Design document

1. Explain the changes if you use a different design compared to your assignment 1.

Since this assignment required us to have GUI, Exception and database system, we were planning to go with 'functions → database → GUI → Exceptions'. So, we separated it into two parts at the beginning, which is 'connecting with database' and 'other functions'. We think the whole structure is quite similar with assignment 1 but we need to use more java I/O to combine different parts together. We kept the structure of participants but we changed the way we load data. We also add a big part of GUI into our task. We think we have a higher but reasonable coupling and a stronger cohesion.

2. Explain how the new classes are organized.

All the new exceptions extend from Exception and are put together in a package. Also, all the GUI parts are put together and they have different focusing which are controlling, setting, displaying and calculating. For the main function part, we only have two new classes, which are ReadFile and TestDB, they are used to access to the participant.txt. and the database system separately. We also use two packages to store function classes and data classes.

3. Explain the process by which your program will interact with user and external data source to run a game.

Once users start the program, it will try to access to database system and get all the participants details. If there is no data in database system, it will try to get data from txt file, which is 'participants.txt'. The game will be run based on these data. Once users start a game and get the result of it. The result will be saved both in database system and txt file, which is called 'gameResults.txt'. Users can also check each athlete's mark and the game history when running the program. And the long-term history can be checked both in database system and txt file.