

App Design 1

1. App Idea

This application aims to provide tools to the Esports statistician and players to track stats across matches and tournaments for Super Smash Bros Ultimate™. The app will provide an interface that allows players to quickly update their match results and view their stats and match history. The app will allow the statistician and players to track player progression and performance over time.

2. Users

- a. Admin: uses the app to view stats and update system data (such as roster).
 - i. Esports Coordinator
 - ii. Should have familiarity with stat tracking systems
- b. Statistician: uses the app to analyze stats and record data.
 - i. Student
 - ii. Should have familiarity with data tracking such as Excel.
- c. Player: uses the app to view stats and record personal data.
 - i. Student
 - ii. Should have familiarity with stat tracking

3. App Usage

- a. A player/statistician will use the app to input match data as the matches progress. Then view the stats and proceed to the next match.
- b. A player/statistician will use the app to view player stats and match history to understand a player's strengths and weaknesses, which will help players improve their performance.
- c. The admin will use the app to view stats and make system edits. Such as updating user roles and inviting new users to the system.
- d. Both mobile(IOS/Android) and PC use expected
- e. The app is meant to be used only by the MTU Esports team.

4. Data

- a. round
- b. Map
- c. player name
- d. Win % for specific characters
- e. Enemy team player
- f. Stocks taken/left

App Design 2

1. App Idea

This application aims to provide tools to the Esports statistician and players to track stats across matches and tournaments for Super Smash Bros Ultimate™. The app will provide an interface that allows players to quickly update their match results and view their stats and match history. The app will allow the statistician and players to track player progression and performance over time.

2. Users

- a. Admin: uses the app to view stats, updating system data (such as roster), and managing members' roles.
 - i. Esports Coordinator
 - ii. Should have familiarity with stat tracking systems
- b. Statistician: uses the app to analyze stats and record data.
 - i. Student
 - ii. Should have familiarity with data tracking such as Excel.
- c. Player: uses the app to view stats and record personal data.
 - i. Student
 - ii. Should have familiarity with stat tracking

3. Major Workflows

- a. Create an Event/competition
 - i. Add characteristics
 1. Name
 2. type
 3. Location
 4. Date
 - b. Join Event/competition
 - i. Add match
 1. Add characteristics
 - a. Player
 - i. character
 - b. Enemy
 - i. character
 - c. Stocks taken/loss
 - d. win/lose
- c. View Event History
 - i. View overall results
 1. View match breakdown
- d. View Player History
 - i. View overall stats
 1. win/loss
 - a. Overall

- b. Crew
 - c. Individual
 - 2. Main characters
 - 3. Most wins against characters
 - 4. Most losses against character
- ii. View previous events/matches
 - 1. Filter by:
 - a. Event
 - b. Character
 - c. Enemy
 - d. Match type

4. Views

- a. Home page
 - i. List upcoming events
- b. Nav bar
 - i. Links to events and team pages
 - ii. Link to my profile
 - iii. Admin page link
- c. Events page
 - i. List upcoming events
 - ii. List past events
 - iii. Provide search/filter function
- d. Team page
 - i. List team members
- e. Player page
 - i. Edit my profile
 - 1. My characters, change password, etc
 - ii. List stats
 - iii. List match history
- f. Admin page
 - i. Roster control
 - 1. Invite new users
 - 2. Edit user roles/permissions
 - ii. System settings
- g. Account creation landing page
 - i. Create password
 - ii. set-up a profile if a player

5. Data

- a. Match data
 - i. Match type
 - ii. Round
 - iii. Map

- iv. Player name
 - v. Characters used by each player
 - vi. Enemy team player
 - vii. Stocks taken/left
 - viii. Date submitted
 - b. Win % for specific characters
 - c. Event data
 - d. Login data
 - e. User roles
 - f. images (maps, characters)
6. Anticipated Challenges
- a. Proper database construction
 - b. Making the app fast enough for the use case
 - c. Dealing with potential connectivity issues
 - d. Having app work efficiently (quickness of user being able to enter data) on pc and on mobile
 - i. As well as implementing UI that works/looks good for either type device

System Overview

This system will be made using a web app that will allow a user to login and add data about matches to our database. Users will be able to access and download data from the databases to allow for data analysis.

The system will be accessible on both mobile devices and on pc. Users will access the site and the site will be formatted for either pc or for mobile depending on the device the user is accessing the site from.

Stakeholders

Smash team faculty

Being able to have access to a database of players' stats and performance throughout the year while playing games and improving ability will give faculty the resource to better understand areas that players are improving in and areas they need to focus more on to better direct training for players. Being able to easily add in match data will also make the lives of statisticians, who input stats about each game played, much easier and quicker by having an easy to interact with app to track that data.

Smash team players

Being able to have a system to quickly and conveniently add in information about their games played will give players more time to focus on playing their matches and spend less time tracking their matches. Players will also want to know which areas they are performing well in and which areas need to more work and having an easy way to take data from matches and visualize those stats will make that process much more streamlined

User Personas

Persona 1

Smash Esports player - Bob

Age: 19

Bob is a new player on the Smash team and loves playing Smash Bros. and wants to improve his play by playing the game competitively with the MTU Esports team. Bob enjoys playing in tournaments and loves to keep playing while he's in the flow state. He will follow advice of coaches on what to focus on when practicing, but he's never been the type of person to sit and analyze data.

Persona 2

Smash Esports Player - Jennifer

Age: 22

Jennifer has been with the Smash Esports team since her freshman year and has grown a lot over the course of her stay with the team. She will often take the time after each of her sets and watch them back to see what she did well in and where she made mistakes and is always looking for small ways to improve her play.

Persona 3

Smash Esports Coach - Coach

Age: 33

Coach is new to the team and wants to learn things like: how each of the players likes to play the game, who they like to play, matchups that they perform well in, matchups that they struggle against, stages that they prefer/don't prefer. Coach likes to take in all of this data to tailor training and practice individually to make sure players will be in the best condition for their upcoming matches.

Persona 4

Smash Esports statistician - Aaron

Age: 21

Aaron is a busy person, he acts as a match tracker for the team, but also has his own classes he needs to spend time on, is on the student council so he has other responsibilities within the school, and is working part-time during the school year. Aaron is being run thin with juggling all of his responsibilities and recording match data and then taking that data and throwing it manually into a spreadsheet. This is a process that isn't hard, but takes time to do, and time is something he does not have much of as is.

Environments

There are two primary environments that this app will see usage in. The first is during a “crew battle” which usually occur online. In this situation, the users, both the players and the statisticians are usually present in the Esports facility. In this case, any user could enter the data, but most likely the statistician will. There is a moderate amount of time between rounds as each team makes decisions regarding the next round and as such the allotted time to enter data is a bit larger. The goal is to effectively be able to input the data in between each round of a match. Data entry would have to be completed in a couple of minutes at the most, however the statistician could reasonably do data entry during a match if they choose.

The second environment is during a singles tournament. In this case, the players are usually on their own and can be almost anywhere from large expo centers to small office spaces. The statistician may still be present in the building, but they will not be able to fully enter all of the data, requiring the players to keep track of it themselves. In this case, there is less match data as there are fewer players participating in a match and there are generally fewer rounds to record, but the time in between rounds becomes noticeably shorter with a turnaround time as quick as a few seconds if the players aren’t allowed ample time. In this case, the system has to be fast enough to be able to accommodate the potential issues that come with this arrangement.

First Team-Scientist Meeting:

January 17, Tuesday, 1/17/2023, at 4:30 pm
In-person at SDC 266

- What is the scope of this project?
 - Just smash
 - format : crew battles (4v4) & individual
 - Crew battles are sets of individual battles
- What kind of users should we expect?
 - Primary: Statistician
 - Secondary: Players/Analysts
 - For individuals battles, input should be seamless for players
- Type of data
 - round
 - Map
 - playername

- Win % for chars
- Enemy team
- Stocks taken/left

- How should data be updated?
 - For crew battles: player\opponent should auto populate the previous winner
 - Probably need a system specifically designed for crew battles
 - Players must be able to add information after battles

- How should data be displayed to users?

- How should the app look style wise?
 - Both web and app format ios/android (maybe just mobile web interface depending on how complex grails is for multiplatform development.
- From a Security perspective, what information should a user enter to be able to make an account?

- Should the CSV dump all data on a player, or should the data be limited to x previous games played

- Is there any formatting convention that the CSV has to follow?
 - CSV output required
 - Specific format helpful but low priority
 - Custom SQL queries

Second Team-Scientist Meeting:

January 24, Tuesday, 1/17/2023, at 4:30 pm

In-person at SDC 266

- Reception
 - Most events should have reasonable events
 - Might be sluggish
- Tracking dates as well
- Editing previous events
 - Time limit for allowing revisions (short, 24 hours max)
 - Input Error Flag
- Players tracking other player data
 - Don't let edit for other players
- Match History, Publicly available
- 3 outputs - Overall, Crew, Individual
- **Efficiency is important**
- Error Flag after player submits match data: Short note, time stamp
- Potential prototype functionality by Feb 17th if possible

Nominal Use

In order to log match data accurately for a crew battle, a player will record the information using the app. After opening the app the player will press the 'add match' button. A UI will appear allowing the player to add information. The player will add all necessary match information including their character, their opponent's character, stocks taken or lost, and whether they won or lost the match. The player will then submit the information by pressing a button. Upon submitting the information the app will return to the home view, and the information submitted will be transferred to the app's database. When the information is stored the player and the statistician will be able to view the data and analyze it.

In order for the statistician to view a player's stats, the statistician will use the app. First the statistician navigates to the view player history tab. There they will be able to select the player they wish to see the stats for. Once they have selected the player, all of their stats and analytics will be displayed to the statistician. The statistician can exit this view by pressing a button, which will return them to the view player history tab. This nominal use case is the same for a player trying to access the view for themselves or another player.

Error Use

While a player is using the site between matches to enter in stats of the match they just played, they accidentally incorrectly record data into the match and do not realize their error before submitting. In this case, within 24 hours of the match submission, the user will be able to go back and flag the match and include a comment which will be sent to a statistician who will be able to update the match data to correct the mistake.

Simplified HTA

Add Match

Match Page

- Select Player
- Select Player Character
- Select Opponent
- Select Opponent Character
- Select Stage
- Add/Remove Stocks
- Select Winner
- Submit Data

Add Event

Login as Admin

Add Event Page

- Type Event Name
- Select Event Type
- Select Opposing School
- Submit Data

Login

- Navigate to "Login" page
- Enter username
- Enter Password
- Click Submit

View data

- Navigate to "View Data" page
- Select Event
- Select Requested Data
 - Select Entire Event Data
 - Select Specific Player Data
- Click submit

Database Schemas

Domain Classes:

- Set- Contains event type and a set(s) of games
- Game- contains information about a given game (player names, characters, stages)
- Event- contains specific event information like event names and dates
- Players- contains player name, tag and preferred characters?

Domain Class: Set

- Event Type (enum) - Singles or Crew Battle
- Set of games (list) - Games that are apart of this set

Domain Class: Game

- Player (player) - name or tag of our team member
- Opponent (string) - name or tag of the opponent player
- Player Character (enum) - The character played by our player
- Opponent Character(enum) - The character played by the opponent
- Stocks taken (int) - The stocks our player took off the opponent
- Stock lost (int) - The stocks the opponent took off of us
- Match result (Enum) - win or loss

Domain Class: Event

- Date- (date), date of the event
- Name- (string), title of the event

Domain Class Player:

- Player name (String), name of player
- Player tag (String), gamer tag of player (functions as ID)
- Preferred characters (list), 3 best characters