

Online market Database Management System

DATABASE MANAGEMENT SYSTEMS I

Submited by: Bekzat Sadu and Saule Kalykova

**1.Team Members and their Responsibilities**

Team Members: Sadu Bekzat, Saule Kalykova

Responsibilities: Saule: Creation of the ERD diagram

Bekzat: Creation of tables

Saule: Define normal forms of all 16 tables

Bekzat: Writing 20 sql queries

Saule: FD and relation scheme

Bekzat: Converting the queries into algebric form

2.INTRODUCTION

When making the project, we thought about how to make life easier for the employees, the owner and the customers of our online store. Our inspiration was the Technodom online market. We decided to do everything possible to make information for employees accessible and understandable.

Our database was created to organize data, store information about suppliers, customers, products, implement delivery in this entire project, add a shopping cart for the convenience of customers.

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6.Queries

Triggers

отменяет оплату если баланс меньше нужной суммы для оплаты

CREATE OR REPLACE TRIGGER payment\_failure

AFTER UPDATE OF balance ON Account

FOR EACH ROW

BEGIN

UPDATE Payment

SET payment\_success = 'false'

WHERE customer\_id = :new.customer\_id AND :new.balance > pay\_amount;

END;

⋈ (π customer\_id, :new.balance (σ UPDATED = TRUE (Account))) Payment

недоступные товары из базы

CREATE OR REPLACE TRIGGER delete\_unavailable\_products

AFTER DELETE ON Product

FOR EACH ROW

BEGIN

DELETE FROM Order

WHERE product\_id = :old.product\_id AND :old.status = 'not available';

END;

- (π product\_id, :old.status (σ DELETED = TRUE (Product))) Order

триггер который вводит новые данные оплаты

CREATE OR REPLACE TRIGGER payment\_trigger

AFTER INSERT ON Order

FOR EACH ROW

BEGIN

INSERT INTO Payment (payid, pay\_amount, pay\_date)

VALUES (:new.payid, (Select price from Phone, tv, computer, photo, appliance where pid = order.pid join order on order.payid = payment.payid), :new.order\_date);

END;

(π payid, price, order\_date (σ INSERTED = TRUE (Order))) ⊕ Payment

Views

Легкий доступ к балансу клиентов

CREATE VIEW customers\_balance AS

SELECT Account.balance, Customer.surname, Customer.name

FROM Account

JOIN Customer

ON Account.customer\_id = Customer.customer\_id;

π(balance, surname, name)(Account ⋈ Customer)

имени администратора и сайта под его ответственностью

CREATE VIEW admins\_and\_webs

SELECT Admin.admin\_name, Admin.surname, Website.Web\_name

FROM Admin

JOIN Website ON Admin.admin\_id = Website.admin\_id

π(Admin.admin\_name, Admin.surname, Website.Web\_name) (Admin ⨝ Website)

Aggregations

средней цены на товары

Select cat\_name, avg(price) from Phone, tv, computer, photo, appliance

Вывод самого дорогого и самого дешёвого телефона

Select model, max(price),min(price)

From Phone

Вывод количества всех зарегистрированных клиентов

Select count(\*)

From Account

Subquery

SELECT \* FROM Customer

WHERE cid IN (SELECT cid

FROM Account

WHERE balance = 34.40$)

π(\*) (Customer) ⨝ (σ(balance=34.40$) (Account) ⨝ Customer.cid = Account.cid)

Вывести цену и id продукта у которого статус “доступен”

SELECT pid, quantity

FROM Cart

WHERE pid IN (SELECT pid

FROM Product

WHERE status= 'Available')

π(pid, quantity) (Cart) ⨝ (σ(status='Available') (Product) ⨝ Cart.pid = Product.pid)

Вывод даты заказа у клиента под номером 2

SELECT order\_date, Customer.name, Customer.surname

FROM Order,Customer

WHERE Customer.custom\_id = 2;

π order\_date, name, surname (σ custom\_id = 2 (Order × Customer))

Joins

Вывести имя курьера и имя заказчика для удобной связи и отслеживания доставки

Select Delivery.courier\_name, Delivery.tracking\_no, Customer.surname, Customer.name, Customer.phone

FROM Delivery

Join Order on Delivery.oid = Order.oid

join Customer on Customer.cid = Order.cid

π(Delivery.courier\_name, Delivery.tracking\_no, Customer.surname, Customer.name, Customer.phone) (Delivery ⨝ Order ⨝ Customer)

Вывести все товары из одной компании

Select Company, model

from Phone

Join TV ON Phone.Company = TV.Company

Join computer ON Computer.Company = TV.Company

Join Photo ON Photo.Company = Computer.Company

Join Appliance ON Photo.Company = Appliance.Company

π(Phone.Company, Phone.model) (Phone ⨝ TV ⨝ Computer ⨝ Photo ⨝ Appliance)

Отслеживание всей информации о доставке

SELECT Order.oid, Order.cid, Order.order\_date, Delivery.courier\_name, Delivery.tracking\_no

FROM Order

JOIN Delivery ON Order.oid = Delivery.oid

π(Order.oid, Order.cid, Order.order\_date, Delivery.courier\_name, Delivery.tracking\_no) (Order ⨝ Delivery)

Transactions

При добавлении продукта автоматом добавляется в корзину

EXECUTE

BEGIN

INSERT INTO product (p\_id, status, price)

VALUES (:P1\_P\_ID, :P1\_STATUS, :P1\_PRICE);

INSERT INTO cart (p\_id, price, quantity)

VALUES (:P1\_P\_ID, :P1\_PRICE, :P1\_QUANTITY);

END;

USING

:P1\_P\_ID := 3,

:P1\_STATUS := 'Available',

:P1\_PRICE := 50.99,

:P1\_QUANTITY := 3;

При добавлении в заказ продукта добавляется и в доставку и в счёт

BEGIN

INSERT INTO order (oid, cid, pid, order\_date, payid)

VALUES (:oid, :cid, :pid, :order\_date, :payid);

INSERT INTO delivery (tracking\_no, courier\_name, oid)

VALUES (:tracking\_no, :courier\_name, :oid);

INSERT INTO payment (payid, pay\_amount, pay\_date)

VALUES (:payid, :pay\_amount, :pay\_date);

END;

Удаление данных у которых истёк срок

BEGIN

DELETE FROM order WHERE pay\_date < SYSDATE;

DELETE FROM delivery WHERE oid IN (SELECT oid FROM order);

DELETE FROM payment WHERE payid IN (SELECT payid FROM order);END;

Indexes

Index

CREATE INDEX SUP

ON SUPLIER (SUP\_ID)

create index Pay

on Payment(pay\_id)