**הקריה האקדמית אונו**

**מנהל עסקים**

נושאים מתקדמים ב לבסיסי נתונים

תרגיל בית מספר 2

תאריך אחרון להגשה :

19.08.2022

מגישים :

אבשלום אלמו – 313233827

אלון גלאי – 203204029

לינוי רטה - 207974932

Answer 1 :

create database exerciseTwo ;

create table Manufacturers\_q1 (

Code\_Manufactuer integer primary key,

Name\_Manufactuer text (255) not null

);

create table Products\_q1 (

Code\_Product integer primary key,

Name\_Product text (255) not null,

price\_Product real not null,

Manufacturer integer ,

CONSTRAINT FK\_Manufacturers\_q1 FOREIGN KEY (Manufacturer)

REFERENCES Manufacturers\_q1(Code\_Manufactuer)

);

insert into Manufacturers\_q1

values (1,'sony'),

(2,'Crative labs') ,

(3,'Hewlett-Packard'),

(4,'lomefa'),

(5,'Fujisu') ,

(6,'Winchester');

insert into Products\_q1

values (1,'Hard drive' ,240,'5'),

(2,'Memory', 120, 6),

(3, 'Zip drive', 150, 4),

(4,'Floppy disk',5,6),

(5,'Moitor',240,1),

(6,'DVD drive' ,180 ,2) ,

(7, 'CD drive',90 , 2),

(8,'Printer' ,270 , 3),

(9,'Toner Cartage' ,66 ,3 ),

(10,'DVD burner' ,180 , 2);

select \* from Products\_q1;

select Name\_Product

from Products\_q1;

select Name\_Product

from Products\_q1

where price\_Product <= 200;

select Name\_Product

from Products\_q1

where price\_Product between 60 and 120;

select Name\_Product , price\_Product\*100

AS price\_cents\_Product

from Products\_q1;

select avg(price\_Product)

from Products\_q1 ;

select avg(price\_Product)

from Products\_q1

where Manufacturer = 2 ;

select Name\_Product , price\_Product

from Products\_q1

where price\_Product >= 180

order by price\_Product and Name\_Product desc ;

select \*

from products\_q1 , Manufacturers\_q1

where products\_q1.Manufacturer = Manufacturers\_q1.Code\_Manufactuer;

Select Name\_Product , price\_Product , Name\_Manufactuer

from products\_q1 , Manufacturers\_q1

where products\_q1.Manufacturer = Manufacturers\_q1.code\_Manufactuer;

select avg(price\_Product), Manufacturer

from products\_q1

group by Manufacturer;

select avg(price\_Product) as average, Name\_Manufactuer

from products\_q1 , Manufacturers\_q1

where products\_q1.Manufacturer = Manufacturers\_q1.code\_Manufactuer

group by Name\_Manufactuer;

select avg(price\_Product) , Name\_Manufactuer

from products\_q1 , Manufacturers\_q1

where products\_q1.Manufacturer = Manufacturers\_q1.code\_Manufactuer

group by Name\_Manufactuer

having avg(price\_Product) >= 150;

select min(price\_Product) as the\_cheapest , Name\_Product

from products\_q1;

select max(price\_Product) as the\_expensive\_price , name\_manufactuer

from products\_q1 , Manufacturers\_q1

where products\_q1.Manufacturer = Manufacturers\_q1.code\_Manufactuer ;

select avg(price\_Product) as avarage, Name\_Manufactuer

from products\_q1 , Manufacturers\_q1

where products\_q1.Manufacturer = Manufacturers\_q1.code\_Manufactuer

group by Manufacturer

having avg(price\_Product) > 145 and COUNT( Manufacturer)>= 2 ;

insert into products\_q1

value (11,'Loudspeakers',70,2);

update products\_q1

set Name\_Product = 'Laser Printer'

where Code\_Product = 8 ;

update products\_q1

set price\_Product = price\_Product - ( price\_Product \* 0.1)

;

Answer 2 :

create table department\_q2 (

code\_department int(2) primary key ,

name\_department text(30) not null ,

budget real

);

create table employees\_q2 (

ssn\_employees int(9) primary key ,

name\_employees text(30) not null ,

lastName\_employees text(30) not null,

id\_department int(2) ,

constraint fk\_department foreign key (id\_department) references department\_q2(code\_department)

);

insert into department\_q2

values

(14,'IT',65000),

(37,'Accounting',15000),

(59,'Human Resources',240000),

(77,'Research',55000);

insert into employees\_q2

values

(123234877,'Michael','Rogers',14),

(152934485,'Andan','Manikutty',14),

(222364883,'Carol ','Smith',37),

(326587417,'Joe','Stevens',37),

(332154719,'Mary-Anne','Foster',14),

(332569843,'George','Donnell',77),

(546523478,'John','Doe',59),

(631231482,'David','Smith',77),

(654873219,'Zacary','Efron',59),

(745685214,'Eric','Goldsmith',59),

(845657245,'Elizabeth','Doe',14),

(845657246,'Kumar','Swamy',14);

select lastName\_employees

from employees\_q2 ;

select distinct lastName\_employees

from employees\_q2 ;

select \*

from employees\_q2

where lastName\_employees = 'smith';

select \*

from employees\_q2

where lastName\_employees = 'smith' or lastName\_employees = 'doe' ;

select \*

from employees\_q2

where id\_department = 14 ;

select \*

from employees\_q2

where id\_department = 37 or id\_department = 77 ;

select lastName\_employees

from employees\_q2

where lastName\_employees like 's%';

select sum(budget) as 'all budgets departments'

from department\_q2 ;

select code\_department,count(name\_employees) as 'number employees'

from department\_q2 , employees\_q2

where employees\_q2.id\_department = department\_q2.code\_department

group by code\_department;

select \*

from department\_q2 , employees\_q2 ;

select name\_employees,lastName\_employees,name\_department,budget

from employees\_q2 ,department\_q2

where employees\_q2.id\_department = department\_q2.code\_department;

select name\_employees,lastName\_employees,name\_department,budget

from employees\_q2 ,department\_q2

where employees\_q2.id\_department = department\_q2.code\_department and budget > 60000;

select \*

from department\_q2

where budget >(

select avg(budget)

from department\_q2

);

select name\_department

from department\_q2 , employees\_q2

where department\_q2.code\_department = employees\_q2.id\_department

group by id\_department

having count(name\_employees) >2;

select name\_employees,lastName\_employees ,min(budget)

from department\_q2 , employees\_q2

group by ssn\_employees

having min(budget)

limit 2;

insert into department\_q2

values ( 11,'Quality Assurance',40000);

insert into employees\_q2

values ( 847219811,'Mary ',' Moore',11);

update department\_q2

set budget = budget - (budget \* 0.10);

update employees\_q2

set code\_department = 14

where code\_department = 77;

delete from employees\_q2

where code\_department = 14;

delete from employees\_q2

where department\_q2 in (

select code\_department from department\_q2

where budget >=60000

);

delete from employees\_q2 ;

Answer 3 :

CREATE TABLE providers\_q3(

code\_providers varchar (50) primary key,

name\_providers text (30));

CREATE TABLE pieces\_q3(

code\_piecs INT primary key,

name\_piecs text (30));

CREATE TABLE provides\_q3(

piece INT,

provider varchar (50),

price INT not null,

primary key(piece, provider),

constraint fk\_provider foreign key provides\_q3(provider) references providers\_q3(code\_providers),

constraint fk\_piece foreign key provides\_q3(piece) references pieces\_q3(code\_piecs));

INSERT INTO pieces\_q3 VALUES

(1,'Sprocket'),

(2,'Screw'),

(3,'Nut'),

(4,'Bolt');

INSERT INTO providers\_q3 VALUES

('HAL','Clarke Enterprises'),

('RBT', 'Susan Calvin Corp'),

('TNBC', 'Skellington Supplies');

insert into provides\_q3 values

(1,'HAL',10),

(1,'RBT',15),

(2,'HAL',20),

(2,'RBT',15),

(2,'TNBC',14),

(3,'RBT',50),

(3,'TNBC',45),

(4,'HAL',5),

(4,'RBT',7);

select name\_piecs

from pieces\_q3;

select \*

from providers\_q3;

select piece, avg(price)

from provides\_q3

group by piece;

select name\_providers

from providers\_q3

where code\_providers in (

select provider

from provides\_q3

where piece = 1

);

select name\_piecs

from pieces\_q3

where code\_piecs in (

select piece

from provides\_q3

where provider = 'HAL'

);

select pieces\_q3.name\_piecs, providers\_q3.name\_providers, Price

FROM pieces\_q3

INNER JOIN provides\_q3 ON pieces\_q3.code\_piecs = piece

INNER JOIN providers\_q3 ON providers\_q3.code\_providers = provider

WHERE price =

(

SELECT MAX(price)

FROM provides\_q3

WHERE piece = pieces\_q3.code\_piecs

);

INSERT INTO provides\_q3

VALUES (1, 'TNBC', 7);

UPDATE provides\_q3

SET price = price + 1;

DELETE FROM provides\_q3

WHERE provider = 'RBT' AND Piece = 4;

DELETE FROM provides\_q3

WHERE provider = 'RBT';

Answer 4 :

create table scientists\_q4 (

ssn int(9) primary key,

name\_scientists text(40) not null

);

create table projects\_q4 (

code\_pro varchar (4) not null primary key,

name\_pro text(40) not null ,

hours\_pro int not null

);

create table assigneto\_q4 (

scientists int(9) ,

code\_\_pro varchar(9) ,

primary key(scientists, code\_\_pro),

constraint fk\_projects foreign key assigneto\_q4(code\_\_pro)

references projects\_q4(code\_pro),

constraint fk\_scientists foreign key assigneto\_q4(scientists)

references scientists\_q4(ssn)

);

INSERT INTO scientists\_q4

VALUES

(123234877,'Michael Rogers'),

(152934485,'Anand Manikutty'),

(222364883, 'Carol Smith'),

(326587417,'Joe Stevens'),

(332154719,'Mary-Anne Foster'),

(332569843,'George ODonnell'),

(546523478,'John Doe'),

(631231482,'David Smith'),

(654873219,'Zacary Efron'),

(745685214,'Eric Goldsmith'),

(845657245,'Elizabeth Doe'),

(845657246,'Kumar Swamy');

INSERT INTO projects\_q4

VALUES

('AeH1','Winds: Studying Bernoullis Principle', 156),

('AeH2','Aerodynamics and Bridge Design',189),

('AeH3','Aerodynamics and Gas Mileage', 256),

('AeH4','Aerodynamics and Ice Hockey', 789),

('AeH5','Aerodynamics of a Football', 98),

('AeH6','Aerodynamics of Air Hockey',89),

('Ast1','A Matter of Time',112),

('Ast2','A Puzzling Parallax', 299),

('Ast3','Build Your Own Telescope', 6546),

('Bte1','Juicy: Extracting Apple Juice with Pectinase', 321),

('Bte2','A Magnetic Primer Designer', 9684),

('Bte3','Bacterial Transformation Efficiency', 321),

('Che1','A Silver-Cleaning Battery', 545),

('Che2','A Soluble Separation Solution', 778);

INSERT INTO assigneto\_q4

VALUES

(123234877,'AeH1'),

(152934485,'AeH3'),

(222364883,'Ast3'),

(326587417,'Ast3'),

(332154719,'Bte1'),

(546523478,'Che1'),

(631231482,'Ast3'),

(654873219,'Che1'),

(745685214,'AeH3'),

(845657245,'Ast1'),

(845657246,'Ast2'),

(332569843,'AeH4');

select scientists\_q4.name\_scientists , projects\_q4.name\_pro,hours\_pro

from scientists\_q4 , projects\_q4 , assigneto\_q4

where scientists\_q4.ssn = assigneto\_q4.scientists and projects\_q4.code\_pro = assigneto\_q4.code\_\_pro

group by scientists\_q4.name\_scientists

order by projects\_q4.name\_pro asc , scientists\_q4.name\_scientists asc

;

select DISTINCT projects\_q4.name\_pro

from projects\_q4

where projects\_q4.code\_pro not in (

select assigneto\_q4.code\_\_pro

from assigneto\_q4 ) ;