

**Bases de Dados - 2021/22**

**Docentes:** Leonardo Alexandre

João Aparício

Projeto de Bases de Dados – Parte 2

**Grupo 122 – Turno L20**

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| **Aluno** | **Horas de trabalho** |
| Carolina Coelho (99189) | 13 horas (33.3%) |
| Gonçalo Nunes (99229) | 13 horas (33.3%) |
| João Fonseca (95749) | 13 horas (33.3%) |

**Modelo Relacional**

Point\_Of\_Retail(address,name)

Ivm(serial\_number, manuf)

installed\_at(serial number, manuf, address, nr)

* serial\_number, manuf: FK(Ivm)
* address: FK(Point\_Of\_Retail)

Retailer(TIN,name)

* UNIQUE(name)

Shelve(serial\_number, manuf, nr, height,categ\_name)

* serial\_number, manuf: FK(Ivm.serial\_number, Ivm.manuf)
* categ\_name: FK(Category.name)
* IC-1: serial\_number,manuf must exist in Ambient\_Temp\_Shelf or Warm\_Shelf or Cold\_Shelf
* IC-2: No shelve can exist at the same time in Ambient\_Temp\_Shelf, Warm\_Shelf or/and Cold\_Shelf

Ambient\_Temp\_Shelf(serial number, manuf, nr, height)

* serial\_number, manuf, nr: FK(Shelve.serial\_number, Shelve.manuf, Shelve.nr)

Warm\_Shelf(serial number, manuf, nr, height)

* serial\_number, manuf, nr: FK(Shelve.serial\_number, Shelve.manuf, Shelve.nr)

Cold\_Shelf(serial number, manuf, nr, height)

* serial\_number, manuf, nr: FK(Shelve.serial\_number, Shelve.manuf, Shelve.nr)

Product(ean,descr)

* IC-3: Every Product (ean) must participate in the has association

planogram(ean, serial\_number, manuf, nr, faces, units, loc)

* ean: FK(Product)
* serial\_number, manuf, nr: FK(Shelve.serial\_number, Shelve.manuf, Shelve.nr)

Category(name)

* IC-4: name must exist in Simple\_Category or Super\_category
* IC-5: No shelve can exist at the same time in Simple\_Category and Super\_Category

Simple\_Category(name)

* name: FK(Category.name)

Super\_Category(name)

* name: FK(Category.name)

has\_other(sub\_category\_name, super\_category\_name)

* super\_category\_name: FK(Super\_Category.name)
* sub\_category\_name: FK(Category.name)
* IC-6: super\_category\_name is always different from sub\_category\_name
* IC-7: there can’t be cycles between categories

has(ean,name)

* ean: FK(Product)
* name: FK(Category)

responsible\_for(serial\_number, manuf, categ\_name, TIN)

* serial\_number, manuf: FK(Ivm)
* categ\_name: FK(Category.name)
* TIN: FK(Retailer)

Replenishment\_event(ean, serial\_number, manuf, nr, instant, TIN, units)

* serial\_number, manuf, nr, ean: FK(Planogram.nr, Planogram.ean, Planogram.serial\_number, Planogram.manuf)
* TIN: FK(Retailer)

IC-8: a Product can only be replenished on a Shelf where its Category is displayed.

IC-9: units replenished cannot exceed the number of units specified in planogram

IC-10­­: a Product can only be replaced by the Retailer responsible for the Product category

**Uma imagem com texto

Descrição gerada automaticamenteÁlgebra Relacional**

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**SQL**

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| 1) |
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|  | 2) |
|  |  |
|  | SELECT |
|  | p.serial\_number |
|  | FROM |
|  | planogram AS p |
|  | WHERE |
|  | p.\_ean=9002490100070 |
|  | GROUP BY |
|  | p.serial\_number |
|  |  |
|  | 3) |
|  |  |
|  | SELECT |
|  | COUNT(h.sub\_category\_name) AS sub\_categ\_count |
|  | FROM |
|  | has\_other AS h |
|  | WHERE |
|  | h.super\_category\_name='Sopas Take-Away' |
|  | GROUP BY |
|  | h.super\_category\_name |
|  |  |
|  |  |
|  | --4) |
|  |  |
|  | WITH t1 AS ( |
|  | SELECT p.ean, p.descr, SUM(r.units) AS units\_sum |
|  | FROM Product AS p |
|  | NATURAL JOIN Replenishment\_event AS r |
|  | GROUP BY p.ean) |
|  |  |
|  | SELECT |
|  | t1.ean, t1.descr |
|  | FROM |
|  | t1 |
|  | WHERE |
|  | t1.units\_sum = (SELECT MAX(units\_sum) |
|  | FROM t1) |