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COSC1295 Advanced Programming Assignment 2

Github Repository

https://github.com/rmit-s3626804-sofia-mckerrow/advanced-programming-ass2

Design Questions

1. I added controller classes for each of the windows (stages) in the game, as well as a SQLiteConnection class for connecting the game to the database. I also added a GameResult class to store the data from each game. This was because the data for the results of each game included some variables from the Athlete class, such as athletes' IDs, and some variables from the Game class, such as the points. I decided to make a new class combining the variables from these classes so that I could use one array of GameResult objects when displaying the results from all of the games in the DisplayResultsController class. I also created classes for each of the exceptions specific to the game, such as GameFullException and TooFewAthleteException.

2. The new controller classes are included in the gui package. The MenuController class is for the main menu, from which a user can select a game, start a game, etc. The SelectGameController class is for the window where the user can select a game, i.e. a cycle, run, or swim game. The SelectAthletesController class is for the window where the user can select the athletes for the game. The SelectOfficialController class is for the window where the user can select the official for the game. The StartGameController class is for the window where the user can start and run the game. The DisplayResultsController is for the window where the results of all the games is displayed. The DisplayPointsController is for the window where the total points of all the athletes is displayed. The SQLiteConnection class is included in the gameDatabase package. The custom exception classes, such as GameFullException, are included in the customExceptions package.

3. When the program is started from the Ozlympic class, it first checks if there is a database file (Ozlympics.db). If the database file is found, then the program will connect to the database and populate the array lists of participants (athletes and officials) with data from the participants table. If the database file is not found, then the program will use the participants.txt file to populate the array lists of participants.

   From the Menu window, the user can select the "Select a game to run" option. This will open a Select Game window. In this window, the user can select which type of game they would like to play. For example, if the user clicks the "Cycling race" button, then a new game of type Cycle class will be added to the array of games.

After the user has selected a game to play and clicked the "Next" button, the Select Athletes window will open. In this window, the user can select between four and eight athletes to add to the game. When the user selects an athlete from the list and clicks the "Add" button, this athlete will be added to the array list of athletes for the game.

Once the user has selected between four and eight athletes and clicked the "Next" button, the Select Official window will open. In this window, the user can select an official to add to the game. When the user selects an official from the list and clicks the "Add" button, this official will be set as the official for the game.

The user can run the game from the Menu window by clicking the "Start the game" button. This will open the Start Game window. In this window, the results of the game will be displayed. The results of the game will be added to the GameResults.txt file as well as an array list of results. If the database file is found, then the results will also be added to the results table.

The user can display the results of all the games by clicking the "Display the final results of all games" button. This will open the Display Results window. If the database file can be found, then the results displayed will be populated from the data in the results table in the database. If the database file cannot be found, then the results displayed will be populated from the array list of game results.

The user can display the total points of all the athletes by clicking the "Display the points of all games" button. This will open the Display Points window. The data displayed in the table for this window will be populated from the array list of all the athletes, including their total points.