

NCSY Kollel leagues drafting and schedule making:

Stage I

- **Who:** NCSY Kollel Staff and Sports Staff
- **Why:** Every year people spend way too much time making the schedule and drafting, and maintenance to said schedule. It is particularly difficult as one needs to have hockey and basketball leagues simultaneously and create a fair reffing schedule. This would automate the team making and scheduling.
- **What:** Must be able to draft based on skill level, ensuring teams are fair and have goalies and bigs, and create a schedule that avoids conflicts.
- **How:** In a perfect world, one would have an excel sheet with a list of all participants, what sports they are playing, and their respective skill levels in those sports, and whether they are a big or a goalie. They would use the program to put all the names which would create the teams and make a schedule, or either of those independently if inputted. We could also make a method to trade players between teams. In a more advanced world, we could have the program also keep the results of games and standings between the teams.

Stage 2

Classes:

- Abstraction
 - Class Player, Class Team, Class League
 - Class Game, Class ScheduleSlot, Class Day, Class Schedule,
- Class Player extends Comparable
 - Private Variables
 - String Name
 - Int BallSkill
 - Boolean Big
 - Boolean Captain
 - Int HockeySkill
 - Boolean Goalie
 - Boolean CaptainRef
 - BasketballTeam ballTeam
 - HockeyTeam hockeyTeam
 - Methods- Getters and setters
 - CompareTo (skill level), Equals (based on name)
- Abstract Class Team
 - Private Variables
 - Final int teamSize

- HashSet Player roster
- Player Captain
- Class HockeyTeam extends
 - Player goalie
- Class BasketballTeam extends
 - Player big
- Methods- Getters and setters
- Class League
 - MaxHeap BasketballPlayers
 - MaxHeap HockeyPlayers
 - [][]of Strings info from excel sheet
 - HashMap<Player, Team[]> (or Trie Players) playerFinder
 - []Teams
 - Schedule Schedule
 - Methods
 - Search for player
 - Method to extract data from excel sheet input at command line
 - Draft method- Takes players from the [][] from the excel sheet and creates player objects and places them in the necessary heap. Drafts on to teams that don't

have same division to avoid hockey and basketball conflicts

- Main method would be in this class
- Abstract Class Game
 - HockeyGame extends
 - HockeyTeam[2] teams
 - BasketballGame extends
 - BasketballTeam[2] teams
 - Methods- getters and setters
- Class ScheduleSlot
 - Game[] of however many basketball/hockey games being played
 - HashSet of players or divisions playing at this time (will help avoid conflicts)
 - Methods: getters, setters,
- Day
 - ScheduleSlot[] for the games being played that day
 - Method- swap games between schedule slots until no conflict
- Schedule
 - Day[] all the days that have games being played

- Method- Schedule games with minimal repetition of
opponents