



מיני פרויקט בבסיסי נתונים – תרגיל בית 2

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SHEKEM - בסיס נתונים לאחסון נתוני שקם

תוכן עניינים

2...	שאלות SELECT
4...	שאלות DELETE
5...	שאלות UPDATE
6...	שאלות SELECT עם פרמטרים
7...	הוספת אילוצים

שאלות SELECT

שאלתה #1:

השאלתה מחזירה נהגים שיש להם משלוחים בחודש הגיוס שלהם, לפי סדר רישיון יורד

```
-- Details of drivers that have orders on the month of their enlistment --
select rank, name, idf_num, license_num
from driver D
join soldier S on D.id = S.id
where exists
    (select *
     from delivery O
     where extract(month from enlistment_date_) = extract(month from delivery_date)
     and D.id = O.id)
order by license_num desc;
```

	RANK	NAME	IDF_NUM	LICENSE_NUM
1	Tat Aluf	Genni	954544	9145834
2	Rav Seren	Sharleen	329501	8833337
3	Aluf	Oneida	896988	8587560
4	Aluf Mishne	Kiah	934357	8281810
5	Turai	Alli	695252	8280458

שאלתה #2:

השאלתה מחזירה את סוגי הרכבים שלא מביאים משלוחים לקריה.

```
-- Types of cars that don't have deliveries to the Kirya --
Select distinct model, type
From vehicle, driver
Where id not in
    (Select id
     From delivery
     natural join brings_to
     natural join shekem
     Where base_name in
        (Select base_name
         From shekem S
         Where S.base_name = 'Kirya'));
```

	MODEL	TYPE
1	Caprice	Shanghai Maple
2	Avensis	TechArt
3	Esprit	Noble
4	Novus	OSCA
5	B-Series	Superformance

שאלתה #3:

השאלתה מחזירה את כמות המחירות הממוצעת (לפי דרגה) של מוכר בשקם שיש בה מוצרים מיובשים.

```
-- Average number of sales per rank of sellers that have dried products in their shekem --
Select rank, avg(total_sales_)
From seller S
join soldier F on F.id = S.id
Where shekem_num in
    (Select shekem_num
     From has_natural_join product
     Where product_name like 'Dried%'
     and S.shekem_num = shekem_num)
Group by rank;
```

	RANK		AVG(TOTAL_SALES_)	
▶	1	Turai Rishon	...	5258.5
	2	Samal	...	4878.33333333333
	3	Aluf	...	3960.66666666667
	4	Rav Seren	...	6032
	5	Rav Samal Rishon	...	6753

שאלתה #4:

השאלתה מחזירה נהגים שהתגייסו אחרי 1990 ולוהם יותר משלוחים מהמספר המינימלי של מכירות בקרב המוכרים חלקי 10.

```
-- Drivers with more orders than a tenth of the minimum number of sales of a seller, --
-- that were enlisted after 1990 --
Select rank, name, idf_num, enlistment_date_
From driver D
join soldier S on D.id = S.id
join delivery O on D.id = O.id
Where extract(year from enlistment_date_) > 1990
Group by D.id, name, rank, idf_num, enlistment_date_
Having count(O.delivery_num) > any(Select (total_sales_/10) From seller);
```

	RANK		NAME		IDF_NUM		ENLISTMENT_DATE_	
▶	1	Segen Mishneh	...	Coralyn	...	253239	25/10/2008	...
	2	Seren	...	Lilah	...	378119	28/05/2013	...
	3	Samal	...	Helena	...	841970	16/03/2004	...
	4	Rav Seren	...	Liv	...	269531	10/10/2021	...
	5	Aluf Mishne	...	Norean	...	198593	04/03/2007	...

שאלות DELETE

שאלת #1

השאלתה מוחקת מוכרים שהתגייסו לפני 7.10.2023 או שבחנות שלהם יש 0 מוצרים.

אחרי:

לפני:

```
select * from seller;
```

	SHIFT	TOTAL_SALES	SUPERVISOR_ID	SELLER_NUM	ID	SHEKEM_NUM
1	Night	6106	3745933	98322	994812657	186507
2	Night	9514	196828766	44693	135231662	369488

```
select * from seller;
```

	SHIFT	TOTAL_SALES	SUPERVISOR_ID	SELLER_NUM	ID	SHEKEM_NUM
1	Day	2011	918748943	96690	265895682	135537
2	Night	2718	244846859	34264	71558043	98391
3	Night	2328	101904069	32595	782517633	945179
4	Day	6753	449521069	40053	939716730	677788
5	Day	2668	329175750	96239	543444956	595804
6	Day	666	510987803	15137	801831686	95394
7	Night	8476	460780700	82558	821679082	878781
8	Night	4887	231186640	29960	757571536	484227

השאלתה:

```
-- Deletes sellers enlisted before 2023-10-07 and sellers whose stores have 0 products --
Delete from seller
Where (ID, Shekem_num) in
  (Select S.ID, S.Shekem_num
   From seller S
   join soldier F on S.ID = F.ID
   Where F.Enlistment_Date_ < DATE '2023-10-07'
  Union
   Select S.ID, S.Shekem_num
   From seller S
   join has H on S.Shekem_num = H.Shekem_num
   Group by S.ID, S.Shekem_num
   Having count(H.Product_num) = 0);
```

שאלת #2

השאלתה מוחקת מוצרים שלא נמצאים באף שקם.

אחרי:

לפני:

```
select * from product;
```

	PRODUCT_NUM	PRODUCT_NAME	MANUFACTURING	AMOUNT
1	72242	InstantCrepMix	InstantKornMix	9469
2	95228	OrangeJuice	Honeydew	3388
3	36405	InstantMashedPotatoes	DriedAlmonds	3338
4	52612	Cereal	AlmondExtract	5546
5	28039	Salad	Sandwiches	1839
6	2413	InstantKhinkaliMix	DriedBlackberries	5551
7	72512	CranberryJuice	Flour	799
8	19248	Apple	VanillaExtract	1981
9	58434	Chicken	Tempura	5885
10	85850	Pizza	Soup	3307
11	44829	InstantBagelMix	InstantProfiteroleMix	102
12	97804	InstantGyozaMix	Strawberry	2747
13	73777	InstantRevaniMix	InstantArrackMix	4987
14	39655	GrapeJuice	GrapeJuice	9640
15	86943	GreenBeans	InstantQuittenbrandMix	4875

```
select * from product;
```

	PRODUCT_NUM	PRODUCT_NAME	MANUFACTURING	AMOUNT
1	72242	InstantCrepMix	InstantKornMix	9469
2	95228	OrangeJuice	Honeydew	3388
3	36405	InstantMashedPotatoes	DriedAlmonds	3338
4	52612	Cereal	AlmondExtract	5546
5	28039	Salad	Sandwiches	1839
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14	39655	GrapeJuice	GrapeJuice	9640
15	86943	GreenBeans	InstantQuittenbrandMix	4875

השאלתה:

```
-- Deletes products that don't exist in any shekem --
Delete from Product
Where product_num in
  (Select product_num
   From product P natural join has
   Group by product_num
   Having count(*) = 0);
```

שאלות UPDATE

שאלתה #1:

השאלתה משנה מוצרים בעלי שם בצורת "P_zza" / "Ap%" ל"Pizza/Apples?".

אחרי:

לפני:

```
select * from product;
```

	PRODUCT_NUM	PRODUCT_NAME	MANUFACTURING	AMOUNT
1	72242	InstantCrepeMix	InstantKornMix	9469
2	95228	OrangeJuice	Honeydew	3388
3	36405	InstantMashedPotatoes	DriedAlmonds	3338
4	52612	Cereal	AlmondExtract	5546
5	28039	Salad	Sandwiches	1839
6	2413	InstantKhinkaliMix	DriedBlackberries	5551
7	72512	CranberryJuice	Flour	799
8	19248	Pizza/Apples?	VanillaExtract	1981
9	58434	Chicken	Tempura	5885
10	85850	Pizza/Apples?	Soup	3307
11	44829	InstantBagelMix	InstantProfiteroleMix	102

```
select * from product;
```

	PRODUCT_NUM	PRODUCT_NAME	MANUFACTURING	AMOUNT
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10	85850	Pizza	Soup	3307
11	44829	InstantBagelMix	InstantProfiteroleMix	102
12	97804	InstantGyozaMix	Strawberry	2747
13	73777	InstantRevaniMix	InstantArrackMix	4987
14	39655	GrapeJuice	GrapeJuice	9640

השאלתה:

```
-- Changes items spelt "P_izza"/"Ap%" and changes them to "Pizza/Apples?" --
Update product
Set product_name = 'Pizza/Apples?'
Where product_name like 'P_zza' or product_name like 'Ap%';
```

שאלתה #2:

השאלתה מקדמת (בדרגה) נהגים שהם סמלים ראשונים עם רשיון C/D ולפחות משלוח 1.

אחרי:

לפני:

```
select * from soldier;
```

	ID	IDF_NUM	NAME	ENLISTMENT_DATE	RANK
1	872205343	981220	Brose	30/03/1986	Rav Samal Rishon
2	708338623	264985	Cherilyn	24/06/2018	Rav Aluf
3	694965433	474798	Lelia	29/07/1983	Turai Rishon
4	461999971	334093	Joannes	19/10/1985	Rav Samal Mitkadem
5	508353292	286498	Vanda	27/03/2001	Rav Samal
6	899588610	132137	Tabbi	08/11/2012	Rav Aluf
7	934269879	375547	Jobie	27/06/1981	Aluf Mishne
8	123564850	800088	Herman	23/09/2023	Rav Seren
9	249443272	42273	Lothaire	11/02/1986	Sgan Aluf
10	809069260	918992	Fair	26/06/2016	Turai Rishon
11	728544897	292984	Sharity	23/08/1995	Rav Seren

```
select * from soldier;
```

	ID	IDF_NUM	NAME	ENLISTMENT_DATE	RANK
1	872205343	981220	Brose	30/03/1986	Rav Samal Rishon
2	708338623	264985	Cherilyn	24/06/2018	Rav Aluf
3	694965433	474798	Lelia	29/07/1983	Turai Rishon
4	461999971	334093	Joannes	19/10/1985	Rav Samal Rishon
5	508353292	286498	Vanda	27/03/2001	Rav Samal
6	899588610	132137	Tabbi	08/11/2012	Rav Aluf
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9	249443272	42273	Lothaire	11/02/1986	Sgan Aluf
10	809069260	918992	Fair	26/06/2016	Turai Rishon
11	728544897	292984	Sharity	23/08/1995	Rav Seren

השאלתה:

```
-- Raise the rank of drivers of rank 'Rav Samal Mitkadem' with a C/D license type and more than 200 deliveries--
Update soldier S
Set S.rank = 'Rav Samal Mitkadem'
Where S.id in
  (Select D.id
   From driver D
   Where (D.license_type = 'C' or D.license_type = 'D')
   and D.id in
     (Select B.id
      From delivery B
      Group by B.id
      Having count(*) > 0))
and S.rank = 'Rav Samal Rishon';
```

אילוצים

אילוצ #1:

האילוצ מגדיר שטוראי תהיה הדרגה הדיפולטיבית.

```
-- Making Turai the default rank for soldiers --
Alter table soldier
Modify (rank VARCHAR2(100) default 'Turai');

Insert into soldier(ID, idf_num, Name, Enlistment_Date_)
Values (870363085, 444444, 'Shalom', TO_DATE('2000-01-01', 'YYYY-MM-DD'));
```

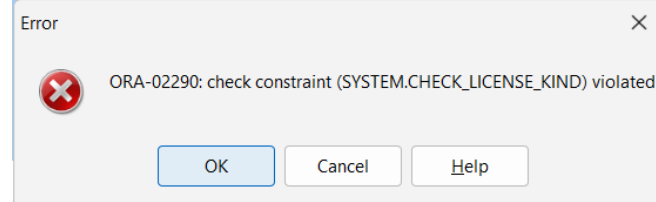
	ID	IDF_NUM	NAME	ENLISTMENT_DATE_	RANK
64	850294879	367784	Alberto	03/09/2002	Aluf
65	895532177	276496	Felicia	29/08/1998	Sgan Aluf
66	994893233	519535	Nike	13/05/2000	Turai Rishon
67	870770849	782796	Neysa	31/07/1981	Segen Mishneh
68	958585013	692058	Stephanus	19/07/2017	Segen Rishon
69	869363085	444444	Shalom	01/01/2000	Turai

אילוצ #2:

האילוצ דואג שסוג הרישיון יהיה מסוגי A/C/B/D בלבד.

```
-- Making sure license type is one of A, B, C or D --
Alter Table driver
Add constraint check_license_kind
Check (license_type IN ('A', 'B', 'C', 'D'));
```

```
Insert into driver(license, status, license_type, id, license_num)
Values(111111111, 'Active', 'F', 870363085, 3456789);
```

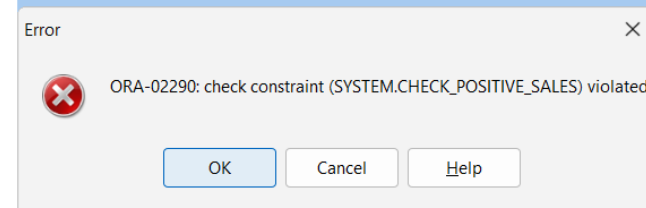


אילוצ #3:

האילוצ בודק שסך המכירות של מוכר גדול מ-0.

```
-- Ensuring a seller's 'total_sales_' is positive --
Alter table seller
Add constraint check_positive_sales
Check (total_sales_ >= 0);
```

```
Insert into seller(shift, total_sales_, supervisor_id, seller_num, id, shekem_num)
Values('Day', -5, 3745933, 57577, 870363085, 3456789);
```



שאלות SELECT עם פרמטרים

שאלתה #1:

השאלתה מחזירה משלוחים בטווח זמן נתון (לפי סדר התאריכים).

```
-- Selects deliveries within a specific date range --
Select D.delivery_num, D.status, D.delivery_date, DR.id as driver_id
From delivery D
join driver DR on D.id = DR.id
Where D.delivery_date between TO_DATE('&start_date', 'YYYY-MM-DD')
and TO_DATE('&end_date', 'YYYY-MM-DD')
order by delivery_date;
```

	DELIVERY_NUM	STATUS	DELIVERY_DATE	DRIVER_ID
1	281136368	DeliveryFailed	05/01/2007	67209238
2	309814093	Delayed	04/03/2007	385633411
3	260466551	InTransit	14/03/2007	111331288
4	605926120	Delivered	28/05/2007	596057126
5	345855702	AwaitingPayment	28/05/2007	135231662

Name	Value
start_date	2007-01-01
end_date	2011-06-01

שאלתה #2:

השאלתה מחזירה חנויות שקם ללא מוצרים עם בסיס בעל מבנה שם נתון.

```
-- Selects shekems with no products and with a specific base name pattern --
With EmptyShekems as
(Select S.shekem_num
From shekem S
left join has H on S.shekem_num = H.shekem_num
Group by S.shekem_num, S.base_name
Having count(H.product_num) = 0
and S.base_name like '&base_name_pattern')
Select ES.shekem_num, S.base_name
From EmptyShekems ES
join shekem S on ES.shekem_num = S.shekem_num;
```

	SHEKEM_NUM	BASE_NAME
1	278261	Unit81Base
2	573374	Unit8200Base
3	831820	Unit81Base
4	430268	Unit8200Base

Name	Value
base_name_pattern	Unit%

שאלתה #3:

השאלתה מחזירה נהגים עם דרגה מבין הדרגות הנתונות שהסטטוס שלו הוא "פעיל".

```
-- Selects drivers with specific ranks provided in a list and with an 'Active' status --
Select id, name, rank
From soldier
Where rank in ('&rank1', '&rank2', '&rank3')
and id in
  (Select D.id
   From driver D
   Where D.status = 'Active');
```

ID	NAME	RANK
1	Ame	Aluf
2	Noami	Seren
3	Gracie	Turai

Variables

Name	Value
rank1	Aluf
rank2	Seren
rank3	Turai

:#4 שאלתה

השאלתה מחזירה את הנהגים עם סוגי רישיונות מהשניים הניתנות שלהם משלוח אחרי תאריך מסוים. השאלתה עושה זאת עם רמיזה להרצה בשיטת לולאות מקוננות.

```
-- Selects drivers with specific license types and their recent deliveries using a hint --
Select /*+ USE_NL(D R) */ D.id, D.license, D.status, D.license_type, count(R.delivery_num) as recent_deliveries
From driver D
join delivery R on D.id = R.id
Where D.license_type in ('&license_type1', '&license_type2')
and R.delivery_date > TO_DATE('&recent_date', 'YYYY-MM-DD')
Group by D.id, D.license, D.status, D.license_type;
```

ID	LICENSE	STATUS	LICENSE_TYPE	RECENT_DELIVERIES
1	16457682	Active	C	1
2	1063184211	Provisional	D	1
3	897757592	Denied	D	1
4	1256724041	Temporary	C	1
5	243752640	RestrictedConditional	D	1