Ultimate Disc is a competitive frisbee sport - it's a fun game that can sometimes get quite competitive, but as a student lead club on campus, managing our players and how teams are created fairly can be a challenge. This project objective is to create a custom web application that allows this. The basic features should include player dashboard, where they can check in to sessions, a team allocator that divides players fairly, and a trophy system. To make team allocations fair, each player is assigned a class (Novice, Experienced, Pro) and a skill level (1 - 10). The algorithm should short the players based on these info into a black and white shirt team.

Features (in detail):

Team Allocations

First the program needs to decide what allocation mode it is set to, these being:

One Game: Splits all players into two teams. One team black, one team white.

Two Games: If there is an abundance of players, two games and four teams will be created. Higher skill players will be used to create the first game, and lower skill players in the second.

Training: No calculations needed, simply allocate them to training.

Training would run first to take all players wishing to train out of the pool before either One Game or Two Games are chosen (based on the remaining players).

Trophy System

After each session (and games have concluded), all players are given the opportunity to give trophies to other players (0 - 3 players). There will be a variety of pre-made trophies (examples: Best Throw, Ultimate Catcher etc), which the player can pair with their selected player. There is also a new trophy text box, allowing players to suggest customer trophies, these can be added manually by the admin for the following week. Trophies are saved to players profiles and become viewable after the session has concluded.

The admin should be able to (at the end of these sessions) see all incoming trophies. Trophies should only push to players dashboards after they have been approved (either individually or by pressing approve all).

Obvious limitations include only giving trophies to players who checked in for that session, and 3 unique people can be given trophies (not 3 of the same person for different trophies)

Dashboard

The player should have a username and password to log into their dashboard. This displays to them their info, attendance, access to the check in forum, their trophies ect. They should be able to see the teams they played in (who they played with) as well as the result of that session. Typically one game is played per session, however a tournament mode could be created in the future (after a stable build is made). Each session (each week), when the player presses the check-in button, this redirects them to the check in forum. They will enter details like what colour shirt they have (black, white or both). This forum will remind them to pay (talk to our executives) if they are on a weekly basis. Semesterly players will have green indicating they have already paid. After pressing checkin, their attendance is registered and visible to the admin on the admin dashboard.

Admin Dashboard

This is where all the behind the scenes work, here all players profiles are accessible - their basic details can be changed (change a weekly player to a semesterly). This dashboard should be split into separate tabs:

Players Tab: A list of all the players, editable and searchable, the admin can access these and change data.

Session Tab: The session tab is split further into separate sections.

- **Attendance Sub-tab**: A live updated list of all players who check in. As they check in, this table populates. There is a live count of players, as well as info like black shirt and white shirt only players, both shirt players and those who selected training. The admin should also be able to manually check in players (both existing and new ones), or de-check players to cancel their attendance.

- **Draft Sub-tab:** As players populate the attendance, black shirt players get pushed to team black, and the same for white (this is mandatory as these players can only go on a single team). Statistics like total team strength (using player sum skill levels) will begin to show. Other details like if the girls are split up (even gender) should also be shown. There should be a "Start Allocation" button which runs the algorithm, populating the draft teams. After the automatic process, the admin can drag and drop players between the teams to edit it at will, the total team strengths should update anyway accordingly

- **Final Sub-tab:** When the draft is complete, on the final page this will show the result of the draft. After pressing confirm, the teams are locked in and the allocations confirmed. Players should see in their dashboard what team they are assigned to.

What happens if someone comes late?

Players who arrive after the final allocations check in like normal. After allocations, the player can join any team, but this should be logged on the admin panel (so the history is accurate for that player). Some players might switch teams as the game goes on (for some reason), in their profile history, the team played can be changed to BOTH (rare occasion).

Result Tab:

Once the game concludes, the admin can press "finish game", and they enter details like the final score and submit. This will trigger the player's ability to add trophies for people.

- **Trophies Sub-tab:** As players add their trophies, the table will populate. The admin can click the tick button for each trophy, approving it (changing status to approved). Once the night has ended and players have been given ample time to add trophies, the admin presses publish, attaching all approved trophies to respective profiles and changing their status to pushed.

Preferences (? Possibly impractical)

Allocation 101

Each player will have the corresponding data tied to their name

FIXED	STATIC	STATIC	FLEX	FLEX	FLEX	CHANGE	CHANGE
ID	Name	Student Number	Payment	Class	Skill	Check-In	Shirt
Auto Gen Int	String	String	Weekly Semester	Novice Experienced Pro	Int 1 - 10	1 or 0 (for each week)	Black White Both

FIXED should never change after the initial entry
STATIC shouldn't really change after the initial entry
FLEX might change across the semester
CHANGE changes each session / week

The allocations should consider these factors (maybe in order)

1) Black shirt and White shirt only players

Some players (minority) may bring only one colour shirt, forcing them onto a team.

2) Skill and Class based allocations

The program will first total all players, but divided into the 3 classes. If all three classes have an even amount, then the program can perform a clean split.

Example: Novice = 6, Experienced = 4, Pro = 2

The Pro class players will be sorted first (typically > 7 skill). It will sort the players into their skill, and since the players are even, the highest (or now first in line) will be sorted to Black, the next White, the next Black, the next White.

Sometimes situations may be different. Assume 4 pros, except 1 pro only has a black shirt. There are technically 4 pros, but 3 to assign. This should still be treated as even split. It just means the first assign will be to the team without a pro (still resulting in 2 players one side, 2 the other.

Once this is complete, the program will move down the class (next is experienced) and do the same thing, until the last class Novice. This will produce event teams with good skill distribution.

Problems arise when the numbers are not even. Assume that there is only 1 pro player. This player is skipped and added in later. Moving onto the Experienced, assume there is total 5, on black only the rest both. With 4 left to allocate, the first is pushed to white. After the teams are even again, normal allocations apply. This is done until all allocations are complete, leaving two teams, but on pro unallocated. This pro can then be allocated to the weaker side.