Requirements Analysis – MathGames DB

G7: Diogo Carvalho   nmec: 92969

Diogo Cunha   nmec: 95278

Pedro Amaral   nmec: 93283

Pedro Santos   nmec: 93221

Rafael Baptista   nmec: 93367

Ricardo Cruz   nmec: 93118

Project: Our project aims to create a web portal, a desktop application and a mobile application that allow users to play several "jogos matemáticos" (table games that involve some strategy/reasoning) using a computer or a mobile device. It should also be possible to create and manage virtual tournaments.

1. A **user** which must have an id, a username, an email, a password, an avatar, a global ranking, information if it is or is not an administrator, a rank for each **game** and N friends.

2. A **game** which must have an id, a name, a description and a recommended age.

3. A **game match** which must include an id, a **game**, two **users** (player1 and player2), a winning **user**, a current state, a counter of moves and a game type.

4. A **tournament** which must have an id, a creator **user**, a name, a **game**, a max number of participants, information if it is private/public, a password, N participating **users** (with information if it has already been eliminated) and a winning **user**.

5. A **banned user** which must have the reason said **user** was banned.

The system must also respect the follow integrity restrictions:

1. In each **Tournament** there cannot be more participating **users** than the max number of participants.

2. In a **game math**, the 2 **users** participating in it cannot be the same **user**.

3. In local **game matches**, the second **user** must be always null.

4. The winner of a **match** must be one of the **users** that played it.

5. In a **tournament**, the max number of participants must be 2^n, $n>1$.

6. In a **friends** relation, the **users** cannot be the same.