

תרגול 1

כמה פעולות בוצעו	זמן ריצה (התוצאה שמופיעה בסוגריים)	תוצאה	פעולה בSQL
50*50=2500	0.0009 (0.0002)	2	מכפלה קרטזית
196	0.0007 (0.0001)	2	צירוף
50+50=100	0.0017 (0.0002)	2	תת שאילתא

מכפלה קרטזית

```
SELECT B1.BranchName
FROM Branch as B1, Branch as B2
WHERE (B1.BranchCity = B2.BranchCity) AND
(B2.BranchName = "Aviv")
```

צירוף

```
SELECT B1.BranchName
FROM Branch as B1 join Branch as B2
ON (B1.BranchCity = B2.BranchCity)
WHERE B2.BranchName = "Aviv"
```

תת שאילתא

```
SELECT BranchName
FROM Branch
WHERE BranchCity = (
    SELECT BranchCity
    FROM Branch
    WHERE BranchName = "Aviv")
```

תרגול 2

שאלה 1

```
select Sector , count(SectorID),  
case  
when count(SectorID)<2 then 'Less than 2 sectors'  
when count(SectorID)=2 then 'Exactly 2 sectors'  
else 'More than 2 sectors'  
end  
from Sectors join Companies  
using (SectorID)  
GROUP BY SectorID
```

שאלה 2

```
UPDATE Stocks  
SET OptionID = (  
    select round(SectorID*CompanyID)  
    from Companies  
    where CompanyName = 'MachteshimAgan')  
WHERE CompanyID = (  
    select CompanyID  
    from Companies  
    where CompanyName = 'MachteshimAgan')
```

שאלה 3

פעולה בSQL	תוצאה	זמן ריצה (התוצאה שמופיעה בסוגריים)
פונקציית השוואת מחרוזות	4	0.0019 (0.0002)
בדיקת השוואה ע"י תנאי IF	4	0.0015 (0.0002)

פונקציית השוואת מחרוזות

```
select STRCMP((
    select count(*)
    from Companies
    where Markets = 'Dual'),
    (select count(*)
    from Companies
    where Markets = 'Israel'))
```

בדיקת השוואה ע"י תנאי IF

```
select if((
    select count(*)
    from Companies
    where Markets = 'Dual') = (select count(*)
    from Companies
    where Markets = 'Israel'), 'Y', 'N')
```

תרגול 3

שאלה 4

```
CREATE VIEW TOP5
AS
(SELECT StockName, Price
FROM stocks
ORDER BY price DESC
LIMIT 5)
```

שאלה 5

פעולה בSQL	תוצאה	זמן ריצה (התוצאה שמופיעה בסוגריים)
MIN , MAX	2	0.0012 (0.0002)
אופרטור LIMIT	2	0.0012 (0.0002)

MIN , MAX

```
Select CompanyName
From Companies join Stocks
Using (CompanyID)
Where Price in ((
    select max(Price)
    From Stocks),
    (select min(Price)
    From Stocks))
```

```
SELECT companyname
FROM companies JOIN stocks
USING (companyid)
WHERE price IN ((
    SELECT price
    FROM stocks
    order by price desc
    limit 1),
    (SELECT price
    FROM stocks
    order by price asc
    limit 1))
```

שאלה 6

```
CREATE Temporary TABLE CompaniesCounter
(
    select count(*) as cou
    from Companies
)

select StockName
from Stocks join CompaniesCounter
where CompanyID = CompaniesCounter.cou*10
```

```
Start Transaction;

CREATE VIEW Cheapest3
AS
(select StockName , Price
from Stocks
order by price asc
LIMIT 3);

CREATE Temporary TABLE MinPrice
(select min(Price)
From Cheapest3);

UPDATE Stocks
SET Price = Price*1.1
WHERE Price = (select *
from MinPrice);

Commit;


SELECT *
FROM stocks
```

תרגול 4

שאלה 8

Insert Into Options

Values (

(select OptionID

from Stocks

where StockName = 'Machteshim'),

(select round((

select Price

from Stocks

where StockName = 'Machteshim')/12)),

CURDATE()))

שאלה 9

Select StockName

From Stocks

Join Companies

Using (CompanyID)

Where SectorID = (

select SectorID

From Companies

Where CompanyName = 'BankPoalim')

Select StockName

From Stocks

Where CompanyID in (

select CompanyID

From Companies

Where SectorID = (

select SectorID

From Companies

Where CompanyName = 'BankPoalim'))

שאלה 10

פעולה בSQL	תוצאה	זמן ריצה (התוצאה שמופיעה בסוגריים)
פתרון ע"י שימוש בתתי-שאליות	1	0.0011 (0.0002)
פתרון ע"י שימוש בVIEW		0.0012 (0.0088)

פתרון ע"י שימוש בתתי-שאליות

select s.Sector

from Sectors as s

join (select SectorID

from Companies as c

where c.Markets = 'Israel'

group by c.SectorID

having count(c.SectorID) = (select max(counter)

from (select count(c2.SectorID) as counter

from Companies as c2

where Markets = 'Israel'

group by SectorID) as mic)) as smic

using (SectorID)


```
CREATE VIEW BigSector
AS
(SELECT s.Sector, count(Sector) as counter
FROM companies as c
join sectors as s
USING (sectorid)
WHERE markets='ISRAEL'
GROUP BY Sector)
```

```
SELECT sector
FROM BigSector
WHERE counter = (
                SELECT MAX(counter)
                from BigSector)
```

שאלה 11

```
DELIMITER $$
CREATE FUNCTION SectorCounter(SectorsID int)
RETURNS int
BEGIN
    DECLARE CompanyCount int;
    SELECT count(*)
    INTO CompanyCount
    FROM companies
    WHERE SectorID = SectorsID;
    RETURN CompanyCount;
END $$
DELIMITER;
```

```
SELECT SectorCounter(1)
```