Student: Amir Yakubov

Group: IA-2002

Assignment 7

**Practice task 1.**

a. Create the "Employee" and "Department” tables , including all of columns, data types, and constraints. Make sure to create the foreign key constraint. Fill data in each table, at the least 20 records (you can import mock data from mockaroo.com)

create table department (

department\_id int primary key,

dep\_name varchar(255),

description text);

create table employee(

employee\_id int primary key,

first\_name varchar(50),

last\_name varchar(50),

email char(50),

hire\_date date,

salary decimal(12),

department\_id int,

foreign key (department\_id) references department(department\_id));

insert into department (department\_id, dep\_name, description) values (1, 'Human Resources', 'Clothing');

insert into department (department\_id, dep\_name, description) values (2, 'Sales', 'Electronics');

insert into department (department\_id, dep\_name, description) values (3, 'Engineering', 'Games');

insert into department (department\_id, dep\_name, description) values (4, 'Accounting', 'Shoes');

insert into department (department\_id, dep\_name, description) values (5, 'Legal', 'Garden');

insert into department (department\_id, dep\_name, description) values (6, 'Human Resources', 'Beauty');

insert into department (department\_id, dep\_name, description) values (7, 'Training', 'Computers');

insert into department (department\_id, dep\_name, description) values (8, 'Engineering', 'Music');

insert into department (department\_id, dep\_name, description) values (9, 'Marketing', 'Computers');

insert into department (department\_id, dep\_name, description) values (10, 'Sales', 'Games');

insert into department (department\_id, dep\_name, description) values (11, 'Marketing', 'Health');

insert into department (department\_id, dep\_name, description) values (12, 'Services', 'Books');

insert into department (department\_id, dep\_name, description) values (13, 'Research and Development', 'Kids');

insert into department (department\_id, dep\_name, description) values (14, 'Research and Development', 'Baby');

insert into department (department\_id, dep\_name, description) values (15, 'Product Management', 'Music');

insert into department (department\_id, dep\_name, description) values (16, 'Human Resources', 'Garden');

insert into department (department\_id, dep\_name, description) values (17, 'Engineering', 'Sports');

insert into department (department\_id, dep\_name, description) values (18, 'Business Development', 'Movies');

insert into department (department\_id, dep\_name, description) values (19, 'Legal', 'Toys');

insert into department (department\_id, dep\_name, description) values (20, 'Sales', 'Garden');

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (1, 'Korella', 'Scryne', 'kscryne0@chicagotribune.com', '2014-03-10', 107215, 1);

insert into employee (employee\_id, first\_name, last\_name, email, hire\_date , salary, department\_id ) values (2, 'Pavla', 'Matussov', 'pmatussov1@ezinearticles.com', '2019-11-08', 658737, 2);

insert into employee (employee\_id, first\_name, last\_name, email, hire\_date , salary, department\_id ) values (3, 'Hyacintha', 'Fabb', 'hfabb2@youtu.be', '2015-03-28', 107089, 3);

insert into employee (employee\_id, first\_name, last\_name, email, hire\_date , salary, department\_id ) values (4, 'Noellyn', 'Bakey', 'nbakey3@technorati.com', '2012-09-30', 365133, 4);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (5, 'Margarethe', 'Insworth', 'minsworth4@histats.com', '2013-04-04', 179149, 5);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (6, 'Victoria', 'Dilon', 'vdilon5@foxnews.com', '2017-09-02', 762975, 6);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (7, 'Belita', 'Levicount', 'blevicount6@unicef.org', '2018-12-21', 745193, 7);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (8, 'Muire', 'Decruse', 'mdecruse7@upenn.edu', '2020-02-28', 821240, 8);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (9, 'Gilburt', 'Johncey', 'gjohncey8@sciencedirect.com', '2014-12-19', 741283, 9);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (10, 'Ellette', 'Kneeshaw', 'ekneeshaw9@vistaprint.com', '2017-08-11', 599986, 10);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (11, 'Milton', 'Abramin', 'mabramina@is.gd', '2016-10-09', 322389, 11);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (12, 'Lanie', 'Dayment', 'ldaymentb@vimeo.com', '2015-04-05', 782062, 12);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (13, 'Kory', 'Jory', 'kjoryc@pcworld.com', '2014-01-31', 881946, 13);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (14, 'Mariele', 'Kiltie', 'mkiltied@simplemachines.org', '2012-09-09', 257556, 14);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (15, 'Banky', 'Buessen', 'bbuessene@cdc.gov', '2015-07-05', 382263, 15);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (16, 'Sunny', 'Trittam', 'strittamf@addtoany.com', '2018-10-17', 316143, 16);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (17, 'Roselia', 'Westnage', 'rwestnageg@pinterest.com', '2019-08-19', 244407, 17);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (18, 'Dagny', 'Atwood', 'datwoodh@apache.org', '2016-11-28', 801319, 18);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (19, 'Tova', 'De la Eglise', 'tdelaeglisei@deliciousdays.com', '2019-07-29', 937926, 19);

insert into employee (employee\_id , first\_name, last\_name, email, hire\_date , salary, department\_id ) values (20, 'Heather', 'Tailby', 'htailbyj@dot.gov', '2019-10-31', 227297, 20);

select\*from department, employee

where department.department\_id=employee.department\_id

b. Using JOIN methods write a single query to make a join with two table to find the name of the employee, including first\_name and last name, department ID and name of department.

select first\_name, last\_name, employee.department\_id, dep\_name

from employee

inner join department

on department.department\_id=employee.department\_id

c. Using JOIN methods write a single query to make a join with two tables to display dep\_name, first\_name and last\_name, hire date, salary and work experience for all the employees

select dep\_name, first\_name, last\_name, hire\_date, salary, '2020.11.01' - hire\_date as work\_experience

from department

inner join employee

on department.department\_id=employee.department\_id;

d. Using JOIN methods write a single query to make a join with two tables to display dep\_name, first\_name and last\_name, hire date and salary for all the employees who achieved a working experience is more than 5 years.

select dep\_name, first\_name, last\_name, hire\_date, salary

from department

inner join employee

on department.department\_id=employee.department\_id

where hire\_date < '2015.01.01';

e. Using JOIN methods write a single query to make a join with two tables employee and department to get the dep\_name and number of employees working in each department.

select dep\_name, count(\*)

from department

inner join employee

on department.department\_id=employee.department\_id

group by dep\_name

having count(\*)>0;

f. Using JOIN methods write a single query to find first\_name, last\_name and dep\_name and hire date for those employees who were hired after ‘01-01-2015’

select dep\_name, first\_name, last\_name, hire\_date

from department

inner join employee

on department.department\_id=employee.department\_id

where (hire\_date > '2015.01.01');

g. Using JOIN methods write a single query to display dep\_name and employee\_id whose salary higher than minimum salary of employees.

select dep\_name, employee\_id

from employee

inner join department

on employee.department\_id=department.department\_id

Where employee.salary>(select min(employee.salary) from employee)

**Practice task 2.** **Create the Database “Market”.**

create table customers(

id int primary key,

first\_name varchar(50),

last\_name varchar(50),

date\_of\_birth date,

gender char(7),

email char(50)

);

create table products(

id int primary key,

name varchar (255),

description text,

price int

);

create table Cart(

id int primary key,

customer\_id int,

foreign key (customer\_id) references Customers(id)

);

create table product\_photo(

id int primary key,

url varchar(60),

products\_id int,

foreign key (products\_id) references products(id)

);

create table Cart\_product(

cart\_id int,

product\_id int,

foreign key (product\_id) references products(id),

foreign key (cart\_id) references cart(id)

);

insert into customers (id, first\_name, last\_name, date\_of\_birth, gender, email) values (1, 'Berkie', 'Pounder', '2004-09-09 17:07:28', 'Male', 'bpounder0@omniture.com');

insert into customers (id, first\_name, last\_name, date\_of\_birth, gender, email) values (2, 'Corri', 'Humphries', '1987-11-21 08:43:39', 'Female', 'chumphries1@51.la');

insert into customers (id, first\_name, last\_name, date\_of\_birth, gender, email) values (3, 'Whitman', 'Stook', '1996-06-21 17:39:05', 'Male', 'wstook2@about.com');

insert into customers (id, first\_name, last\_name, date\_of\_birth, gender, email) values (4, 'Philipa', 'Erdely', '2003-11-11 04:20:57', 'Female', 'perdely3@cloudflare.com');

insert into customers (id, first\_name, last\_name, date\_of\_birth, gender, email) values (5, 'Jeremiah', 'Lowcock', '1998-07-02 23:22:03', 'Male', 'jlowcock4@whitehouse.gov');

insert into customers (id, first\_name, last\_name, date\_of\_birth, gender, email) values (6, 'Robbi', 'Chasen', '2007-09-12 23:29:14', 'Female', 'rchasen5@cyberchimps.com');

insert into customers (id, first\_name, last\_name, date\_of\_birth, gender, email) values (7, 'Nataline', 'Allkins', '2000-09-12 00:01:24', 'Female', 'nallkins6@wordpress.com');

insert into customers (id, first\_name, last\_name, date\_of\_birth, gender, email) values (8, 'Mechelle', 'Matfin', '2007-03-16 11:59:31', 'Female', 'mmatfin7@sitemeter.com');

insert into customers (id, first\_name, last\_name, date\_of\_birth, gender, email) values (9, 'Llywellyn', 'Towell', '2010-07-11 02:16:10', 'Male', 'ltowell8@xinhuanet.com');

insert into customers (id, first\_name, last\_name, date\_of\_birth, gender, email) values (10, 'Kirstyn', 'Skingley', '1991-01-11 13:12:33', 'Female', 'kskingley9@ucsd.edu');

insert into products (id, name, description, price) values (1, 'Wine - Cava Aria Estate Brut', 'Graft repair atrial def', 510309);

insert into products (id, name, description, price) values (2, 'Sea Urchin', 'Excise ciliary body les', 751068);

insert into products (id, name, description, price) values (3, 'Cheese - Brie,danish', 'Hysteroscopy', 1637199);

insert into products (id, name, description, price) values (4, 'Tea - Orange Pekoe', 'Transfront pituitary bx', 1719433);

insert into products (id, name, description, price) values (5, 'Tuna - Bluefin', 'Inj/inf platelet inhibit', 723257);

insert into products (id, name, description, price) values (6, 'Flower - Carnations', 'Stern sm bowel interpos', 286655);

insert into products (id, name, description, price) values (7, 'Asparagus - Green, Fresh', 'Partial esophagectomy', 1163052);

insert into products (id, name, description, price) values (8, 'Beef - Top Sirloin - Aaa', 'Intra-op electron rad rx', 809528);

insert into products (id, name, description, price) values (9, 'Sobe - Tropical Energy', 'Mid-inner ear ops NEC', 1074827);

insert into products (id, name, description, price) values (10, 'Shichimi Togarashi Peppeers', 'Conjunc free graft NEC', 1151627);

insert into cart (id, customer\_id) values (1, 1);

insert into cart (id, customer\_id) values (2, 2);

insert into cart (id, customer\_id) values (3, 3);

insert into cart (id, customer\_id) values (4, 4);

insert into cart (id, customer\_id) values (5, 5);

insert into cart (id, customer\_id) values (6, 6);

insert into cart (id, customer\_id) values (7, 7);

insert into cart (id, customer\_id) values (8, 8);

insert into cart (id, customer\_id) values (9, 9);

insert into cart (id, customer\_id) values (10, 10);

insert into product\_photo (id, url, products\_id) values (1, 'http://npr.org', 1);

insert into product\_photo (id, url, products\_id) values (2, 'http://oracle.com', 2);

insert into product\_photo (id, url, products\_id) values (3, 'https://symantec.com', 3);

insert into product\_photo (id, url, products\_id) values (4, null, 4);

insert into product\_photo (id, url, products\_id) values (5, 'https://xrea.com', 5);

insert into product\_photo (id, url, products\_id) values (6, 'http://cbsnews.com', 6);

insert into product\_photo (id, url, products\_id) values (7, null, 7);

insert into product\_photo (id, url, products\_id) values (8, 'https://nba.com', 8);

insert into product\_photo (id, url, products\_id) values (9, 'https://ameblo.jp', 9);

insert into product\_photo (id, url, products\_id) values (10, null, 10);

insert into cart\_product (cart\_id, product\_id) values (1, 1);

insert into cart\_product (cart\_id, product\_id) values (2, 2);

insert into cart\_product (cart\_id, product\_id) values (3, 3);

insert into cart\_product (cart\_id, product\_id) values (4, 4);

insert into cart\_product (cart\_id, product\_id) values (5, 5);

insert into cart\_product (cart\_id, product\_id) values (6, 6);

insert into cart\_product (cart\_id, product\_id) values (7, 7);

insert into cart\_product (cart\_id, product\_id) values (8, 8);

insert into cart\_product (cart\_id, product\_id) values (9, 9);

insert into cart\_product (cart\_id, product\_id) values (10, 10);

a. Using JOIN methods write a single query to output list of products with its URL;

select name, url

from products

join product\_photo

on product\_photo.id = products.id

b. Using JOIN methods write a single query to output list of products which have no photo (URL);

select name , url

from product\_photo

inner join products

on products.id=product\_photo.id

where product\_photo.url is null

c. Using JOIN methods write a single query to output list of customers with ordered products;

select first\_name, last\_name, name

from customers

inner join cart

on customers.id =cart.customer\_id

inner join cart\_product

on cart.customer\_id =cart\_product.product\_id

inner join products

on cart\_product.product\_id =products.id

d. Using JOIN methods write a single query to output list of customers with ordered products and products’ photo.

select first\_name, last\_name, name, url

from customers

inner join cart

on customers.id =cart.customer\_id

inner join cart\_product

on cart.customer\_id =cart\_product.product\_id

inner join products

on cart\_product.product\_id =products.id

inner join product\_photo

on products.id=product\_photo.id

e. Using JOIN methods write a single query to output list of cart with customer’s name and total sum of their orders;

select cart\_id, first\_name, last\_name, sum(price)

from cart

inner join customers

on cart.customer\_id=Customers.id

inner join cart\_product

on cart\_product.cart\_id=cart.id

inner join products

on cart\_product.product\_id=products.id

group by cart\_id, first\_name, last\_name

f. What are the types of joins and when would you use each of them?

1. Inner join: returns records that have matching values in both tables.

2. Left outer join: returns all records from the left table, and the matched records from the right table.

3. Right outer join: returns all records from the right table, and the matched records from the left table.

4. Full outer join: returns all records when there is a match in either left or right table.

g. Show the difference between INNER OUTER, LEFT OUTER, and RIGHT OUTER

