Software Development Report
for
CSC 122: Programming II: Fall 2022
Own Data Structure:
Set
by
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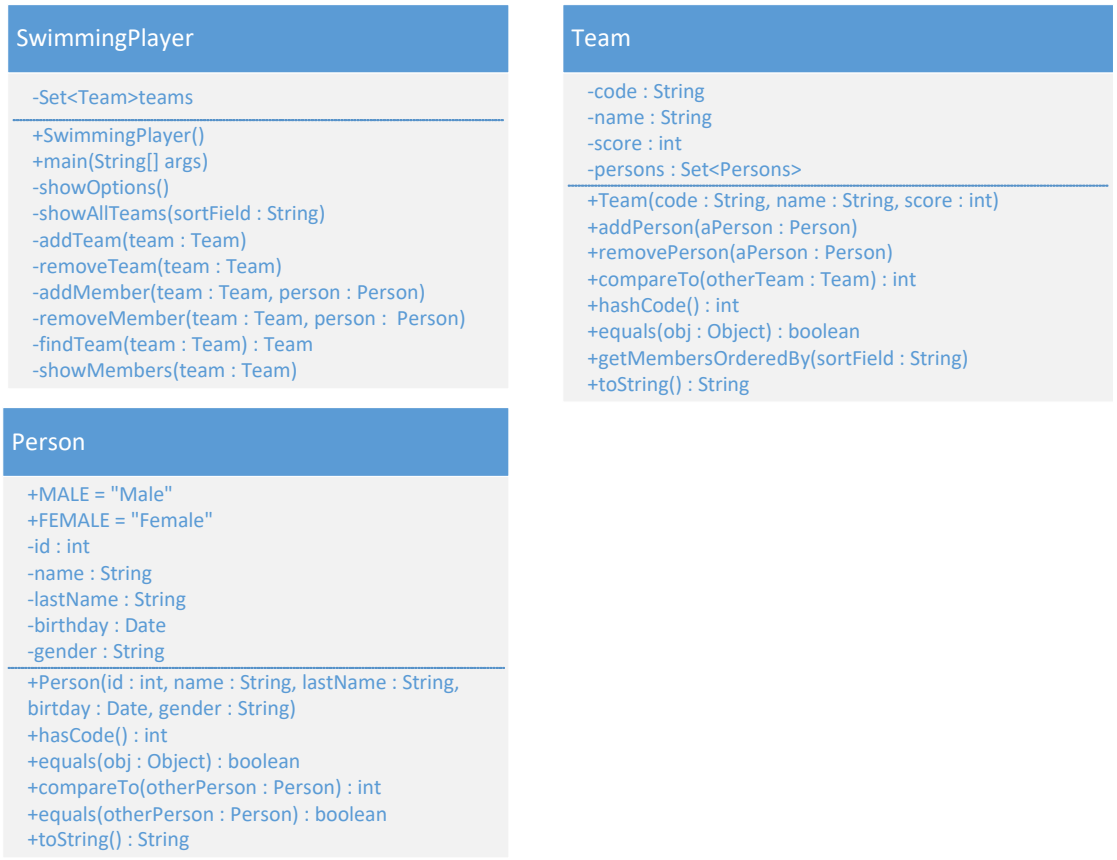
Problem Summary

The program allows to store swimming teams with their code and score and their swimmers and do actions with them like as an example showing a list of all the teams, adding a team, add a swimmer to a team (indicate an error if it is already exists), show a list of all the swimmers a team has…

Implementation Requirements

- Set
- Independent learning
- @override
- Dates
- Parse

System Design



Testing Plan

Case	Description	Input	Output

S1	Create a team	`aTeam = new Team("BU-IN", "Bethel University (IN)", 0);`
		`addTeam(aTeam);`
			`Team added.`
			`Current teams are:`
			`Code= BU-IN, name:Bethel University (IN), score:0, swimmers: null`

S2	Create a swimmer	`birthday = null;`
		`try {`
		`birthday =new SimpleDateFormat("MM/dd/yyyy").parse("05/12/2003");`
		`} catch (ParseException e) {`
		`System.out.println("Invalid date");`
		`}`
		`aSwimmer = new Person(1, "Manel", "Casado Garrigues", birthday, Person.MALE);`
			Swimming created

S3	Add swimmer to a team	aTeam = new Team("BU-IN", "Bethel University (IN)", 0);
		try {
		swimingPlayer.addMember(aTeam, aSwimmer);
		} catch (Exception e) {
		System.err.println(e.getLocalizedMessage()
		+ " " + aTeam);
		}
			Person added.
			[Code= BU-IN, name:Bethel University (IN), score:0, swimmers: [Person with id:= 1, name:Manel, lastName:Casado Garrigues, birthDay:Mon May 12 00:00:00 GMT 2003, gender:Male]

S4	Remove a team	aTeam = new Team("BU-IN", "Bethel University (IN)", 0); swimingPlayer.removeTeam(aTeam);	Team does not exist Code= BU-IN, name:Bethel University (IN), score:0, swimmers: null
S5	Sort team members	Not done	Not done

Time Spent

The program and development report took me around 10 hours to develop

Outside resources used

- UML cheat sheet provided in Canvas
- Microsoft Visio to create the System Design
- Link with examples of data structures and how they work provided on the syllabus
- geeksforgeeks.org for understanding how Set works and help from my dad creating a testing plan

Security Report

- Positive: There cannot be two swimmers with the same name
- Negative: Not being able to read

Ethical Report

- A potential ethical risk would be if the data got leaked and contained sensible information in a more advanced version
- A positive application would be applying this to an actual swimming league. This could be used by swimming associations in a more developed version.

Future improvements

- Load data from a file or through the console instead of adding it on the code
- Throw exception with an error if a team already exists
- Order team members by different criteria
- Add a menu with different options such as add, remove, etc.

Lessons learned

- How Sets work and how to use them
- What @override is

Improvements of Work

- Better testing