בס"ד

דוח מיני פרויקט בבסיסי נתונים

<u>מגישות:</u>

רעיה פלדמר

חיה לקס

מערכת: ספריה

יחידה: השאלת ספרים

תוכן עניינים:

מבוא:

מערכת השאלת הספרים כוללת: ספרניות, לקוחות עם חשבון להשאלת ספרים, ספרים, משחקים והשאלות.

ישנן 2 סוגי השאלות- השאלת ספרים והשאלת משחקים.
כל השאלה מורכבת מהלקוח שהשאיל, הספרנית שביצעה את ההשאלה, הספר/משחק שהושאל, תאריך ההשאלה, תאריך אחרון להחזרה, תאריך החזרה(במידה והוחזר) ומספר השאלה.

גם עבור הספרנית וגם עבור הלקוחות נשמרים הת"ז, השם, הפלאפון, המייל.
בנוסף, לספרנית נשמר גם תאריך תחילת העבודה, ושם משתמש וסיסמה עבור כניסה למערכת.
וללקוח נשמרים מספר ספרים מקסימלי להשאלה והאם הוא פעיל (יכול להשאיל).

עבור כל ספר נשמרים מספר הספר, הכותרת, מספר הנושא, מספר הוצאה לאור, כותרת ושפה.
ועבור כל עותק של הספר נשמר מספר הספר, מספר עותק, שנת הוצאה, מהדורה וזמינותו.

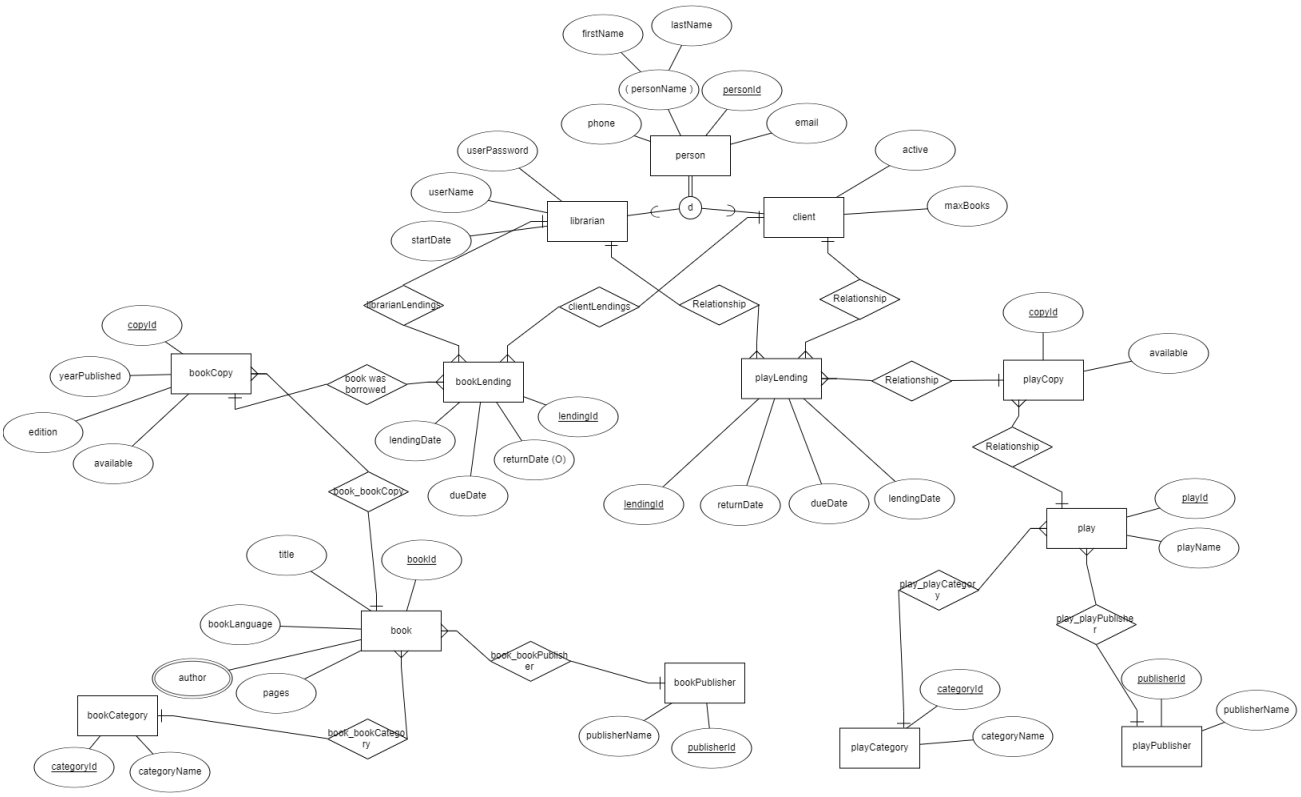
עבור כל משחק נשמרים מספר המשחק, שם המשחק, מספר נושא ומספר חברה.
ועבור כל עותק של המשחק נשמר מספר המשחק, מספר העותק וזמינותו.

<u>החלטות עיצוב:</u>

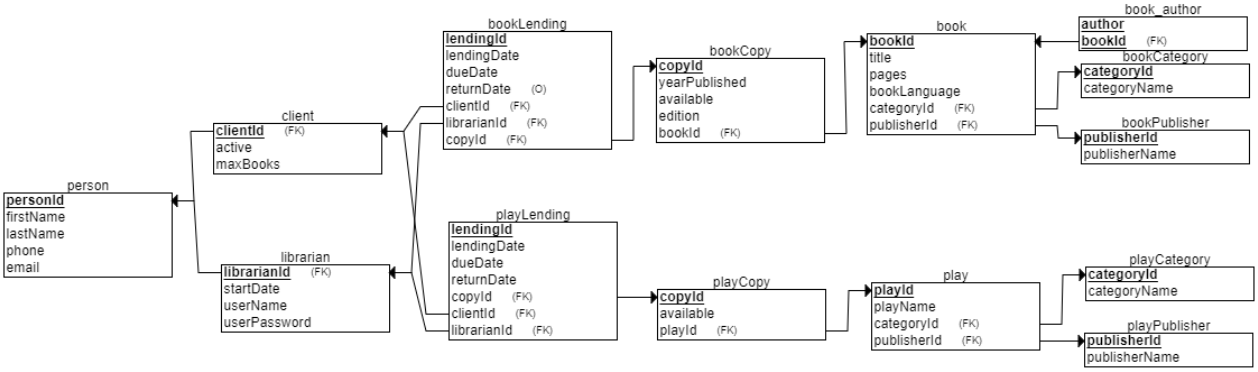
בחרנו שכל השאלה תכיל ספר/משחק אחד ולא את כל הספרים והמשחקים מאותו הזמן ע"מ שיהיה אפשרות להחזיר כל ספר בזמן אחר ולא יהיה צריך להחזיר את כל מה שהושאל ביחד.

על הלקוח נשמר אם הוא פעיל כיוון שגם עבור לקוחות שאינם פעילים אנו רוצים לדעת את היסטוריית ההחלפות שלהם לצרכים סטטיסטים וכדו'.

תרשים ERD:

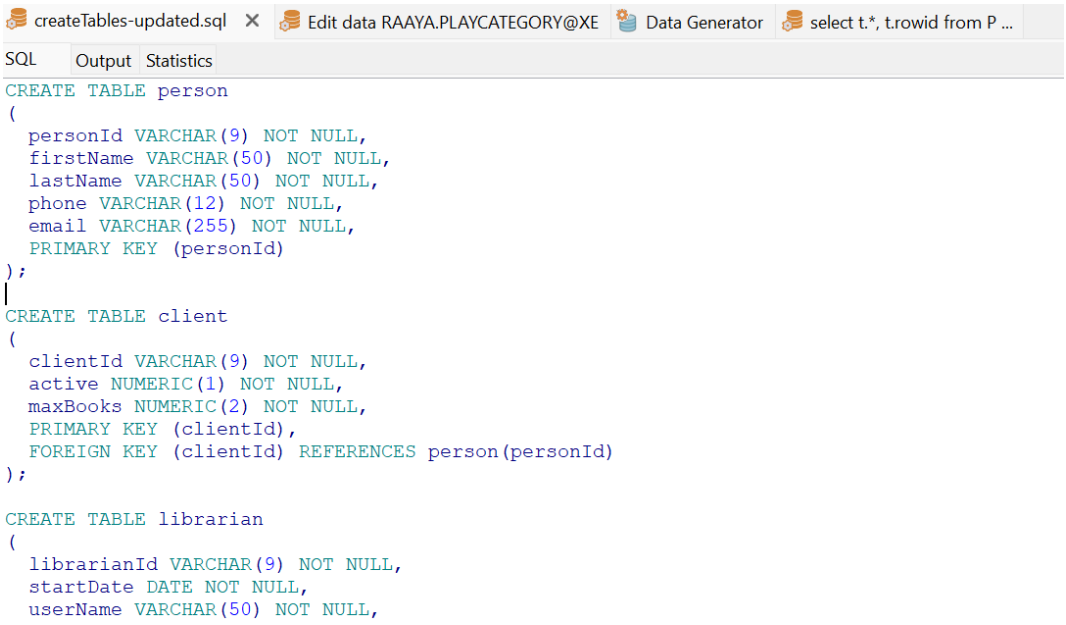


תרשים DSD



פקודות createTable:

צילום מסך



כל פקודות הcreate table בעמוד הבא.

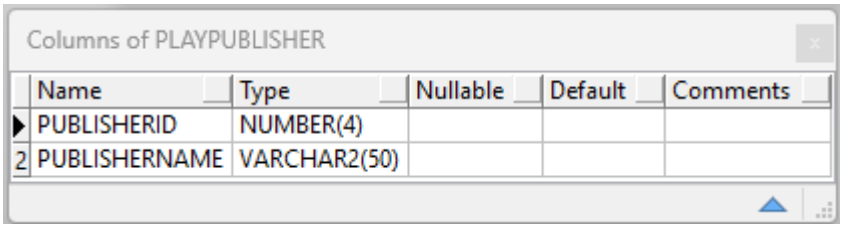
1

```
CREATE TABLE person
(
  personId VARCHAR(9) NOT NULL,
  firstName VARCHAR(50) NOT NULL,
  lastName VARCHAR(50) NOT NULL,
  phone VARCHAR(12) NOT NULL,
  email VARCHAR(255) NOT NULL,
  PRIMARY KEY (personId)
);

CREATE TABLE client
(
  active NUMERIC(1) NOT NULL,
  maxBooks NUMERIC(2) NOT NULL,
  clientId VARCHAR(9) NOT NULL,
  PRIMARY KEY (clientId),
  FOREIGN KEY (clientId) REFERENCES person(personId)
);

CREATE TABLE librarian
(
  startDate DATE NOT NULL,
  userName VARCHAR(50) NOT NULL,
  userPassword VARCHAR(50) NOT NULL,
  librarianId VARCHAR(9) NOT NULL,
  PRIMARY KEY (librarianId),
  FOREIGN KEY (librarianId) REFERENCES person(personId)
);

CREATE TABLE bookCategory
(
  categoryName VARCHAR(50) NOT NULL,
  categoryId NUMERIC(3) NOT NULL,
  PRIMARY KEY (categoryId)
);

CREATE TABLE bookPublisher
(
  publisherName VARCHAR(50) NOT NULL,
  publisherId NUMERIC(4) NOT NULL,
  PRIMARY KEY (publisherId)
);

CREATE TABLE playCategory
(
  categoryId NUMERIC(3) NOT NULL,
  categoryName VARCHAR(50) NOT NULL,
  PRIMARY KEY (categoryId)
);

CREATE TABLE playPublisher
(
  publisherId NUMERIC(4) NOT NULL,
  publisherName VARCHAR(50) NOT NULL,
  PRIMARY KEY (publisherId)
);

CREATE TABLE book
(
  bookId NUMERIC(6) NOT NULL,
  title VARCHAR(50) NOT NULL,
  pages NUMERIC(4) NOT NULL,
  bookLanguage VARCHAR(50) NOT NULL,
  categoryId NUMERIC(3) NOT NULL,
  publisherId NUMERIC(4) NOT NULL,
  PRIMARY KEY (bookId),
  FOREIGN KEY (categoryId) REFERENCES
bookCategory(categoryId),
  FOREIGN KEY (publisherId) REFERENCES
bookPublisher(publisherId)
);
```

2

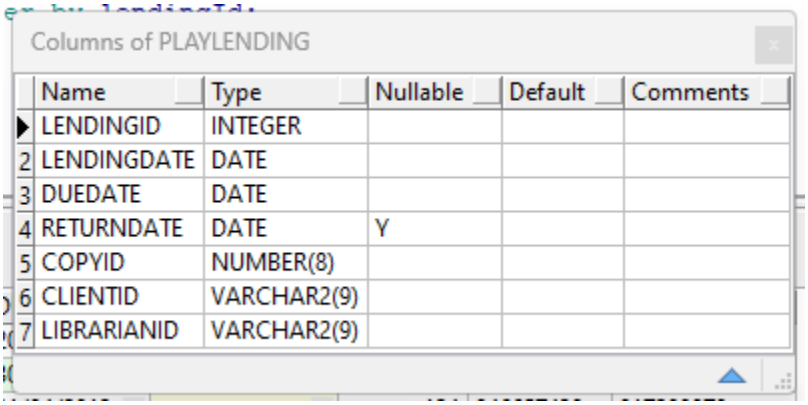
```
CREATE TABLE play
(
  playId NUMERIC(6) NOT NULL,
  playName VARCHAR(50) NOT NULL,
  categoryId NUMERIC(3) NOT NULL,
  publisherId NUMERIC(4) NOT NULL,
  PRIMARY KEY (playId),
  FOREIGN KEY (categoryId) REFERENCES
playCategory(categoryId),
  FOREIGN KEY (publisherId) REFERENCES
playPublisher(publisherId)
);

CREATE TABLE bookCopy
(
  copyId NUMERIC(8) NOT NULL,
  yearPublished NUMERIC(4) NOT NULL,
  available NUMERIC(1) NOT NULL,
  edition NUMERIC(3) NOT NULL,
  bookId NUMERIC(6) NOT NULL,
  PRIMARY KEY (copyId),
  FOREIGN KEY (bookId) REFERENCES book(bookId)
);

CREATE TABLE playCopy
(
  copyId NUMERIC(8) NOT NULL,
  available NUMERIC(1) NOT NULL,
  playId NUMERIC(6) NOT NULL,
  PRIMARY KEY (copyId),
  FOREIGN KEY (playId) REFERENCES play(playId)
);

CREATE TABLE playLending
(
  lendingId INT NOT NULL,
  lendingDate DATE NOT NULL,
  dueDate DATE NOT NULL,
  returnDate DATE NOT NULL,
  copyId NUMERIC(8) NOT NULL,
  clientId VARCHAR(9) NOT NULL,
  librarianId VARCHAR(9) NOT NULL,
  PRIMARY KEY (lendingId),
  FOREIGN KEY (copyId) REFERENCES playCopy(copyId),
  FOREIGN KEY (clientId) REFERENCES client(clientId),
  FOREIGN KEY (librarianId) REFERENCES
librarian(librarianId)
);

CREATE TABLE book_author
(
  author VARCHAR(100) NOT NULL,
  bookId NUMERIC(6) NOT NULL,
  PRIMARY KEY (author, bookId),
  FOREIGN KEY (bookId) REFERENCES book(bookId)
);

CREATE TABLE bookLending
(
  lendingDate DATE NOT NULL,
  returnDate DATE,
  lendingId INT NOT NULL,
  dueDate DATE NOT NULL,
  clientId VARCHAR(9) NOT NULL,
  librarianId VARCHAR(9) NOT NULL,
  copyId NUMERIC(8) NOT NULL,
  PRIMARY KEY (lendingId),
  FOREIGN KEY (clientId) REFERENCES client(clientId),
  FOREIGN KEY (librarianId) REFERENCES
librarian(librarianId),
  FOREIGN KEY (copyId) REFERENCES bookCopy(copyId)
);
```

צילום הפעלת פקודות desc:



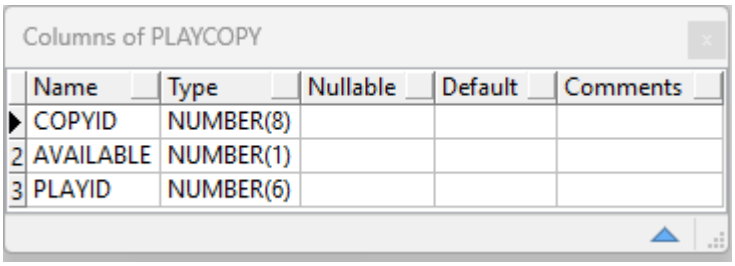
Columns of PLAYPUBLISHER

	Name	Type	Nullable	Default	Comments
1	PUBLISHERID	NUMBER(4)			
2	PUBLISHERNAME	VARCHAR2(50)			



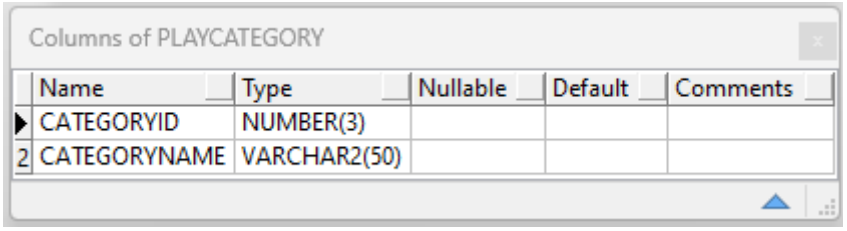
Columns of PLAYLENDING

	Name	Type	Nullable	Default	Comments
1	LENDINGID	INTEGER			
2	LENDINGDATE	DATE			
3	DUEDATE	DATE			
4	RETURNDATE	DATE	Y		
5	COPYID	NUMBER(8)			
6	CLIENTID	VARCHAR2(9)			
7	LIBRARIANID	VARCHAR2(9)			



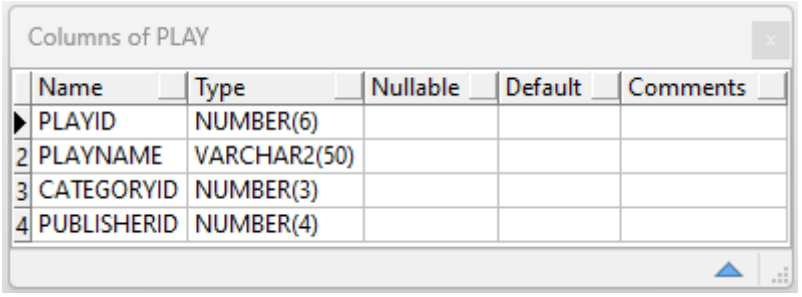
Columns of PLAYCOPY

	Name	Type	Nullable	Default	Comments
1	COPYID	NUMBER(8)			
2	AVAILABLE	NUMBER(1)			
3	PLAYID	NUMBER(6)			



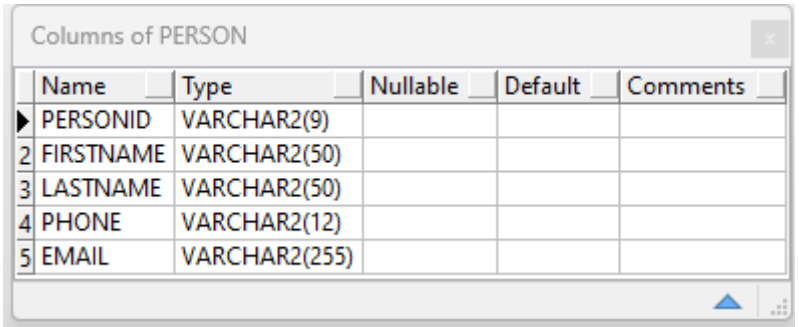
Columns of PLAYCATEGORY

	Name	Type	Nullable	Default	Comments
1	CATEGORYID	NUMBER(3)			
2	CATEGORYNAME	VARCHAR2(50)			



Columns of PLAY

	Name	Type	Nullable	Default	Comments
1	PLAYID	NUMBER(6)			
2	PLAYNAME	VARCHAR2(50)			
3	CATEGORYID	NUMBER(3)			
4	PUBLISHERID	NUMBER(4)			



Columns of PERSON

	Name	Type	Nullable	Default	Comments
1	PERSONID	VARCHAR2(9)			
2	FIRSTNAME	VARCHAR2(50)			
3	LASTNAME	VARCHAR2(50)			
4	PHONE	VARCHAR2(12)			
5	EMAIL	VARCHAR2(255)			

Columns of LIBRARIAN

	Name	Type	Nullable	Default	Comments
1	LIBRARIANID	VARCHAR2(9)			
2	STARTDATE	DATE			
3	USERNAME	VARCHAR2(50)			
4	USERPASSWORD	VARCHAR2(50)			

Columns of CLIENT

	Name	Type	Nullable	Default	Comments
1	CLIENTID	VARCHAR2(9)			
2	ACTIVE	NUMBER(1)			
3	MAXBOOKS	NUMBER(2)			

Columns of BOOKPUBLISHER

	Name	Type	Nullable	Default	Comments
1	PUBLISHERID	NUMBER(4)			
2	PUBLISHERNAME	VARCHAR2(50)			

Columns of BOOKLENDING

	Name	Type	Nullable	Default	Comments
1	LENDINGID	INTEGER			
2	LENDINGDATE	DATE			
3	DUEDATE	DATE			
4	RETURNDATE	DATE	Y		
5	CLIENTID	VARCHAR2(9)			
6	LIBRARIANID	VARCHAR2(9)			
7	COPYID	NUMBER(8)			

Columns of BOOKCOPY

	Name	Type	Nullable	Default	Comments
1	COPYID	NUMBER(8)			
2	AVAILABLE	NUMBER(1)			
3	YEARPUBLISHED	NUMBER(4)			
4	EDITION	NUMBER(3)			
5	BOOKID	NUMBER(6)			

Columns of BOOKCATEGORY

	Name	Type	Nullable	Default	Comments
1	CATEGORYID	NUMBER(3)			
2	CATEGORYNAME	VARCHAR2(50)			

Columns of BOOK_AUTHOR

	Name	Type	Nullable	Default	Comments
1	AUTHOR	VARCHAR2(100)			
2	BOOKID	NUMBER(6)			

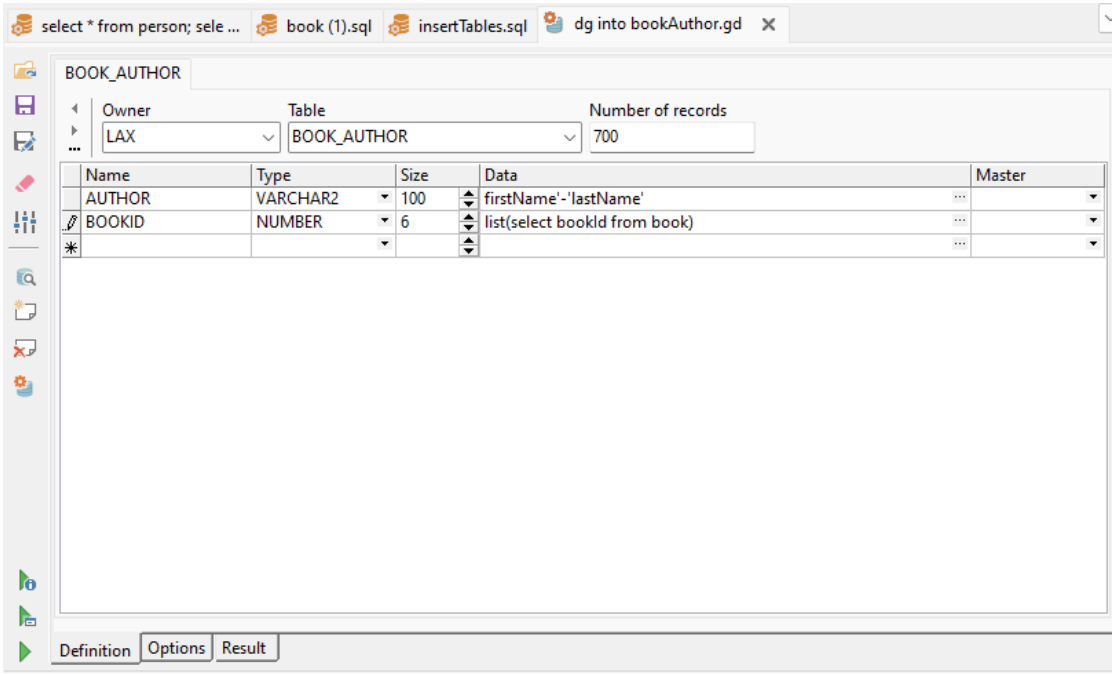
Columns of BOOK

	Name	Type	Nullable	Default	Comments
1	BOOKID	NUMBER(6)			
2	TITLE	VARCHAR2(50)			
3	PAGES	NUMBER(4)			
4	BOOKLANGUAGE	VARCHAR2(50)			
5	CATEGORYID	NUMBER(3)			
6	PUBLISHERID	NUMBER(4)			

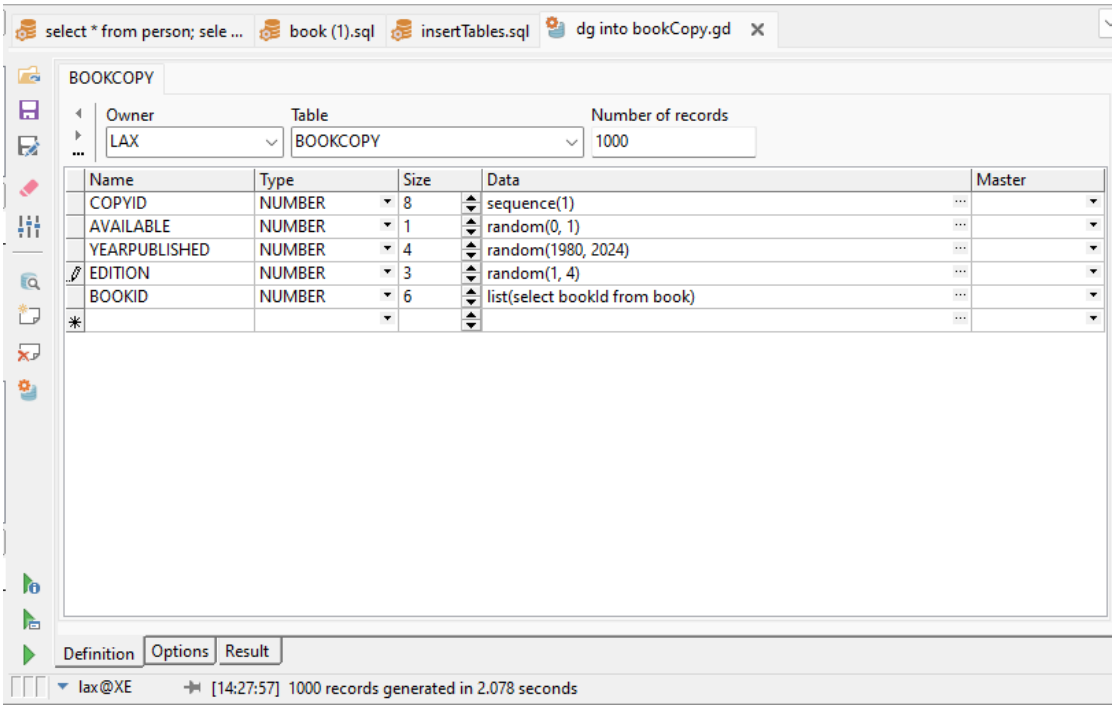
הכנסת נתונים (ב3 דרכים שונות):

<u>הכנסה מדטא גנרטור</u>

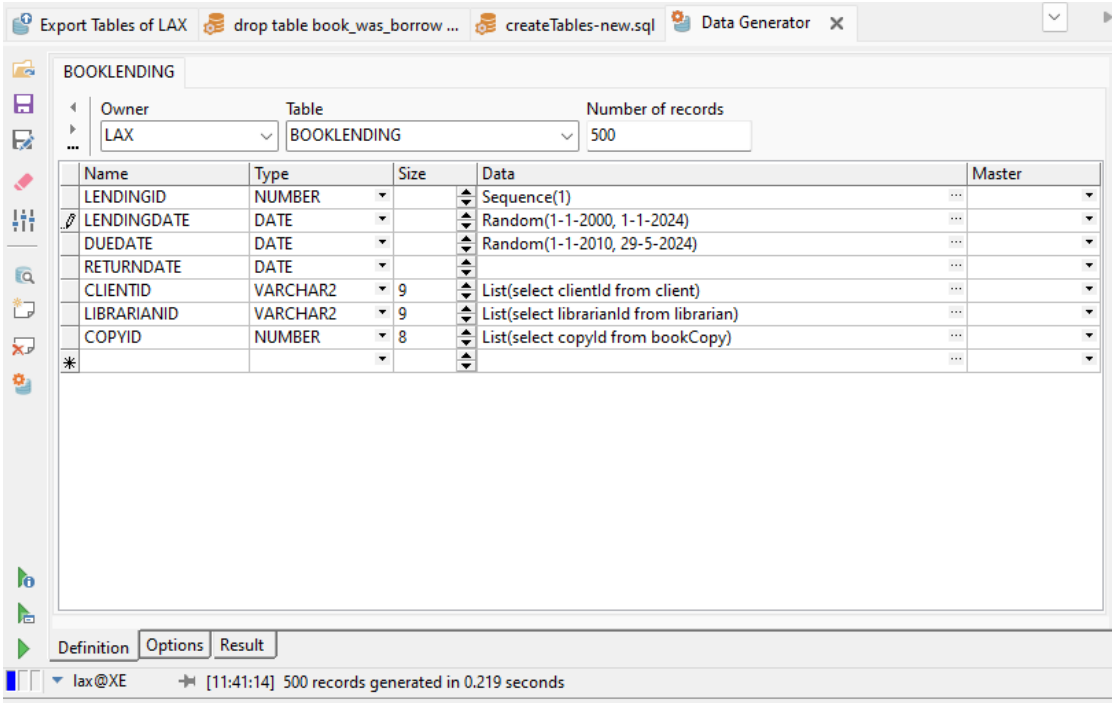
-book_Author



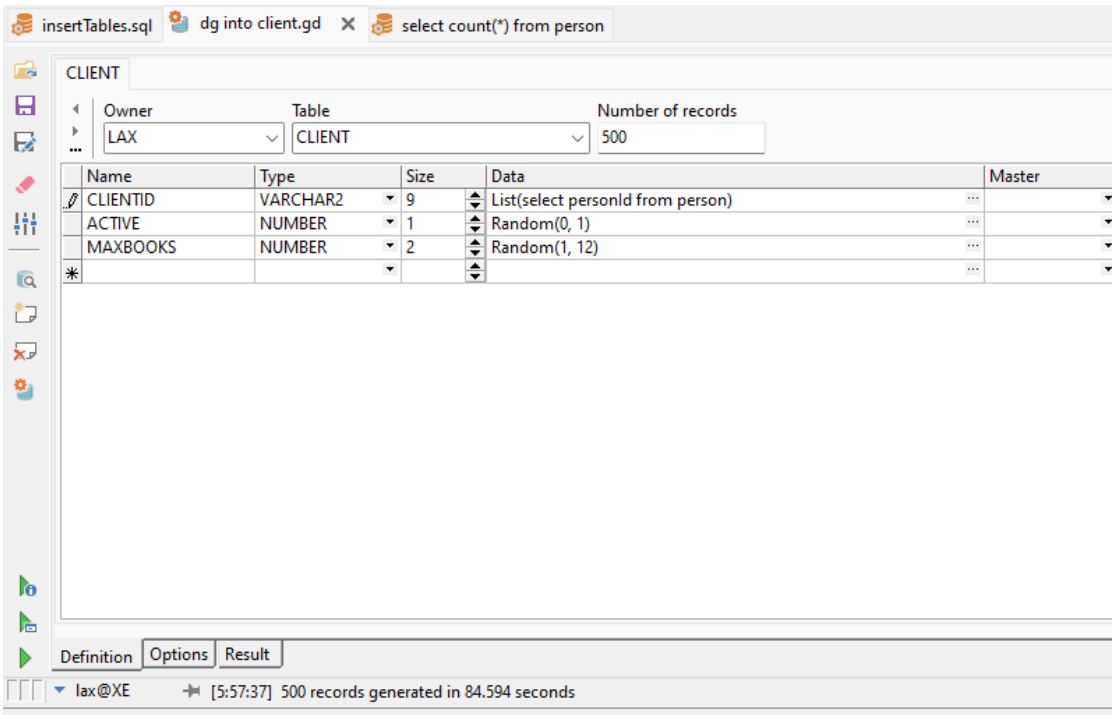
- bookCopy



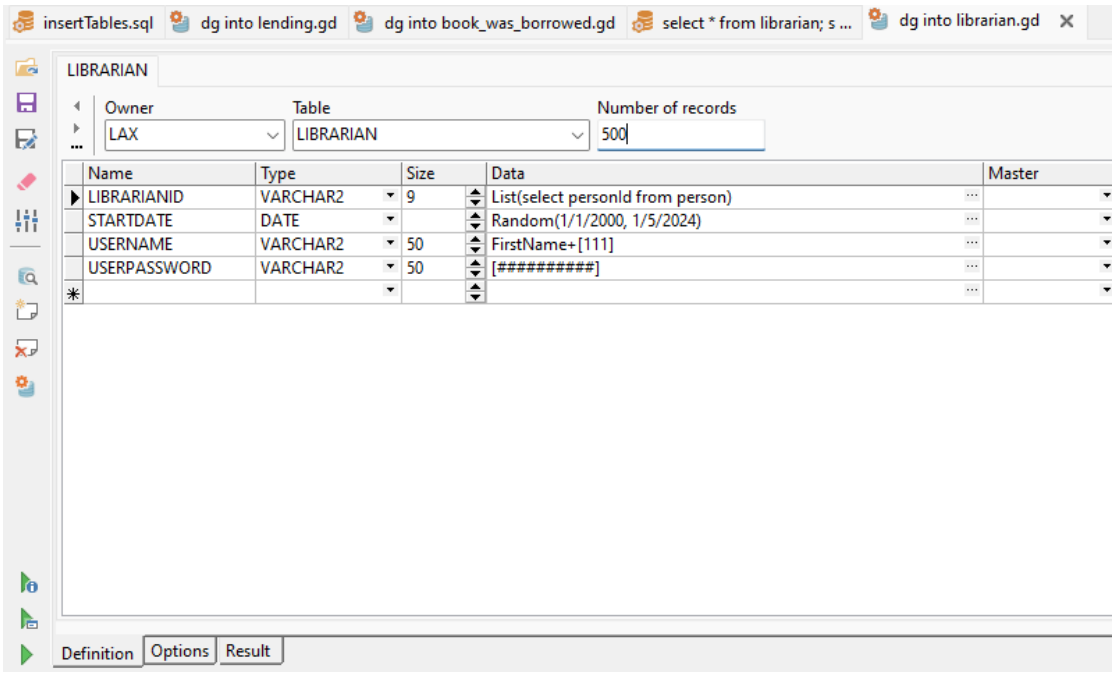
bookLending-



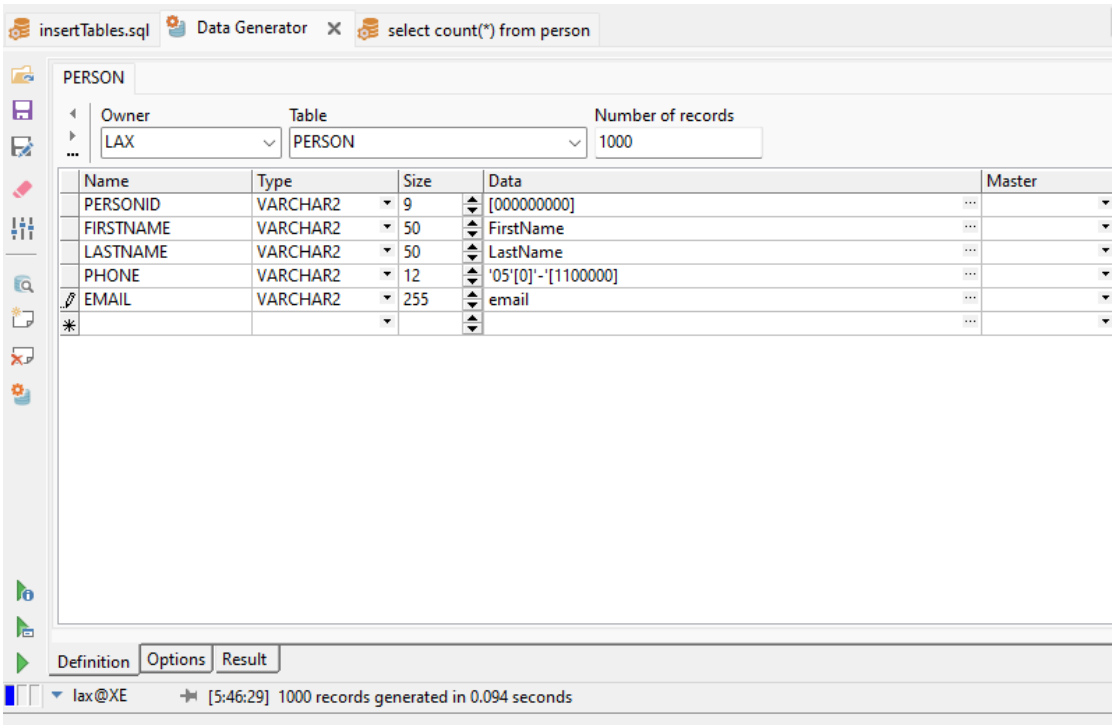
client-



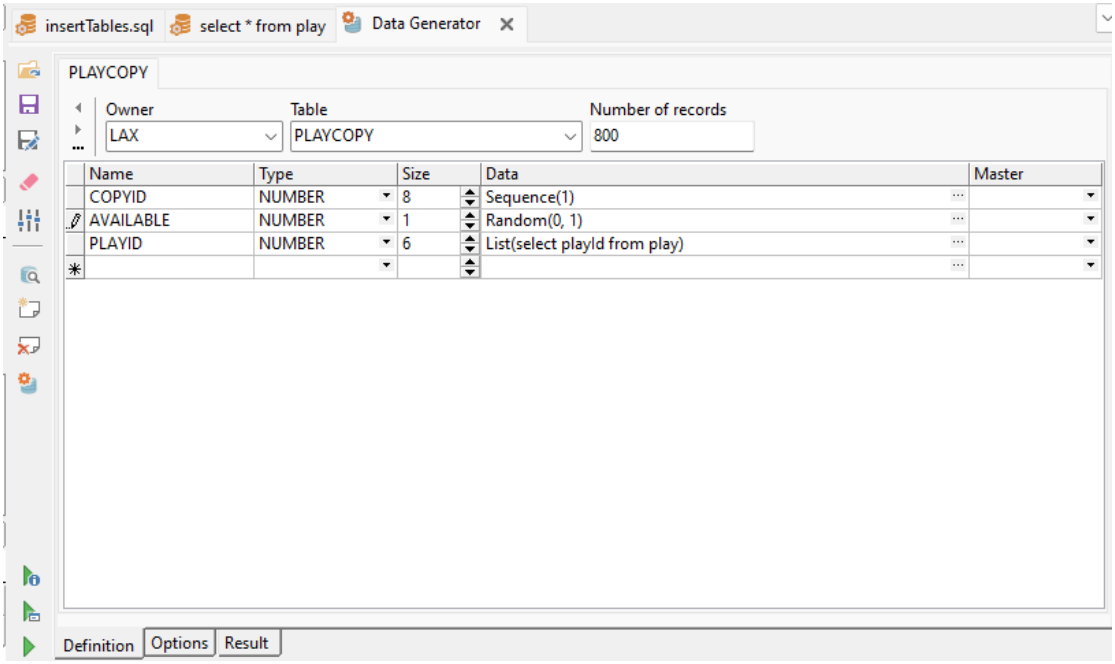
librarian-



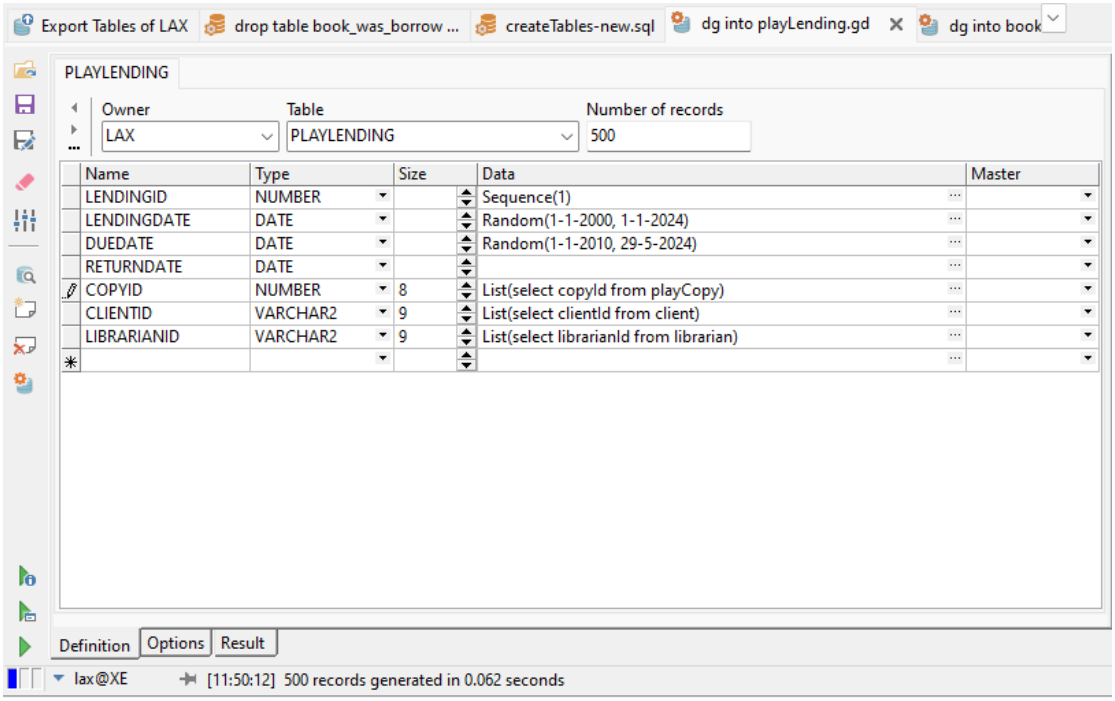
person-



playCopy-

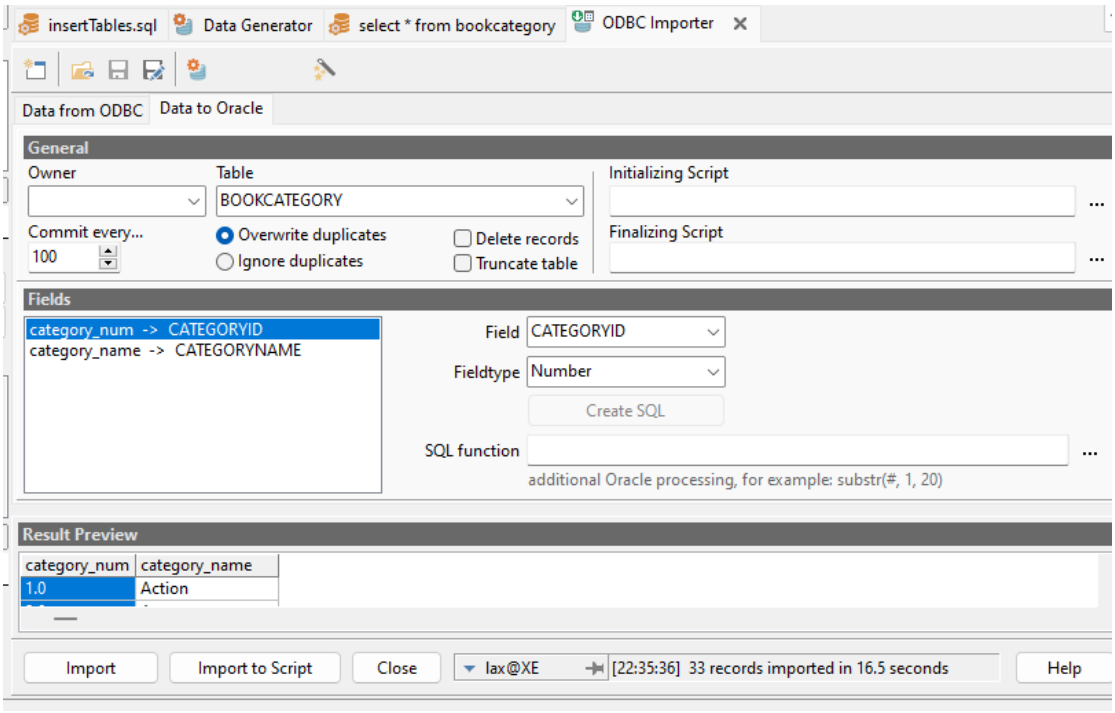


playLending-

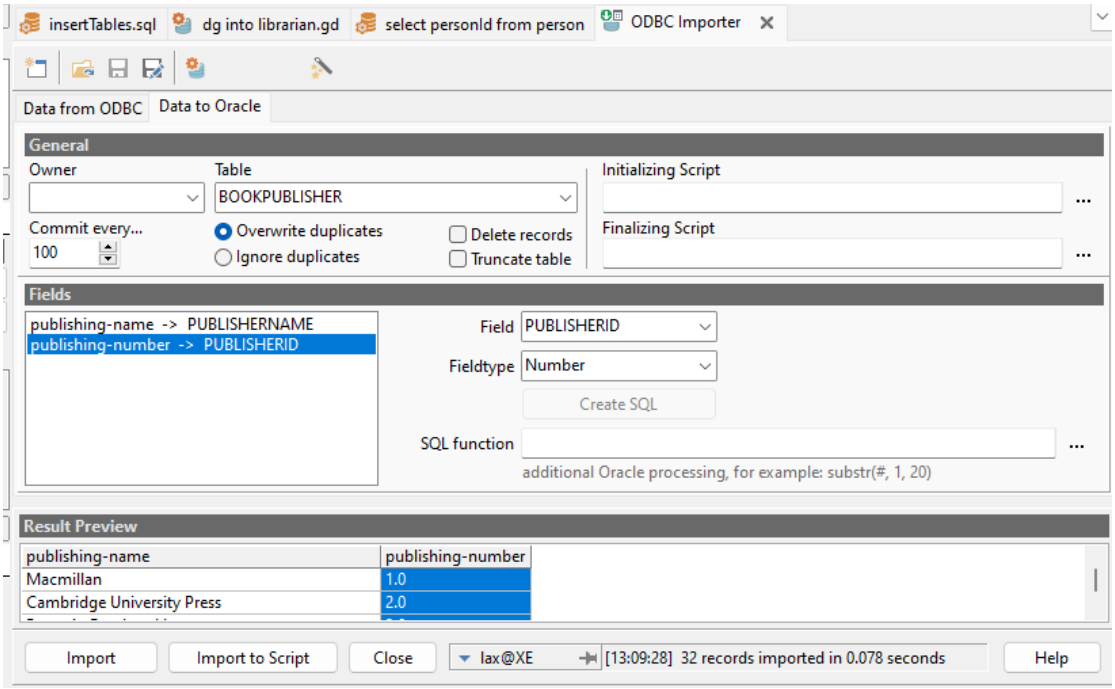


הכנסה מאקסל

bookCategory-

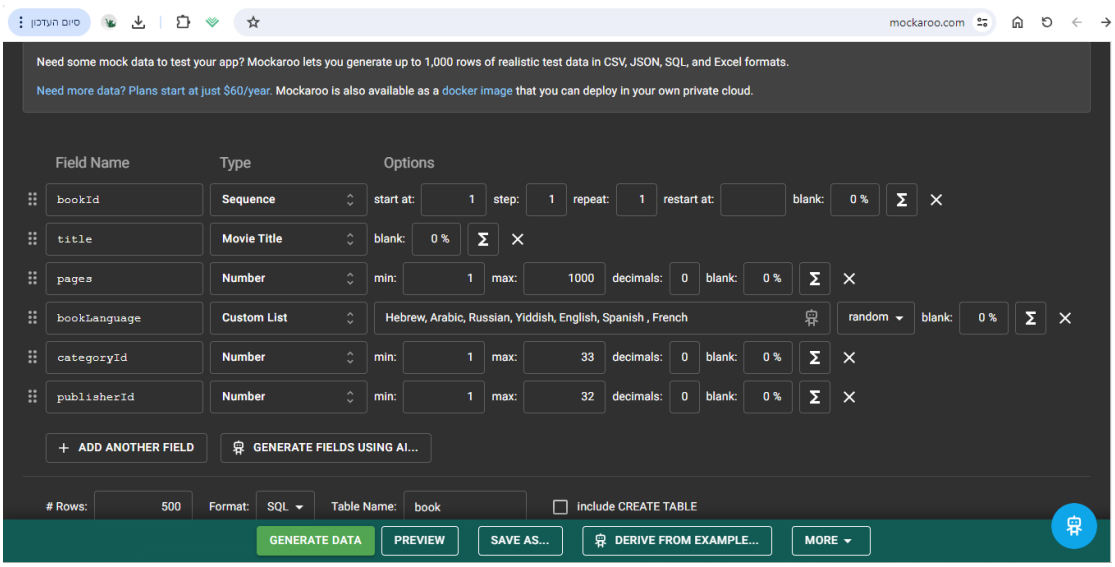


bookPublisher-

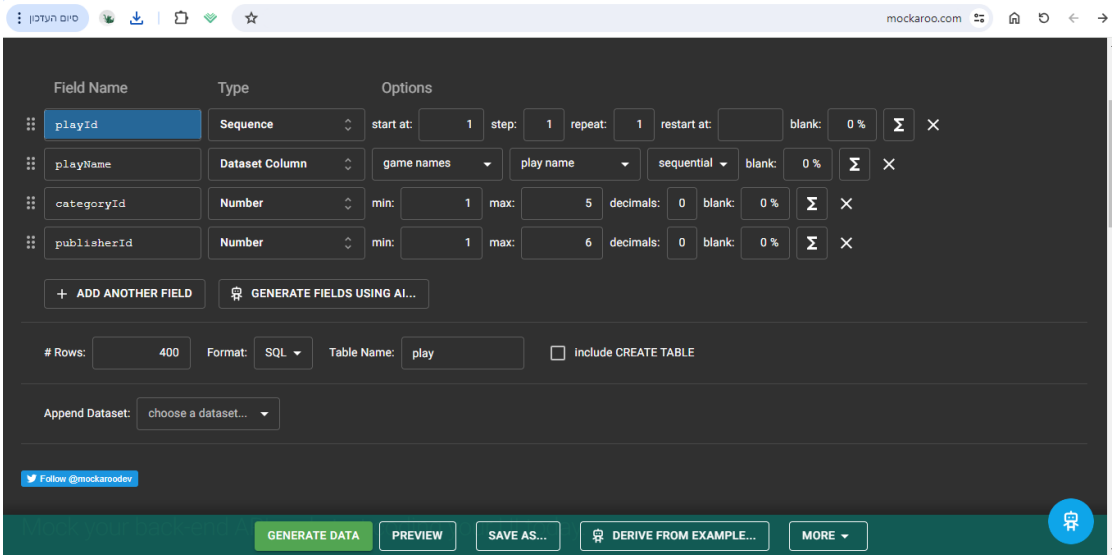


הכנסה מהאתר Mockaroo

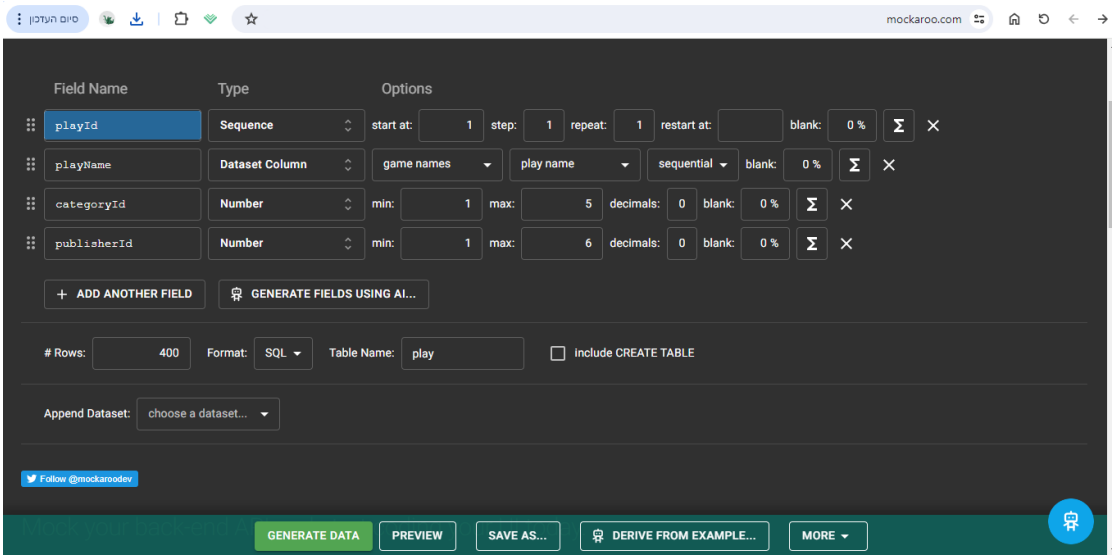
book-



play-



צילום מסך של גיבוי:



צילום מסך של שחזור: