**Bazy Danych**

Laboratorium

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**Lab 1 10.03.2017**

Rozdanie tematów: 2 **Hurtownia kawy**

**Lab 2 ~~17.03.2017~~**

Laboratorium przeniesione na następny termin.

**Lab 3 24.03.2017**

Konceptualny model ER bazy danych uwzględniający encje wyodrębnione.



**Lab 4 31.03.2017**

CREATE TABLE

DROP TABLE employees;

DROP TABLE orderhasproducts;

DROP TABLE orders;

DROP TABLE products;

DROP TABLE warehouse;

CREATE TABLE employees (

employee\_id INTEGER NOT NULL,

task VARCHAR2(45 CHAR),

firstname VARCHAR2(20 CHAR),

lastname VARCHAR2(30 CHAR),

warehouse\_id INTEGER,

manager\_id INTEGER

);

ALTER TABLE employees ADD CONSTRAINT employees\_pk PRIMARY KEY ( employee\_id );

CREATE TABLE orderhasproducts (

product\_id INTEGER NOT NULL,

order\_id INTEGER NOT NULL

);

ALTER TABLE orderhasproducts ADD CONSTRAINT orderhasproducts\_pk PRIMARY KEY ( product\_id, order\_id );

CREATE TABLE orders (

order\_id INTEGER NOT NULL,

seller\_id INTEGER,

customer\_id INTEGER,

orderdate DATE

);

ALTER TABLE orders ADD CONSTRAINT orders\_pk PRIMARY KEY ( order\_id );

CREATE TABLE products (

product\_id INTEGER NOT NULL,

coffeename VARCHAR2(35 CHAR),

quantity INTEGER,

productioncost INTEGER,

price INTEGER,

warehouse\_id INTEGER NOT NULL

);

ALTER TABLE products ADD CONSTRAINT products\_pk PRIMARY KEY ( product\_id );

CREATE TABLE warehouse (

warehouse\_id INTEGER NOT NULL,

"capacity" INTEGER,

ocupancy INTEGER,

storekeepersnr INTEGER

);

ALTER TABLE warehouse ADD CONSTRAINT warehouse\_pk PRIMARY KEY ( warehouse\_id );

ALTER TABLE orderhasproducts ADD CONSTRAINT orderhasproducts\_products\_fk FOREIGN KEY ( product\_id )

REFERENCES products ( product\_id );

ALTER TABLE orderhasproducts ADD CONSTRAINT orderhasproducts\_orders\_fk FOREIGN KEY ( order\_id )

REFERENCES orders ( order\_id );

ALTER TABLE products ADD CONSTRAINT warehousestoredinid FOREIGN KEY ( warehouse\_id )

REFERENCES warehouse ( warehouse\_id );

ALTER TABLE employees ADD CONSTRAINT warehouseworkedinid FOREIGN KEY ( warehouse\_id )

REFERENCES warehouse ( warehouse\_id );

ALTER TABLE employees ADD CONSTRAINT manager\_id FOREIGN KEY ( manager\_id )

REFERENCES employees ( employee\_id );

ALTER TABLE orders ADD CONSTRAINT seller\_id FOREIGN KEY ( seller\_id )

REFERENCES employees ( employee\_id );

**Lab 5 7.04.2017**

INSERT

--Wstawiam inzynierow, ktorzy nie maja powiazania z innymi encjami

INSERT INTO employees (employee\_id, task, firstname, lastname)

VALUES (101,'engineer', 'Janusz', 'Nowak');

INSERT INTO employees (employee\_id, task, firstname, lastname)

VALUES (102,'engineer', 'Adam', 'Wenge');

INSERT INTO employees (employee\_id, task, firstname, lastname)

VALUES (103,'engineer', 'Jerzy', 'Mak');

--Wstawiam sprzedawcow

INSERT INTO employees (employee\_id, task, firstname, lastname)

VALUES (301,'seller', 'Edyta', 'Kaminowska');

INSERT INTO employees (employee\_id, task, firstname, lastname)

VALUES (302,'seller', 'Dariusz', 'Marecki');

INSERT INTO employees (employee\_id, task, firstname, lastname)

VALUES (303,'seller', 'Adam', 'Henke');

--Wstawiam magazyny

INSERT INTO warehouse (warehouse\_id, ocupancy, capitance, storekeepersnr)

VALUES (9010, 0, 6350, 0);

INSERT INTO warehouse (warehouse\_id, ocupancy, capitance, storekeepersnr)

VALUES (9020, 0, 4200, 0);

INSERT INTO warehouse (warehouse\_id, ocupancy, capitance, storekeepersnr)

VALUES (9021, 0, 5500, 0);

INSERT INTO warehouse (warehouse\_id, ocupancy, capitance, storekeepersnr)

VALUES (9022, 0, 3200, 0);

INSERT INTO warehouse (warehouse\_id, ocupancy, capitance, storekeepersnr)

VALUES (9023, 0, 2500, 0);

INSERT INTO warehouse (warehouse\_id, ocupancy, capitance, storekeepersnr)

VALUES (9024, 0, 4300, 0);

INSERT INTO warehouse (warehouse\_id, ocupancy, capitance, storekeepersnr)

VALUES (9025, 0, 7300, 0);

INSERT INTO warehouse (warehouse\_id, ocupancy, capitance, storekeepersnr)

VALUES (9011, 0, 2300, 0);

INSERT INTO warehouse (warehouse\_id, ocupancy, capitance, storekeepersnr)

VALUES (9012, 0, 4500, 0);

INSERT INTO warehouse (warehouse\_id, ocupancy, capitance, storekeepersnr)

VALUES (9013, 0, 5600, 0);

-- Wstawiam magazynierow i podnosza ich liczbe w odpowiednich magazynach

INSERT INTO employees (employee\_id, task, firstname, lastname, warehouse\_id)

VALUES (201, 'storekeeper', 'Maciej', 'Krzak', 9010);

UPDATE warehouse

SET storekeepersnr = storekeepersnr + 1

WHERE warehouse\_id = 9010;

INSERT INTO employees (employee\_id, task, firstname, lastname, warehouse\_id)

VALUES (202, 'storekeeper', 'Michalina', 'Kowalczyk', 9010);

UPDATE warehouse

SET storekeepersnr = storekeepersnr + 1

WHERE warehouse\_id = 9010;

INSERT INTO employees (employee\_id, task, firstname, lastname, warehouse\_id)

VALUES (203, 'storekeeper', 'Katarzyna', 'Rakowska', 9020);

UPDATE warehouse

SET storekeepersnr = storekeepersnr + 1

WHERE warehouse\_id = 9020;

INSERT INTO employees (employee\_id, task, firstname, lastname, warehouse\_id)

VALUES (204, 'storekeeper', 'Piotr', 'Makowiecki', 9021);

UPDATE warehouse

SET storekeepersnr = storekeepersnr + 1

WHERE warehouse\_id = 9021;

INSERT INTO employees (employee\_id, task, firstname, lastname, warehouse\_id)

VALUES (205, 'storekeeper', 'Maciej', 'Kosowski', 9021);

UPDATE warehouse

SET storekeepersnr = storekeepersnr + 1

WHERE warehouse\_id = 9021;

--Wstawiam menagerow ,rowniez bez powiazan z innymi encjami

INSERT INTO employees (employee\_id, task, firstname, lastname)

VALUES (501, 'manager', 'Mateusz', 'Borowski');

INSERT INTO employees (employee\_id, task, firstname, lastname)

VALUES (502, 'manager', 'Maria', 'Chrzanowska');

INSERT INTO employees (employee\_id, task, firstname, lastname)

VALUES (503, 'manager', 'Ryszard', 'Bocian');

--Przydzielam menagerom ich zespol inzynierow

UPDATE employees

SET manager\_id = 501

WHERE employee\_id = 101;

UPDATE employees

SET manager\_id = 501

WHERE employee\_id = 102;

UPDATE employees

SET manager\_id = 501

WHERE employee\_id = 103;

--Zespol managerow

UPDATE employees

SET manager\_id = 502

WHERE employee\_id = 201;

UPDATE employees

SET manager\_id = 502

WHERE employee\_id = 202;

UPDATE employees

SET manager\_id = 502

WHERE employee\_id = 203;

UPDATE employees

SET manager\_id = 502

WHERE employee\_id = 204;

UPDATE employees

SET manager\_id = 502

WHERE employee\_id = 205;

--Zespol sprzedawcow

UPDATE employees

SET manager\_id = 503

WHERE employee\_id = 301;

UPDATE employees

SET manager\_id = 503

WHERE employee\_id = 302;

UPDATE employees

SET manager\_id = 503

WHERE employee\_id = 303;

--Wstawiam produkty

INSERT INTO products (product\_id, coffeename, quantity, productioncost, price, warehouse\_id)

VALUES (1, 'Inka', 750, 20, 28, 9010);

UPDATE warehouse

SET ocupancy = ocupancy + 750

WHERE warehouse\_id = 9010;

INSERT INTO products (product\_id, coffeename, quantity, productioncost, price, warehouse\_id)

VALUES (2, 'Arabica', 420, 35, 43, 9020);

UPDATE warehouse

SET ocupancy = ocupancy + 420

WHERE warehouse\_id = 9020;

INSERT INTO products (product\_id, coffeename, quantity, productioncost, price, warehouse\_id)

VALUES (3, 'Robusta', 210, 54, 67, 9020);

UPDATE warehouse

SET ocupancy = ocupancy + 210

WHERE warehouse\_id = 9020;

INSERT INTO products (product\_id, coffeename, quantity, productioncost, price, warehouse\_id)

VALUES (4, 'InkaBlack', 560, 24, 29, 9021);

UPDATE warehouse

SET ocupancy = ocupancy + 560

WHERE warehouse\_id = 9021;

INSERT INTO products (product\_id, coffeename, quantity, productioncost, price, warehouse\_id)

VALUES (5, 'ArabicaPalona', 160, 64, 72, 9021);

UPDATE warehouse

SET ocupancy = ocupancy + 160

WHERE warehouse\_id = 9021;

INSERT INTO products (product\_id, coffeename, quantity, productioncost, price, warehouse\_id)

VALUES (6, 'Liberica', 110, 34, 42, 9010);

UPDATE warehouse

SET ocupancy = ocupancy + 110

WHERE warehouse\_id = 9010;

INSERT INTO products (product\_id, coffeename, quantity, productioncost, price, warehouse\_id)

VALUES (7, 'Zielona', 260, 22, 29, 9023);

UPDATE warehouse

SET ocupancy = ocupancy + 260

WHERE warehouse\_id = 9023;

INSERT INTO products (product\_id, coffeename, quantity, productioncost, price, warehouse\_id)

VALUES (8, 'Attibassi', 220, 25, 34, 9024);

UPDATE warehouse

SET ocupancy = ocupancy + 220

WHERE warehouse\_id = 9024;

INSERT INTO products (product\_id, coffeename, quantity, productioncost, price, warehouse\_id)

VALUES (9, 'Hopje', 360, 56, 70, 9022);

UPDATE warehouse

SET ocupancy = ocupancy + 360

WHERE warehouse\_id = 9022;

INSERT INTO products (product\_id, coffeename, quantity, productioncost, price, warehouse\_id)

VALUES (10, 'Pluton', 130, 78, 89, 9024);

UPDATE warehouse

SET ocupancy = ocupancy + 130

WHERE warehouse\_id = 9024;

--Wstawiam zamowienia

INSERT INTO orders (order\_id, seller\_id, customer\_id)

VALUES (1,301, 1);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (1,1,200);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (2,1,300);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (3,1,150);

INSERT INTO orders (order\_id, seller\_id, customer\_id)

VALUES (2,301, 1);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (3,2,430);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (2,2,870);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (4,2,550);

INSERT INTO orders (order\_id, seller\_id, customer\_id)

VALUES (3,301, 2);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (5,3,200);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (2,3,430);

INSERT INTO orders (order\_id, seller\_id, customer\_id)

VALUES (4,302, 3);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (1,4,200);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (2,4,300);

INSERT INTO orders (order\_id, seller\_id, customer\_id)

VALUES (5,302, 4);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (1,5,200);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (2,5,270);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (3,5,150);

INSERT INTO orders (order\_id, seller\_id, customer\_id)

VALUES (6,302, 5);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (1,6,270);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (2,6,320);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (3,6,270);

INSERT INTO orders (order\_id, seller\_id, customer\_id)

VALUES (7,302, 6);

INSERT INTO orders (order\_id, seller\_id, customer\_id)

VALUES (8,302, 7);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (1,8,200);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (2,8,270);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (3,8,350);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (4,8,220);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (5,8,320);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (6,8,850);

INSERT INTO orders (order\_id, seller\_id, customer\_id)

VALUES (9,302, 8);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (3,9,160);

INSERT INTO orders (order\_id, seller\_id, customer\_id)

VALUES (10,302, 9);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (3,10,140);

INSERT INTO orderhasproducts(product\_id, order\_id, quantity)

VALUES (5,10,350);

Commit;

SELECT

-- 2 polecenia select uzywajace klauzuli where

SELECT firstname, lastname

FROM employees

WHERE task = 'seller';

SELECT warehouse\_id, capitance

FROM warehouse

WHERE capitance > 4000;

-- 2 polecenia select wykorzystujace funkcje agregujace oraz grupowanie

SELECT warehouse\_id, ocupancy

FROM warehouse

ORDER BY OCUPANCY ASC;

SELECT task, lastname, employee\_id

FROM employees

ORDER BY task ASC, employee\_id DESC;

SELECT COUNT(employee\_id), task

FROM employees

GROUP BY task;

-- 2 polecenia select z podzapytaniem

SELECT warehouse\_id, ocupancy FROM warehouse

WHERE ocupancy =

(SELECT MIN(ocupancy)

FROM warehouse);

SELECT warehouse\_id, storekeepersnr FROM warehouse

WHERE storekeepersnr =

(SELECT MAX(storekeepersnr)

FROM warehouse);

-- 2 polecenia select uzywajace zlaczen (join)

SELECT products.product\_id, products.coffeename,products.quantity, products.productioncost, products.price, products.warehouse\_id

FROM products INNER JOIN warehouse ON (products.warehouse\_id = warehouse.warehouse\_id AND warehouse.storekeepersnr > 1);

SELECT employees.employee\_id, employees.warehouse\_id

FROM employees INNER JOIN warehouse ON (employees.warehouse\_id = warehouse.warehouse\_id AND warehouse.storekeepersnr = 2);

**Lab 6 12.04.2017**