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| UTBM - Autumn 2024 semester |
| IF3E Project Report |
| Board Game Tournament Management |

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# The goal

## The objective

The objective of this project is to design and develop a relational database system to manage board game tournaments. This system will allow organizers to register players, schedule matches, track results, and manage scores for various board games such as chess, Settlers of Catan, Ticket to Ride, or any other popular tabletop game. The system will also support team-based games, track individual or team performance, and generate rankings.

## The scope of the project

The system will manage different types of board games, player registrations, tournament schedules, match results, and final rankings. It will support both single-player and team-based tournaments. Users can use this system to create tournaments, register participants, and follow the progress through different rounds of play.

# How it is done

## The thinking part

The first step was to analyze the subject in depth, and to understand and imagine the first ideas for the construction of the project. Some points were rather obscure, but were quickly clarified with the help of the teacher. I then created the database in the form of an entity-association diagram. This stage was rather crucial, as it determined the rest of the project, i.e. the actual creation of the database, then the queries that would be useful for the website's operation.

## Creating the entity-association diagram

After several attempts, modifications, additions and deletions, I finally came up with a diagram that spoke to me, and that seems correct for the rest of the project. Here's a picture of the diagram :

Une image contenant diagramme, dessin, croquis, origami

Description générée automatiquement

As you can see, this diagram contains many relationships 1..1, 1..N, or N..N. It's important to know that each user can become an “organizer” (i.e. create games, tournaments, matches, etc.), by having the “is\_organizer” data set to 1. This will give him/her access to more features on the website.

## Database creation

The next logical step after creating the diagram was to put the database into practice. The database was created using PhpMyAdmin. The .sql database file is attached to the project folder. The creation of the database also enabled us to perfect the previous diagram. Here's an image of the database's relational schema:

Une image contenant texte, capture d’écran, diagramme, Police

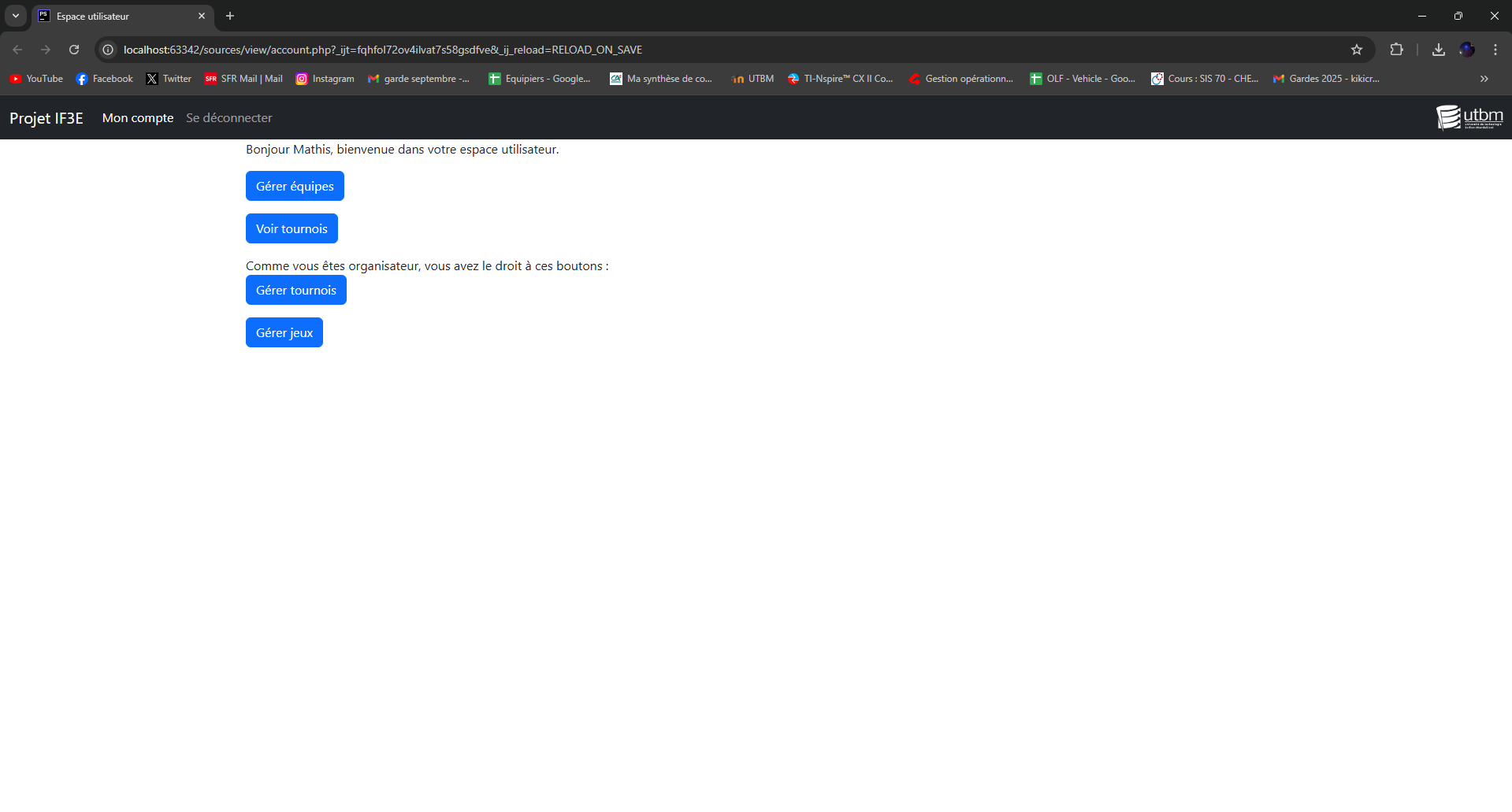
Description générée automatiquement

## Website design

The next logical step was to start creating the website. First, I created the user registration and login interface. But I found the interface rather sad. So I decided to start from scratch, taking the database given to me by my teacher and adapting it to my needs. This basis was used to create a graphic charter for the rest of the website.

After that, I created the “team-based” part, i.e. team creation, the fact of being able to join a team, then the creation of games and tournaments, and finally the last stage: the creation of matches and rankings.

Once players have registered, they can access their account page, where a multitude of actions are possible, such as viewing current tournaments, or managing their teams. If the player is also an “organizer”, he or she has access to two further buttons enabling him or her to manage games and tournaments, by creating, adding or modifying matches.

 As the website developed, I was able to improve certain pages or perfect database queries. One of the queries that took me the longest was the one that calculated the ranking of a player or team in a tournament according to the number of matches won, lost or drawn.

Then I move on to the finishing touches, which consist in visually improving the site, correcting and optimizing certain codes, and giving it a more “personal” look. This also allowed me to redo certain pages from scratch, to maintain a certain harmony with the rest of the site.

## Objectives achieved

* - The first objective was to create a login and user authentication, which was made possible by taking over the elements that had been provided to us in a correction. In addition, the password is encrypted in the database, for added security.
* The second objective was ultimately player registration, enabling players to enter their personal information, favorite games and rankings. Once their account is created, they can create or join a team.
* Players registered in the database as “organizers” can create games, specifying the number of players, the rules and the type of game (single-player or team-based).
* Players registered in the database as “organizers” can create tournaments, defining the rules, the game, the number of teams/players, then adding participants.
* The organizer can also manage matches in a tournament he has created, not only by creating them, but also by managing the score and match status.

# Conclusion

The project was a real learning experience, not only in the use of databases, but also in the basics of html and php. By putting our knowledge into practice, we were able to develop techniques and designs that we hadn't necessarily been able to work on during tutorials. It also helped us visualize the application of what we had seen. Last but not least, there may be a bit more than we bargained for, for the sake of practice and testing !

Github of the project is just here :   
<https://github.com/ByScream/UTBM-IF3E-Projet-BGTMS>