

Java Technologies - Lab 3

[valid 2022-2023]

JavaServer Faces

Create a Web application using **JavaServer Faces** technology, dedicated to [Sports Tournament Scheduling](#)

"The problem is to schedule a tournament of n *teams* over $n-1$ weeks, with each week divided into $n/2$ periods, and each period divided into two slots.

The first team in each slot plays at home, whilst the second plays the first team away.

A tournament must satisfy the following three constraints: every team plays once a week; every team plays at most twice in the same period over the tournament; every team plays every other team."

Each team has the following properties: name, founding date, city.

The main specifications of the application are:

Compulsory (1p)

Create the following:

- A relational database in order to store and retrieve data. ([PostgreSQL](#) is recommended).
You should have at least the tables: *teams* and *cities*.
 - A JSF project using Maven
 - A web page for viewing the teams in the database.
-

Homework (2p)

- Create the support for managing the *teams*, using a [datatable](#).
 - Define a page for creating a new team or editing an existing one, using a modal [dialog](#).
Use appropriate components for specifying the date and the city.
 - Define the web-flow using *navigation-rules*.
 - Internationalize the user interface and offer support for at least two locales.
-

Bonus (2p)

- Create an algorithm for solving the problem. You may use a constraint solver such as [Choco solver](#), [OptaPlanner](#) or [ORTools](#),
 - Create a page for displaying the results.
 - Create a random generator that produces problem instances of various sizes and test your algorithm.
-

Notes

- It is recommended to use an Ajax-based JSF implementation: [PrimeFaces](#), [BootsFaces](#), or other.
- Additional points will be given for using JSF technology beyond the "beginner" level (use custom converters, validators, "rich" components, i18n, etc.).

Bibliography

- [Slides](#)
- [The Web Tier](#)
- [JavaServer Faces Technology](#)
- [Introduction to Facelets](#)
- [JavaServer Faces 2.2 Facelets Tag Library Documentation](#)

Additional Readings

- [References](#)