 10 minutes of repeatedly using it
    B. All options of the search bar will be properly labeled in English text
    C. Search results will produce an accurate list of users
    D. Search results will be displayed within 3 seconds

Search for User Pass/Fail Criterias
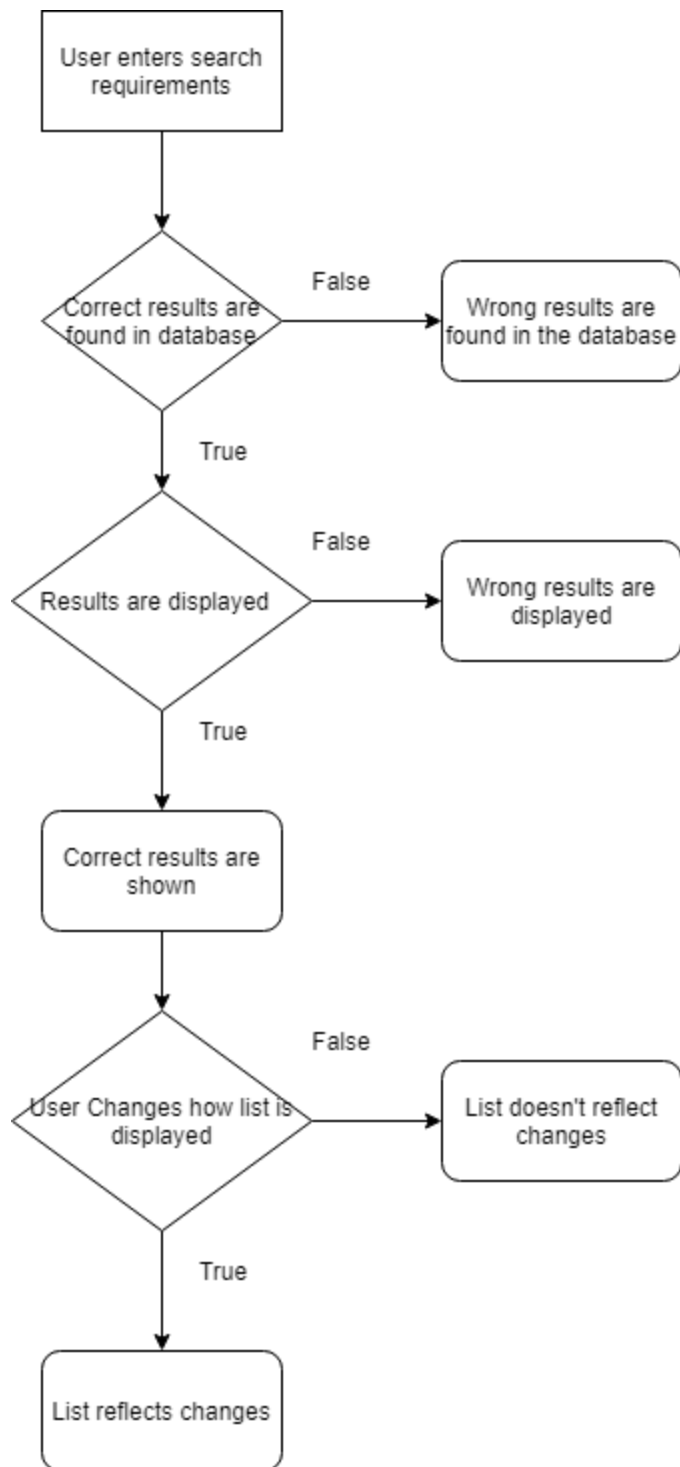
Find Event(s) For Me (2)

This function ranks at a two because this makes it easier for people who are trying to look for events at certain times. It helps those with specific requirements, but this is just an accessory to find events. Users will also be able to view events on other dedicated pages without having to use this.

Business Requirements

A. Users are able to enter information and have a list of events catered to their requirements
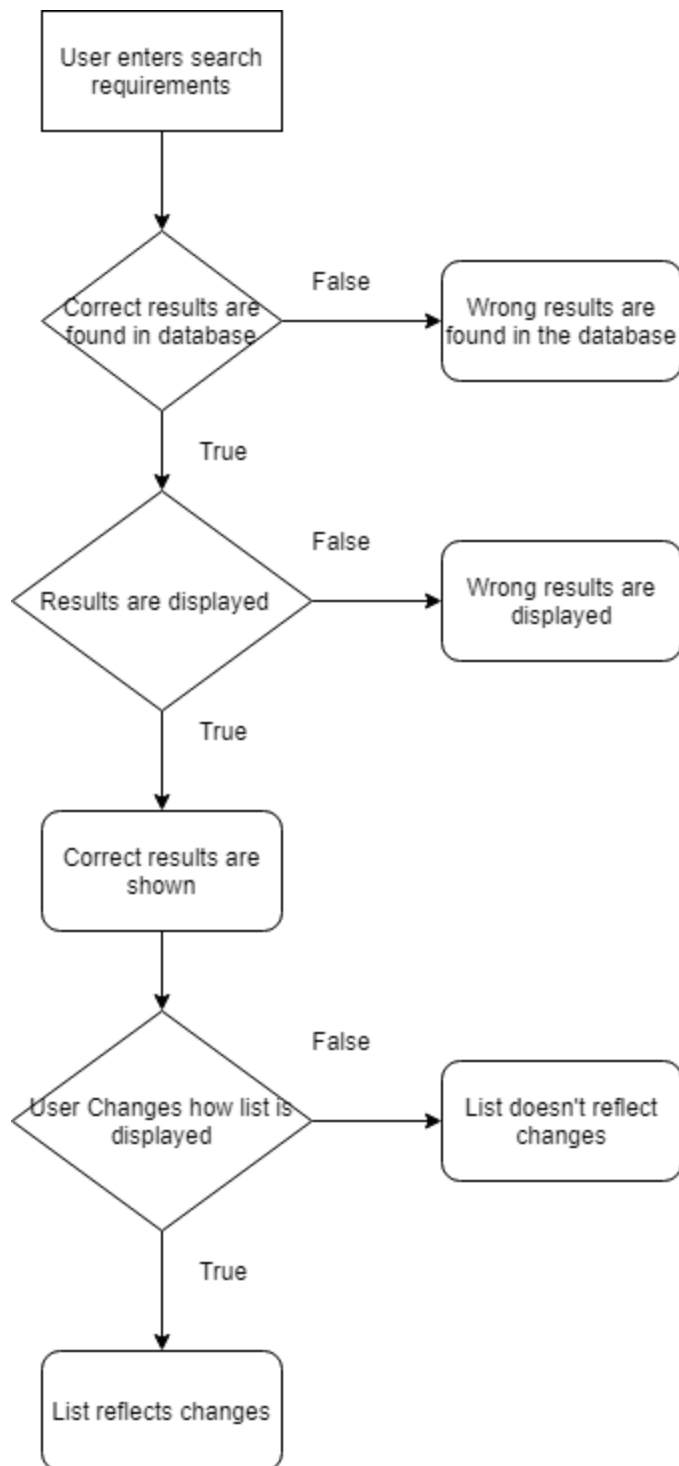B. A list of events will be the result of the function

Functional requirements

A. Able to search for events given different information
   a. Available free time
   b. Different tags
   c. Age Range
   d. Skill Level
B. If room limit is full then the event will not be brought up
C. Will only show events that are about to happen
   a. No past events will be shown
   b. Events past their halfway point will not be shown
D. Events will be listed in alphabetical order and in time frame of hours
E. By default, number of users shown on the page after a search will be 25
   a. User can adjust the number of users per page

Nonfunctional Requirements

A. All options of the event finder will be properly labeled in english text
B. Search results will produce an accurate list of events

Find Event for Me Pass/Fail Criterias

```
User enters search
requirements
        |
        v
Correct results are    --False-->   Wrong results are
found in database                   found in the database
        |
      True
        |
        v
Results are displayed  --False-->   Wrong results are
                                    displayed
        |
      True
        |
        v
Correct results are
shown
        |
        v
User Changes how list is  --False-->   List doesn't reflect
displayed                              changes
        |
      True
        |
        v
List reflects changes
```

Event Check-In (1)

This function is rated 1 because it enables the function of rating and commenting on other users that attended the same event. Not only does the function act as a easy sign in sheet, but it also allows the event coordinators to see who actually came to the event.

Business Requirements

    A. Registered Users are able to check in to event if they are within range of the event's address
    B. Event coordinators are able to see who attended the event
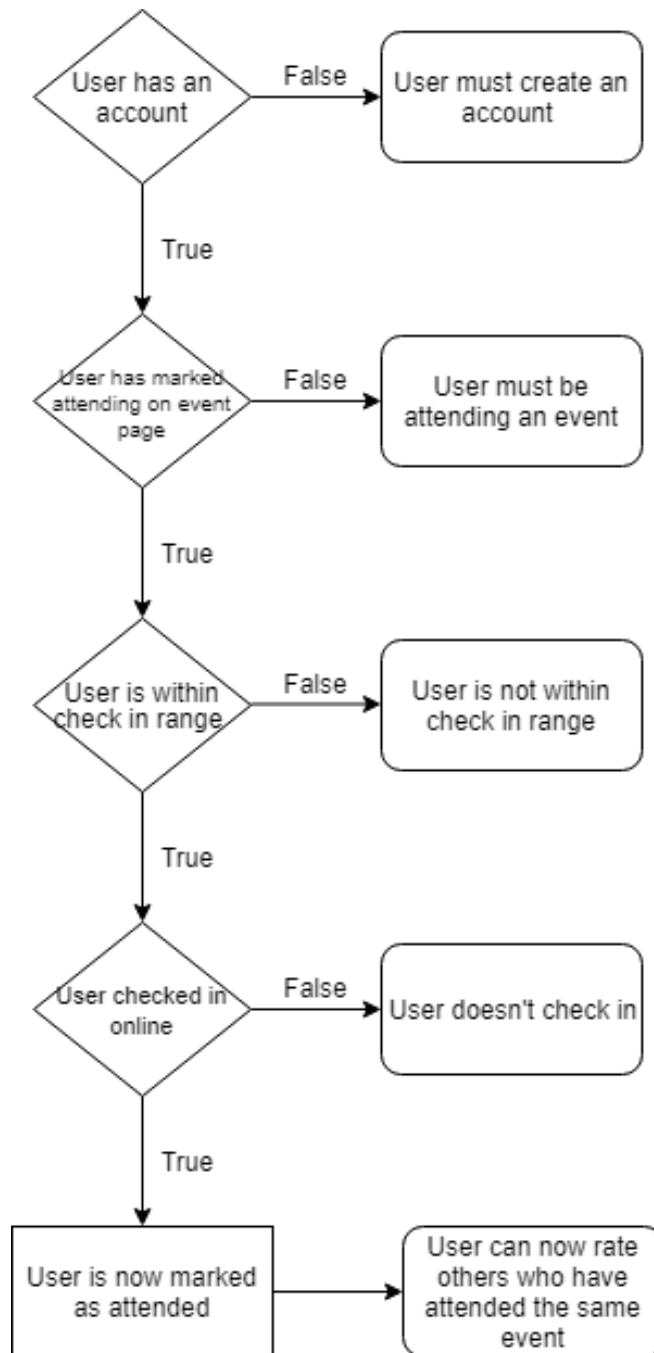   C. Event coordinators are able to check in users if preferred

Functional requirements

    A. User needs an account to be able to check in
    B. Users are able to check in from the start of the event till the end of it
        a. Events coordinators can specify when check-in starts and ends
    C. Event coordinators can specify if they want to manually check in users or to let them check in themselves
        a. Self check ins must gather user location information from their mobile phone
    D. In order to rate or comment on other people, attendees must also check out of the event
        a. This means that users must have checked in to the event first in order to check out
    E. After the event, the event will be shown in the users event history
        a. Other users can view the event and see how you were rated
        b. Only if you attended an event will you be able to see it in the history

Nonfunctional Requirements

    A. Accurately tell if you are within a 2 mile radius range of the address
    B. Server must receive information on who checked in or out and update the event coordinator within 3 seconds
    C. Check in system will be intuitive
        a. Able to check in after seeing it once

Event Check-In Pass/Fail Criteria

```
┌─────────────┐   False   ┌──────────────────┐
│ User has an │──────────▶│ User must create │
│   account   │           │    an account    │
└─────────────┘           └──────────────────┘
       │ True
       ▼
┌──────────────────┐  False  ┌──────────────────┐
│  User has marked │────────▶│   User must be   │
│ attending on event│        │ attending an event│
│       page       │         └──────────────────┘
└──────────────────┘
       │ True
       ▼
┌─────────────┐   False   ┌──────────────────┐
│ User is within│────────▶│ User is not within│
│check in range │         │  check in range  │
└─────────────┘           └──────────────────┘
       │ True
       ▼
┌─────────────┐   False   ┌──────────────────┐
│User checked in│────────▶│ User doesn't check in│
│    online     │         └──────────────────┘
└─────────────┘
       │ True
       ▼
┌─────────────┐           ┌──────────────────┐
│User is now   │─────────▶│ User can now rate │
│marked as     │          │ others who have   │
│attended      │          │ attended the same │
└─────────────┘           │      event       │
                          └──────────────────┘
```

User Ratings (1)

This functionality is ranked 1 because this is one of the main unique functions of the website. It allows users to see how others view them at events and it also serves as a easy way for event coordinators to remove the trolls from the group. The users rating may also includes comments that will help specify what others really think of them rather than a thumbs up or thumbs down.

Business Requirements

    A. Registered user are able to rate other users that attend the same event as them
    B. Registered user are able to leave comments users that attend the same event as them

Functional requirements

    A. A user needs a account with the website to be able to rate/comment on other users
    B. Only after checking in an event will you be able to rate/comment other users
         a. Not possible to rate/comment users any other time
         b. Can only rate/comment users at that event
    C. A User can only rate another user by using the rating system
         a. A user can be rated thumbs-up or thumbs-down
    D. Value of the rating is calculated using the average percent of thumbs up over all events
    E.   Able to see overall rating outside of profile
         a. Shows average of overall rating
         b. Shows events attended
    F. Missing the event leads to an automatic thumbs-down
    G. Can view overall ratings at each event attended
         a. Can expand event to see comments about user

Nonfunctional Requirements

    A. Average score will be calculated precisely
    B. Score will be easily visible and user will have no trouble finding it

User Rating Pass/Fail Criterias
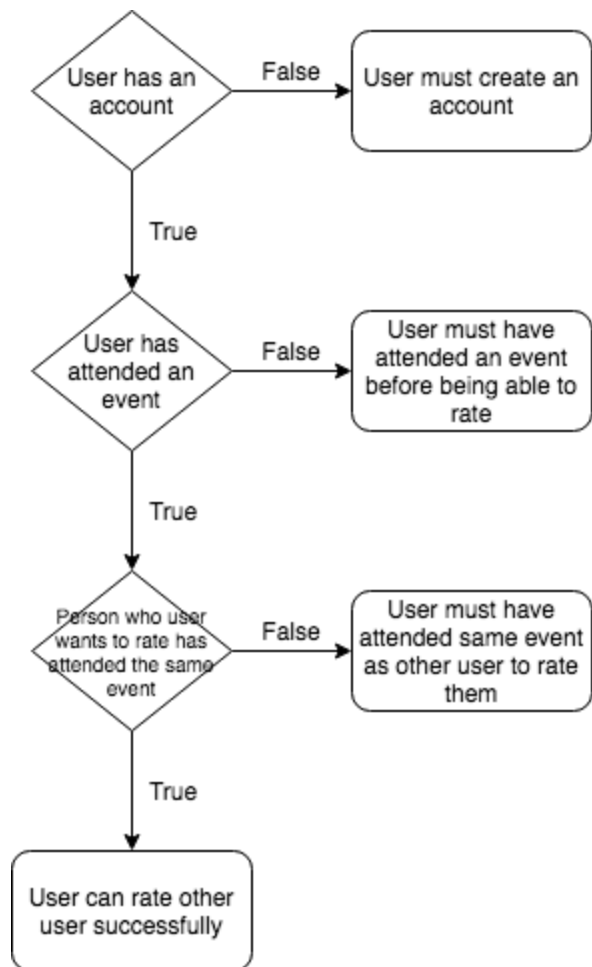
Block List (5)

A list that enables the user to add people the had disagreements with or they just don't like. Since a block list only shows users who they blocked, it is ranked 5 for lowest priority as its implementation does not affect whether or not the website can function properly or not.

Business Requirements

    A. Registered users are able to add people to a block list that will exclude events that the blocked users are attending, in searches
    B. Users cannot view other users' block lists
    C. General users can only block other general users
    D. Admins cannot block other admins or a system admin

Functional requirements

    A. A user needs an account with the website to use the list
    B. Able to block anyone with an account associated with the website
    C. If a user tries to join an event with a block person in it, the the system will give them a warning
    D. If the user is hosting an event, then any blocked users on the list will not be able to join
    E. Able to unblock anyone on the list at anytime
    F. Events that have the block user attending will not be shown in event finder

Nonfunctional Requirements

    A. Block list will be easily accessible to the registered user
    B. Accurately represent the correct blocked users
    C. Users can only block at most 100 people
    D. When viewing the list, users can configure the amount of users they see per page
        a. Default max users per page is 25
        b. List can be sorted in alphabetical order by name or by most recently blocked

Block List Pass/Fail Criterias
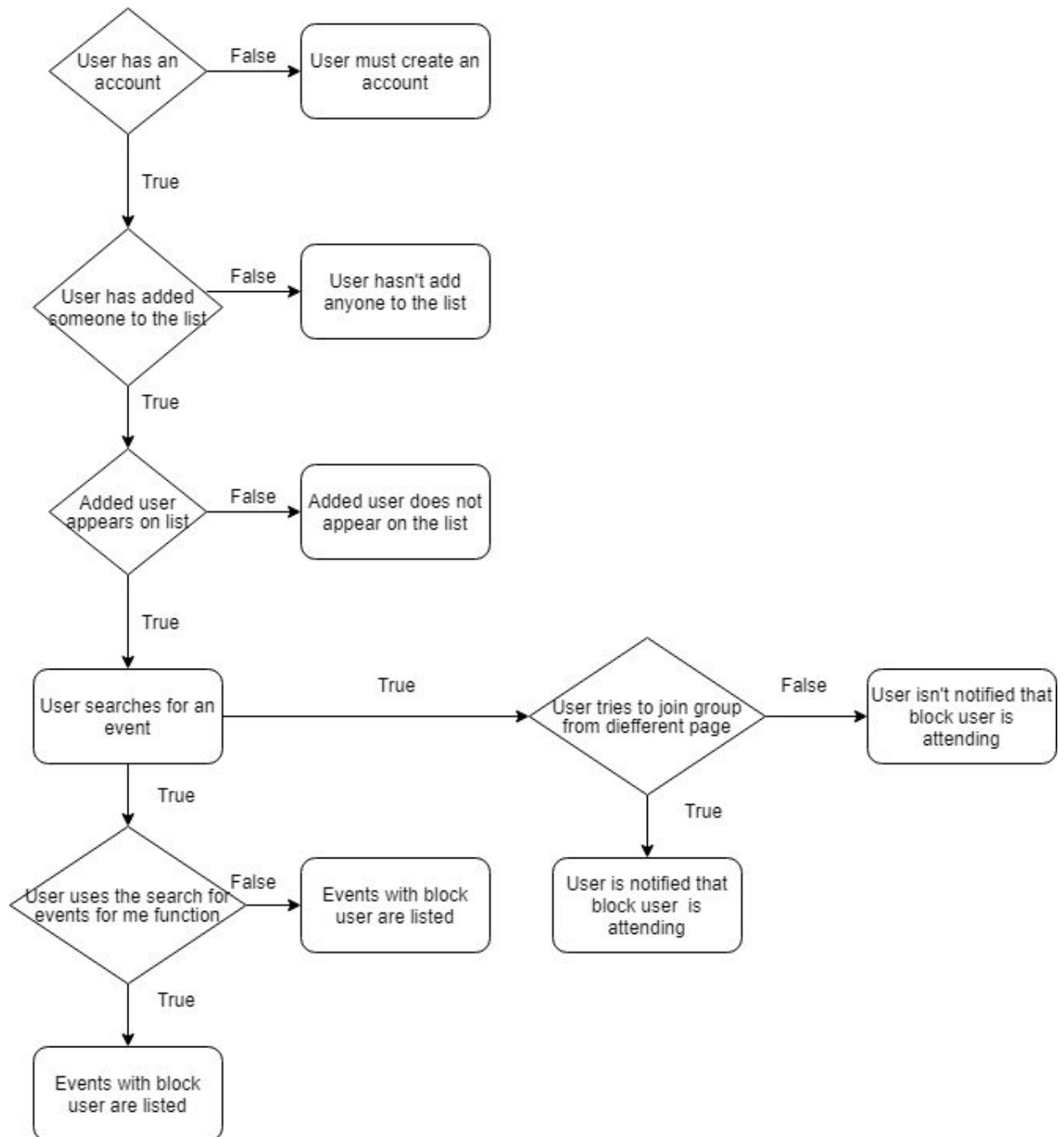
Tags (3)

This function is ranked 3 because it helps distinguish between users and it helps customize events so people will have an easier time searching for them. Although people will still be able to search for events without tags, they help find what their looking for more efficiently.

Business Requirements

A. Registered users and events will be able to add different tags to differentiate between other users and events

Functional requirements

A. Any profile can add as many tags as they like
    a. Limited to the amount of made tags already
    b. No user made tags will be allowed
B. Events are able to add tags
    a. Events can have an unlimited amount of tags
    b. Up to event coordinator to display the right tags

Nonfunctional Requirements

A. Tags will accurately represent what the user has chosen to describe their interests or event(s)
B. Tags must be searchable when looking for event or user

Tags Pass/Fail Criteria
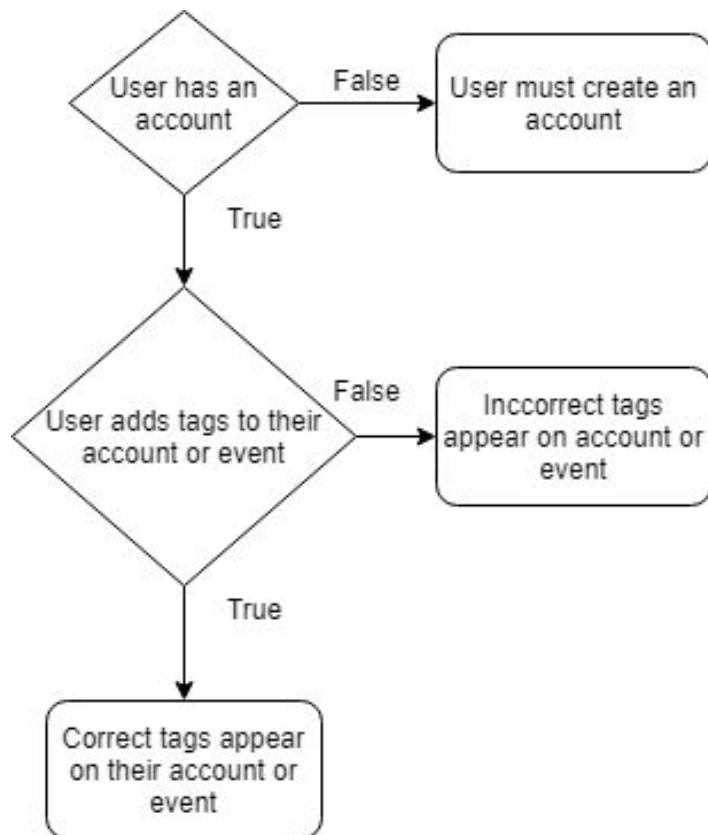
Scoping

A. Since this website is a public website, people from all over the world can access this website
   a. User base of this website can only be those in the North America region
   b. User must be accessing it from a North American IP address to create an account
   c. Website must be supported by the latest version of Google Chrome (Currently 69.0.3497.100 as of 2018.10.08)
   d. This website must be a single page application
      i. Web pages the user interacts with must be dynamic and change contents displayed without requesting to fetch HTML repeatedly
         1. This is done by changing the pathname, search, and hash on the website url to determine what content to render without changing protocol or hostname when requesting content
      ii. Users without a valid registered account on the website cannot access paths that are meant for registered users and will result in redirect to previous page or to an error page if attempting to access
B. If user is 18 years of age or older and is currently in the North America region, they are able to register for an account
   a. Upon successful register, the user is granted basic user permissions
      i. Basic users are able to use the unique functionalities as well as core functionalities that do not involve data management or user access control
      ii. Location, IP range, and permissions of this user are stored into a database
         1. Secondary authentication and security questions are also stored with the user's account
   b. If someone is registered, but is attempting to access their account from outside of North America, a redirect or error must be done
      i. Users will be able to regain access to their functionalities once their location and IP range are within North America region when attempting to access