

Race Schedule Simulator

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Status Summary

- Work Done: We used Factory Pattern in RaceSystem, and we have implemented 3 competition systems(League, Knock-out, Swiss-round) so far.(Haolin) Then we added the Observer pattern to output the results of the simulation to a txt file.(Dawson) We created a class specifically for the user interface, so that the Main function can be concise.

- Changes or Issues Encountered:

We found it cumbersome to schedule games by entering start and end times. Because there are many types of "time", unforeseen problems will always be encountered when declaring and transmitting. In the end we decided to use "Day+number" to represent the date of the game.

Another issue is that we did not find suitable existing data on common competitions. So we decided to create a class to enter the name of common competitions, the competition system, the number of participating teams, the length of the season and the time of a single game.

- Patterns:

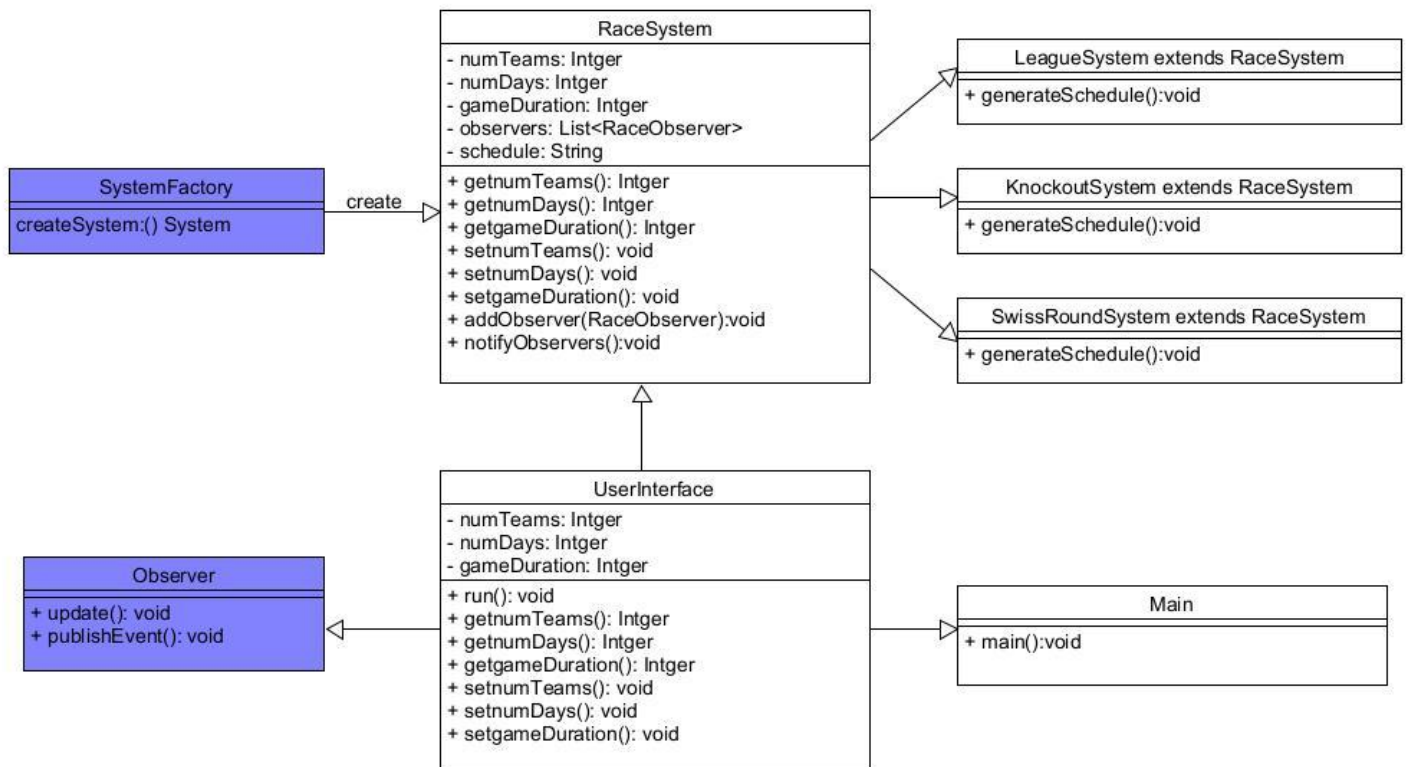
Factory Pattern: In RaceSystem class, we use static factory pattern. This method accepts a type argument that specifies the type of race system to create, and other arguments that are necessary to create an instance of the specified race system. In the future we may use:

```
RaceSystem raceSystem = RaceSystem.createRaceSystem("playoff", numTeams, numDays, gameDuration);
```

to create new competition systems.

Observer Pattern: We use Observer Pattern to export the simulation results to a txt file for users to view. In the future we may also use it to implement some new functions, such as allowing users to view a team's games, etc.

Class Diagram



Plan for Next Iteration

- Add 3 more competition systems: League-playoff, Double-elimination, and Dutch.
- Implement Strategy Pattern for constraints. It allow user select some special requests, like break day, super day, or certain versus.
- Implement Command Pattern for UserInterface. Create a class that holds all the commands and invokes them when needed. It will help easily add new commands in the future, such as a command to import a schedule from a file.
- Create the class that recorded relative data about common events like NBA, NFL, UEFA .etc.