

README File – Databases – 2022 – Group 8

This project regards the design of a database for the races of Portugal (running races), using the tools of SQL and Python and it's constituted by the following steps:

1. Creation of the UML (uml.png file) and Relational Model (relational.txt):

Based on the fields provided on the excel file, a UML model of the database was created and the related relation model. Several decisions were made like calculating the age based on the birth date of the runner, create a separated tables for certain details, like event type, age class, etc.

2. Creation of SQL script (races.sql):

This script will create

3. Load the Data into the Data Base (load_races.py):

To load the data from python into the SQL database several actions were done since the excel file was not compliant with the format of the database tables and contains many errors. Some of that actions were:

- Conversion of the data types;
- Remove duplicated lines;
- Creation of a Age Class table with an automatic determination;
- Treat the null entries
- Check backlash cells;

4. User Interface (races.py):

An interface that allows to manage and interact with the races database.

At the moment, a few functionalities were developed like:

- Read, delete, update, insert a record for runners where validations were put in place to not allow the user to insert wrong information on the database,
- FAQs: allows the user to consult some information from the database.

5. SQL questions(question.sql):

Pure SQL questions answering specific asked questions.

6. Extra (extra.py):

In order to extract some meaningful information from the database four plots were achieved:

- Relation between age and time
- Relation between distance and time
- Relation between event and sex
- Relation between event year and distance

Contribution of each group member:

- UML and Relation Model: all members;
- Races.sql: Cátia and Sónia
- load_races.py: Cátia
- races.py: Sónia
- questions.sql:
 - Sónia A to E
 - Cátia helped on E
 - Beatriz did the Extra
- extra.py: Beatriz
- Notes: Beatriz did some SQL questions to be put on the on the interface, but they were not integrated due to time restrictions and to the “design” of the interface, therefore an extra file will be added with the questions (interfaceQuestions.sql).