

# Business Requirement Documents

CECS 491

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# 1. PROJECT SUMMARY

## 1.1 Purpose

The purpose of this document is to provide information about the business requirements used in the **Kraken Bracket** project

## 1.2 Background Information

- When it comes to managing large-scale video game tournaments, it is likely that there will be confusion among staff and competitors
- Other video game tournament apps on the market do not provide real-time updates once the information is inputted into the system. This will cause delays and inconveniences for those who are keeping track of updates regarding tournament matches, competitors, etc.
- The **Kraken Bracket** project will provide solutions to these problems. The most important aspect of the project is to provide all users with real-time information on events, tournaments, and other aspects of the app.

## **2. PROJECT OBJECTIVE**

We are projecting that this application can potentially be a major platform for a competitive gaming audience. This application is targeted to suit the needs of tournament organization for tournament hosts, competitors, and spectators of tournaments large or small. With the potential traction this product gains, it can also become a social platform similar to Twitch and Discord such that product is also a platform to reach the gaming audience in terms of product advertisement potential sponsors as well.

### **3. PROJECT SCOPE**

#### **3.1 Audience**

Our application is targeting specifically competitive video game players who seek a solution to organize tournament brackets whether the tournament is large or small, as well as regular users who are interested in knowing tournament information. We intend our application to be the go-to application for all tournaments.

The application will initially be launched for audiences in California. After launch, the application will be accessed by users within the continental United States plus Alaska and Hawaii.

#### **3.2 Type Of Application**

Initially, the application will support the latest versions of Google Chrome and Mozilla Firefox browsers for the web application. Minimum 10 mbps internet connection

The intended target is to have the application supported on the latest versions of iOS and Android. It will support 4G cellular connection and above.

#### **3.3 Data To Be Collected**

The following tentative data will be collected:

- User account information
  - Name (first and last)
  - Birthday (MM/DD/YYYY)
  - Location (city and state)
- Tournament Brackets and Events
  - Name
  - Comments
  - Date / time (local time of the event)

## 4. FEATURES

This section outlines functional and non-functional features for all users. Each feature varies depending on the user role.

### 4.1 Account

#### 4.1.1 Account Registration

- User create an account to access features exclusive to registered users
- Required Account information to be inputted
  - Email
    - Email format
    - Maximum of 200 characters
  - Password
    - Minimum of 12 to a maximum of 2000 characters
    - At least one of the following characters:
      - Upper or Lowercase alphabet letter
      - Number (0-9)
      - Special character (UTF-8)
  - First Name, Last Name
    - Minimum of 2 to a Maximum of 20 characters (letters only) for each of the names
  - GamerTag
    - GamerTag minimum of 2 to a maximum of 20 characters, can be non-unique (utf-8)
    - Every GamerTag will have 4 ending digits 0000-9999
- Fill out Profile Information or skip for a later time
  - DOB (MM/DD/YYYY)
  - Phone number (###-###-####)
  - Location (city and state)
    - Initially California
  - Add profile picture (500 x 500 pixel)

#### Preconditions

- Must not be logged in with another account
- Must be at Account Registration view

#### Postconditions

- User account is created
- Display user-friendly message indicating account is created
- Redirected to the homepage
- Account creation selection is removed and replaced with GamerTag

#### Failure Postconditions

- Unable to create account
- Unable to be redirected to homepage
- Log in / Account creation selection is still visible and not replaced

#### Non-functional

- Account will be created and stored within 1000 ms
- User is automatically login after creation

#### 4.1.2 Account Management

- Allow user to manage their account, such as edit / update account information
  - Change Name
  - Change password
  - Enable / Disable account

#### Preconditions

- User must be registered and logged in
- Must be in Account Management view
- User must input a time-sensitive code in order to change the password
  - Code is sent to User's email, after the user requests to change the password
  - Code is a random 8 character combination of letters and numbers

#### Postconditions

- User account is updated
- Display user-friendly message indicating what was updated

#### Failure Postconditions

- Unable to update Account due to one or more of the following conditions:
  - Invalid password
  - Invalid password change code



#### Non-functional

- Account will be updated and stored within 1000 ms
- Password change code is sent to the user's email within 5000 ms
- Password needs to meet the minimum requirements
  - Minimum of 12 to a maximum of 2000 characters
  - At least one of the following characters:
    - Upper and lowercase
    - Number (0-9)
    - Special character (UTF-8)

#### 4.1.3 Account Recovery

- User forgot their password and is unable to login and requests to reset their password

#### Preconditions

- User is not currently log in
- Must be at log in view
- Must have access to Email

#### Postconditions

- User is redirected to password reset view and prompt to enter a new password

#### Failure Postconditions

- Password is not successfully updated
- Unable to log in with new password

#### Non-Functional

- Security code is sent to user's email within 5000 ms
- Password is updated within 1000 ms

## **4.2 User (Registered and Non-Registered)**

### 4.2.1 Search For Tournament Brackets

- Search for Tournament Bracket
- Search criteria
  - Keyword Bracket name

- Must have a minimum of 1 character keyword

#### Preconditions

- User does not need to be logged in to search
- Must be at search view

#### Postconditions

- Displaying results
  - 10 results per view
  - 10+ results will be displayed in multiple of 10
  - Can be less than 10
- Result displaying
  - Tournament Bracket name
  - Host name
  - Type of game being played
  - Type of bracket system
  - Number of Competitors
  - The event that is it associated with (if any)

#### Failure Postconditions

- Result is not displaying properly

#### Non-functional

- Result is fetched and displayed within 1000 ms
- Sort is accurate
  - Most keyword match to least

#### 4.2.2 Search For Event

- Search for Event
- Search criteria
  - Keyword event name
  - Must have a minimum of 1 character keyword

#### Preconditions

- User does not need to be logged in to search

- Must be at search view

#### Postconditions

- Displaying results
  - 10 results per view
  - 10+ results will be displayed in multiple of 10
  - Can be less than 10
- Result displaying
  - Event name
  - Host name
  - List of Tournament Bracket it encompasses
    - First three

#### Failure Postconditions

- Result is not displaying properly

#### Non-functional

- Result is fetched and displayed within 1000 ms
- Sort is accurate
  - Most keyword match to least

#### 4.2.3 Search For Registered User

- Search for User
- Search criteria
  - Keyword - Gamertag
  - Must have a minimum of 1 character keyword

#### Preconditions

- User does not need to be logged in to search
- Must be at search view

#### Postconditions

- Displaying results
  - 25 results per view
  - 25+ results will be displayed in multiple of 25
  - Can be less than 25
- Result displaying

- Gamertag
- Gamertag ending 4 digits

#### Failure Postconditions

- Result is not displaying properly

#### Non-functional

- Result is fetched and displayed within 1000 ms
- Sort is accurate
  - Most keyword match to least

#### 4.2.4 Event Home View / Dashboard

- Event Dashboard displays concise information about each Event
- The following must be displayed for all Events:
  - All brackets in the tournament. Each bracket will include its type and number of entrants & pools
  - Tournament Rules
- The following must and will only display under certain conditions:
  - Competitors - sorted by alphabetical order from their GamerTag. If no Competitors are available, then this section will not appear
  - Prizes (if information is provided)
  - Video game(s) being played (if information is provided)
  - Standings - all tournament Competitors and their ranks in the tournament (e.g. which player came in 1st place, 2nd, etc.). Will only display if the bracket is finished. Else, this section will not appear
  - Start and End date of Event

#### Preconditions

- User does not need to be logged in to view dashboard
- Event must exist
- User must click on Event's home page in order to view

#### Postconditions

- Information mentioned above is fetched and displayed to the User

#### Failure Post Conditions

- At least one of the required information mentioned does not display

- At least one of the certain-conditions information is available and does not display

#### Non-Functional

- All information must be retrieved and displayed to the User within 5000 ms
- The displayed information is accurate according to the Event

#### 4.2.5 Tournament Bracket Home View / Dashboard

- Display Tournament Bracket information
- While Tournament Bracket is active display the current Bracket, along with its Competitors
- After Tournament Bracket is completed display Winner and / or top seated Competitors

#### Preconditions

- User does not need to be logged in to view dashboard
- Tournament Bracket must exist
- User must on Tournament Bracket Home View / Dashboard

#### Postconditions

- Information mentioned above is fetched and displayed to the User

#### Failure Post Conditions

- At least one of the required information mentioned does not display
- Wrong information is displayed
- Active and Post Tournament Bracket view type is wrong

#### Non-Functional

- All information must be retrieved and displayed to the User within 5000 ms
- The displayed information is accurate according to the Tournament Bracket

## 4.3 Registered User

### 4.3.1 Comment On Tournament Brackets

- Allow user to leave a comment on Tournament Bracket
- Reply to another comment within the Tournament Bracket
- Minimum 1 character comment
  - Any character that is UTF-8 support

#### Preconditions

- User must be logged in
- Must be at Tournament Bracket view
  - Under comment selection

#### Postconditions

- Comment is successfully uploaded
- User Gamertag is display along with the time stamp

#### Failure Postconditions

- Comment upload is not successful
- Wrong Gamertag
- Local timestamp is wrong

#### Non-Functional

- Comment is uploaded within 1000 ms
- Comment is uploaded to the proper place where the user intended to comment

### 4.3.2 Message Other Registered-Users

- Sent / Receive message to / from another User
- Must have a minimum of 1 character keyword

#### Preconditions

- User must be logged in
- The other user must registered within our system
- User must be at message view

#### Postconditions

- Message is sent / received by user
- User is notified when a message is received

#### Failure Postconditions

- Message is sent / received by the wrong user
- Message incorrect
- Timestamp is incorrect

#### Non-functional

- Message is sent / received within 1000 ms
- User is notified within 500ms when the message is received
- Message is displayed within the message view correctly

#### 4.3.3 Create Tournament Bracket

- User create Tournament Bracket
  - Bracket Name Minimum 5 to a maximum of 75 characters (utf-8)
    - Can not contain emojis
  - Bracket Type (Single, Double, Round-Robin)
  - Maximum number of competitors Maximum 128 users
- Additional optional information to include
  - Video game being played, Maximum of 50 characters
  - Gaming platform, Maximum of 50 characters
  - Rulesets, Maximum of 700 characters
  - Start Date, End Date (MM/DD/YYYY)
    - Start date by default is when first match starts
    - End date by default is when a winner is decided

#### Preconditions

- User must be logged in
- User must be at Tournament Bracket Creation View

#### Postconditions

- The Tournament Bracket is created and able to be viewed
- Bracket has the correct information
- Registered Users is able to register to the Bracket

#### Failure Postconditions

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- Incorrect Host user, allowing another User to edit
- Bracket is unviewable
- Users can not register to the Bracket

#### Non-Functional

- Bracket will be created and viewable within 1000 ms
- View will be automatically zoom out to view and is able to be zoomed in

#### 4.3.4 Create Event

- User creates an event and becomes host for the event
  - Event name minimum 5 to a maximum of 75 characters (utf-8)
    - Can not contain emojis
  - User can create multiple tournament brackets within an event minimum 1 to a maximum of 10 tournament brackets
- Optional information
  - Valid location address
  - Start Date, End Date (MM/DD/YYYY)
    - Default Start Date is when the first match start
    - Default End Date is when all Tournament Brackets have been concluded
  - Event descriptions
    - Minimum 5 to a maximum of 700 characters
    - Can include emojis and special characters (utf-8)
  - Create Tournament Bracket now or later

#### Preconditions

- User must be logged in
- User must be at Event Creation view

#### Postconditions

- The event is created
- The User who created the Event becomes the Host of the event
- The Tournament Brackets are created within the Event
- Registered users are able to sign up for the Event and the Tournament Brackets they want to participate in

#### Failure Postconditions

- Incorrect Host user, allowing another User to edit the event information



- Event is unviewable
- Brackets in the event are unviewable
- User cannot register for the Event or Tournament Brackets within the event

#### Non-functional

- Event will be created within 1000 ms

#### 4.3.5 Register For Tournament Brackets And Events

- Registered User select register to Tournament Bracket or Event
- Registering for Brackets will require User's information to be filled out
- Confirm registration

#### Preconditions

- Users must be logged in to register for Events and Tournament Brackets
- Must be under Event or Tournament Bracket view

#### Postconditions

- User is successful in registering for Event and/or Tournament Brackets
- Automatically follow the Event and/or Tournament Bracket

#### Failure Postconditions

- User is unsuccessful when registering for an Event or Tournament Bracket
- Automatic following failed, User does not receive notification

#### Non-Functional

- Registering process will be completed within 1000 ms

#### 4.3.6 Unregister Tournament Bracket

- User select unregister Tournament Bracket
- Unregister before Tournament Bracket start date
  - User will be indicated that unregistration was a success
- Unregister during in progress Tournament Bracket
  - User will receive a lost for their upcoming Match
  - Tournament Bracket will indicate this User forfeited
- Unregister after Tournament Bracket end date
  - This action can not be performed
  - No changes can be made to Tournament Bracket after end date

#### Preconditions

- Users must be logged in
- Must be at Tournament Bracket view
- Users must be already registered in the Tournament Bracket

#### Postconditions

- User is successful in unregistering from the Tournament Bracket
- Automatically stop receiving notification

#### Failure Postconditions

- User is unsuccessful in unregistering from the Tournament Bracket
- User still gets notification from the Tournament Bracket even after unregistering
- User is still registered in Tournament Bracket

#### Non-functional

- Unregistering process will be completed within 1000 ms
- Tournament Bracket will automatically be updated

#### 4.3.7 Unregister Event

- User select unregister Event
- User does not want to receive notification
- Unregister before Event start date
  - User will be indicted that unregistration was a success
- Unregister during in progress Event
  - User will be indicted that unregistration was a success
- Unregister after Event end date
  - This action can not be performed
  - No changes can be made to Event after end date

#### Preconditions

- Users must be logged in
- Must be at Event view
- Users must be already registered the Event

#### Postconditions

- User is successful in unregistering from the Event

- Automatically stop receiving notification

#### Failure Postconditions

- User is unsuccessful in unregistering from the Event
- User still gets notification from the Event even after unregistering

#### Non-functional

- Unregistering process will be completed within 1000 ms

#### 4.3.8 Profile Customization

- User can edit certain aspects of their profile:
  - GamerTag
  - Date of birth
  - Profile picture
    - Upload own profile picture
      - User can upload JPEG files it will have to be cropped
      - 500 x 500 pixel limit
    - Select 1 of 10 available preset avatars
  - Bio minimum 1 to a maximum of 700 characters (utf-8)

#### Preconditions

- User must be logged in
- Must be at profile view
- GamerTag limit not reached

#### Postcondition

- User is successful in making any changes in their profile
- User will automatically receive an Email indicating change has occurred

#### Failure Postcondition

- User is unsuccessful in saving any changes they have made in their profile
- Updated information is not being reflected on the profile

#### Non-functional

- Information will be updated within 1000 ms

#### 4.3.9 Push Notification

- User received notification message
- Notification from:
  - Tournament Bracket / Event update
  - Registration / unregister from Tournament Bracket or Event
  - Tournament Bracket score / placement update

#### Preconditions

- User must be logged in to receive Push Notification
- User is associated with Tournament Bracket or Event

#### Postconditions

- Push Notification message is displayed for the User

#### Failure Postcondition

- User receives notification from unassociated Tournament Bracket or Event
- Displayed message is not show
- User does not receive a notification at all when they should

#### Non-Functional

- Push Notification will be received within 1000 ms
- Multiple Push Notification will be stacked on top of each other and no overlap
  - Most recent will be at the bottom
- Push Notification will fade out after 5000 ms, unless closed by the User

## 4.4 Host

### 4.4.1 Update Event Information

- Change required Event information - must only be allowed to do so before the event starts
  - Start and end time - both values must not be less than the current date's value, i.e. dates must be in a future time
  - Location
- Change optional Event information
  - Event descriptions
    - Minimum 5 to a maximum of 700 characters
    - Can include emojis and special characters (utf-8)

#### Preconditions

- User must be logged in and be a Host of the Event
- Must be at Update Event view

#### Postcondition

- Host is able to save any changes made to an event
  - This includes any changes made to Tournament Brackets that is in an event
- Users associated with the Event will be notified

#### Failure Postconditions

- Host is unsuccessful in saving changes made to an event

#### Non-Functional

- Changes will be updated within 1000 ms

### 4.4.2 Update Tournament Bracket Information

- Change required Tournament Bracket information
  - Type of bracket system (Single, Double, Round-Robin)
  - Maximum number of competitors (maximum of 128 Users)
  - Input registration end date (MM/DD/YYYY)
    - Registration end date has to be after current creation date
- Change optional Tournament Bracket information

- The associated Event if there is any
- Video game being played
- Rule-set the game is being played on
- The platform the game is being played on
- Start / End date (MM/DD/YYYY)

#### Preconditions

- User must be logged in and be the Host of the Tournament Bracket or Event that the Tournament Bracket is under
- Must be at Tournament Bracket view

#### Postconditions

- Host is successful in saving any changes made in the tournament bracket
- Users following the Tournament Bracket will be notified

#### Failure Postconditions

- Host is unsuccessful in saving any changes made in the Tournament Bracket
- The new Start / End date is conflicting with the old Start / End date

#### Non-Functional

- Changes will be updated within 1000 ms

#### 4.4.3 Manage Tournament Bracket

- Input Competitor score
- Adding / removing / replacing a Competitor
- Disqualify Competitors (must provide reason(s))
- Input grace period for upcoming matches (minutes)
- Have a set check-in time frame for competitors to enter in a tournament bracket. After the time has expired, competitors will be disqualified for that match

#### Preconditions

- User must be logged in and be a Host that is authorized to manage the Tournament Bracket
- Must be at Tournament Bracket View

#### Postconditions

- Tournament Bracket successfully updates when a Host manages certain information in the tournament bracket
- Users following the Tournament Bracket will be notified

#### Failure Postconditions

- Tournament fails to update even after Host manages any information in the tournament bracket
- Update is not being reflected on Tournament Bracket

#### Non-Functional

- Changes will be updated within 1000 ms

#### 4.4.4 Delete Tournament Bracket

- Host want to remove Tournament Bracket
- Before Tournament Bracket start date
  - Host can remove Tournament Bracket
  - Deletion will be notified to all users currently registered to the Tournament Bracket
- In Progress Tournament Bracket
  - Progress will still be recorded and available for viewing
  - Must state reason for stopping Tournament
- After Tournament Bracket end date
  - This action can not be done
  - Tournament Bracket is archived

#### Preconditions

- User must be logged in
- User must be the Host for the Tournament Bracket if they want to delete Tournament Bracket
- Tournament Bracket deletion must be perform before the start date
- For in progress Tournament Bracket, this action will end Tournament Bracket and must provide reason(s)

#### Postconditions

- Host is successful in deleting the Tournament Bracket
- In progress Tournament Bracket will end
- Users associated with the Tournament Bracket will be notified

#### Failure Postconditions

- Host is unsuccessful when deleting the Tournament Bracket
- The Tournament Bracket is still accessible by Users
- Users is still able to make update to Tournament Bracket, when in progress Tournament Bracket ends

#### Non-functional

- Deletion will be completed within 1000 ms
- All Users currently in view will be redirected to a different page

#### 4.4.5 Delete Event

- Host want to remove Event
- Before Event start date
  - Host can remove Event
  - Deletion will be notified to all users currently registered to the Event
- In Progress Event
  - Progress will still be recorded and available for viewing
  - Must state reason for stopping Event
- After Event end date
  - This action can not be done
  - Event is archived

#### Preconditions

- User must be logged in
- User must be the Host for the Event if they want to delete Event
- Event deletion must be perform before the start date
- For in progress Event, this action will end the Event and must provide reason(s)

#### Postconditions

- Host is successful in deleting the Event
- In progress Event will end
- Users associated with the Event will be notified

#### Failure Postconditions

- Host is unsuccessful when deleting the Event
- The Event is still accessible by Users



- Host is still able to make update to Event, when in progress Event ends

Non-functional

- Deletion will be completed within 1000 ms
- All Users currently in view will be redirected to a different page

## 4.5 Competitor

### 4.5.1 Check Into A Match

- Check into a Tournament Bracket before every Match during the grace period.
- Competitor will self check in by inputting a 5 character code supplied by Host that will contain numbers, lowercase letters, and uppercase letters from the english alphabet
- Competitor inputs 5 character code to check in
- Have an indicator shown at the Tournament Bracket that a Competitor has checked-in
- Failure to check in will result in a loss.

#### Preconditions

- User must be logged in
- User must be a Competitor of the Tournament Bracket
- Competitor can only check in during the grace period of the tournament bracket

#### Postconditions

- Competitor who checks in during the grace period is successfully marked as checked in the Tournament Bracket
- Tournament Bracket will indicate that the Competitor failed to check in and automatically move the other Competitor up the bracket

#### Failure Postconditions

- Competitor who are checked into a match is unsuccessful in checking in a match and becomes disqualified from the tournament bracket they are competing in
- Competitors who do not check into the tournament they are competing after the grace period is still successfully marked as checked in

#### Non-Functional

- User check-in status will be updated within 1000 ms

### 4.5.2 Selecting the Winner

- At the end of the Match, the Competitor will select the Winner of the match.
- Host can also select the Winner if conflict occurs.
- Automatically be selected as Winner if other Competitor failed to check in

#### Preconditions

- User must be logged in
- User must be a Competitor or Host of the Tournament Bracket
- Both Competitor must have successfully checked in the same Match

#### Postconditions

- Both Competitors have selected a Winner
- The Winner will be moved up the Tournament Bracket or be declared the Winner of the Tournament Bracket
- The defeated Competitor will end their Tournament Bracket matches or if applicable they will move to the Consolation Bracket to get another fighting chance
- If both Competitors did not select the same Winner, Host will be notified and be the one to select the Winner.

#### Failure Postconditions

- Tournament Bracket did not update to reflect the Winner of the Match
- The wrong Competitor is declared Winner
- A Competitor is declared Winner, when both Competitor did not select the same Winner
- If applicable the defeated Competitor is not updated in the Consolation Bracket

#### Non-functional

- The selection view will display the correct Competitors, with themselves always at the left side and their opponent at the right side.
- Tournament Bracket will update within 1000 ms