Projeto BD - parte 2

Grupo 44

Turno L07

Prof. João Tomás Brazão Caldeira
Prof. Pedro Manuel Moreira Vaz Antunes de Sousa

Aluno	Esforço (horas)	Esforço relativo
Tiago Coutinho Carreto Tavares Rebelo (103037)	7 horas	33%
Tiago Miguel Santos Dias (102613)	7 horas	33%
Vicente Marques de Barros Naves da Silva (103725)	7 horas	33%

customer(cust_no, name, email, phone, address)

- UNIQUE(email)

order(order_no, date)

product(sku, name, description, price)

ean product(sku, ean)

- sku: FK(product.sku)

supplier(TIN, name, address)

supply-contract(date, TIN, sku)

- sku: FK(product)
- TIN: FK(supplier)

contains(order_no, sku, qty)

- order_no: FK(order)
- sku: FK(product)

sale(order_no)

- order_no: FK(order.order_no)

delivery(address, sku, TIN)

- address: FK(warehouse)
- sku, TIN: FK(supply-contract.sku, supply-contract.TIN)

places(cust_no, order_no)

- cust_no: FK(customer)
- order_no: FK(order)
- UNIQUE(order_no)
- IC-1: Customers can only pay for the Sale of an Order they have placed themselves

pay(order_no, customer_no)

workplace(address, lat, long)

- UNIQUE(lat, long)

office(address)

- address: FK(workplace.address)

warehouse(address)
- address: FK(workplace.address)

department(name)

Employee(ssn, TIN, bdate, name)
- UNIQUE(TIN)

works(name, ssn, address)

process(ssn, order_on)

ICs:

IC-5: Every ssn must exist in the relation works
IC-6: Every order_no must exist in the relation contains

Parte 2

a)

$\pi_{customer.name}(\sigma_{product.price>50} \square \sigma_{order.date >= 2023\text{-}01\text{-}01} \square \sigma_{order.date <= 2023\text{-}12\text{-}31}(Customer \bowtie Order \bowtie Product))$

b)

$\pi_{employee.name}(\sigma_{workplace = \text{“warehouse”}} - \sigma_{workplace = office} \square \sigma_{order.date >= 2023\text{-}01\text{-}01} \square \sigma_{order.date >= 2023\text{-}01\text{-}31}(employee \bowtie works \bowtie process))$

c)

$funcs \leftarrow (product\, G_{count() \rightarrow c}\, (contains))$

$funcs \leftarrow G_{max(c)}(funcs) \bowtie funcs$

d)

$order.order\_no\ G_{SUM(product.price * contains.qty)}(order \bowtie contains \bowtie product)$