

1st Semester 2021/2022

MESTRADO EM ENGENHARIA ELETROTÉCNICA E DE COMPUTADORES

# SIBD Project – Part 2

Number	Name	Effort	Hours
No 93148	Miguel Quinteiro Ribeiro	33%	10h
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## Group 2

Shift: PB06

Teacher: Prof. Francisco Regateiro

# 1 Schema

The choices of data types were made based on what is conventionalized (course presentations) and what made more sense, when no convention was found. However, the following points should be highlighted for further clarification:

- ISO code – For ISO code attribute of a country, the choice followed the convention *ISO 3166-1 alpha-3*. This choice is aimed at obtaining country designations that more easily recall the real name of a country;<sup>(i)</sup>
- Country’s flag – For the country’s flag attribute, it was used the URL of the flag’s image;
- Name – Country names are stored in their English designation (instead of their native country designation);
- Boat length – The boat length is represented in feet because it is a unit very common in this environment; Only a decimal place is necessary because these measures are not very accurate and do not need to be, usually are integer numbers;
- ID Card – The ID Card is stored as VARCHAR since it can contain letters regarding the country, like validation digits;
- MMSI and CNI – Both MMSI and CNI are stored as NUMERIC because it is considered that they are purely numeric attributes;

# 2 Populate

Relatively to populate the dataset, the goal was to produce an expressive dataset. Such dataset had to enable a diverse set of combinations: boats and sailors with and without reservations; sailors who make more than one reservation; countries with and without locations (ports, marines and wharfs) and reservations with different number of trips.

Despite the need for an expressive dataset, the group had to make sure the same dataset was not too complex. A complex dataset could rise difficulties when validating the results. Therefore the dataset produced was simple and expressive at the same time.

# 3 Queries

The aim is develop simple queries. Although, in order to facilitate the identification of records and queries’ results, more complex queries have been written. Examples of these situations are the following ones:

- (A) – When we want to know all the boats that have been reserved at least once, although the combination of ISO code with the CNI identifies unambiguously a boat, it is preferable to know the boat’s name as it facilitates its identification. This aspect implies a more advanced query;
- (B) – When we want to know the sailors that have reserved boats registered in the country “Portugal”, the name o the sailor was added, despite the fact that the combination of the country’s ISO code and the sailor’s ID card identifies unambiguously a sailor;

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<sup>(i)</sup><https://andrewwhitby.com/2021/01/08/the-right-country-codes/>