PROJECT: DONATEXL
SPECIFICATIONS AND GUIDELINES
PART I

Project Description

DonateXL is a non-profit organization operating in Portugal since 1998 whose mission is to protect the environment through textile reuse. It executes programs for development cooperation in Africa and South America and promotes conscious and sustainable consumption, having a network of affordable second-hand stores all around the world.

This project relies on donations of used clothes, shoes, and accessories, which can be deposited in **containers** spread throughout the city or directly in a **store**. All stores and containers must have associated **geo-coordinates** (Latitude, Longitude). As for the containers, it is important to know their state at any given moment, i.e., if they are full or not. Additionally, the stores must have a unique address, composed by a street name, building number, floor number and postal code. Stores can be of one of two types: **Regular** or **Premium**. For the Premium stores, the prices are set higher than for the Normal stores.

Every item received through container donations is sent to a **Local Warehouse (LW)**, of which the street name, building number, floor number and postal code, should also be stored. In the LW all items are organized in packages indicating the origin container. The items collected from the stores are packaged there and labeled with the store's ID. All packages, both from the LWs and stores, are then sent to a **National Distribution Center (NDC)**.

At the NDC, the items are carefully analyzed (Triage) in order to determine their use. Depending on its condition, each item can only have one of the following uses:

- Direct **Resale** in one of the *DonateXL* stores;
- **Recycling** of its material to produce new items;
- **Reuse** in one of the *DonateXL* social projects;
- Elimination if the item is too damaged.

The information about the **origin** (Container or Store) and **use** (Resale, Recycling, Reuse, Elimination) of each item needs to be stored in the data model.

In case the item is destined to resale, it should be classified in the NDC by **category** (e.g. Clothing, Accessories, Shoes, Jewelry, Interior Textiles, Stuffed Animals), **subcategory** (e.g. Shirts, Pants, Skirts), **size**, **season** (Summer, Spring, Fall, Winter), **section** (e.g. Man, Woman, Kids), **brand** (if it exists), and **type** (Regular or Premium).

NDC's pricing team will set the **prices** of the items to sell at the *DonateXL* stores. The number of items to be distributed to each store is defined on a monthly basis by the NDC, according to the sales history of each store and to the existing NDC stock.

The stores have many sales **promotions** throughout the year, and they can be of two types: Countdown Promotions and *Ad-hoc*/Seasonal Promotions. The Countdown Promotions consist in a period where all items in the store are sold for the same price, beginning with a starting price, and decreasing the same amount per day until a defined final price is reached. For example, on the first day of the promotion, all items cost 5€ (starting price) and then the price decreases 0.5€ per day until the final price of 1€ per item is reached. As for the *Ad-hoc*/Seasonal Promotions, the stores can offer discounts (e.g. 50% price reduction) storewide or only in some selected items.

The clients that want to be notified of all news, promotions and special offers can subscribe to the **Newsletter** by entering their personal details – Email, First Name, Last Name and Phone Number (optional) – and selecting the list of stores from which they want to receive announcements.

Deliverables (PART I)

The model that will result from the answers to the requirements set out above can always be expanded as a result of new questions that students identify and thus enriched. In addition, in this first delivery, there may be restrictions that cannot be represented, and their implementation will have to be postponed to the business rules definition phase that will be part of the 2nd delivery. The identification of these business rules even at this stage, in the form of comments introduced in the model, is a positive factor in the evaluation of the 1st delivery.

The first delivery consists of the design of the entity-relationship and relational models[1], and the production of SQL code (DDL) instantiated to Microsoft SQL Server as indicated below:

1. Conceptual Data Model (Entity-Relationship Model) developed in Power Designer (.cdm file).
2. Physical Data Model (Relational Model) developed in Power Designer and obtained using Microsoft SQL Server specifications (.pdm file).
3. SQL script generated in Power Designer with SQL statements for database objects creation in SQL Server (.sql file).
4. Text file (.txt) with the identification (name and number) of all the group elements.

The deliverables described above must be sent by email to jnneves@novaims.unl.pt, plapa@novaims.unl.pt, and imargarido@novaims.unl.pt in a single zipped file (.zip) following the template "DB_2022_2023_Delivery_1_AAAANNN" – AAAANNN is the student number of the group's delegate.

The deadline for this delivery is **October 9, 2022,** at **11:59pm**. No submission after this datetime will be accepted.

[1] Power Designer Conceptual Data Model and Physical Data Model, respectively.