Projeto de Bases de Dados
2ªEntrega

Turno Prático 10, Prof. Flávio Martins

Grupo 199			
Nome	Nº	Esforço (Horas)	Contribuição (%)
Gonçalo Carvalho	99227	5	33.(3) %
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Modelo Relacional

ivm(serial_number, manuf)

point_of_retail(name, address)

product(ean, descr)

shelve(serial_number, manuf, nr, height,category)

- serial_number, manuf: FK(ivm)
- category: FK(category)

ambient_temp_shelf(serial_number, manuf, nr, height, stored_category)

- serial_number, manuf: FK(ivm)
- stored_category: FK(category)

warm_shelf(serial_number, manuf, nr, height, stored_category)

- serial_number, manuf: FK(ivm)
- stored_category: FK(category)

cold_shelf(serial_number, manuf, nr, height, stored_category)

- serial_number, manuf: FK(ivm)
- stored_category: FK(category)

retailer(tin, name)

- UNIQUE(name)

category(name)

simple_category(name)

super_category(name)

planogram(ean, serial_number, manuf, nr, faces, units, loc)

- ean : FK(product)
- serial_number, manuf, nr: FK(shelve)

replenishment_event(ean, serial_number, manuf, nr, retailer_info, instant, units)

- ean, serial_number, manuf, nr

- IC-1: the number of units replenished can not exceed the number specified in the planogram
- retailer_info : FK(retailer)

installations(<u>serial_number, manuf, address,</u> nr)

- serial_number, manuf: FK(ivm)
- address: FK(point_of_retail)

category_hierarchy(<u>category_name,</u> super)

- category_name: FK(category)
- super: FK(super_category)
- IC-2: a category can not be associated to itself
- IC-3: the categories can not form cycles

product_classification(<u>ean, category</u>)

- ean: FK(product)
- category: FK(category)

retailer_responsabilities(<u>serial_number, manuf, category_name, name,</u> tin)

- serial_number, manuf: FK(ivm)
- category_name: FK(category)
- tin: FK(retailer)

Álgebra Relacional

1.

$$\pi_{ean,descr}(product) \bowtie \left(\pi_{ean}\left(\sigma_{units>10 \wedge instant>input\_date}(replenishment\_event)\right) \cap \pi_{ean}\left(\sigma_{category=<input>}(product\_classification)\right)\right)$$

2.

$$\left(\pi_{serial\_number}\left(\pi_{category}\left(\sigma_{ean=<input>}(product\_classification)\right)\right)\right) \bowtie \pi_{serial\_number,category}(shelve)$$

3.

$$\pi_{Count}\left(\sigma_{super=<input>}\left(\ {}_{super}G_{count()}(category\_hierarchy)\right)\right)$$

4.

$$most\_replenished\_ean \leftarrow G_{Max(units)}\left(\ {}_{ean}G_{SUM(units)}(replenishment\_event)\right)$$

$$\pi_{ean,descr}(\sigma_{ean=most\_replenished\_ean}(product))$$

SQL

1.

```
SELECT aux_table.ean, descr
   FROM replenishment_event
   JOIN (SELECT product.ean, descr, category
      FROM product
      JOIN product_classification
      ON product.ean = product_classification.ean
      WHERE category = <INPUT_CATEGORY>) AS aux_table
   ON replenishment_event.ean = aux_table.ean
   WHERE units > 10 AND
TIMESTAMPDIFF(SECOND,<INPUT_TIMESTAMP>,instant) > 0;
```

2.

```
SELECT serial_number
   FROM shelve
   WHERE stored_category = (SELECT category
                            FROM product_classification
                            WHERE ean = <INPUT>)
```

3.

```
SELECT COUNT(category_hierarquy.category_name)
 FROM category_hierarchy
 WHERE category_name = <input>
```

4.

```
SELECT ean, descr
   FROM product
   WHERE ean = (SELECT ean
                FROM (SELECT ean, SUM(units) as SummedUnits
                     FROM replenishment_event
                     GROUP BY ean) AS aux_table2
                     WHERE SummedUnits = (SELECT MAX(aux_table1.sum)
                                          FROM (SELECT SUM(units) AS sum
                                               FROM replenishment_event
                                               GROUP BY ean) AS aux_table1));
```