Middle East Technical University | Department of Computer Engineering

CENG 351

Data Management and File Structures

Fall '2019-2020

SQL-LAB EXAM-

Duration: 75 Minutes

1 Specifications

You are given the following investment account schema for the stock market(BIST). In the schema, **performedOrders** table contains all the transactions that are either "BUY" or "SELL".
The sample data for relations is also given below. Note that these data are for illustration purpose and they are **NOT** used for evaluating your solutions for the questions.

Customer (cid, name, birthday, city)
Share (shareID, shareName, shareName, priceBuy, priceSell)
Account (accountNo, cid) REFERENCES Customer(cid)
performedOrders(tid, accountNo, shareID, type, amount, price, time)
REFERENCES Account(accountNo) Share(shareID)
ShareOwned(accountNo, shareID, totalAmount) REFERENCES Account(accountNo) Share(shareID)

2 Questions

Prepare appropriate SQL queries for given definitions.

1. (15 pts) Delete all rows in "performedOrders" table that contains orders from the customer accounts whose cid is 10002.

2. (15 pts) For customers whose name ends with "t", list their **cid**s and **sum** of **totalAmount** of shares he/she owns. (List **cid**s and "**sum of totalAmount**"s where **cid**s are in ascending order).

3. (15 pts) List distinct **accountNo** of accounts that have shares from at least two different companies whose **priceBuy** is greater than 10.(i.e., priceBuy>10) (List distinct **accountNo**s in ascending order)

4. (15 pts) List distinct **cid**s of customers who has performed "BUY" order(s) but no "SELL" order(s) before "2019-11-07".(i.e., time<"2019-11-07") (List distinct **cid**s in ascending order)

5. (20 pts) List distinct **accountNo** of accounts that own all the shares whose sell price (**priceSell**) is greater than 10.(i.e., priceSell>10) (List distinct **accountNo**s in ascending order)

6. (20 pts) List **tid**, **amount** and **time** of "BUY" type transactions in performedOrders table which are performed by "high stakeholders". The "high stakeholders" are customers whose sum of "totalAmount" of all owned shares are greater than 60. (List **tid**s, **amount**s and **time**s where **tid**s are in ascending order)
   i.e., from the given instance, customer whose cid is 10001 is "high stake holder". He has 2 accounts; a10001_1 and a10001_2. From these accounts, sum of totalAmount of his shares are 100+20+20+10=150 which is greater than 60.
   Customer whose cid is 10003 is also "high stakeholder" because sum of totalAmount of his share is 100 which is greater than 60.

3 Regulations

1. Use Chromium web browser.

2. DO NOT forget to put semicolon(;) after your queries!

3. You are not allowed to use **LIMIT** clause in your queries.

4. In each "evaluation" and "run" operations, we create the database from the beginning. So do not be afraid of deleting/updating rows.

5. The grades at the end of the sql-lab will **not** be the final grades. While evaluating your queries we may use instances **different** from those given in during the lab session. These sample instances for each of the tables are given on next page. Hence, your final grades **may change**.

Table 1: **Customer**

cid	name	birthday	city
10001	Ahmet	1987-04-01	Ankara
10002	Berk	1990-06-12	Istanbul
10003	Ceren	1956-10-24	Izmir
10004	Damla	1962-10-16	Antalya
10005	Mehmet	1975-06-11	Ankara

Table 2: **Share**

shareID	shareName	priceBuy	priceSell
1	ISCTR	10.00	5.00
2	TUPRS	100.00	50.00
3	BJKAS	20.00	10.00
4	ASELS	30.00	20.00
5	FENER	5.00	4.00

Table 3: **Account**

accountNo	cid
a10001_1	10001
a10001_2	10001
a10002_1	10002
a10002_2	10002
a10003_1	10003
a10004_1	10004
a10005_1	10005

Table 4: **performedOrders**

tid	accountNo	shareID	type	amount	price	time
1	a10001_1	2	BUY	100	100.00	2019-11-06 14:42:52
2	a10001_1	4	BUY	20	30.00	2019-11-06 17:35:32
3	a10001_2	2	BUY	90	100.00	2019-11-06 11:00:32
4	a10001_2	2	SELL	80	50.00	2019-11-06 19:35:32
5	a10002_1	2	BUY	10	100.00	2019-11-06 17:00:02
6	a10002_1	2	SELL	5	50.00	2019-11-08 17:50:42
7	a10002_2	4	BUY	10	30.00	2019-11-06 12:00:42
8	a10002_2	4	SELL	5	20.00	2019-11-08 13:50:42
9	a10003_1	3	BUY	200	20.00	2019-11-06 10:50:15
10	a10003_1	3	SELL	100	10.00	2019-11-06 13:52:13
11	a10004_1	4	BUY	30	30.00	2019-11-05 09:57:13
12	a10004_1	4	SELL	10	20.00	2019-11-08 11:58:13
13	a10005_1	4	BUY	50	30.00	2019-11-06 14:59:13
14	a10005_1	5	BUY	50	5.00	2019-11-06 14:59:13
15	a10005_1	5	SELL	20	4.00	2019-11-06 15:50:00

Table 5: **ShareOwned**

accountNo	shareID	totalAmount
a10001_1	2	100
a10001_1	4	20
a10001_1	3	20
a10001_2	2	10
a10002_1	2	5
a10002_2	4	5
a10003_1	3	100
a10004_1	4	20
a10005_1	4	20
a10005_1	5	30