



איחוד הצלה

UNITED HATZALAH

מיני פרויקט בבסיסי נתונים

אגף ציוד

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תקציר הארגון

מטרת הארגון:

איחוד הצלה הוא ארגון ללא כוונות רווח המספק שירותי חירום רפואיים בישראל. הארגון מתבסס על צוות מתנדבים מקצועיים, הכוללים רופאים, חובשים ופראמדיקים, המגיבים לקריאות חירום רפואיות 24 שעות ביממה, 7 ימים בשבוע.

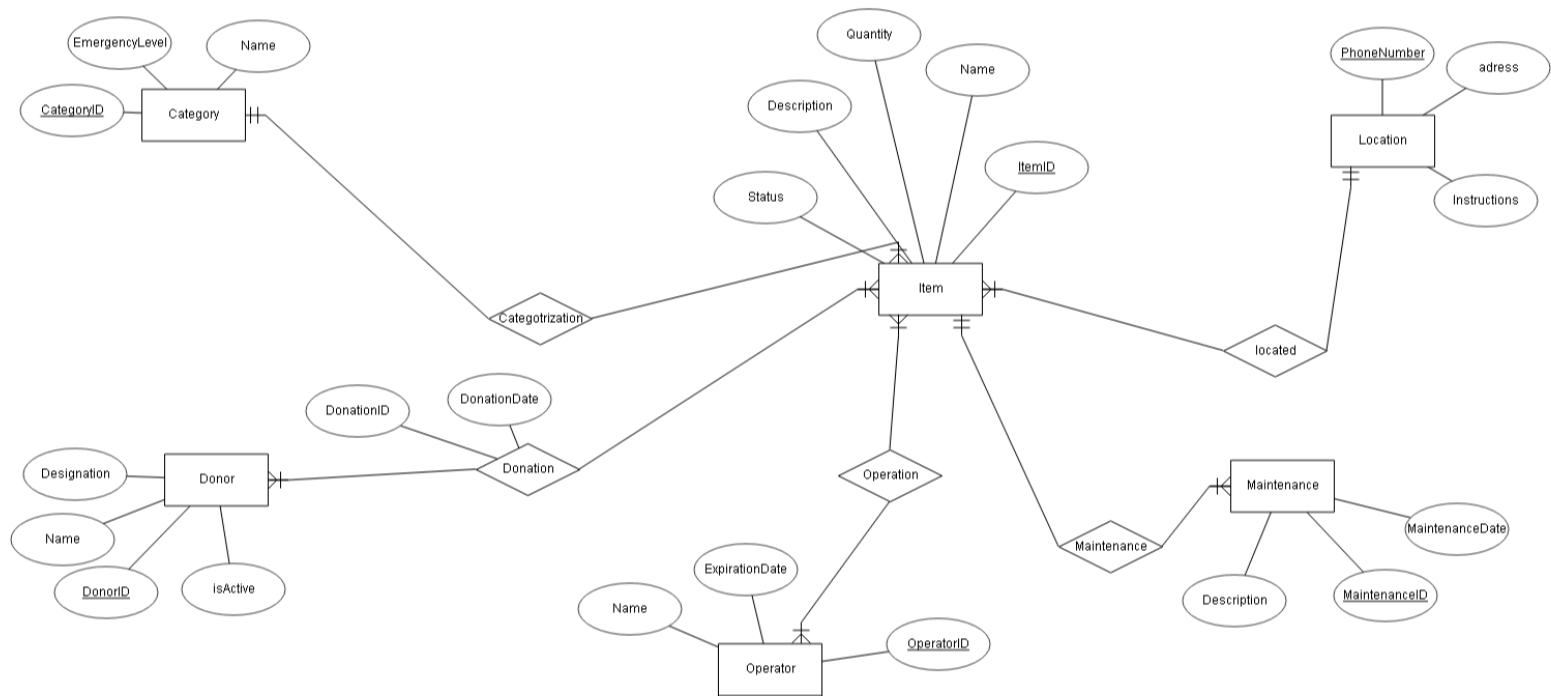
הישויות העיקריות:

- **מתנדבים:** מתאר את המתנדבים הפועלים בארגון, כולל פרטים אישיים, הכשרה, זמינות ותחום התמחות.
- **קריאות:** מתאר את קריאות החירום המתקבלות על ידי הארגון, כולל מיקום האירוע, תיאור המקרה וסוג החירום הרפואי.
- **משימות:** מתאר את משימות ההצלה המוקצות למתנדבים, כולל זיהוי המתנדב המוקצה, זמן ההגעה הצפוי וסטטוס המשימה.
- **ציוד:** מתאר את ציוד החירום הנמצא ברשות הארגון, כולל אמבולנסים, אופנועי הצלה וציוד רפואי.

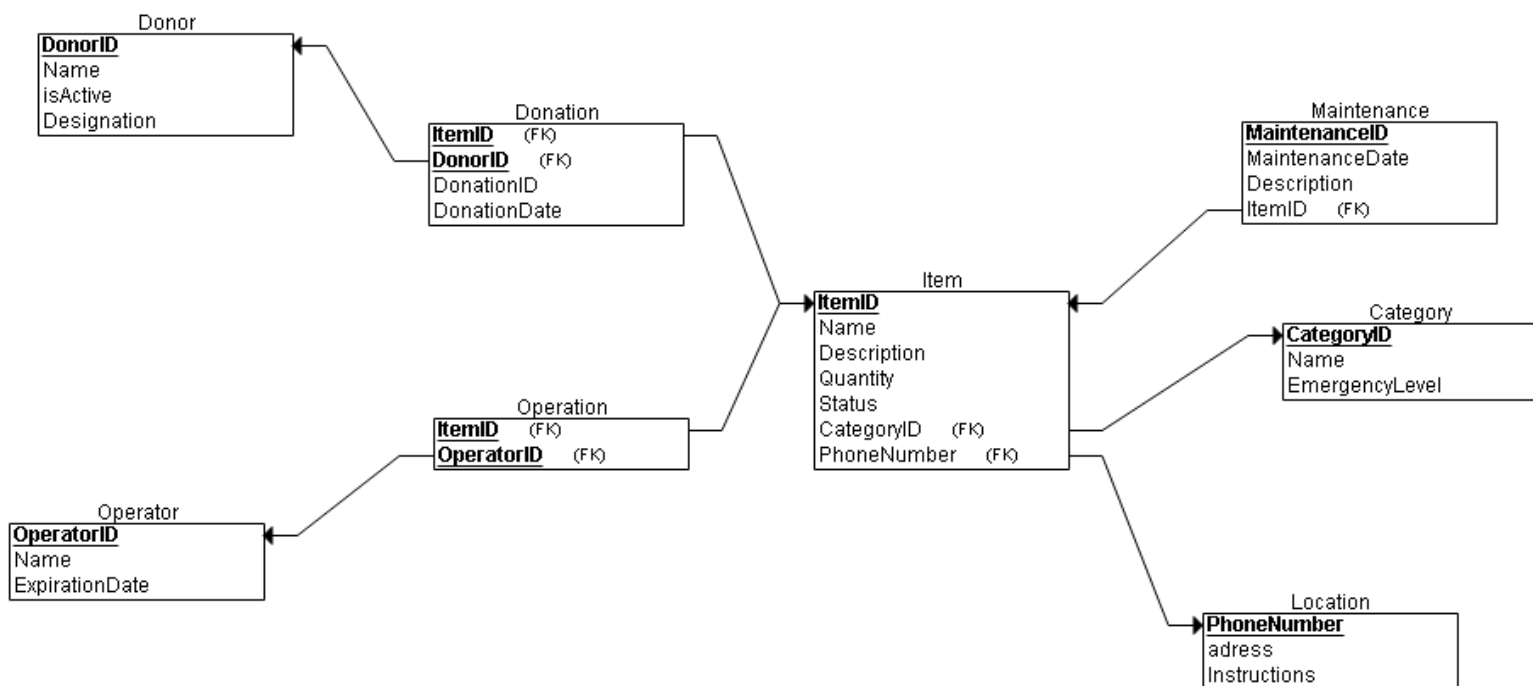
תהליכים עיקריים:

- **קבלת קריאות:** מוקדנים מקבלים קריאות חירום טלפוניות ומתעדות את פרטי המקרה.
- **שיבוץ משימות:** מערכת ממוחשבת משבצת את המתנדבים הזמינים הקרובים ביותר למקום האירוע.
- **ניהול משימות:** צוות ניהול עוקב אחר התקדמות המשימות ומספק סיוע במידת הצורך.
- **דיווח:** מתנדבים מדווחים על סיום המשימה ומתעדים את הטיפול הרפואי שניתן.

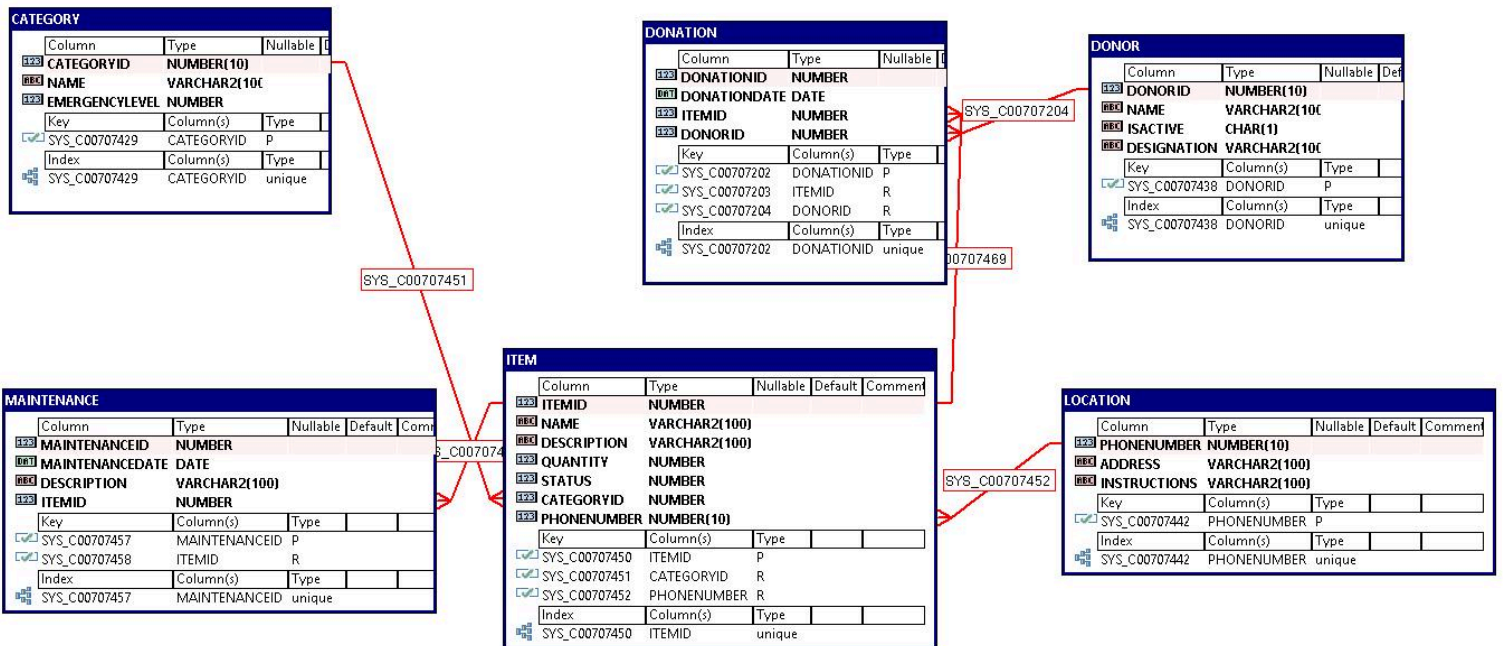
תרשים ERD



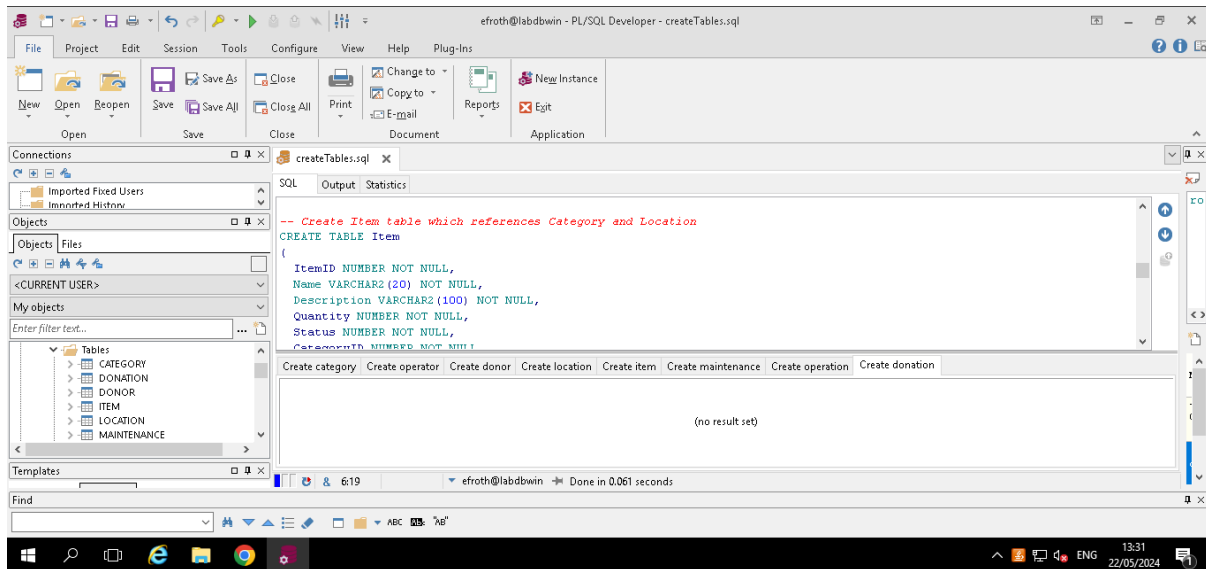
תרשים DSD



DSD from oracle



Create tables



-- Create Category table first as it's referenced by Item
 CREATE TABLE Category

```
(
  CategoryID NUMBER(10) NOT NULL,
  Name VARCHAR2(100) NOT NULL,
  EmergencyLevel NUMBER NOT NULL,
  PRIMARY KEY (CategoryID)
);
```

-- Create Operator table as it's referenced by Operation
 CREATE TABLE Operator

```
(
  OperatorID NUMBER(10) NOT NULL,
  Name VARCHAR2(100) NOT NULL,
  ExpirationDate DATE NOT NULL,
  PRIMARY KEY (OperatorID)
);
```

-- Create Donor table as it's referenced by Donation
 CREATE TABLE Donor

```
(
  DonorID NUMBER(10) NOT NULL,
  Name VARCHAR2(100) NOT NULL,
  isActive CHAR(1) NOT NULL,
  Designation VARCHAR2(100),
```

```

PRIMARY KEY (DonorID)
);

-- Create Location table as it's referenced by Item
CREATE TABLE Location
(
  PhoneNumber NUMBER(10) NOT NULL,
  Address VARCHAR2(100) NOT NULL,
  Instructions VARCHAR2(100),
  PRIMARY KEY (PhoneNumber)
);

-- Create Item table which references Category and Location
CREATE TABLE Item
(
  ItemID NUMBER NOT NULL,
  Name VARCHAR2(100) NOT NULL,
  Description VARCHAR2(100),
  Quantity NUMBER NOT NULL,
  Status NUMBER NOT NULL,
  CategoryID NUMBER NOT NULL,
  PhoneNumber NUMBER(10) NOT NULL,
  PRIMARY KEY (ItemID),
  FOREIGN KEY (CategoryID) REFERENCES Category(CategoryID),
  FOREIGN KEY (PhoneNumber) REFERENCES Location(PhoneNumber)
);

-- Create Maintenance table which references Item
CREATE TABLE Maintenance
(
  MaintenanceID NUMBER(10) NOT NULL,
  MaintenanceDate DATE NOT NULL,
  Description VARCHAR2(100),
  ItemID NUMBER NOT NULL,
  PRIMARY KEY (MaintenanceID),
  FOREIGN KEY (ItemID) REFERENCES Item(ItemID)
);

-- Create Operation table which references Item and Operator
CREATE TABLE Operation
(
  ItemID NUMBER NOT NULL,
  OperatorID NUMBER NOT NULL,
  PRIMARY KEY (ItemID, OperatorID),

```



```

FOREIGN KEY (ItemID) REFERENCES Item(ItemID),
FOREIGN KEY (OperatorID) REFERENCES Operator(OperatorID)
);

```

-- Create Donation table which references Item and Donor

```
CREATE TABLE Donation
```

```
(
```

```
    DonationID NUMBER NOT NULL,
```

```
    DonationDate DATE NOT NULL,
```

```
    ItemID NUMBER NOT NULL,
```

```
    DonorID NUMBER NOT NULL,
```

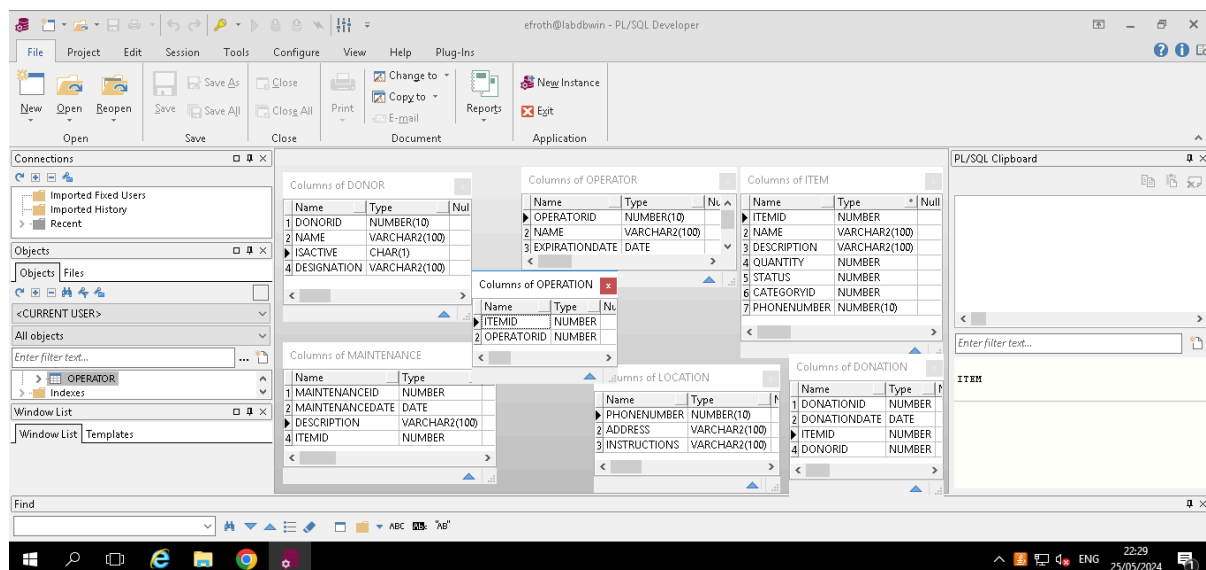
```
    PRIMARY KEY (DonationID),
```

```
    FOREIGN KEY (ItemID) REFERENCES Item(ItemID),
```

```
    FOREIGN KEY (DonorID) REFERENCES Donor(DonorID)
```

```
);
```

Desc:



selectAll

```
-- Select data from Category table
SELECT * FROM Category;
```

```
-- Select data from Operator table
SELECT * FROM Operator;
```

```
-- Select data from Donor table
SELECT * FROM Donor;
```

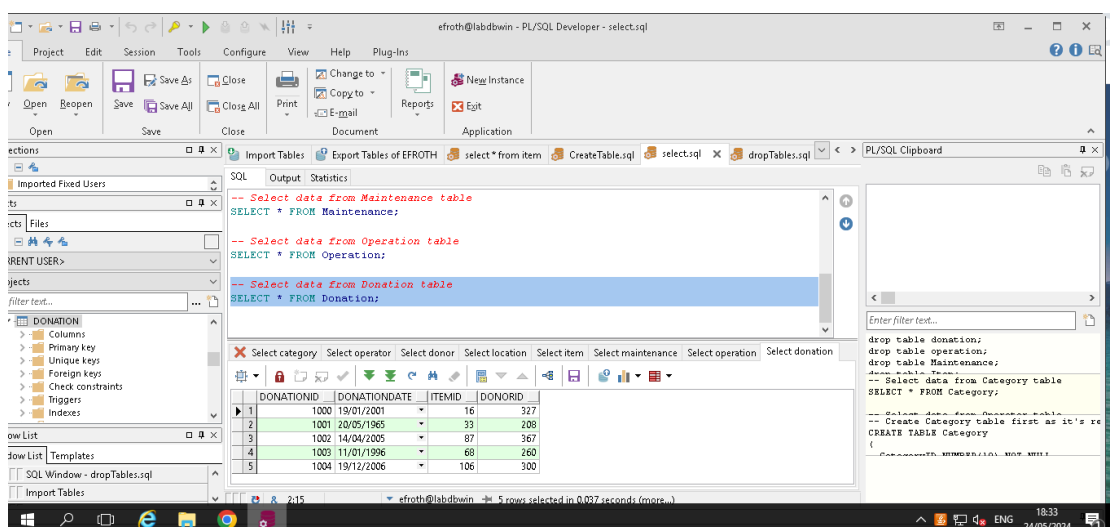
```
-- Select data from Location table
SELECT * FROM Location;
```

```
-- Select data from Item table
SELECT * FROM Item;
```

```
-- Select data from Maintenance table
SELECT * FROM Maintenance;
```

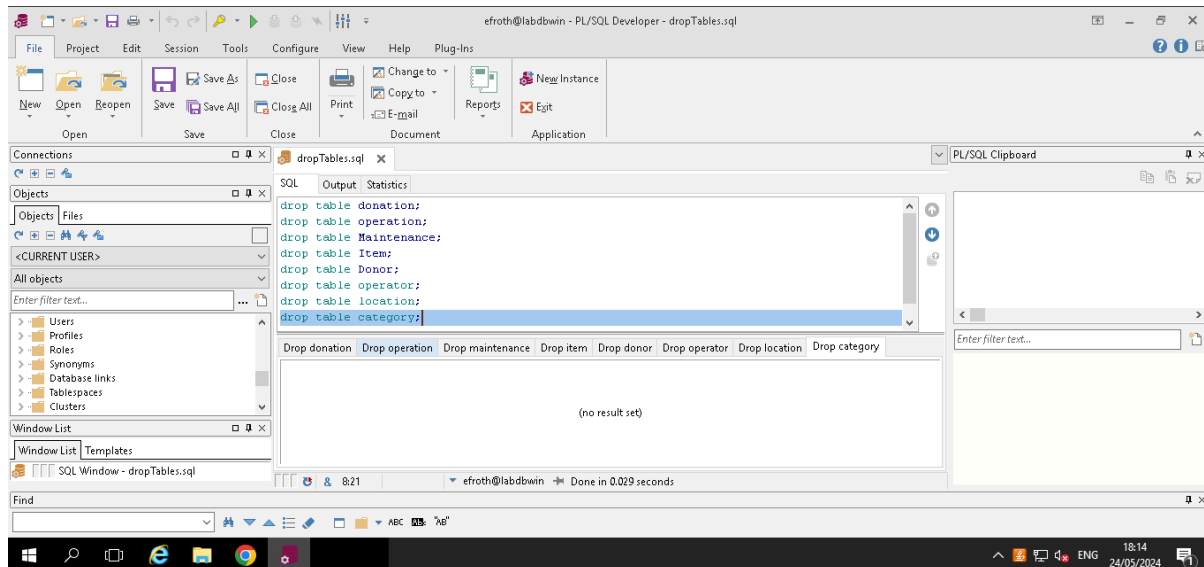
```
-- Select data from Operation table
SELECT * FROM Operation;
```

```
-- Select data from Donation table
SELECT * FROM Donation;
```



Drop

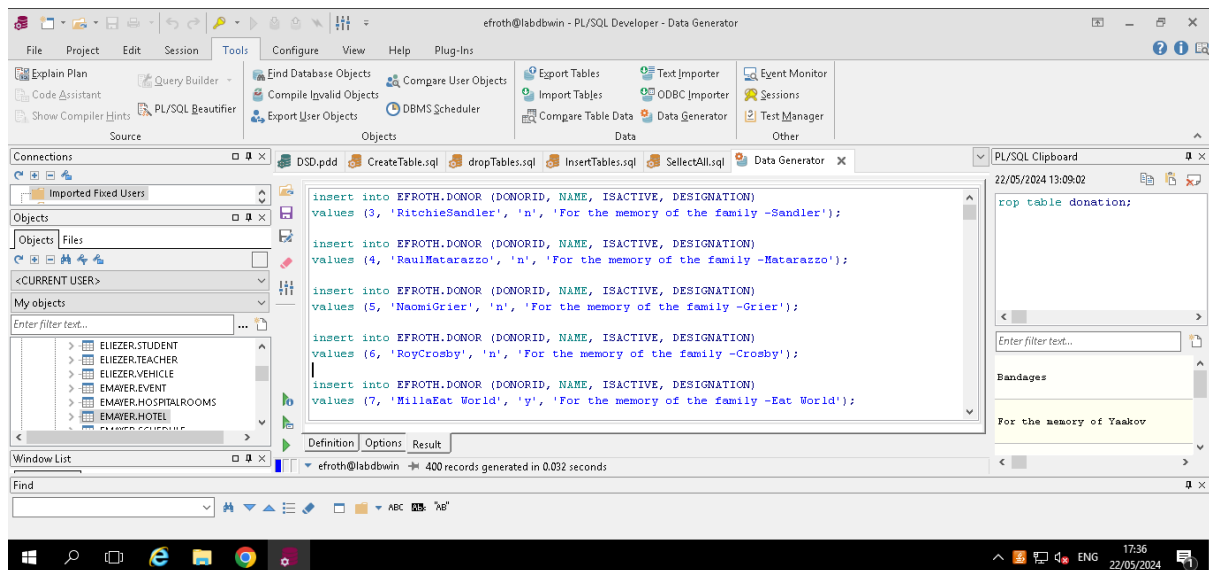
drop table donation;
 drop table operation;
 drop table Maintenance;
 drop table Item;
 drop table Donor;
 drop table operator;
 drop table location;
 drop table category;



הסבר סדר מחיקה:

מחיקת טבלת "תרומה" (Donation): טבלה זו מקשרת אל הטבלאות "פריט" (Item) ו"תורם" (Donor).
 מחיקת טבלת "פעולה" (Operation): טבלה זו מקשרת אל הטבלאות "פריט" (Item) ו"מפעיל" (Operator).
 מחיקת טבלת "תחזוקה" (Maintenance): טבלה זו מקשרת אל הטבלאות "פריט" (Item).
 מחיקת טבלת "פריט" (Item): טבלה זו מקשרת אל הטבלאות "קטגוריה" (Category) ו"מיקום" (Location).
 מחיקת טבלת "תורם" (Donor): לטבלה זו אין תלות בטבלאות אחרות, אך היא מקושרת על ידי טבלת "תרומה" (Donation).
 מחיקת טבלת "מפעיל" (Operator): לטבלה זו אין תלות בטבלאות אחרות, אך היא מקושרת על ידי טבלת "פעולה" (Operation).
 מחיקת טבלת "מיקום" (Location): לטבלה זו אין תלות בטבלאות אחרות, אך היא מקושרת על ידי טבלת "פריט" (Item).
 מחיקת טבלת "קטגוריה" (Category): לטבלה זו אין תלות בטבלאות אחרות, אך היא מקושרת על ידי טבלת "פריט" (Item).

Insert



-- Insert data into Category table

```
INSERT INTO Category (CategoryID, Name, EmergencyLevel) VALUES (1, 'heart', 5);
```

```
INSERT INTO Category (CategoryID, Name, EmergencyLevel) VALUES (2, 'general', 3);
```

-- Insert data into Operator table

```
INSERT INTO Operator (OperatorID, Name, ExpirationDate) VALUES (1, 'John Doe', TO_DATE('2025-12-31', 'YYYY-MM-DD'));
```

```
INSERT INTO Operator (OperatorID, Name, ExpirationDate) VALUES (2, 'Jane Smith', TO_DATE('2024-06-30', 'YYYY-MM-DD'));
```

-- Insert data into Donor table

```
INSERT INTO Donor (DonorID, Name, isActive, Designation) VALUES (1, 'ACME Corp', 'Y', 'For the memory of Moshe');
```

```
INSERT INTO Donor (DonorID, Name, isActive, Designation) VALUES (2, 'Global Fund', 'N', 'For the memory of Yehuda and Rachel levi');
```

-- Insert data into Location table

```
INSERT INTO Location (PhoneNumber, Address, Instructions) VALUES (1234567890, '123 Main St', 'ID is required');
```

```
INSERT INTO Location (PhoneNumber, Address, Instructions) VALUES (9876543210, '456 Elm St', 'Only with certificate');
```

-- Insert data into Item table

```

INSERT INTO Item (ItemID, Name, Description, Quantity, Status, CategoryID,
PhoneNumber) VALUES (1, 'Bandages', 'Sterile bandages', 100, 1, 2, 1234567890);
INSERT INTO Item (ItemID, Name, Description, Quantity, Status, CategoryID,
PhoneNumber) VALUES (2, 'Defibrillator', 'For heart attack', 200, 1, 1, 9876543210);

```

-- Insert data into Maintenance table

```

INSERT INTO Maintenance (MaintenanceID, MaintenanceDate, Description, ItemID)
VALUES (1, TO_DATE('2023-01-15', 'YYYY-MM-DD'), 'Checked expiry date', 1);
INSERT INTO Maintenance (MaintenanceID, MaintenanceDate, Description, ItemID)
VALUES (2, TO_DATE('2023-02-20', 'YYYY-MM-DD'), 'clean', 2);

```

-- Insert data into Operation table

```

INSERT INTO Operation (ItemID, OperatorID) VALUES (1, 1);
INSERT INTO Operation (ItemID, OperatorID) VALUES (2, 2);

```

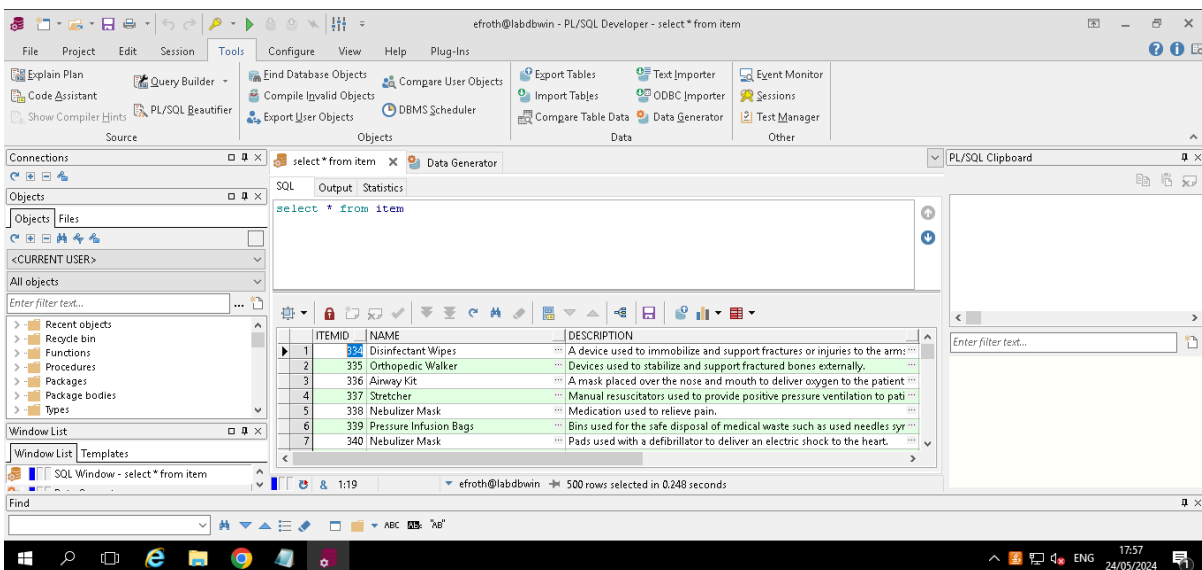
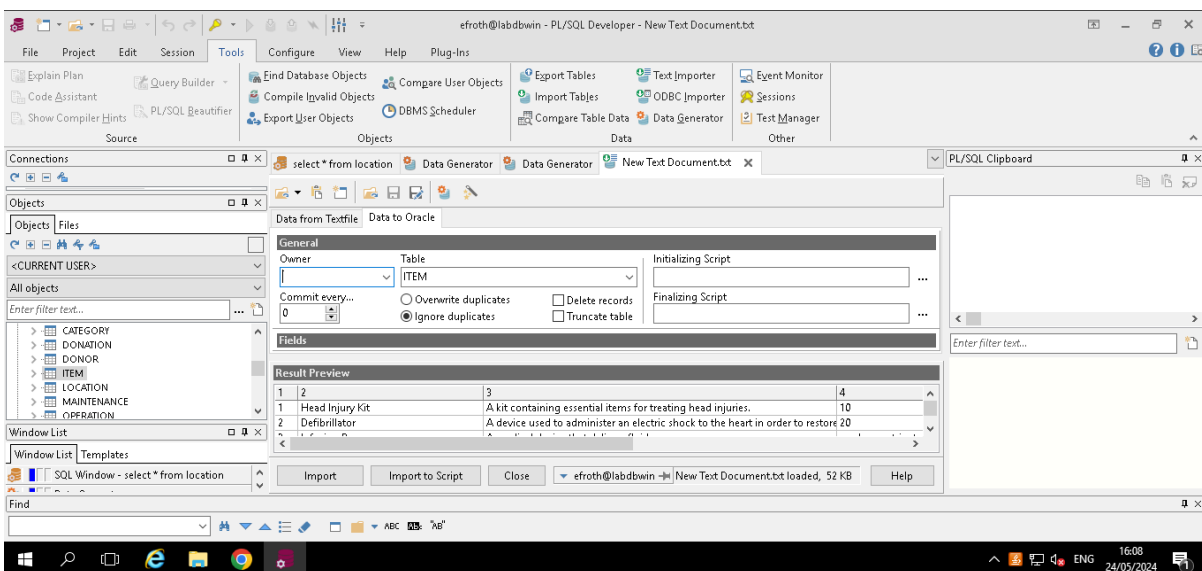
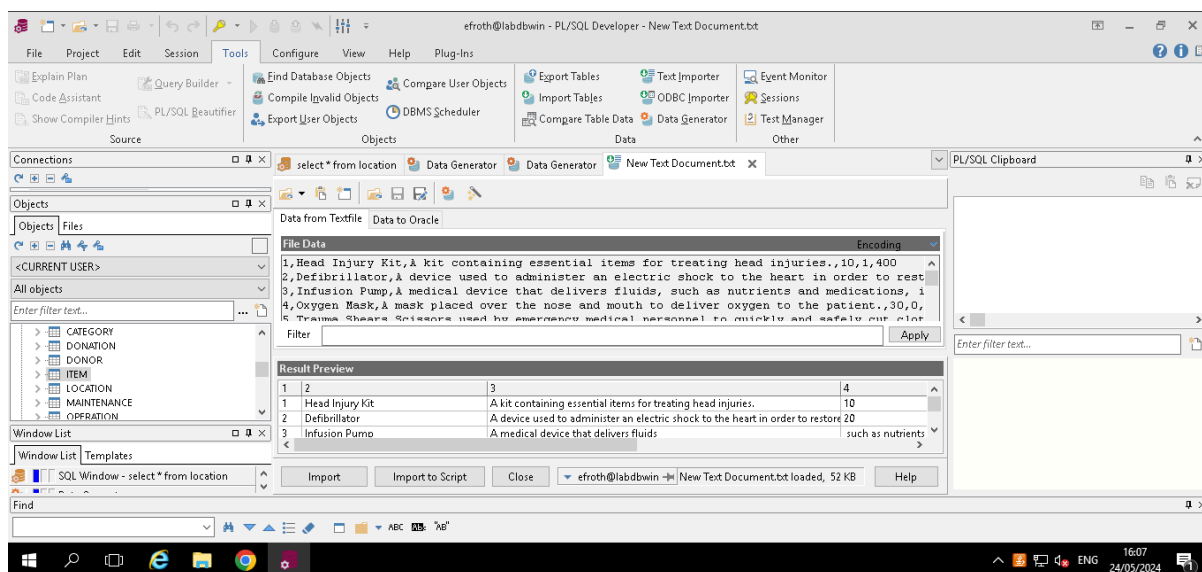
-- Insert data into Donation table

```

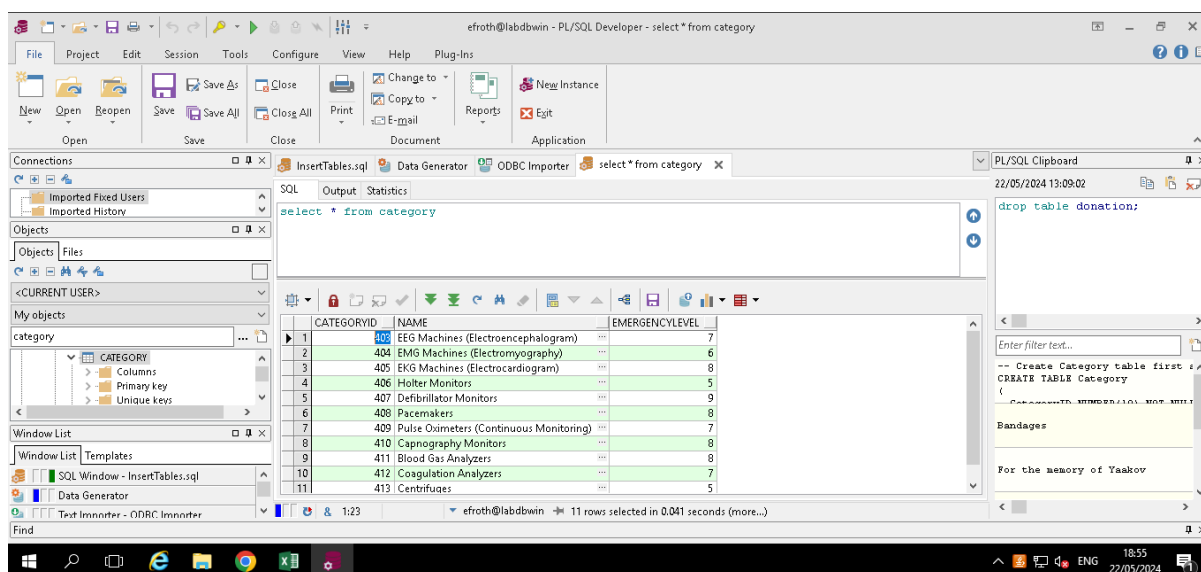
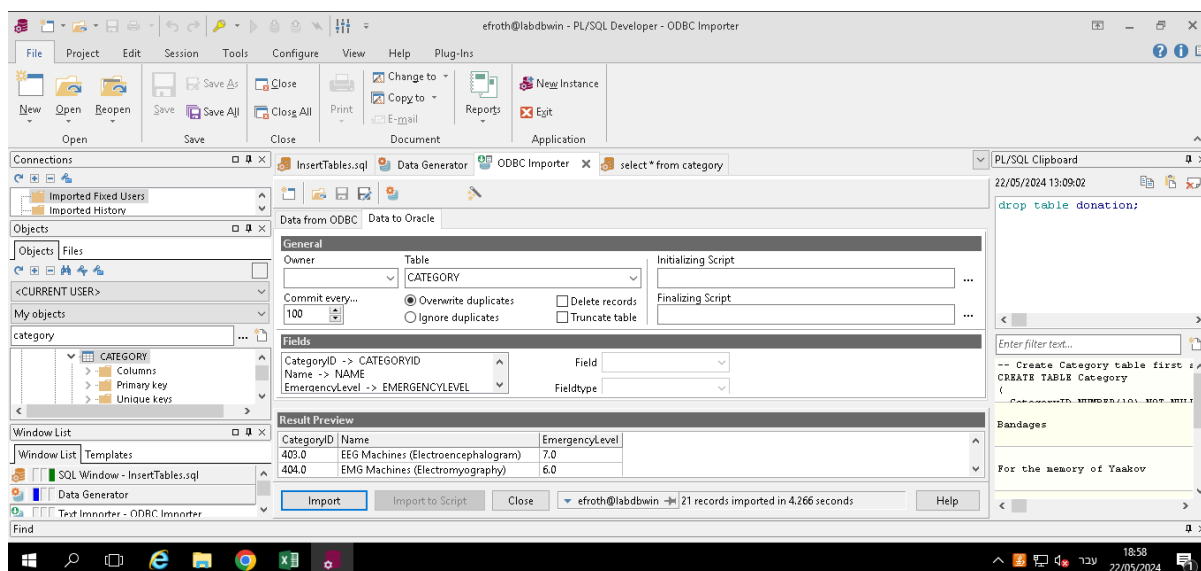
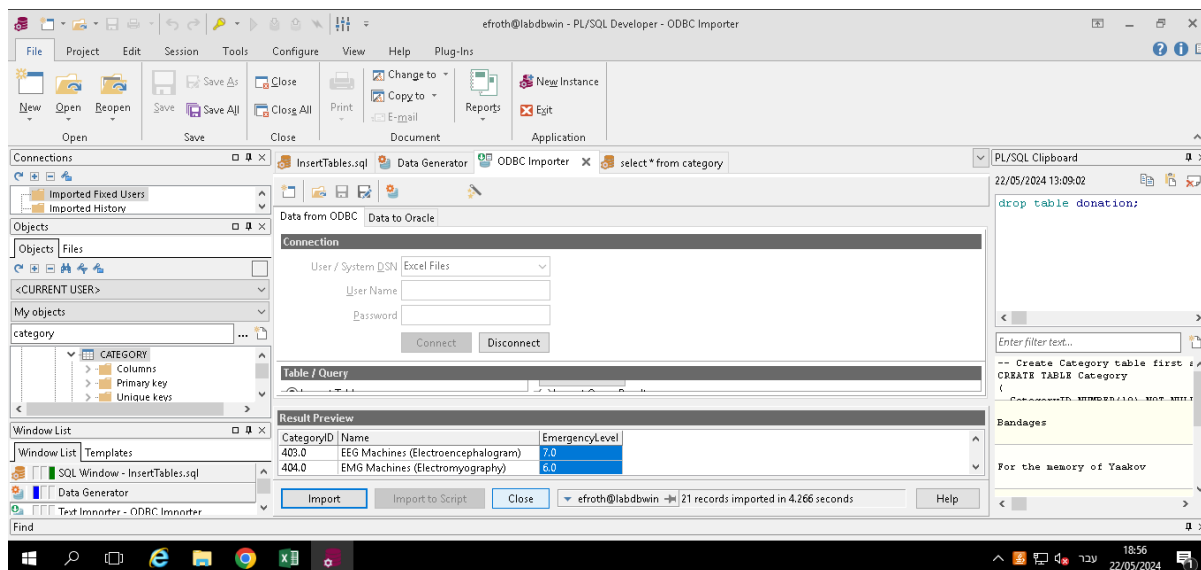
INSERT INTO Donation (DonationID, DonationDate, ItemID, DonorID) VALUES (1,
TO_DATE('2023-03-10', 'YYYY-MM-DD'), 1, 1);
INSERT INTO Donation (DonationID, DonationDate, ItemID, DonorID) VALUES (2,
TO_DATE('2023-04-05', 'YYYY-MM-DD'), 2, 2);

```

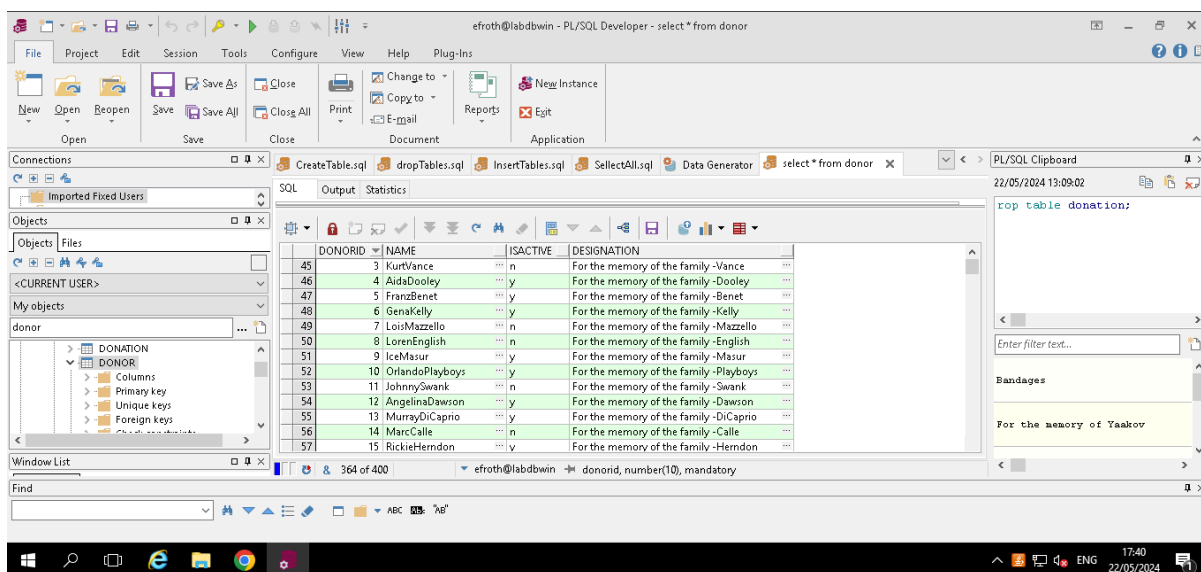
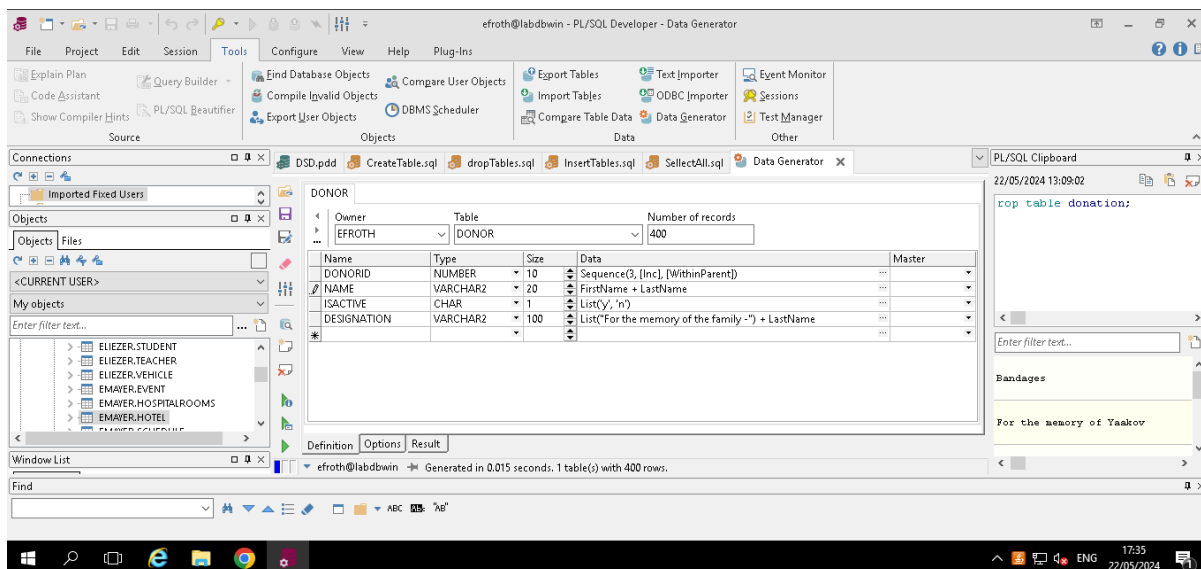
הכנסת נתונים מקובץ טקסט



הכנסת נתונים מקובץ אקסל



הכנסת נתונים ע"י DATA-Generator



הכנסת נתונים ע"י שימוש באתר mockaroo

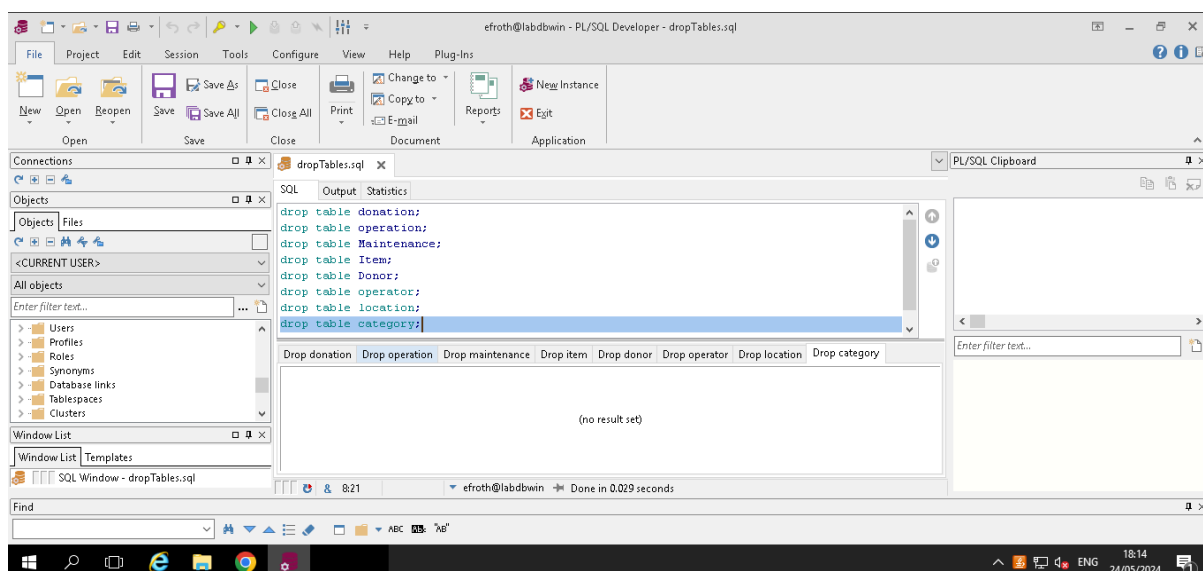
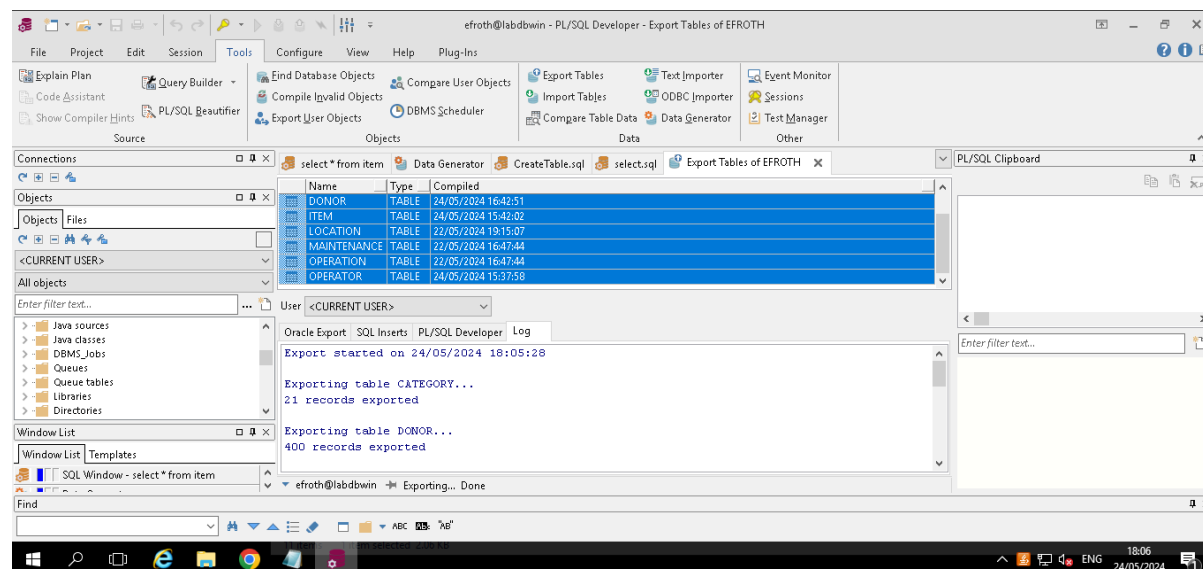
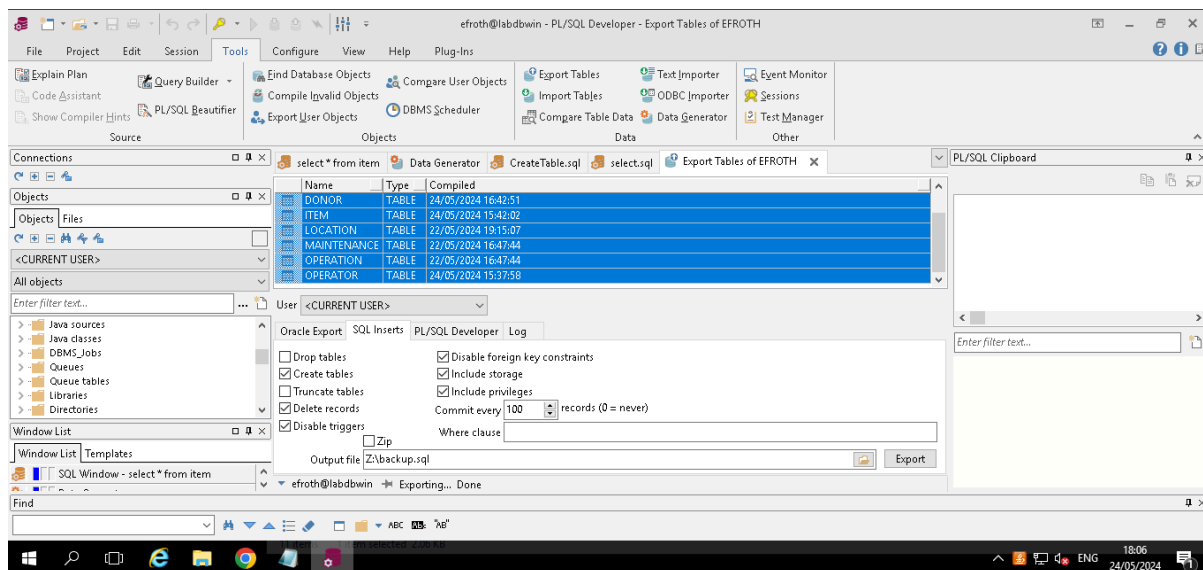
Operator

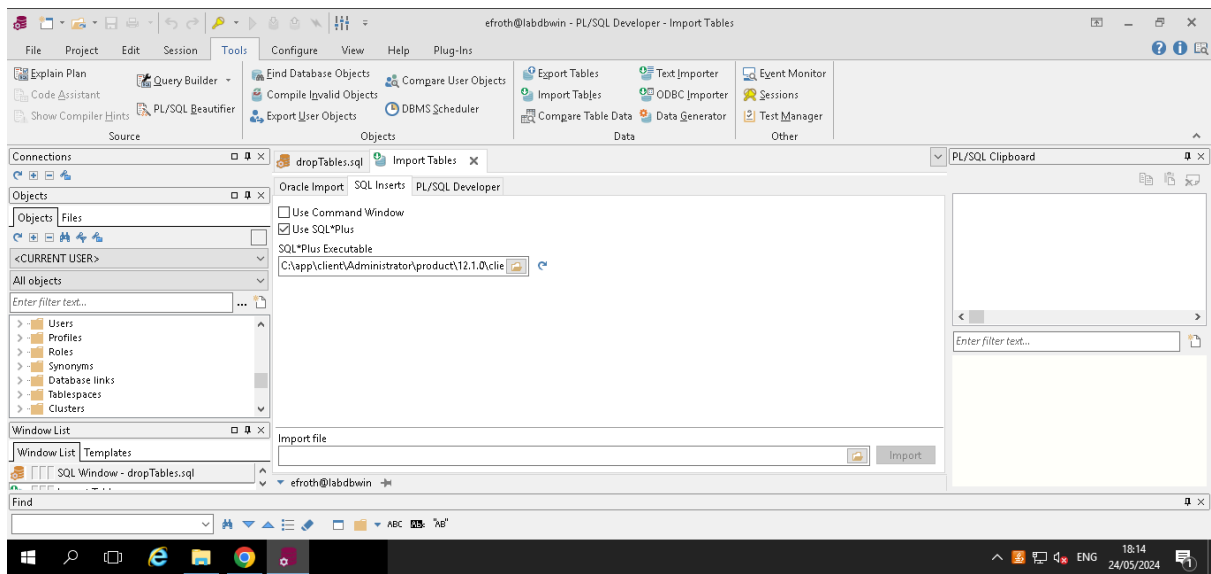
Field Name	Type	Options
operatorID	Row Number	blank: 0 % Σ ×
name	First Name	blank: 0 % Σ ×
ExpirationDate	Datetime	05/29/2024 to 05/25/2035 format: d/m/yyyy blank: 0 % Σ ×

+ ADD ANOTHER FIELD
GENERATE FIELDS USING AI...

Rows: 400
Format: SQL
Table Name: operator
☒ include CREATE TABLE

גיבוי ושחזור





שאלות

שאלתה 1

תאור: רשימת הפריטים שאין להם רשומה ב-operation, כלומר, אין להם מפעיל משויך, כדי שנוכל למצוא להם מפעיל

קוד:

```
SELECT
,i.ItemID
,i.Name AS ItemName
,c.Name AS CategoryName
,l.Address AS LocationAddress
FROM
Item i
JOIN Category c ON i.CategoryID = c.CategoryID
JOIN Location l ON i.phoneNumber = l.phoneNumber
WHERE
) i.ItemID NOT IN
SELECT DISTINCT ItemID
FROM Operation
(
ORDER BY
,i.Name
```

הרצה ומדידת זמנים:

The screenshot shows a SQL query execution window. The query is as follows:

```
SELECT
  i.ItemID,
  i.Name AS ItemName,
  c.Name AS CategoryName,
  l.Address AS LocationAddress
FROM
  Item i
  JOIN Category c ON i.CategoryID = c.CategoryID
  JOIN Location l ON i.phoneNumber = l.phoneNumber
WHERE
  i.ItemID NOT IN
  (
    SELECT DISTINCT ItemID
    FROM Operation
  )
ORDER BY
  i.Name
```

The results are displayed in a table with 4 columns: ITEMID, ITEMNAME, CATEGORYNAME, and LOCATIONADDRESS. There are 9 rows of data.

	ITEMID	ITEMNAME	CATEGORYNAME	LOCATIONADDRESS
1	461	AED Training Unit	EEG Machines (Electroencephalogram)	60 Hawn Blvd
2	216	AED Training Unit	EMG Machines (Electromyography)	50 Arlington
3	357	AED Training Unit	EKG Machines (Electrocardiogram)	4 Haggard Blvd
4	345	AED Training Unit	Nebulizers (Portable)	289 Tilda Ave
5	384	AED Training Unit	Blood Warmers	886 Huston Drive
6	309	Adhesive Bandages	Nebulizers (Portable)	82nd Street
7	497	Airway Kit	Pacemakers	86 Borgnine Street
8	336	Airway Kit	Infusion Pumps (Large Volume)	66 Gagnon Street
9	574	Alcohol Swabs	Blood Gas Analyzers	872 Marina Street

At the bottom of the window, the status bar shows: 8:6, 0:02, efroth@labdbwin, 9 rows selected in 2.075 seconds (more...)

שאלתה 2

תאור: רשימת הפריטים שצריכים תחזוקה, מסודרים לפי הסטטוס שלהם, והצגת תאריך התחזוקה האחרון שלהם

קוד:

```
SELECT
,i.ItemID
,i.Name AS ItemName
,i.Status
)
SELECT
(MAX(m.MaintenanceDate
FROM
Maintenance m
WHERE
m.ItemID = i.ItemID
AS LastMaintenanceDate (
FROM
Item i
WHERE
) i.Status IN
SELECT DISTINCT Status
FROM Item
WHERE Quantity < 10
(
ORDER BY
;LastMaintenanceDate DESC
```

הרצה ומדידת זמנים:

Query1: Select...

SQL Output Statistics

```

i.Name AS ItemName,
i.Status,
(
SELECT
MAX(m.MaintenanceDate)
FROM
Maintenance m
WHERE
m.ItemID = i.ItemID
) AS LastMaintenanceDate
FROM
Item i

```

	ITEMID	ITEMNAME	STATUS	LASTMAINTENANCEDATE
1	337	Stretcher	...	1
2	338	Nebulizer Mask	...	1
3	339	Pressure Infusion Bags	...	1
4	342	Cardiac Defibrillator Training Units	...	1
5	343	Portable Ventilator	...	1
6	344	Disposable Bedpans	...	1
7	347	First Aid Kit	...	1
8	354	Medical Feeding Pumps	...	1
9	356	Disinfectant Wipes	...	1

efroth@labdbwin 9 rows selected in 0.774 seconds (more...

שאלתה 3

תאור: רשימת פריטים שמעולם לא נתרמו והפרטים הקשורים אליהם, מה שיכול לעזור לארגון לקבוע אילו פריטים לא מנוצלים באמצעות תרומות ואולי להקצות אותם מחדש.

קוד:

```
SELECT
,i.ItemID
,i.Name AS ItemName
,c.Name AS CategoryName
,l.Address AS LocationAddress
FROM
Item i
JOIN
Category c ON i.CategoryID = c.CategoryID
JOIN
Location l ON i.phoneNumber = l.phoneNumber
WHERE
) i.ItemID NOT IN
SELECT DISTINCT d.ItemID
FROM Donation d
(
ORDER BY
,c.Name
,i.Name
```

הרצה ומדידת זמנים:

SQL Output Statistics				
<pre>JOIN Location l ON i.phoneNumber = l.phoneNumber WHERE i.ItemID NOT IN (SELECT DISTINCT d.ItemID FROM Donation d) ORDER BY c.Name, i.Name;</pre>				
	ITEMID	ITEMNAME	CATEGORYNAME	LOCATIONADDRESS
1	365	Ambu Bags	Blood Banking Equipment	63 Johnson Blvd
2	353	Blood Pressure Cuff	Blood Banking Equipment	74 Owen Drive
3	303	Electrocardiogram (ECG) Machines	Blood Banking Equipment	64 Duisburg Street
4	467	Enteral Feeding Tubes	Blood Banking Equipment	17 Seth Blvd
5	312	Enteral Feeding Tubes	Blood Banking Equipment	22 Manaus Ave
6	556	Hypodermic Needles	Blood Banking Equipment	32 Peter Road
7	539	Hypodermic Needles	Blood Banking Equipment	99 Tualatin Drive
8	559	Intravenous Cannulas	Blood Banking Equipment	626 Carlingford Drive
9	288	Intravenous Infusion Pumps	Blood Banking Equipment	49 Miami Drive

15:46 efroth@labdbwin 9 rows selected in 0.044 seconds (more...)

שאלתה 4

תאור: רשימת כל הפריטים שעברו הכי הרבה תיקונים במהלך השנה האחרונה, כולל שם הקטגוריה והכתובת של המיקום שבו נמצא הפריט. זה יעזור לזהות פריטים שדורשים תחזוקה מתמדת.

קוד:

```
SELECT
,i.ItemID
,i.Name AS ItemName
,c.Name AS CategoryName
,l.Address AS LocationAddress
COUNT(m.MaintenanceID) AS MaintenanceCount
FROM
Item i
JOIN
Category c ON i.CategoryID = c.CategoryID
JOIN
Location l ON i.phoneNumber = l.phoneNumber
JOIN
Maintenance m ON i.ItemID = m.ItemID
WHERE
(m.MaintenanceDate >= ADD_MONTHS(SYSDATE, -12)
GROUP BY
,i.ItemID
,i.Name
,c.Name
,l.Address
HAVING
COUNT(m.MaintenanceID) > 0
ORDER BY
,MaintenanceCount DESC
```

הרצה ומדידת זמנים:

Output Statistics					
m.MaintenanceDate >= ADD_MONTHS(SYSDATE, -12)					
GROUP BY					
i.ItemID,					
i.Name,					
c.Name,					
l.Address					
HAVING					
COUNT(m.MaintenanceID) > 0					
ORDER BY					
MaintenanceCount DESC;					

	ITEMID	ITEMNAME	CATEGORYNAME	LOCATIONADDRESS	MAINTEN#
1	69	Orthopedic Splinting Materials	Patient Transfer Shee	37 Lionel Ave	12
2	4	Oxygen Mask	EEG Machines (Electr	38 Tilly Drive	8
3	113	Orthopedic Implants	Blood Warmers	11 Stephanie Street	8
4	77	Intravenous Cannulas	EMG Machines (Elect	758 Bryan Street	8
5	128	Intravenous Administration Sets	Defibrillator Monitors	42nd Street	8
6	91	Medical Needles and Syringes	Enteral Feeding Pump	38 Tilly Drive	8
7	17	Glucose Meter	Blood Warmers	38 Tilly Drive	8
8	72	Hypodermic Needles	Spirometers	16 Tinsley Street	7
9	44	Blood Glucose Test Strips	Patient Lifts	28 Victoria Drive	7

22:11 efroth@labdbwin 9 rows selected in 0.035 seconds (more...)

שאלתה מחיקה 1

תאור: מחיקת תורמים בלי תרומות ב-5 שנים האחרונות ושאלן שום פריטים שהם תרמו.

קוד:

```
DELETE FROM Donor
) WHERE DonorID IN
SELECT d.DonorID
FROM Donor d
LEFT JOIN Donation do ON d.DonorID = do.DonorID AND do.DonationDate >=
(ADD_MONTHS(SYSDATE, -60)
LEFT JOIN Item i ON i.ItemID = do.ItemID
GROUP BY d.DonorID
HAVING COUNT(do.DonationID) = 0 AND COUNT(i.ItemID) = 0
);
```

לפני הרצה

390	67	RandyDickinson	...	n	For the memory of the family -Dickinson	...	AAC2uHAAGAABD4fABs
391	68	MikoFolds	...	n	For the memory of the family -Folds	...	AAC2uHAAGAABD4fABt
392	69	GladysWeiland	...	n	For the memory of the family -Weiland	...	AAC2uHAAGAABD4fABu
393	70	ShelbyBlanchett	...	y	For the memory of the family -Blanchett	...	AAC2uHAAGAABD4fABv
394	71	GeraldineBening	...	y	For the memory of the family -Bening	...	AAC2uHAAGAABD4fABw
395	72	TeaColman	...	n	For the memory of the family -Colman	...	AAC2uHAAGAABD4fABx
396	73	LouiseHartnett	...	n	For the memory of the family -Hartnett	...	AAC2uHAAGAABD4fABy
397	74	MiaCarlton	...	n	For the memory of the family -Carlton	...	AAC2uHAAGAABD4fABz
398	75	LariLaPaglia	...	y	For the memory of the family -LaPaglia	...	AAC2uHAAGAABD4fAB0
399	76	JoelySobieski	...	n	For the memory of the family -Sobieski	...	AAC2uHAAGAABD4fAB1
400	77	AndieRucker	...	y	For the memory of the family -Rucker	...	AAC2uHAAGAABD4fAB2
	1000	shlomo Y	...	n	For the memory of Yeudith	...	
	1001	shira Yosef	...	n	for the memory of Yosef family	...	

אחרי הרצה

390	67	RandyDickinson	...	n	For the memory of the family -Dickinson	...	
391	68	MikoFolds	...	n	For the memory of the family -Folds	...	
392	69	GladysWeiland	...	n	For the memory of the family -Weiland	...	
393	70	ShelbyBlanchett	...	y	For the memory of the family -Blanchett	...	
394	71	GeraldineBening	...	y	For the memory of the family -Bening	...	
395	72	TeaColman	...	n	For the memory of the family -Colman	...	
396	73	LouiseHartnett	...	n	For the memory of the family -Hartnett	...	
397	74	MiaCarlton	...	n	For the memory of the family -Carlton	...	
398	75	LariLaPaglia	...	y	For the memory of the family -LaPaglia	...	
399	76	JoelySobieski	...	n	For the memory of the family -Sobieski	...	
400	77	AndieRucker	...	y	For the memory of the family -Rucker	...	

efroth@labdbwin 400 rows selected in 0.249 seconds

שאלתה מחיקה 2

תאור: מחיקת מקומות שאין בהם מוצרים ולא נתרמו להם תרומות בשנתיים האחרונות.

קוד:

Delete Locations That Have No Items and No Donations in the Last Two Years--

DELETE FROM Location

) WHERE phoneNumber IN

SELECT l.phoneNumber

FROM Location l

LEFT JOIN Item i ON l.phoneNumber = i.phoneNumber

LEFT JOIN Donation d ON i.itemID = d.itemID AND d.DonationDate >= ADD_MONTHS(SYSDATE, (-24

GROUP BY l.phoneNumber

HAVING COUNT(i.itemID) = 0 AND COUNT(d.DonationID) = 0

;

לפני הרצה

5	999999098	89 Chalee Street	permission from organization head	AAC2wJAAGAABD4LAAG
6	999999099	51 Heath Road	permission from organization head	AAC2wJAAGAABD4LAAH
7	999999100	75 Wetzlar	permission from manager	AAC2wJAAGAABD4LAAI
8	999999101	732 Cozier Road	permission from security	AAC2wJAAGAABD4LAAJ
9	999999102	93 Sao roque Street	permission from security	AAC2wJAAGAABD4LAAK
10	999999103	37 Lionel Ave	permission from manager	AAC2wJAAGAABD4LAAI
11	999999104	60 Tambor Road	permission from manager	AAC2wJAAGAABD4LAAH
12	999999106	82 Van Helden Drive	permission from security	AAC2wJAAGAABD4LAAO
13	999999107	4 Haggard Blvd	permission from security	AAC2wJAAGAABD4LAAP
14	999999108	5 Porto alegre Road	permission from security	AAC2wJAAGAABD4LAAQ
15	999999109	30 Schaumburg Blvd	permission from security	AAC2wJAAGAABD4LAAR
16	999999110	851 Avalon Road	permission from security	AAC2wJAAGAABD4LAAS
	999999900	Yosef 50	permission from security	
	999999901	Moshe 30	permission from security	

אחרי הרצה

283	999999076	16 Crutrup Drive	permission from chief security officer	
284	999999076	56 Longueuil Road	permission from chief security officer	
285	999999078	883 Oshkosh Road	permission from organization head	
286	999999080	25 Worrell Blvd	permission from organization head	
287	999999081	80 Hughes Road	permission from chief security officer	
288	999999082	13 George Drive	permission from chief security officer	
289	999999083	50 Santana	permission from organization head	
290	999999085	52 Key Biscayne Drive	permission from organization head	
291	999999087	13rd Street	permission from chief security officer	
292	999999088	11 Stephanie Street	permission from organization head	
293	999999089	7 Terence Drive	permission from chief security officer	
294	999999090	80 Grier Drive	permission from chief security officer	
295	999999091	34 Coltrane Drive	permission from chief security officer	

שאלתה עדכון 1

תאור: מציאת תורמים שלא תרמו ב-5 שנים אחרונות ושינוים ללא פעילים.

קוד:

```
UPDATE Donor
SET isActive = 'n'
) WHERE DonorID IN
SELECT d.DonorID
FROM Donor d
LEFT JOIN Donation do ON d.DonorID = do.DonorID AND do.DonationDate >=
(ADD_MONTHS(SYSDATE, -60)
GROUP BY d.DonorID
HAVING COUNT(do.DonationID) = 0
);
```

לפני הרצה

	DONORID	NAME	ISACTIVE	DESIGNATION
1	1010	LiamRhodes	y	Rhodes
2	95	MarlonCharles	n	For the memory of the family -Charles
3	96	MarleyWahlberg	n	For the memory of the family -Wahlberg
4	99	CeliaBoyle	y	For the memory of the family -Boyle
5	107	MekhiCobbs	n	For the memory of the family -Cobbs
6	110	BalthazarHong	n	For the memory of the family -Hong
7	117	RoscoLi	n	For the memory of the family -Li
8	139	FrancesHatchet	y	For the memory of the family -Hatchet
9	161	TaylorChandler	y	For the memory of the family -Chandler
10	169	JohnetteMetcalf	y	For the memory of the family -Metcalf
11	179	AzucarColtrane	n	For the memory of the family -Coltrane
12	181	CheechEngland	y	For the memory of the family -England

אחרי הרצה

```
Query1Update.sql x select * from donor;
SQL Output Statistics
--Find the donors that don't have a donation in the last five years and change
-- them isActive field to no
UPDATE Donor
SET isActive = 'n'
WHERE DonorID IN (
  SELECT d.DonorID
  FROM Donor d
  LEFT JOIN Donation do ON d.DonorID = do.DonorID AND do.DonationDate >= ADD_MONTHS(SYSD,
  GROUP BY d.DonorID
  HAVING COUNT(do.DonationID) = 0
);
|
```

efroth@labdbwin 5 rows updated in 0.001 seconds

שאלתה עדכון 2

תאור: עדכון כמות הפריטים לפי 2 במקרה של רמת חירום גבוהה וכמות קטנה מ-100.

קוד:

```
UPDATE Item
SET Quantity = Quantity * 2
WHERE ItemID IN (SELECT ItemID FROM (SELECT i.ItemID
FROM Item i
JOIN Category c ON i.CategoryID = c.CategoryID
;((WHERE c.EmergencyLevel >= 5 and quantity<100
```

לפני הרצה

	ITEMID	NAME	DESCRIPTI	QUANTITY	STATUS	CATEGORYID	PHONENUMBER
111	64	Disinfectant Wipes	Wipes satu	284	0	415	999999
112	65	Diagnostic Kits	Kits contai	70	1	416	999999
113	66	Portable Ultrasound Machines	Handheld	292	0	417	999999
114	67	Cardiac Defibrillator Training Units	Training d	72	1	418	999999
115	68	Nasogastric Tubes	Tubes inse	75	0	419	999999
116	69	Orthopedic Splinting Materials	Materials u	74	1	420	999999
117	70	Laryngeal Mask Airways	Devices ins	308	0	421	999999
118	71	Ambu Bags	Manual res	76	1	422	999999
119	72	Hypodermic Needles	Needles us	79	0	423	999999
120	76	Medical Tourniquets	Tournique	332	0	403	999999
121	77	Intravenous Cannulas	Thin tubes	328	1	404	999999
122	78	Tracheostomy Tubes	Tubes inse	340	0	405	999999
123	79	Portable Oxygen Concentrators	Devices th	84	1	406	999999
124	80	Electrocardiogram (ECG) Machines	Devices us	348	0	407	999999
125	81	Medical Scales	Scales user	344	1	408	999999
126	82	Pediatric Airway Management Devices	Devices sp	356	0	409	999999

אחרי הרצה

	ITEMID	NAME	DESCI	QUANTITY	STATUS	CATEGORYID	PHONENUMBER
09	62	IV Fluid Warmers	Devic	132	0	413	999999100
10	63	Rescue Breathing Masks	Mask	68	1	414	999999200
11	64	Disinfectant Wipes	Wipes	284	0	415	999999300
12	65	Diagnostic Kits	Kits c	140	1	416	999999301
13	66	Portable Ultrasound Machines	Hand	292	0	417	999999201
14	67	Cardiac Defibrillator Training Units	Traini	144	1	418	999999202
15	68	Nasogastric Tubes	Tubes	75	0	419	999999101
16	69	Orthopedic Splinting Materials	Mater	74	1	420	999999103
17	70	Laryngeal Mask Airways	Devic	308	0	421	999999345
18	71	Ambu Bags	Manu	76	1	422	999999001
19	72	Hypodermic Needles	Needl	158	0	423	999999111
20	76	Medical Tourniquets	Tourr	332	0	403	999999002
21	77	Intravenous Cannulas	Thin t	328	1	404	999999003
22	78	Tracheostomy Tubes	Tubes	340	0	405	999999006
23	79	Portable Oxygen Concentrators	Devic	168	1	406	999999007
24	80	Electrocardiogram (ECG) Machines	Devic	348	0	407	999999011

שאלתה עם פרמטרים 1

תאור: רשימת כל הפריטים יחד עם שם הקטגוריה וכתובת המיקום שלהם, מסודרים לפי רמת חירום בקטגוריה ולאחר מכן לפי שם הפריט כדי למצוא את הפריטים עם רמת חירום גבוהה וכמות נמוכה מ-הכמות שנחליט על מנת להזמין פריטים חדשים

קוד:

```
SELECT
,ItemID
,ItemName
,CategoryName
,EmergencyLevel
,Quantity
LocationAddress
) FROM
SELECT
,i.ItemID
,i.Name AS ItemName
,c.Name AS CategoryName
,c.EmergencyLevel
,i.Quantity
l.Address AS LocationAddress
FROM
Item i
JOIN Category c ON i.CategoryID = c.CategoryID
JOIN Location l ON i.phoneNumber = l.phoneNumber
WHERE
c.EmergencyLevel > 7
AND i.Quantity < 30) HighEmergencyItems
ORDER BY
,EmergencyLevel DESC
,ItemName
```

הרצה

Query1WithParam.sql

SQL Output Statistics

```
i.Name AS ItemName,
c.Name AS CategoryName,
c.EmergencyLevel,
i.Quantity,
l.Address AS LocationAddress
FROM
Item i
JOIN Category c ON i.CategoryID = c.CategoryID
JOIN Location l ON i.phoneNumber = l.phoneNumber
WHERE
c.EmergencyLevel > 7
AND i.Quantity < 30) HighEmergencyItems
ORDER BY
EmergencyLevel DESC, |
ItemName;
```

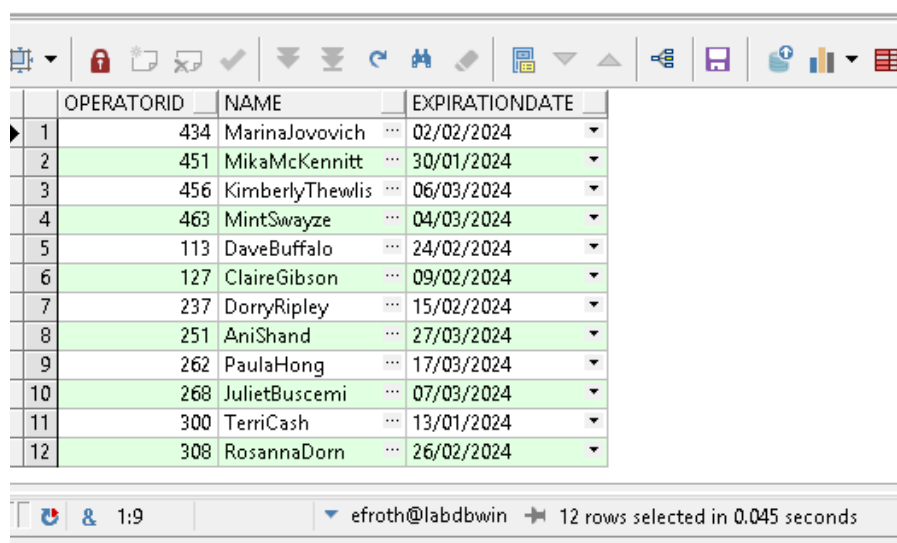
ITEMID ITEMNAME CATEGORYNAME EMERGENCYLEVEL QUANTITY LOCATIONADDRESS

28:24 efroth@labdbwin 0 rows selected in 0.034 seconds

שאלתה עם פרמטרים 2
 תאור: רשימת מפעילים לפי תאריך תפוגה- תאריך סיום הרשיון
 קוד:

```
select operatorid, name, expirationDate FROM Operator o
WHERE
(o.expirationDate<=ADD_MONTHS(SYSDATE, -2 )
```

הרצה



	OPERATORID	NAME	EXPIRATIONDATE
1	434	MarinaJovovich	02/02/2024
2	451	MikaMcKennitt	30/01/2024
3	456	KimberlyThewlis	06/03/2024
4	463	MintSwayze	04/03/2024
5	113	DaveBuffalo	24/02/2024
6	127	ClaireGibson	09/02/2024
7	237	DorryRipley	15/02/2024
8	251	AniShand	27/03/2024
9	262	PaulaHong	17/03/2024
10	268	JulietBuscemi	07/03/2024
11	300	TerriCash	13/01/2024
12	308	RosannaDorn	26/02/2024

efroth@labdbwin 12 rows selected in 0.045 seconds

שאלתה עם פרמטרים 3

תאור: מציאת מקום לפי מספר טלפון וכתובת, והחזרת כמות הפריטים שבו
קוד:

```
SELECT
,l.Address AS LocationAddress
COUNT(i.ItemID) AS ItemCount
FROM
Location l
LEFT JOIN
Item i ON l.phonenumber = i.phonenumber
WHERE
'l.address = '32 Peter Road
'AND l.phoneNumber = '999999008
GROUP BY
l.Address
ORDER BY
;ItemCount DESC
```

הרצה

```
SELECT
    l.Address AS LocationAddress,
    COUNT(i.ItemID) AS ItemCount
FROM
    Location l
LEFT JOIN
    Item i ON l.phonenumber = i.phonenumber
WHERE
    l.address = '32 Peter Road'
    AND l.phoneNumber = '999999008'
GROUP BY
```

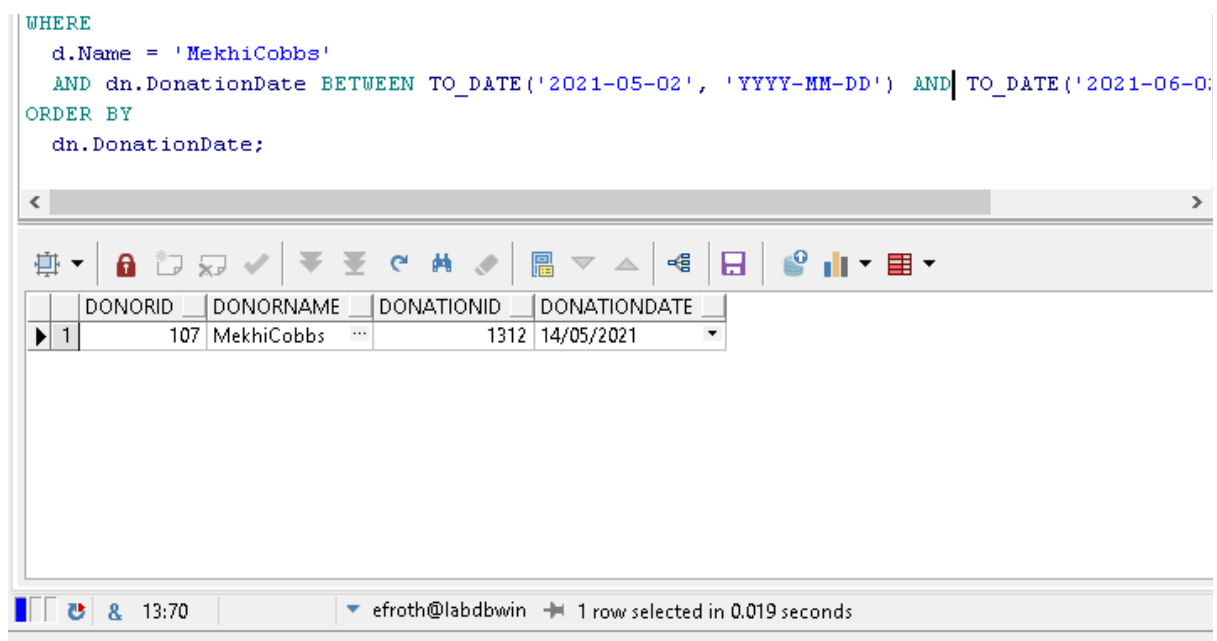
	LOCATIONADDRESS	ITEMCOUNT
1	32 Peter Road	4

efroth@labdbwin 1 row selected in 0.023 seconds

שאלתה עם פרמטרים 4
 תאור: מציאת פרטי תרומות לפי שם תורם וטווח תאריכים
 קוד:

```
SELECT
,d.DonorID
,d.Name AS DonorName
,dn.DonationID
,dn.DonationDate
FROM
Donor d
JOIN Donation dn ON d.DonorID = dn.DonorID
WHERE
'd.Name = 'MekhiCobbs'
AND dn.DonationDate BETWEEN TO_DATE('2021-05-02', 'YYYY-MM-DD') AND
('TO_DATE('2021-06-02', 'YYYY-MM-DD
ORDER BY
;dn.DonationDate
```

הרצה



The screenshot shows a SQL query execution window. The query is as follows:

```
WHERE
  d.Name = 'MekhiCobbs'
  AND dn.DonationDate BETWEEN TO_DATE('2021-05-02', 'YYYY-MM-DD') AND TO_DATE('2021-06-02', 'YYYY-MM-DD')
ORDER BY
  dn.DonationDate;
```

The results table shows one row:

	DONORID	DONORNAME	DONATIONID	DONATIONDATE
1	107	MekhiCobbs	1312	14/05/2021

The status bar at the bottom indicates: 13:70, efroth@labdbwin, 1 row selected in 0.019 seconds.

אילוצים

אילוח 1- בדיקה שלכל החפצים יש כמות גדולה מ-0:

ALTER TABLE Item

;ADD CONSTRAINT CK_Item_Quantity CHECK (Quantity >= 0

דוגמת הרצה:

The screenshot shows the Oracle SQL Developer interface for the ITEM table. The table structure is as follows:

Name	Type	Size	Data
ITEMID	NUMBER		Sequence(600)
NAME	VARCHAR2	100	'hi'
DESCRIPTION	VARCHAR2	100	'ho'
QUANTITY	NUMBER		Sequence(-1)
STATUS	NUMBER		Sequence(1)
CATEGORYID	NUMBER		Sequence(418)
PHONENUMBER	NUMBER	10	'999999089'

An error dialog box is displayed with the message: "ORA-02290: check constraint (EFROTH.CK_ITEM_QUANTITY) violated". The dialog has buttons for OK, Cancel, and Help.

אילוח 2- קביעת ערך ברירת מחדל של שדה תאריך להיום:

ALTER TABLE Donation

ADD CONSTRAINT Default_date_donation

;(modify donationDate Date Default (sysdate

דוגמת הרצה:

The screenshot shows the Oracle SQL Developer interface for the DONATION table. The table structure is as follows:

Name	Type	Size	Data
DONATIONID	NUMBER		Sequence(101)
DONATIONDATE	DATE		
ITEMID	NUMBER		'19'
DONORID	NUMBER		'199'

Below the table structure, a data grid is shown with the following data:

Row	ITEMID	DONATIONDATE	DONORID
11	90	16/06/2024 05:19:44	19
12	91	16/06/2024 05:19:44	19
13	92	16/06/2024 05:19:44	19
14	101	16/06/2024 05:20:06	19
15	1312	14/05/2021	128

אילוח 3-אילוח שדה שם בקטגוריה להיות לא ריק קוד:

```
ALTER TABLE category
ADD CONSTRAINT category_name_not_null
;modify name VARCHAR2(100) not null
```

דוגמת הרצה

The screenshot shows the Oracle SQL Developer interface. At the top, there are dropdown menus for 'Owner' (EFROTH) and 'Table' (CATEGORY), and a text box for 'Number of records' (1). Below this is a table structure view for the 'CATEGORY' table:

Name	Type	Size	Data
CATEGORYID	NUMBER	10	Sequence(418)
NAME	VARCHAR2	100	
EMERGENCYLEVEL	NUMBER		'8'

An error dialog box is displayed in the foreground with the title 'Error'. It contains a red 'X' icon and the message: 'ORA-01400: cannot insert NULL into ("EFROTH"."CATEGORY"."NAME")'. At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

שינויים שבצענו בבסיס הנתונים:

הוספנו שדה כמות לטבלה מיקום:

```
;ALTER TABLE Location ADD Capacity INT
```

הוספנו שדה מיקום לטבלה מפעיל:

```
;ALTER TABLE Operator ADD adress INT
```

פרוצדורות

פרוצדורה 1-Distribute Items

הסבר:

הליך זה מאפשר אוטומציה של חלוקת פריטים שנתרמו למיקומים שונים בהתבסס על כמותם ועל קיבולת המיקומים. הוא מבטיח הקצאה יעילה על ידי מתן עדיפות למיקומים עם יותר מקום ועוקב אחר תהליך החלוקה בטבלה ייעודית.

קוד:

```
CREATE OR REPLACE PROCEDURE distribute_items
IS
CURSOR item_cursor IS
SELECT ItemID, Quantity
FROM Item
;WHERE Quantity > 0

) TYPE location_rec IS RECORD
,phoneNumber Location.phoneNumber%TYPE
Capacity Location.Capacity%TYPE
;
;TYPE location_tab IS TABLE OF location_rec
;location_data location_tab
BEGIN
update item
set quantity=itemID
;where itemID>300
Fetch location data into the PL/SQL table --
SELECT phoneNumber, Capacity
BULK COLLECT INTO location_data
FROM Location
;WHERE Capacity > 0

FOR item_record IN item_cursor LOOP
FOR i IN 1..location_data.COUNT LOOP
IF item_record.Quantity > 0 AND location_data(i).Capacity > 0 THEN
DECLARE
;distribute_qty INT
BEGIN
;(distribute_qty := LEAST(item_record.Quantity, location_data(i).Capacity

UPDATE Item
SET Quantity = Quantity - distribute_qty
;WHERE ItemID = item_record.ItemID

UPDATE Location
SET Capacity = Capacity - distribute_qty
;WHERE phoneNumber = location_data(i).phoneNumber

Update the PL/SQL table to reflect the change in capacity --
;location_data(i).Capacity := location_data(i).Capacity - distribute_qty

Update the item_record quantity --
```

```

;item_record.Quantity := item_record.Quantity - distribute_qty
EXCEPTION
WHEN OTHERS THEN
DBMS_OUTPUT.PUT_LINE('Error distributing item ID ' || item_record.ItemID || ' to
;(location ' || location_data(i).phoneNumber || ': ' || SQLERRM
;END
;END IF
;END LOOP
;END LOOP

;COMMIT
EXCEPTION
WHEN OTHERS THEN
;(DBMS_OUTPUT.PUT_LINE('An error occurred during distribution: ' || SQLERRM
;ROLLBACK
;END

```

פרוצדורת עזר-calculate_and_update_location_capacity

הסבר:

עוברת על כל המיקומים, מחשבת את סך כל כמות הפריטים עבור כל אחד מהם על סמך טבלת Item, ומעדכנת את שדה ה-Capacity בטבלת Location בהתאם. היא גם מציגה הודעות סטטוס ומטפלת בשגיאות.

קוד:

This procedure calculate the capacity of a location by the items that belongs to this location--

```
CREATE OR REPLACE PROCEDURE update_location_capacity
```

```
IS
```

```
Cursor to select all locations --
```

```
CURSOR location_cursor IS
```

```
SELECT phoneNumber
```

```
;FROM Location
```

```
Variable to store total quantity of items for a location --
```

```
;v_total_quantity INT
```

```
BEGIN
```

```
Loop through each location --
```

```
FOR loc_rec IN location_cursor LOOP
```

```
Calculate total quantity of items for the current location --
```

```
(SELECT NVL(SUM(Quantity), 0
```

```
INTO v_total_quantity
```

```
FROM Item
```

```
;WHERE phoneNumber = loc_rec.phoneNumber
```

```
Update the Capacity field in the Location table --
```

```
UPDATE Location
```

```
SET Capacity = v_total_quantity
```

```
;WHERE phoneNumber = loc_rec.phoneNumber
```

```
Output the result --
```

```
;(DBMS_OUTPUT.PUT_LINE('Location Phone Number: ' || loc_rec.phoneNumber--
```

```
;(DBMS_OUTPUT.PUT_LINE(' - Total Items: ' || v_total_quantity--
```

```
;END LOOP
```

```
Commit the transaction --
```

```
;COMMIT
```

```
EXCEPTION
```

```
WHEN OTHERS THEN
```

```
;(DBMS_OUTPUT.PUT_LINE('An error occurred
```

```
;ROLLBACK
```

```
;END
```

תוכנית ראשית**הסבר:**

קטע הקוד הזה מנהל את תהליך חלוקת הפריטים. הוא קורא לפרוצדורות נפרדות כדי לחשב ולעדכן את קיבולת המיקום ולבצע את החלוקה עצמה. הוא גם מטפל בשגיאות ומציג הודעות סטטוס.

קוד:

```
CREATE OR REPLACE PROCEDURE Main_distribution
IS
DECLARE--
;v_total_quantity NUMBER

BEGIN
Call the procedure to calculate and update location capacity --
;()update_location_capacity

;(.DBMS_OUTPUT.PUT_LINE('Location capacity updated successfully

Call the procedure to distribute items based on updated capacity --
;()distribute_items

;(.DBMS_OUTPUT.PUT_LINE('Items distributed successfully

EXCEPTION
WHEN OTHERS THEN
;(.DBMS_OUTPUT.PUT_LINE('An error occurred: ' || SQLERRM
;END
```

פרוצדורה 2 :add_new_maintenance_for_donor**הסבר:**

הפרוצדורה הזו מוסיפה רישומי תחזוקה חדשים עבור כל הפריטים שנתרמו על ידי תורם ספציפי.

קוד:

```

CREATE OR REPLACE PROCEDURE add_new_maintenance_for_donor(donor_id IN NUMBER,
(maintenance_date IN DATE
IS
Declare a cursor to select all items donated by the given donor --
CURSOR item_cursor IS
SELECT i.ItemID
FROM Donation d
JOIN Item i ON d.ItemID = i.ItemID
;WHERE d.DonorID = donor_id
;id number
Variable to store the current item ID from the cursor --
;v_item_id Item.ItemID%TYPE
BEGIN
Open the cursor --
;OPEN item_cursor
Loop through each item donated by the donor --
LOOP
;FETCH item_cursor INTO v_item_id
;EXIT WHEN item_cursor%NOTFOUND
(select max(MAINTENANCEid
into id
;from maintenance
;id:=id+1

Insert a new maintenance record for the current item --
(INSERT INTO Maintenance (maintenanceID,ItemID, MaintenanceDate,Description
;('VALUES (id,v_item_id, maintenance_date,'donor asked
;END LOOP

Close the cursor --
;CLOSE item_cursor

Commit the transaction --
;COMMIT

DBMS_OUTPUT.PUT_LINE('New maintenance records added successfully for donor ID: ' ||
;donor_id
EXCEPTION
WHEN OTHERS THEN
Handle any other exceptions that may occur --
;(DBMS_OUTPUT.PUT_LINE('An error occurred: ' || SQLERRM
;ROLLBACK
;END

```

תכנית ראשיתהסבר:**סיכום התכנית הראשית:**

התכנית הראשית הזו מפעילה את הפרוצדורה add_new_maintenance_for_donor עבור תורם ספציפי.

קוד:

```

)CREATE OR REPLACE PROCEDURE Main_new_maintenance( date_1 IN DATE
IS
Main program for the procedure-Add New Maintenance Record for Donor's Items--
DECLARE--
;v_donor_id NUMBER
;v_maintenance_date DATE
BEGIN
' :הכנס את שמך: ' ACCEPT user_name PROMPT --
;v_donor_id := 95
Set the maintenance date to today's date --
;v_maintenance_date := date_1
Call the procedure to add new maintenance records for the donor's items --
;(add_new_maintenance_for_donor(v_donor_id,v_Maintenance_Date

DBMS_OUTPUT.PUT_LINE('New maintenance records added successfully for donor ID: ' || --
;(v_donor_id
EXCEPTION
WHEN OTHERS THEN
;(DBMS_OUTPUT.PUT_LINE('An error occurred: ' || SQLERRM
;END

```


פונקציה 1

הסבר:

הפונקציה הזאת מחפשת את המפעיל בעל תאריך התפוגה המאוחר ביותר עבור כתובת מסוימת כדי לשלוח אותו לארוע.

קוד:

```
(CREATE OR REPLACE FUNCTION find_operator_by_address(p_address IN VARCHAR2
RETURN NUMBER
IS
;v_operator_id NUMBER
;('v_max_expiration_date DATE := TO_DATE('1900-01-01', 'YYYY-MM-DD
;v_temp_operator_id NUMBER
;('v_temp_expiration_date DATE := TO_DATE('1900-01-01', 'YYYY-MM-DD

CURSOR operators_cursor IS
SELECT o.OperatorID, o.ExpirationDate
FROM Operator o
;WHERE o.Adress = p_address
BEGIN
Open the cursor to find the operator with the farthest expiration date --
;OPEN operators_cursor

LOOP
;FETCH operators_cursor INTO v_temp_operator_id, v_temp_expiration_date
;EXIT WHEN operators_cursor%NOTFOUND

IF v_temp_expiration_date > v_max_expiration_date THEN
;v_max_expiration_date := v_temp_expiration_date
;v_operator_id := v_temp_operator_id
;END IF
;END LOOP

;CLOSE operators_cursor

;RETURN v_operator_id
EXCEPTION
WHEN OTHERS THEN
;(DBMS_OUTPUT.PUT_LINE('An error occurred: ' || SQLERRM
;RETURN NULL
;END
```

פרוצדורת עזר:

הסבר:

הפרוצדורה הזו מוסיפה רישום חדש לטבלת Operation בבסיס הנתונים.

קוד:

```
CREATE OR REPLACE PROCEDURE add_operation(p_operator_id IN NUMBER, p_item_id IN
NUMBER
IS
BEGIN
  (INSERT INTO Operation ( ItemID,OperatorID
;VALUES ( p_item_id,p_operator_id

;COMMIT
;END add_operation
```

תכנית ראשית**הסבר:**

התכנית הראשית הזו מטפלת בהוספת פעולה חדשה לטבלאת Operation במערכת ניהול בסיס הנתונים. היא מחפשת את המפעיל המתאים על סמך כתובת ומעדכנת את הטבלה בהתאם.

קוד:

```
CREATE OR REPLACE PROCEDURE Main_fund_operator
IS
DECLARE--
;v_address VARCHAR2(255) := '36 Josh Ave
v_item_id NUMBER := 218; -- This should be the ID of the item associated with the new operation
;v_operator_id NUMBER
BEGIN
Call the function to find the operator by address --
;(v_operator_id := find_operator_by_address(v_address

IF v_operator_id IS NOT NULL THEN
Call the procedure to add a new operation --
;(add_operation(p_operator_id => v_operator_id, p_item_id => v_item_id
;('DBMS_OUTPUT.PUT_LINE('Operation added successfully
ELSE
;('DBMS_OUTPUT.PUT_LINE('No suitable operator found for the given address
;END IF
EXCEPTION
WHEN OTHERS THEN
;(DBMS_OUTPUT.PUT_LINE('An error occurred: ' || SQLERRM
;END
```

פונקציה 2 Calculate_avg_maintenance_interval

הסבר:

פונקציה זו מחשבת את המרווח הממוצע (בימים) בין תאריכי תחזוקה עבור פריט נתון. היא יכולה לסייע בזיהוי פריטים הדורשים תחזוקה תכופה, מה שעשוי לעזור למנהל להחליט האם להשליך אותם.

קוד:

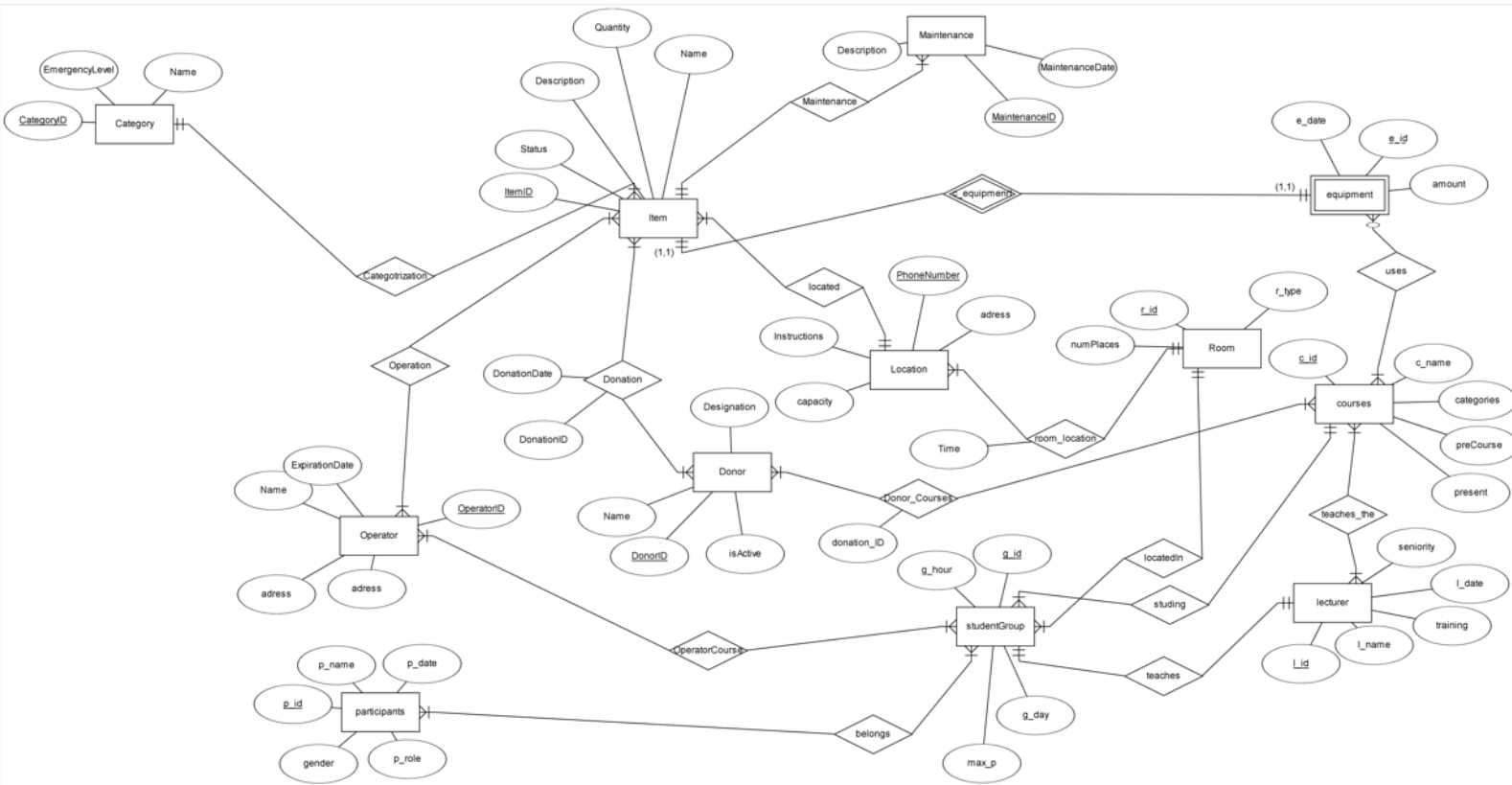
```
(CREATE OR REPLACE FUNCTION avg_maintenance_interval(item_id IN INT
RETURN NUMBER
IS
;TYPE date_tab IS TABLE OF DATE
;maintenance_dates date_tab
;avg_interval NUMBER
BEGIN
SELECT MaintenanceDate BULK COLLECT INTO maintenance_dates
FROM Maintenance
WHERE ItemID = item_id
;ORDER BY MaintenanceDate

IF maintenance_dates.COUNT < 2 THEN
RETURN NULL; -- Not enough data to calculate average
;END IF

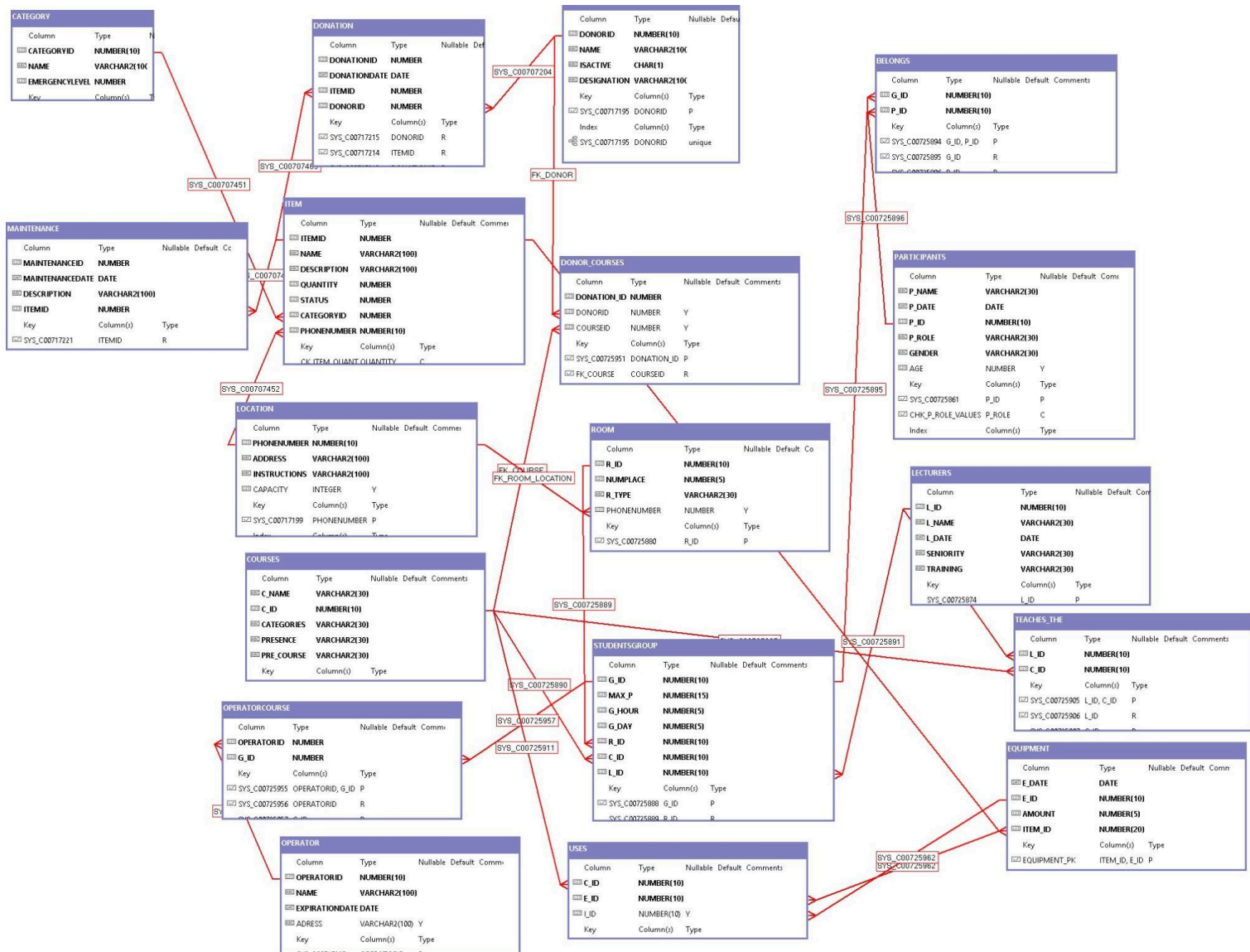
;avg_interval := 0
FOR i IN 2..maintenance_dates.COUNT LOOP
;((avg_interval := avg_interval + (maintenance_dates(i) - maintenance_dates(i-1
;END LOOP

;(RETURN avg_interval / (maintenance_dates.COUNT - 1
EXCEPTION
WHEN NO_DATA_FOUND THEN
;RETURN NULL
WHEN OTHERS THEN
;RETURN -1
;END
```

New ERD



New DSD



אינטגרציה- הסבר

תחילה הפכנו את ישות ציוד לישות חלשה כלפי ישות חפץ, זאת אודות לכך שכל ציוד נדרש לפרטי החפץ עם תוספות משלו שלא קשורות.

```
ALTER TABLE Equipment
;ADD ItemID NUMBER
ALTER TABLE Equipment
;DROP COLUMN e_name
Step 2: Add foreign key constraint to Equipment table referencing Item table --
ALTER TABLE Equipment
ADD CONSTRAINT fk_equipment_item
(FOREIGN KEY (Item_ID
;(REFERENCES Item(ItemID
```

```
Step 3: Drop existing primary key constraint --
ALTER TABLE uses
;DROP CONSTRAINT SYS_C00725912
```

```
--Delete existing constraints
ALTER TABLE uses
DROP CONSTRAINT SYS_C00725910
```

```
ALTER TABLE Equipment
;DROP CONSTRAINT SYS_C00725901
```

```
Step 4: Add new primary key constraint that includes ItemID and e_id --
ALTER TABLE Equipment
ADD CONSTRAINT Equipment_pk
;(PRIMARY KEY (Item_ID, e_id
```

שנית הוספנו קשר של רבים לרבים בין קורס לתורם, כך שכל תורם יוכל לתרום למספר קורסים שירצה, וכל קורס יוכל להתרם ע"י כמה תורמים. בשביל כך הוספנו טבלה שתייצג את הקשר ביניהם.

```
Step 1: Create the junction table --
) CREATE TABLE Donor_Courses
,donation_id NUMBER PRIMARY KEY
,DonorID NUMBER
,CourseID NUMBER
,(CONSTRAINT fk_donor FOREIGN KEY (DonorID) REFERENCES Donor(DonorID
(CONSTRAINT fk_course FOREIGN KEY (CourseID) REFERENCES Courses(c_id
;
Step 2: Add foreign key constraint to Donor_Courses table referencing Donor table --
ALTER TABLE Donor_Courses
ADD CONSTRAINT fk_donor_courses_donor
(FOREIGN KEY (DonorID
;(REFERENCES Donor(DonorID
Step 3: Add foreign key constraint to Donor_Courses table referencing Courses table --
ALTER TABLE Donor_Courses
ADD CONSTRAINT fk_donor_courses_courses
(FOREIGN KEY (CourseID
;(REFERENCES Courses(c_id
```

לאחמכ הוספנו לכל חדר שיוך למיקום, כלומר לכל חדר יש מיקום אחד, ולכל מיקום, מס חדרים.

Dropping the r_location column from Room table --

```
ALTER TABLE Room
```

```
;DROP COLUMN r_location
```

```
ALTER TABLE room
```

```
;ADD PHONEnUMBER NUMBER
```

Adding the foreign key constraint to link room to Location --

```
ALTER TABLE room
```

```
ADD CONSTRAINT fk_room_location
```

```
;(FOREIGN KEY (PHONEnUMBER) REFERENCES Location(PHONEnUMBER
```

ולבסוף הוספנו למפעיל אפשרות להיות חלק מקבוצה של קורס, כך שהוספנו קשר של רבים לרבים בין מפעיל לישות קבוצה של קורס, לשם כך הוספנו טבלה מקשרת.

Create the OperatorCourse table --

```
) CREATE TABLE OperatorCourse
```

```
,OperatorID NUMBER
```

```
,g_id NUMBER
```

```
,(PRIMARY KEY (OperatorID, g_id
```

```
,(FOREIGN KEY (OperatorID) REFERENCES Operator(OperatorID
```

```
(FOREIGN KEY (g_id) REFERENCES studentsGroup(g_id
```

```
);
```


מבטים

מבט 1-תאור קורסים שנערכים בחדרים עם קיבולת של יותר מ-20 מקומות.

```
CREATE VIEW CourseRoomLecturerDetails AS
SELECT
,C.C_name AS CourseName
,C.categories AS CourseCategory
,C.presence AS CoursePresence
,R.r_id AS RoomID
,R.numplace AS RoomCapacity
,R.r_type AS RoomType
,L.l_name AS LecturerName
,L.seniority AS LecturerSeniority
,L.training AS LecturerTraining
FROM
Courses C
JOIN StudentsGroup S ON C.c_id = S.c_id
JOIN Room R ON S.r_id = R.r_id
JOIN teaches_the T ON C.c_id = T.c_id
JOIN lecturers L ON T.l_id = L.l_id
WHERE
;R.numplace >= 20
```

	COURSENAME	COUR	COURSE	Rc	Rc	ROOMTYPE	LECTURERNAME	LEC	LECTURERTRAINING
1	Health and Safety	Medic	Require	126	78	Seminar Room	Saul Mortensen	3	Advanced Life Support
2	Health and Safety	Medic	Require	126	78	Seminar Room	Gladys McDowell	26	Advanced Life Support
3	Health and Safety	Medic	Require	126	78	Seminar Room	Benjamin Hynde	23	Advanced Life Support
4	Health and Safety	Medic	Require	126	78	Seminar Room	Emerson Mann	17	Emergency Response
5	Health and Safety	Medic	Require	68	97	Lecture Hall	Saul Mortensen	3	Advanced Life Support
6	Health and Safety	Medic	Require	68	97	Lecture Hall	Gladys McDowell	26	Advanced Life Support
7	Health and Safety	Medic	Require	68	97	Lecture Hall	Benjamin Hynde	23	Advanced Life Support
8	Health and Safety	Medic	Require	68	97	Lecture Hall	Emerson Mann	17	Emergency Response
9	Health and Safety	Medic	Require	368	86	Training Centre	Saul Mortensen	3	Advanced Life Support
10	Health and Safety	Medic	Require	368	86	Training Centre	Gladys McDowell	26	Advanced Life Support

מבט 2:

כל הפריטים עם שמות המפעילים והפרטים שלהם.

```
CREATE VIEW ItemOperatorV AS
SELECT
,i.ItemID
,i.Name AS ItemName
,i.Description AS ItemDescription
,i.Quantity
,i.Status
,o.OperatorID
,o.Name AS OperatorName
,o.ExpirationDate
FROM
Item i
JOIN
Operation op ON i.ItemID = op.ItemID
JOIN
;Operator o ON op.OperatorID = o.OperatorID
```

Create itemoperatorv

Select itemoperatorv

1 of 402 efroth@labdbwin [00:36:44] 402 rows selected in 0.493 seconds

שאלות על מבט 1

שאלתה 1- מספר הקורסים והכיתות עבור כל דרגת סניוריות:

```
,SELECT C.LecturerSeniority
,COUNT(DISTINCT C.CourseName) AS NumberOfCourses
COUNT(DISTINCT R.r_id) AS NumberOfRooms
FROM CourseRoomLecturerDetails C
JOIN lecturers L ON C.LecturerName = L.l_name
JOIN Room R ON C.RoomID = R.r_id
GROUP BY C.LecturerSeniority
;ORDER BY C.LecturerSeniority
```

		LECTURERSENIORITY	NUMBEROFCOURSES	NUMBEROFRooms
1	1	...	7	17
2	10	...	6	13
3	11	...	8	15
4	12	...	8	24
5	13	...	7	11
6	14	...	5	12
7	15	...	3	3
8	16	...	8	20
9	17	...	4	15
10	18	...	4	9
11	19	...	5	6

2-מידע

שאלתה

על קורסים שבהם נוכחות הקורס היא "Optional":

```
SELECT
,C.CourseName
,C.RoomID
,C.RoomType
,c.RoomCapacity
c.CoursePresence
FROM
CourseRoomLecturerDetails C
WHERE
'C.CoursePresence = 'Optional'
ORDER BY
;C.CourseName
```

		COURSENAME	ROOMID	ROOMTYPE	ROOMCAPACITY	COURSEPRESENCE
1	Advanced Life Support	...	235	Classroom	...	46 Optional
2	Advanced Life Support	...	69	Discussion Room	...	95 Optional
3	Advanced Life Support	...	240	Computer Lab	...	42 Optional
4	Advanced Life Support	...	266	Training Room	...	78 Optional
5	Advanced Life Support	...	266	Training Room	...	78 Optional
6	Advanced Life Support	...	315	Classroom	...	82 Optional
7	Advanced Life Support	...	315	Classroom	...	82 Optional
8	Advanced Life Support	...	317	Auditorium	...	60 Optional
9	Advanced Life Support	...	317	Auditorium	...	60 Optional
10	Advanced Life Support	...	306	Conference Room	...	67 Optional

שאלות על מבט

מבט 1:

```
SELECT
,ItemID
,ItemName
,ItemDescription
,Quantity
,Status
,OperatorID
,OperatorName
ExpirationDate
FROM
ItemOperatorV
WHERE
(ExpirationDate BETWEEN SYSDATE AND ADD_MONTHS(SYSDATE, 1
;OR ExpirationDate < SYSDATE
```

		ITEMNAME	ITEMDESCRIPTION		S	C	OPERATORNAME	EXPIRATIONDATE
1		Splinting Materi	Materials used to immobilize and	0	1	309	MurrayClinton	24/08/2024
2	46	Chest Seal	A device used to cover penetratin	0	0	307	DomingoHagar	12/05/2024
3	52	Splinter Forceps	Forceps designed for removing sp	0	0	113	DaveBuffalo	24/02/2024
4	53	IV Start Kit	A kit containing supplies for starti	0	1	279	LouNivola	20/08/2024
5	56	Hemostatic Dre	A dressing designed to promote k	0	0	113	DaveBuffalo	24/02/2024
6	58	Orthopedic Boo	Boots designed to immobilize anc	0	0	240	YolandaHawthorne	25/07/2024
7	65	Diagnostic Kits	Kits containing tools and reagent	0	1	456	KimberlyThewlis	06/03/2024
8	69	Orthopedic Spli	Materials used to create custom s	0	1	279	LouNivola	20/08/2024
9	70	Laryngeal Mask	Devices inserted into the throat to	0	0	262	PaulaHong	17/03/2024

מבט 2:

```
SELECT
,o.OperatorID
,o.OperatorName
COUNT(o.ItemID) AS ItemCount
FROM
ItemOperatorV o
GROUP BY
,o.OperatorID
o.OperatorName
ORDER BY
;ItemCount DESC
```

	OPERATORID	OPERATORNAME	ITEMCOUNT
1	178	GarryRhodes	4
2	147	MurrayWhitley	4
3	312	JulianneHedaya	4
4	327	MinnieGoodall	4
5	279	LouNivola	4
6	429	MikeHirsch	4
7	370	FairuzaPerrineau	3
8	313	CurtisAtlas	3
9	275	TedFranks	3
10	197	MiaMargulies	3