

Festa da Regueifa: a Spatial Database Example

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The Coat of Arms of Valongo Municipality does not evoke the clash of arms or the scars of battle. Instead, it carries wheat, millstones and water, in honor of the peaceful heroism of the men and women who humbly made bread.

-Adapted from Helder Pacheco's "O Grande Porto"

Abstract

For the final assignment of Spatial Databases, I decided to create a Spatial Database for the 2026 Edition of Festa da Regueifa, the most important celebration in the Portuguese City of Valongo.

I created 5 tables, namely `event_types`, `events`, `festival_days`, `structure_categories`, `structures`, which should be enough to describe all the events taking place and provide information on a spatio-temporal level.

Keywords: Spatial Databases

1 Introduction

My family does not come from Valongo. I don't either, if we are being precise. I moved there with my parents when I was 3 years old. That being said, when someone asks me where I am from, that is the place I think of!

Valongo is a small city of 30 thousand people, and the seat of the Valongo Municipality, with 100 thousand people. The city area has been continuously inhabited for millennia, having played an important role during the Roman Occupation of the Peninsula, the French Invasions, and the Portuguese Civil War. Still, its most important cultural symbol is the bread, especially the "regueifa".

To further promote this symbol, in 2017, the City Hall decided to create a Summer Festival focused on this bread, the "Festa da Regueifa", which has since continued on an annual basis (except for the COVID years).

Since the final assignment of Spatial Database required that we create a spatial database for a city festival, I decided to honor the "Festa da Regueifa".

2 Data Preparation

The Municipality of Valongo has an extensive catalog of Open Geographical data, which luckily includes a **shapefile** of the temporary structures that were used for the 2023 Edition of "Festa da Regueifa", including stages, toilets, tables and stands. Unfortunately, it doesn't include trash bins; on the other hand, it contained individual shapes for each bench and chair, which I deleted as part of a few changes I performed to make it simpler.

The Open Data Catalog also includes an extensive cartography shapefile, which I used to obtain the shapes of all the buildings of the Southern part of the city (historically known as "Valongo Jusão"), where the Festival takes place. Sadly, this file dates to 2016, which forced to make a few manual alterations as well, to implement some important changes that have taken place in the city in the last 10 years.

Finally, the Municipality has already announced the Featured Artists for this year's Edition, which is taking place on the 4th, 5th, 6th and 7th of June. With this information and the full programs of the last two years, I populated my database with the expected events.

3 The Model

The centerpiece of my model are the Events, which have been numbered starting from 330.000 (for no special reason) to be identifiable by an integer ID number. They all have a name, which may either be the real name (for the confirmed events) or a placeholder one. And they may have a starting time, although this isn't mandatory, since there are always wandering performances happening around the festival with no official starting time.

Each Event is described by an Event Type, which is identified by a name and an integer ranging from 110.000 to 110.005 (again, with no special meaning). Furthermore, event types are specified as being religious or not, and as being stationary or not (to take parades into account).

Each Event may also be attributed to a Festival Day, which is identified by the date and an integer aptly ranging from 20260604 to 20260607. Since the festival usually has different closing times depending on the day, that information is also included.

The spatial aspect of all of this finally manifests itself with the Structures, which are identified by integers starting from 1 (automatically assigned by PgAdmin). Each structure possesses a polygon as its geometry, and may represent the location where an event either starts (for the case of the wandering events) or takes place (for the stationary events).

The final class I defined was the Structure Categories, which are specified as being permanent or not. The Structure Categories are identified by a name and an integer ID number which came directly from the original Valongo Open Data on the case of the permanent structures and was made up by me for the temporary structures.

All of this has been visually represented on [Figure 1 on the following page](#).

4 Source Code and Queries

In addition to this report, my submission also includes two SQL files and a shapefile.

The first SQL file has the source code needed to replicate the database. It was written manually by me, and thus doesn't include the steps creating and populating the Structures table, which were obtained by adding the table through QGIS, hence why I have included the shapefile.

The second SQL file has three instances of queries that I found interesting to try when exploring the database.

The first query aimed at finding the houses (and residential buildings) within a 500m radius of the main stage, since that's the stage with the largest sound projection and the only one with concerts until midnight (on Friday and Saturday). Also, from my experience, 500m is close

enough to still hear the concert quite well in situations like this. I obtained 870 rows.

The second query was to simply find the location with the most events starting or happening there. I concluded it was the small stage where the daily opening ceremony usually takes place.

The third query was about checking which of the city's two train stations was closer to the event location. I concluded that the northern station was closer to more temporary structures, and thus closer overall, but I did so using a query that only works for the case of exactly two stations.

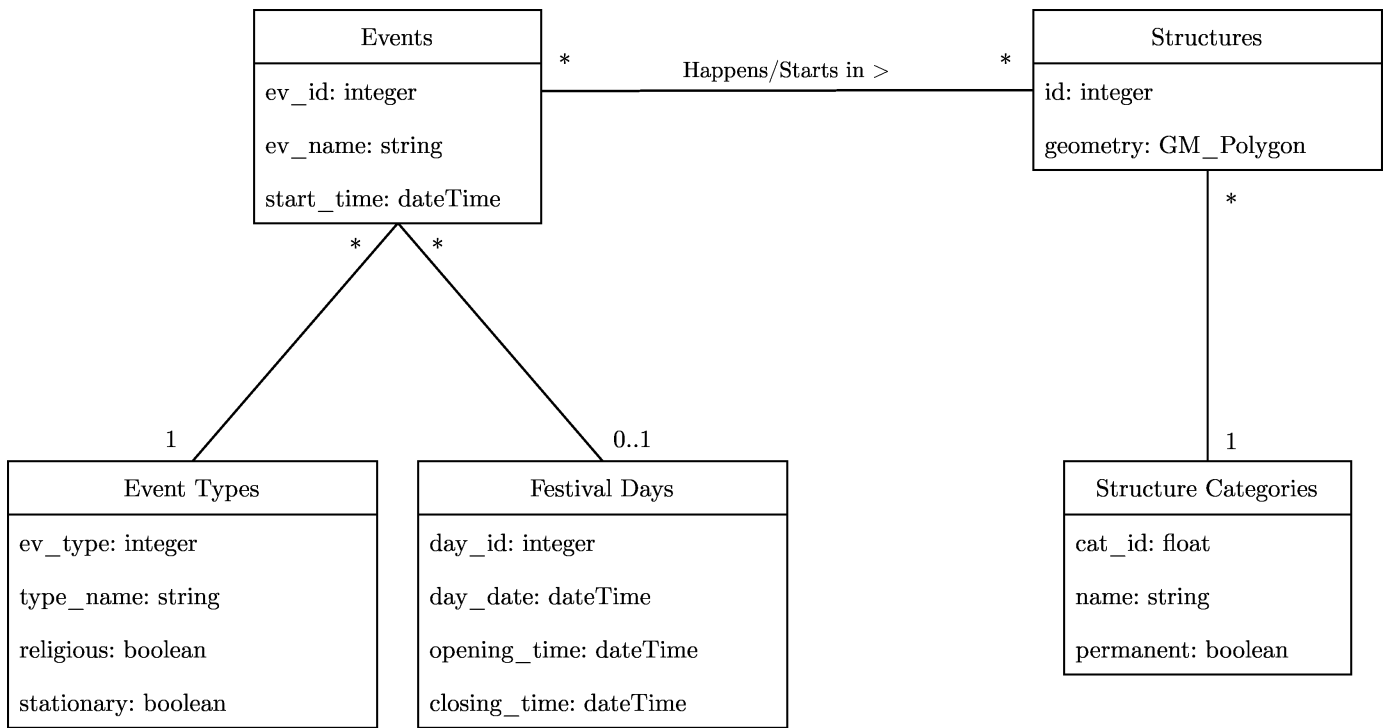


Figure 1: UML class diagram of my database.