

Repository Layer Tech Stack Report

What they do:

Postgres is an open-source relational database management system, so is needed as part of the project to store tournament, player and team information in tables on the database.

JPA is used to map Java object to tables in a relational database, used because it is less error prone and time consuming than writing SQL queries. JPA allows using databases without using database semantics. JPA is a part of Spring Data.

Spring Data is used to provide a consistent Spring-based programming model for data access while retaining the features of the underlying data store.

The repository is an abstraction of the data layer. It only deals with data access.

How they work:

- Postgres uses a client server model
 - The server process manages the database files by accepting connections from the client and doing actions on their behalf.
 - Can handle multiple concurrent connections
- Spring Data analyses new Repositories
 - Looks at all the methods defined
 - Automatically generates queries from the method names

Spring Data Features:

- Repository and custom object mapping abstractions
 - Spring Data Repositories are an abstraction which reduce the amount of code required for data access layers.
- Uses the repository names to dynamically derive the queries.
- Domain base classes which provide basic properties
 - Domain class is the model and represents a persistent entity that is mapped onto a database.
- Transparent auditing
 - Spring data allows keeping track of the time an entity was created or changed and who did it.

Using JPA:

Creating an entity and its corresponding repository

```
@Entity
class Team {
    @Id @GeneratedValue(strategy = GenerationType.AUTO)
    private Long id;
    private String name;

    // getters and setters for each attribute also required
}

interface TeamRepository extends Repository<Team, Long> {
    Team save(Team team);
    Optional<Team> findById(long id);
}
```

Defining Repositories:

A query follows the structure - Type<Entity> query(search parameters)

```
interface TeamRepository extends Repository<Team, Long> {
    //Type<Repository> query(search parameters)
    List<Team> findByIdAndName(Long id, String name);
}
```

```

// Enables the distinct flag for the query
List<Team> findDistinctTeamsByIdOrName(Long id, String name);
List<Team> findTeamsDistinctByIdOrName(Long id, String name);

// Enabling ignoring case (upper/lower case) for an individual property
List<Team> findByNameIgnoreCase(String name);
// Enabling ignoring case for all suitable properties
List<Team> findByIdAndNameAllIgnoreCase(Long id, String name);

// Enabling static ORDER BY for a query
List<Team> findByNameOrderByFirstnameAsc(String name);
List<Team> findByNameOrderByFirstnameDesc(String name);
}

```

Subject Keywords

`find...by` - typically returns repository type, collection, streamable, or a result wrapper. Can be used in combination with additional keywords

`delete...By` - acts as Delete query either returns void or delete count

`...Disitinct...` - used to return only unique results, should be used between the `find` and `by` keywords

Predicate Keywords

Logical Keyword -> Keyword expression

`AND` -> `And`, `OR` -> `Or`, `AFTER` -> `After`, `CONTAINING` -> `Containing`, `BETWEEN` -> `Between` etc... (there are also alternatives but they all have a version that follows this pattern)

Modifier Keywords

`IgnoreCase` - used for case-insensitive comparison

`OrderBy...` - specify order

Projections

Interface-based Projections

In this example a projection called `WinLosses` made using an interface makes it so that when retrieving from the entity if used only returns the team name, win count and loss count for the result.

```

interface WinLosses {
    String getTeamName();
    int getWinCount();
    int getLossCount();
}

interface TeamRepository extends Repository<Team, Long> {
    Collection<WinLosses> findByTeamName(String teamName);
}

```

Class-based Projections (DTOs / Data Transfer Objects)

DTOs hold properties for the fields that are going to be retrieved. Used in the same way as interface projections, but without proxying.

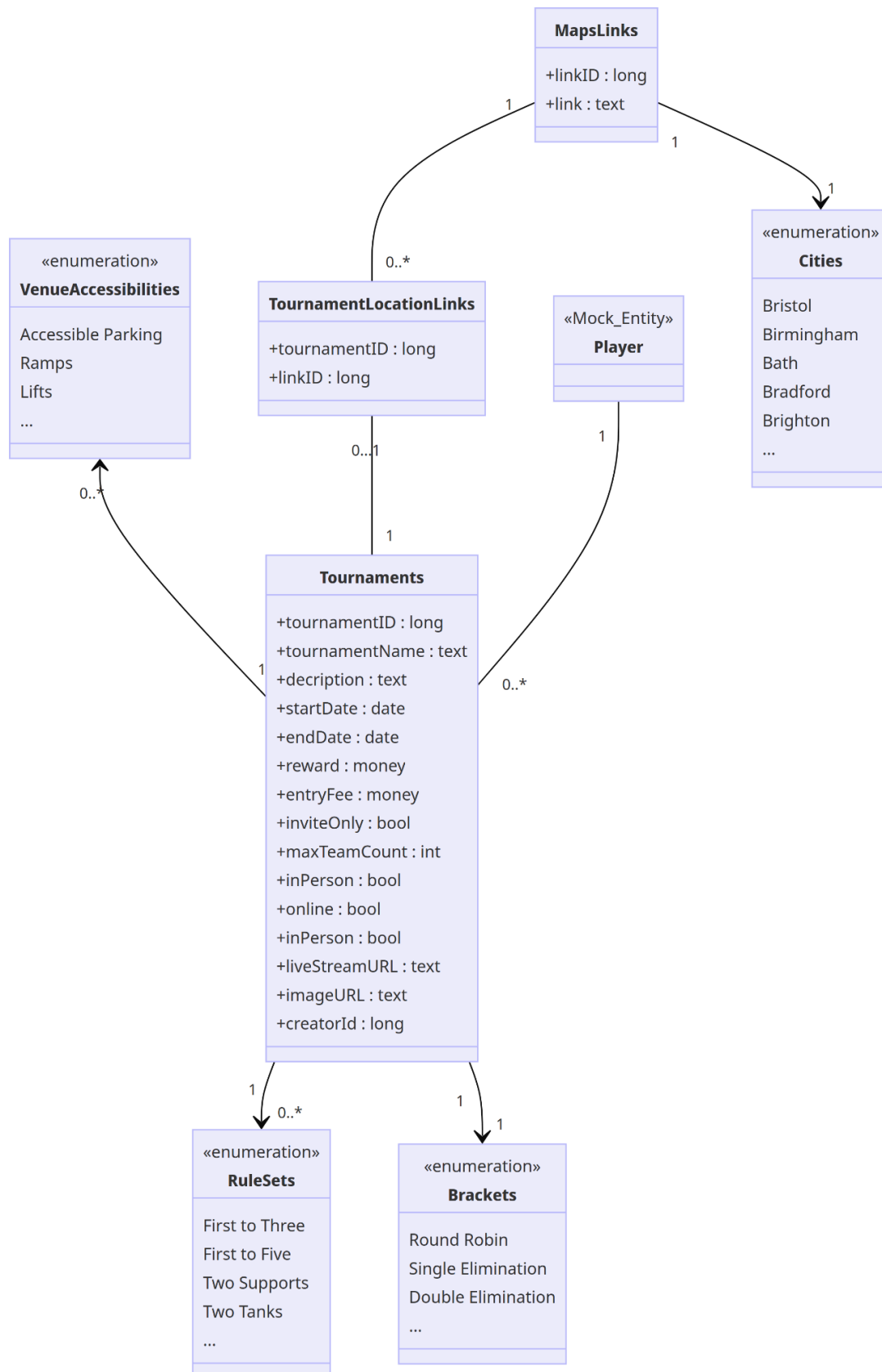
DTO projection example:

```

record WinLosses(String teamName, int winCount, int lossCount) {
}

```

UML Diagram



JDL:

```
entity Tournaments {
  tournamentName String required
  decription String
  startDate ZonedDateTime required
  endDate ZonedDateTime
  reward Float
  entryFee Float
  inviteOnly Boolean
  maxTeamCount Integer
  inPerson Boolean
  online Boolean
  inPerson Boolean
  liveStreamURL String
  imageURL String
  bracket Brackets
  ruleSet RuleSets
}
```

```
entity InPersonVenueAccessibilities {
  accessibility VenueAccessibilities
}
```

```
enum VenueAccessibilities {
  Accessible_Parking
  Ramps
  Lifts
}
```

```
entity MapsLinks {
  linkID Long
  link String
  city Cities
}
```

```
enum RuleSets {
  First_To_Three
  First_To_Five
  Etc
}
```

```
enum Brackets {
  Round_Robin
  Single_Elimination
  Double_Elimination
}
```

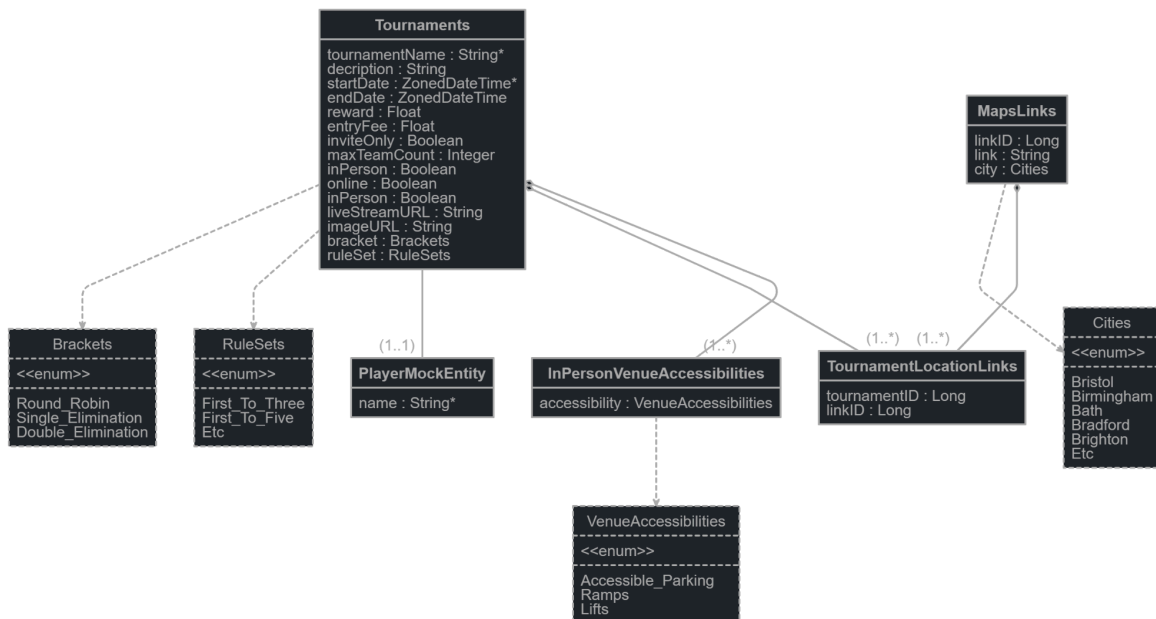
```
entity TournamentLocationLinks {
    tournamentID Long
    linkID Long
}
```

```
enum Cities {
    Bristol
    Birmingham
    Bath
    Bradford
    Brighton
    Etc
}
```

```
entity PlayerMockEntity {
    name String required
}
```




























```
relationship OneToOne {
    Tournaments to PlayerMockEntity
}
```

```
relationship OneToMany {
    MapsLinks to TournamentLocationLinks
    Tournaments to TournamentLocationLinks
    Tournaments to InPersonVenueAccessibilities
}
```



Kanban Feature Cards

<div><div><div></div></div><div>Venue Accessibility Tags</div><div>#117 · created 11 minutes ago by Garance Allaire-Rousse <div></div> Apr 20, 2024</div><div><div>Back End</div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 9 minutes ago</div>
<div><div><div></div></div><div>Max Team Count Input Box</div><div>#116 · created 15 minutes ago by Garance Allaire-Rousse <div></div> Mar 13, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 13 minutes ago</div>
<div><div><div></div></div><div>Location Input Box</div><div>#115 · created 18 minutes ago by Garance Allaire-Rousse <div></div> Mar 11, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 13 minutes ago</div>
<div><div><div></div></div><div>Entry Fee Input Box</div><div>#114 · created 20 minutes ago by Garance Allaire-Rousse <div></div> Mar 11, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 13 minutes ago</div>
<div><div><div></div></div><div>Reward Input Box</div><div>#113 · created 20 minutes ago by Garance Allaire-Rousse <div></div> Mar 11, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 13 minutes ago</div>
<div><div><div></div></div><div>Tournament End Date Input Box</div><div>#112 · created 22 minutes ago by Garance Allaire-Rousse <div></div> Mar 11, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 13 minutes ago</div>
<div><div><div></div></div><div>Tournament Start Date Input Box</div><div>#111 · created 23 minutes ago by Garance Allaire-Rousse <div></div> Mar 11, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 13 minutes ago</div>
<div><div><div></div></div><div>Description Input Box</div><div>#110 · created 24 minutes ago by Garance Allaire-Rousse <div></div> Mar 11, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 13 minutes ago</div>
<div><div><div></div></div><div>Select Venue Accessibilities Drop Down Menu</div><div>#109 · created 32 minutes ago by Garance Allaire-Rousse <div></div> Mar 13, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 27 minutes ago</div>
<div><div><div></div></div><div>Select Bracket Format Drop Down Menu</div><div>#108 · created 36 minutes ago by Garance Allaire-Rousse <div></div> Mar 11, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 27 minutes ago</div>
<div><div><div></div></div><div>Create Online Checkbox</div><div>#107 · created 45 minutes ago by Garance Allaire-Rousse <div></div> Mar 10, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 43 minutes ago</div>
<div><div><div></div></div><div>Create In Person Checkbox</div><div>#106 · created 46 minutes ago by Garance Allaire-Rousse <div></div> Mar 10, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 43 minutes ago</div>
<div><div><div></div></div><div>Create Check Boxes</div><div>#105 · created 47 minutes ago by Garance Allaire-Rousse <div></div> Mar 10, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 43 minutes ago</div>
<div><div><div></div></div><div>Create Closed Access Radio Button</div><div>#104 · created 52 minutes ago by Garance Allaire-Rousse <div></div> Mar 10, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 46 minutes ago</div>
<div><div><div></div></div><div>Create Private Access Radio Button</div><div>#103 · created 53 minutes ago by Garance Allaire-Rousse <div></div> Mar 10, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 46 minutes ago</div>
<div><div><div></div></div><div>Create Public Access Radio Button</div><div>#102 · created 53 minutes ago by Garance Allaire-Rousse <div></div> Mar 10, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 50 minutes ago</div>
<div><div><div></div></div><div>Create Radio Buttons</div><div>#101 · created 54 minutes ago by Garance Allaire-Rousse <div></div> Mar 10, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 46 minutes ago</div>
<div><div><div></div></div><div>Create Create Tournament Button</div><div>#100 · created 56 minutes ago by Garance Allaire-Rousse <div></div> Mar 10, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 56 minutes ago</div>
<div><div><div></div></div><div>Create View Tournament Bracket Examples</div><div>#99 · created 57 minutes ago by Garance Allaire-Rousse <div></div> Mar 10, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 57 minutes ago</div>
<div><div><div></div></div><div>Create View Advanced/Basic Tournament Creation Button</div><div>#98 · created 58 minutes ago by Garance Allaire-Rousse <div></div> Mar 10, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 51 minutes ago</div>
<div><div><div></div></div><div>Create Upload Tournament Banner Button</div><div>#97 · created 59 minutes ago by Garance Allaire-Rousse <div></div> Mar 10, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 58 minutes ago</div>
<div><div><div></div></div><div>Create Buttons for Tournament Creation UI</div><div>#96 · created 1 hour ago by Garance Allaire-Rousse <div></div> Mar 11, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 46 minutes ago</div>
<div><div><div></div></div><div>Create Drop Down Menus for Tournament Creation UI</div><div>#95 · created 1 hour ago by Garance Allaire-Rousse <div></div> Mar 13, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 32 minutes ago</div>
<div><div><div></div></div><div>Create Input Boxes for Tournament Creation UI</div><div>#94 · created 1 hour ago by Garance Allaire-Rousse <div></div> Mar 13, 2024</div><div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div></div>	<div><div></div><div></div></div> <div>updated 15 minutes ago</div>

<div><div></div><div>Change Between Basic and Advanced Tournament Creation UI</div></div> <div>#52 · created 2 weeks ago by Garance Allaire-Rousse ·  Mar 13, 2024</div> <div><div>Back End</div><div>Garance</div><div>Garance To Do</div></div>	<div>  0</div> <div>updated 1 hour ago</div>
<div><div></div><div>Tournament Creation UI</div></div> <div>#37 · created 3 weeks ago by Garance Allaire-Rousse ·  Mar 13, 2024</div> <div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div>	<div>  0</div> <div>updated 1 hour ago</div>
<div><div></div><div>Tournament Page Creation Input Validation</div></div> <div>#36 · created 3 weeks ago by Garance Allaire-Rousse ·  Mar 15, 2024</div> <div><div>Back End</div><div>Garance</div><div>Garance To Do</div></div>	<div>  0</div> <div>updated 1 hour ago</div>
<div><div></div><div>Upload Tournament Banner</div></div> <div>#33 · created 3 weeks ago by Garance Allaire-Rousse ·  Mar 15, 2024</div> <div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div>	<div>  0</div> <div>updated 1 hour ago</div>
<div><div></div><div>View Tournament Bracket Examples Popup</div></div> <div>#31 · created 3 weeks ago by Garance Allaire-Rousse ·  Apr 23, 2024</div> <div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div>	<div>  0</div> <div>updated 1 hour ago</div>
<div><div></div><div>Basic Tournament Creation UI</div></div> <div>#30 · created 3 weeks ago by Garance Allaire-Rousse ·  Mar 11, 2024</div> <div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div>	<div>  0</div> <div>updated 1 hour ago</div>
<div><div></div><div>Advanced Tournament Creation UI</div></div> <div>#29 · created 3 weeks ago by Garance Allaire-Rousse ·  Mar 12, 2024</div> <div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div>	<div>  0</div> <div>updated 1 hour ago</div>
<div><div></div><div>Create Tournament Fully Completed</div></div> <div>#27 · created 3 weeks ago by Garance Allaire-Rousse ·  Apr 24, 2024</div> <div><div>Front End</div><div>Garance</div><div>Garance To Do</div></div>	<div>  0</div> <div>updated 11 minutes ago</div>
<div><div></div><div>Store Tournament Details to Database</div></div> <div>#23 · created 3 weeks ago by Garance Allaire-Rousse ·  Mar 18, 2024</div> <div><div>Back End</div><div>Garance</div><div>Garance To Do</div></div>	<div>  0</div> <div>updated 1 hour ago</div>

Child items 11

Show labels



Add



- ✓ Create Upload Tournament Banner Button
#97 📅 No start date – Mar 10, 2024
Front End Garance Garance To Do
- ✓ Create View Advanced/Basic Tournament Creation Button
#98 📅 No start date – Mar 10, 2024
Front End Garance Garance To Do
- ✓ Create View Tournament Bracket Examples
#99 📅 No start date – Mar 10, 2024
Front End Garance Garance To Do
- ✓ Create Create Tournament Button
#100 📅 No start date – Mar 10, 2024
Front End Garance Garance To Do
- ✓ Create Public Access Radio Button
#102 📅 No start date – Mar 10, 2024
Front End Garance Garance To Do
- ✓ Create Private Access Radio Button
#103 📅 No start date – Mar 10, 2024
Front End Garance Garance To Do
- ✓ Create Closed Access Radio Button
#104 📅 No start date – Mar 10, 2024
Front End Garance Garance To Do
- ✓ Create Radio Buttons
#101 📅 No start date – Mar 10, 2024
Front End Garance Garance To Do
- ✓ Create Check Boxes
#105 📅 No start date – Mar 10, 2024
Front End Garance Garance To Do
- ✓ Create In Person Checkbox
#106 📅 No start date – Mar 10, 2024
Front End Garance Garance To Do
- ✓ Create Online Checkbox
#107 📅 No start date – Mar 10, 2024
Front End Garance Garance To Do

Linked items 2

Add



- Basic Tournament Creation UI #30 📅 Mar 11 👤 ×
- Advanced Tournament Creation UI #29 📅 Mar 12 👤 ×

Create Drop Down Menus for Tournament Creation UI

Edit

Open

Issue created 1 hour ago by Garance Allaire-Rousse

0

0

Create merge request

Drag your designs here or [click to upload](#).

Child items

2

Show labels

Add

✓

Select Bracket Format Drop Down Menu

#108

No start date – Mar 11, 2024

Front End

Garance

Garance To Do

✓

Select Venue Accessibilities Drop Down Menu

#109

No start date – Mar 13, 2024

Front End

Garance

Garance To Do

Open

Create Input Boxes for Tournament Creation UI

Child items

8

Show labels

Add

✓

Tournament Name input box

#93

No start date – Mar 11, 2024

Front End

Garance

Garance To Do

✓

Description Input Box

#110

No start date – Mar 11, 2024

Front End

Garance

Garance To Do

✓

Tournament Start Date Input Box

#111

No start date – Mar 11, 2024

Front End

Garance

Garance To Do

✓

Tournament End Date Input Box

#112

No start date – Mar 11, 2024

Front End

Garance

Garance To Do

✓

Reward Input Box

#113

No start date – Mar 11, 2024

Front End

Garance

Garance To Do

✓

Entry Fee Input Box

#114

No start date – Mar 11, 2024

Front End

Garance

Garance To Do

✓

Location Input Box

#115

No start date – Mar 11, 2024

Front End

Garance

Garance To Do

✓

Max Team Count Input Box

#116

No start date – Mar 13, 2024

Front End

Garance

Garance To Do

Time Sheets

Team sheet Number/ID:

GAR 2

Team member name:

Garance Allaire-Rousse

Team representative (secret

Haiwei He

Team meeting sign off date:

08/02/2024

Date from:

01/02/2024

Date until:

08/02/2024

Task	Date	Start time	End time	Total Hours
First meeting	01/02/2024	11:30 AM	1:00 PM	1:30
Update mockup to be inline with the team	03/02/2024	7:43 PM	8:06 PM	0:23
Update persona to be inline with the team	03/02/2024	8:50 PM	9:16 PM	0:26
Second meeting	05/02/2024	1:30 PM	3:00 PM	1:30
Third meeting	06/02/2024	12:30 PM	1:30 PM	1:00
				0:00
				0:00

Total Hours

4:49

Team sheet Number/ID:

GAR 3

Team member name:

Garance Allaire-Rousse

Team representative (secret

Garance Allaire-Rousse

Team meeting sign off date:

13/02/2024

Date from:

08/02/2024

Date until:

15/02/2024

Task	Date	Start time	End time	Total Hours
Team meeting 1	08/02/2024	11:30 AM	12:30 PM	1:00
Team meeting 2	13/02/2024	2:00 PM	2:39 PM	0:39
				0:00
				0:00
				0:00
				0:00
				0:00

Total Hours

1:39

Team sheet Number/ID:

GAR 4

Team member name:

Garance Allaire-Rousse

Team representative (secret

Talha Tariq

Team meeting sign off date:

20/02/2024

Date from:

16/02/2024

Date until:

20/02/2024

Task	Date	Start time	End time	Total Hours
Tech report research (Postgres)	17/02/2024	3:24 PM	4:30 PM	1:06
Tech report writing + research (Postgres)	18/02/2024	6:05 PM	10:14 PM	4:09
Group meeting	20/02/2024	2:00 PM	3:23 PM	1:23
Continue working on tech report	21/02/2024	12:30 PM	1:30 PM	1:00
				0:00
				0:00
				0:00

Total Hours

7:38

Team sheet Number/ID: GAR 5

Team member name: Garance Allaire-Rousse

Team representative (secretary): Taziba

Team meeting sign off date: _____

Date from: 21/02/2024

Date until: 28/02/2024

Task	Date	Start time	End time	Total Hours
Continue working on tech report	21/02/2024	12:30 PM	1:30 PM	1:00
UML diagrams	22/02/2024	1:00 PM	3:00 PM	2:00
Improve tech report	23/02/2024	00:30	4:30 AM	4:00
Convert UML to JDL	23/02/2024	4:40 AM	5:11 AM	0:31
Team meeting	23/02/2024	12:00 PM	2:50 PM	2:50
Update and submit work according to team meeting	27/02/2024	1:00 AM	3:30 AM	2:30
				0:00

Total Hours 12:51

