

דו"ח פרוייקט שלב ב

מגיש

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שאלות select

1. שאלת לקבלת התרופות שמבוצע עליהם יותר ממחקר אחד.

```
SELECT m.Medicin_ID, m.Medicin_Name, COUNT(rm.Research_ID) AS Num_Research
FROM Medicines m
JOIN Research_Medicines rm ON m.Medicin_ID = rm.Medicin_ID
GROUP BY m.Medicin_ID, m.Medicin_Name
HAVING COUNT(rm.Research_ID) > 1;
```

	MEDICIN_ID	MEDICIN_NAME	NUM_RESEARCH
1	29730	MERCURIUS SOLUBILIS	3
2	83902	Ketorolac tromethamine	4
3	86203	divalproex sodium	2
4	43256	Ceramide Plump Perfect Lip Moisture SPF 30	3
5	51509	Henry Schein Ibuprofen	5
6	66453	Aspirin	5
7	76149	Glimepiride	5
8	54537	Quinapril	2
9	65872	Chlordiazepoxide Hydrochloride	2
10	26200	SurfersSkin Sunscreen Zinc	3
11	91576	Diazepam	2
12	28992	healthy accents stomach relief	2
13	95365	CPDA-1	2
14	78212	Dextrose and Sodium Chloride	3
15	96473	SENSAI CELLULAR PERFORMANCE CREAM FOUNDATION	2

2. שאלת לקבלת שמות הרופאים שמחקריהם פורסמו יותר מפעם אחת.

```
SELECT d.FirstName, d.LastName
FROM Doctor d
JOIN (
    SELECT rd.Doctor_ID
    FROM Research_Doctor rd
    JOIN Publication p ON rd.Research_ID = p.Research_ID
    GROUP BY rd.Doctor_ID
    HAVING COUNT(DISTINCT p.Publication_ID) > 1
) Subquery ON d.Doctor_ID = Subquery.Doctor_ID;
```

	FIRSTNAME	LASTNAME
1	Morgan	Rickman
2	Peter	Spears
3	Taryn	Weir
4	Keanu	Sewell
5	Carrie-Anne	Farrow
6	Miko	LaPaglia
7	Clint	Brody
8	Bridgette	Vincent
9	Jerry	Salt
10	Todd	Cummings
11	Chrissie	McIntyre

3. שאילתה לקבלת שמות החולים (וסוג המדידה) שערך המדידה שלהם גבוהה מהמדידה האחרונה לפני תחילת המחקר.

```
SELECT p.FirstName, p.LastName, m.M_Type
FROM Patient p
JOIN Measurement m ON p.Patient_ID = m.Patient_ID
JOIN Research r ON p.Research_ID = r.Research_ID
WHERE m.M_Date >= r.R_Start
AND m.M_Value > (
    SELECT m_before.M_Value
    FROM Measurement m_before
    WHERE m_before.Patient_ID = p.Patient_ID
    AND m_before.M_Type = m.M_Type
    AND m_before.M_Date < r.R_Start
    ORDER BY m_before.M_Date DESC
    FETCH FIRST 1 ROWS ONLY
);
```

	FIRSTNAME	LASTNAME	M_TYPE
1	Neve	Spall	Pulse rate measurement
2	Elijah	Koyana	Gait analysis
3	Xander	Gore	BMI calculation
4	Pat	Stigers	Wound size measurement
5	Rita	Fishburne	Oxygen saturation measure
6	Laurence	Collins	Wound size measurement
7	Lenny	Morton	Oxygen saturation measure
8	Sonny	Mars	Fingerstick glucose measu
9	Ivan	Pastore	Waist circumference measu
10	Derek	Rains	Pulse rate measurement
11	Ice	Fleming	Blood pressure measuremen

4. שאילתה לקבלת שמות המחקרים שהחלו לפני 2020 ולא פורסמו אפילו פעם אחת

```
SELECT Research_ID, Research_Name
FROM Research
WHERE R_Start < TO_DATE('2020-01-01', 'YYYY-MM-DD')
AND Research_ID NOT IN (
    SELECT DISTINCT Research_ID
    FROM Publication
);
```

	RESEARCH_ID	RESEARCH_NAME
1	514145	Exercise in Cancer
2	642295	Pain Medications
3	520152	Weight Loss Medications
4	993019	Lifestyle Modifications
5	920519	ARNIs in Heart Failure
6	253966	Metformin in Diabetes
7	177584	Weight Loss Medications
8	340075	Smoking Cessation
9	445256	Hormone Replacement
10	938251	Hormone Replacement
11	599550	Growth Hormone Therapy

שאלות delete

1. מחיקת כל המטופלים שנולדו לפני 1973 (נחקים גם כל המדידות שהתייחסו אליהם)

SQL Output Statistics

```
delete FROM Patient
WHERE dateofbirth < TO_DATE('1973-02-12', 'YYYY-MM-DD');
```

```
select * FROM Patient
WHERE DateOfBirth < TO_DATE('1973-01-01', 'YYYY-MM-DD');
```

	PATIENT_ID	FIRSTNAME	SEX	DATEOFBIRTH	LASTNAME	RESEARCH_ID
1	442860740	Devon	male	04/12/1972	Hanks	543975
2	517681908	Jackie	female	13/05/1972	Hunter	280985
3	857225789	Timothy	female	15/11/1972	Shand	873542
4	655109611	Denzel	female	31/03/1972	Hingle	938251
5	546973297	Max	female	26/12/1972	Gracie	177004
6	515628659	Christine	male	15/08/1972	Johnson	197795
7	731438617	Tracy	male	16/02/1972	Feore	861252
8	941633028	Suzi	female	24/07/1972	Rauhofer	636608
9	350249766	Azucar	female	06/11/1972	Polito	143752
10	322253435	Donna	male	17/08/1972	Singletary	692276



```
select * FROM Patient
WHERE DateOfBirth < TO_DATE('1973-01-01', 'YYYY-MM-DD');
```

	PATIENT_ID	FIRSTNAME	SEX	DATEOFBIRTH	LASTNAME	RESEARCH_ID
--	------------	-----------	-----	-------------	----------	-------------

```
SELECT *
FROM Measurement M
JOIN Patient P ON M.Patient_ID = P.Patient_ID
WHERE P.DateOfBirth < TO_DATE('1973-01-01', 'YYYY-MM-DD');
```

	MEASUREMENT_ID	M_DATE	M_TYPE	M_VALUE	PATIENT_ID	PATIENT_ID	FIRSTNAME
1	3002	07/12/2012	Pulse oximetry	49	609078303	609078303	Ritchie
2	4839	10/08/2010	Wound size measurement	29	322253435	322253435	Donna
3	7673	08/04/2012	Tongue depressor test	31	442860740	442860740	Devon
4	7061	16/02/2013	BMI calculation	45	857225789	857225789	Timothy
5	9895	21/07/2011	Pulse oximetry	45	396083026	396083026	Ray
6	7397	08/10/2011	Gait analysis	31	515628659	515628659	Christine
7	3946	04/05/2010	Pulse oximetry	49	517681908	517681908	Jackie



```
SELECT *
FROM Measurement M
JOIN Patient P ON M.Patient_ID = P.Patient_ID
WHERE P.DateOfBirth < TO_DATE('1973-01-01', 'YYYY-MM-DD');
```

	MEASUREMENT_ID	M_DATE	M_TYPE	M_VALUE	PATIENT_ID	PATIENT_ID	FIRSTNAME
--	----------------	--------	--------	---------	------------	------------	-----------

2. מחיקת פרסום במגזין בתאריך מסויים

```
delete FROM Publication
WHERE Magazin = 'Current Biology' AND P_Date = TO_DATE('2020-03-14', 'YYYY-MM-DD');
```

```
select * FROM Publication
WHERE Magazin = 'Current Biology' AND P_Date = TO_DATE('2020-03-14', 'YYYY-MM-DD');
```

	PUBLICATION_ID	P_DATE	MAGAZIN	RESEARCH_ID
1	9782	14/03/2020	Current Biology	895550



```
select * FROM Publication
WHERE Magazin = 'Current Biology' AND P_Date = TO_DATE('2020-03-14', 'YYYY-MM-DD');
```

	PUBLICATION_ID	P_DATE	MAGAZIN	RESEARCH_ID
--	----------------	--------	---------	-------------

שאלות update

1. הוספת 1000 ₪ לתקציב מחקרים שפורסמו יותר מפעם אחת.

```
UPDATE Research
SET Budget = Budget + 1000
WHERE Research_ID IN (
    SELECT Research_ID
    FROM Publication
    GROUP BY Research_ID
    HAVING COUNT(*) > 1
);
```

```
FROM Research R
JOIN Publication P ON R.Research_ID = P.Research_ID
GROUP BY R.Research_ID, R.Research_Name, R.Budget
HAVING COUNT(*) > 1;
```

	RESEARCH_ID	RESEARCH_NAME	BUDGET
1	153552	Antiretroviral Therapy	998917
2	912144	Growth Hormone Therapy	374454
3	731698	Exercise Therapy	204977
4	716554	Weight Loss Medications	335937
5	415919	Bisphosphonates	284662
6	888002	Dietary Supplements	935462
7	847540	Antiplatelet Therapy	132648
8	977542	Antimalarials	17953
9	695349	Dietary Supplements	143383
10	540891	Surgical Interventions	683403
11	966326	PPIs in Infants	822956

```
SELECT R.Research_ID, R.Research_Name, R.Budget
FROM Research R
JOIN Publication P ON R.Research_ID = P.Research_ID
GROUP BY R.Research_ID, R.Research_Name, R.Budget
HAVING COUNT(*) > 1;
```

	RESEARCH_ID	RESEARCH_NAME	BUDGET
1	153552	Antiretroviral Therapy	999917
2	689711	Antimalarials	81296
3	314035	Mindfulness in Binge Eating	842823
4	661024	Antidepressants	430628
5	373489	PPIs and Bone Health	440550
6	431078	Immunotherapy	967068
7	888002	Dietary Supplements	936462
8	610343	Immunotherapy in Asthma	311541
9	691984	Mindfulness Meditation	367284
10	889050	MBSR in Depression	760113
11	64885	Biologic Biologics	164342

2. עדכון שם ייצרן לתרופה מסויימת.

```
UPDATE MEDICINES
SET MANUFACTURER = 'Eisai Inc.'
where MEDICIN_NAME = 'EZ-OX' ;
commit
```

```
select * from MEDICINES
where MEDICIN_NAME = 'EZ-OX'
```

	MEDICIN_ID	MEDICIN_NAME	MANUFACTURER
1	29415	EZ-OX	Air Liquide Healthcare America Corporation

```
SELECT * FROM MEDICINES
where MEDICIN_NAME = 'EZ-OX' ;
```

	MEDICIN_ID	MEDICIN_NAME	MANUFACTURER
1	29415	EZ-OX	Eisai Inc.

שאלות עם פרמטרים

1. שאלת לקבלת מדידות של מטופל מסויים בין תאריכים מסויים.

```
SELECT M.*
FROM Measurement M
JOIN Patient P ON M.Patient_ID = P.Patient_ID
WHERE P.Patient_ID = &<name= "patient_id"
      type = "integer"
      hint= "A 9-digit number"
      required = true>
AND M.M_Date BETWEEN &<name="measurement_from"
                    type = "date" hint = "in format DD/MM/YYYY"
                    required = true >
                    AND &<name="measurement_to"
                    type = "date" hint = "in format DD/MM/YYYY"
                    required = true>;
```

MEASUREMENT_ID	M_DATE	M_TYPE	M_VALUE	PATIENT_ID
1	2865 07/07/2011	Visual acuity measurement	37	249780738
2	2529 23/02/2011	Abdominal circumference m	22	249780738
3	8959 30/09/2012	Visual acuity measurement	32	249780738
4	4867 14/02/2012	Oxygen saturation measure	46	249780738

Variables

Name	Value
patient_id	249780738
measurement_from	1/1/1992
measurement_to	1/1/2024

A 9-digit number

OK Cancel Clear

2. שאלת לקבלת שמות התרופות של ייצרן מסויים שמשתתפות במחקר.

```
SELECT DISTINCT M.Medicin_Name
FROM Medicines M
JOIN Research_Medicines RM ON M.Medicin_ID = RM.Medicin_ID
JOIN Medicines MM ON RM.Medicin_ID = MM.Medicin_ID
WHERE MM.Manufacturer = &<name= "manufacturer_name"
      type = "string"
      hint = "enter manufacturer full name"
      required = true>;
```

MEDICIN_NAME
1 Lidocaine Hydrochloride
2 Lovastatin
3 Gabapentin
4 Levofloxacin

Variables

Name	Value
manufacturer_name	Aidarex Pharmaceuticals LLC

manufacturer_name is required

OK Cancel Clear

3. שאלת לקבלת שמות החולים שנחקרים ע"י רופא מסויים.

```
SELECT P.Patient_ID, P.FirstName, P.LastName
FROM Patient P
JOIN Research R ON P.Research_ID = R.Research_ID
JOIN Research_Doctor RD ON R.Research_ID = RD.Research_ID
WHERE RD.Doctor_ID = &<name= "doctor_id"
      type = "integer"
      hint = "enter 9-digit number"
      required = true>;
```

PATIENT_ID	FIRSTNAME	LASTNAME
1	862055827	Quentin Caine
2	773668246	Corey Koteas
3	292269719	Latin Jolie
4	635578075	Dustin Keitel
5	429708272	Greg Cotton

Variables

Name	Value
doctor_id	141449107

enter 9-digit number

OK Cancel Clear

4. בבחירת שם מגזין הצגת שמות המחקרים שפורסמו בו ותאריך הפרסום.

The screenshot shows the SQL Developer interface. The SQL window contains the following query:

```
SELECT R.Research_ID, R.Research_Name, P.P_Date, P.Publication_ID
FROM Publication P
JOIN Research R ON P.Research_ID = R.Research_ID
WHERE P.Magazin = <name = "magazin_name"
      list = "SELECT DISTINCT Magazin FROM Publication"
      type = "string"
      required = true> ;
```

The Output window displays the results of the query:

	RESEARCH_ID	RESEARCH_NAME	P_DATE	PUBLICATION_ID
1	431078	Immunotherapy	14/01/2016	3000
2	314035	Mindfulness in Binge Eating	16/12/2019	6509
3	795129	Cognitive Rehabilitation	31/03/2020	2587

The Variables window is open, showing a variable named 'magazin_name' with the value 'Current Opinion in Neurology'.

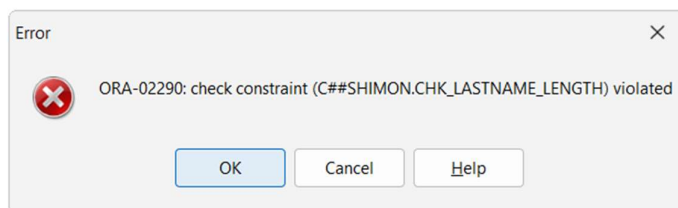
אילוצים:

1. הוספת אילוץ על שם ומשפחת המטופל שאינו קטן משני תווים.

```
ALTER TABLE Patient
ADD CONSTRAINT CHK_FirstName_Length CHECK (LENGTH(FirstName) >= 2)
ADD CONSTRAINT CHK_LastName_Length CHECK (LENGTH(LastName) >= 2);
```

הכנסת שגיאה:

```
INSERT INTO Patient (Patient_ID, FirstName, Sex, DateOfBirth, LastName, Research_ID)
VALUES (111111111, 'a', 'male', TO_DATE('2000-01-01', 'YYYY-MM-DD'), 's', NULL);
```

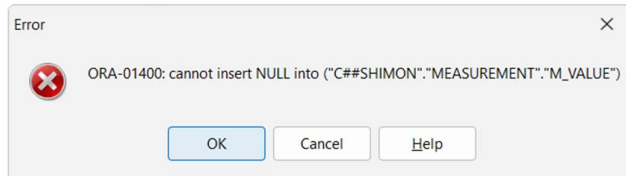


2. הוספת אילוץ לערך מדידת מטופל שאינו null

```
ALTER TABLE Measurement
MODIFY M_Value INT NOT NULL;
```

הכנסת שגיאה:

```
INSERT INTO Measurement (Measurement_ID, M_Date, M_Type, M_Value, Patient_ID)
VALUES (1111, TO_DATE('2024-06-18', 'YYYY-MM-DD'), 'Blood Pressure', NULL, 901346615);
```



3. הוספת אילוץ לטבלת מחקר שבברירת מחדל התקציב יהיה 1000
שח (עם אפשרות ל – null)

```
ALTER TABLE Research  
MODIFY Budget INT DEFAULT 1000 NULL;
```

הכנסת ערך ברירת מחדל:

```
INSERT INTO Research (Research_ID, Research_Name, Budget, R_Start)  
VALUES (111111, 'test', DEFAULT, TO_DATE('2024-06-18', 'YYYY-MM-DD'));  
commit
```



```
select * from research  
where research_name = 'test'
```

	RESEARCH_ID	RESEARCH_NAME	BUDGET	R_START	
▶ 1	111111	test	...	1000	18/06/2024 ...