

מינוי פרויקט  
בבסיסי נתונים  
סמסטר ב' תשפ"ד

שם המערכת:

תזמורת

שם האגף:

אירועים

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# תוכן הענינים

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# תיאור המערכת

שם המערכת:

תזמורת

אגף:

אירועים

תיאור המערכת:

בפרויקט נבנה בסיס נתונים לניהול שירותי תזמורת לאירועים. במערכת ננהל אירוע תוך בחירת מפיק, זמר, כלי תזמורת וכו'.

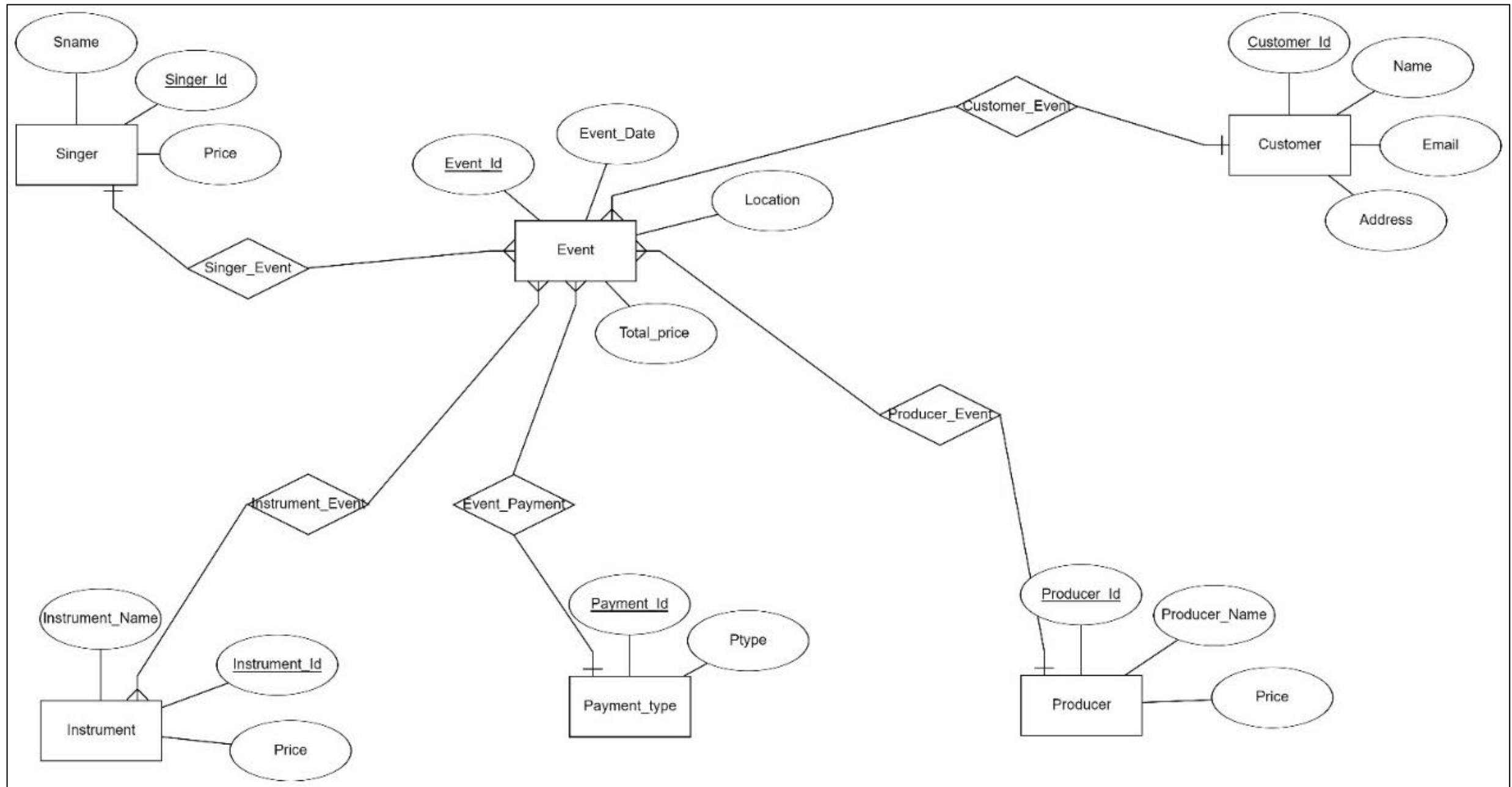
הישויות והשדות:

- אירוע: מספר מזהה, תאריך, מיקום, מחיר, מפיק, זמר, לקוח ואמצעי תשלום.
- מפיק: מספר מזהה, שם ומחיר.
- זמר: מספר מזהה, שם ומחיר.
- כלי תזמורת: מספר מזהה, שם ומחיר.
- לקוח: מספר מזהה, שם, אימייל וכתובת.
- סוג תשלום: מספר מזהה וסוג.

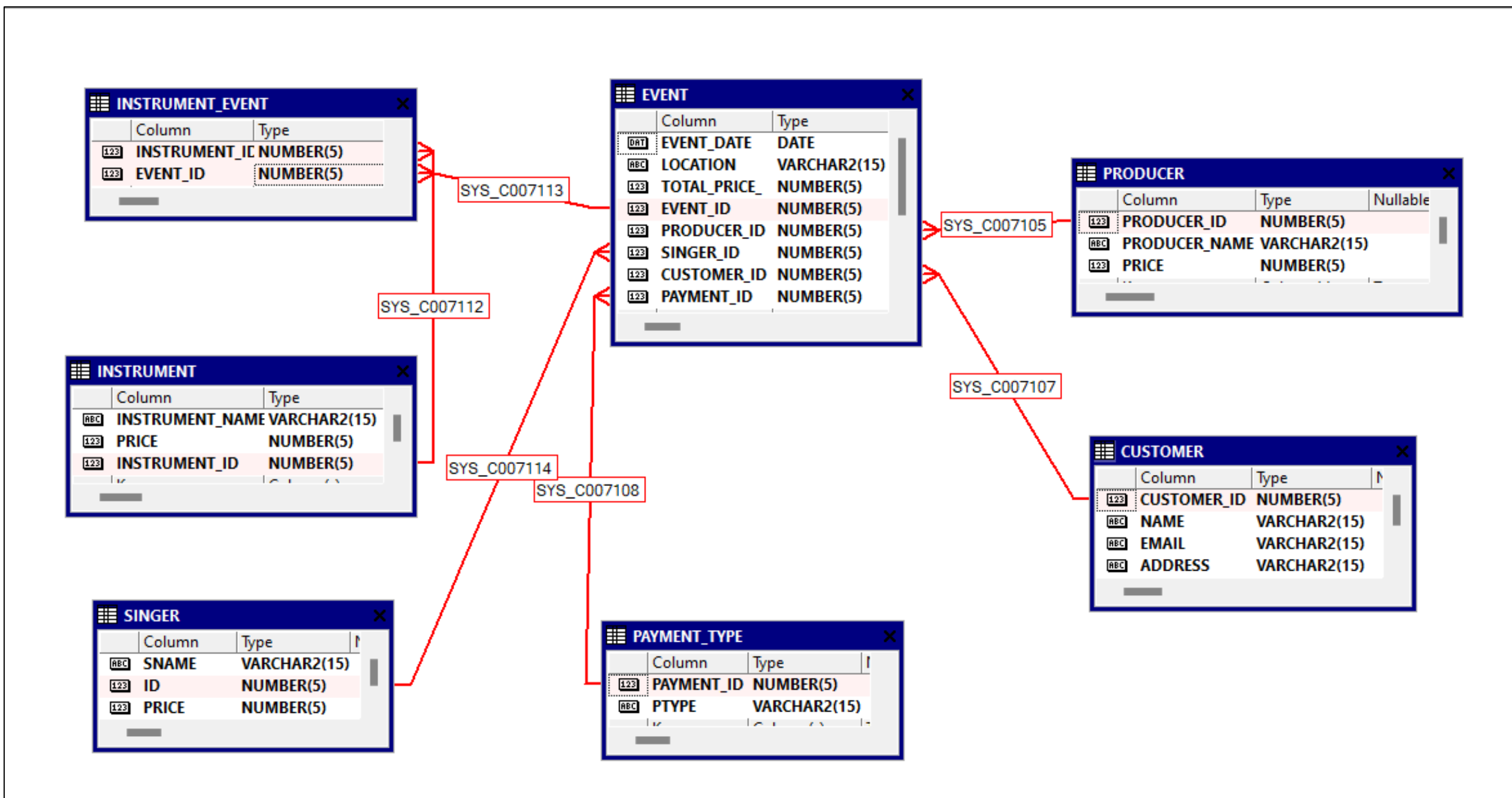
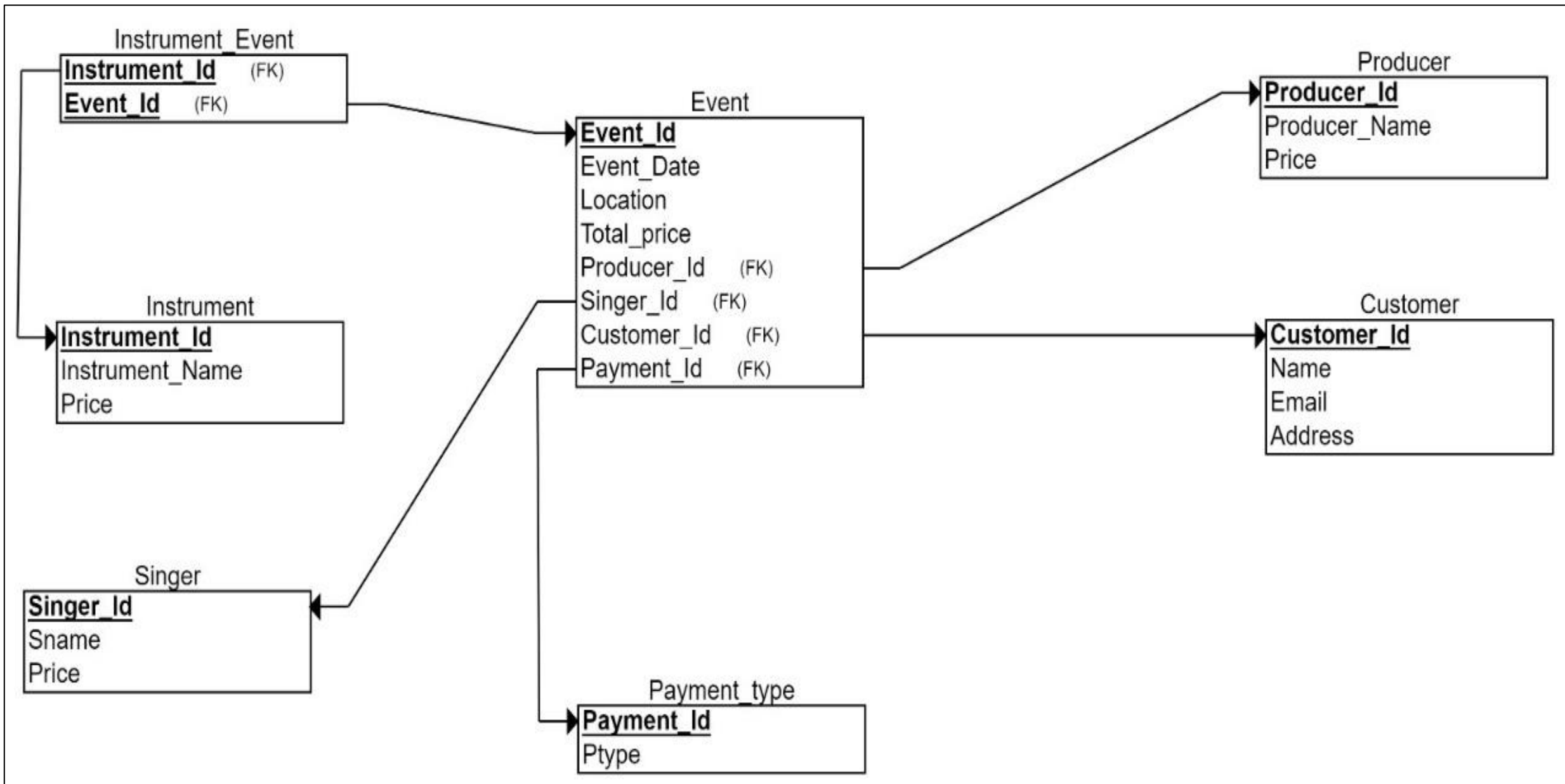
כמו"כ בסיס הנתונים דואג לקשר בין הישויות ע"מ שהאירוע יתנהל כשורה כפי המתוכנן ללא דאגות ובעיות.

# דיאגרמות

## ERD



# DSD



# createTables.sql

CREATE TABLE Singer

```
(
  Sname VARCHAR(15) NOT NULL,
  Singer_Id NUMERIC(5) NOT NULL,
  Price NUMERIC(5) NOT NULL,
  PRIMARY KEY (Id)
);
```

CREATE TABLE Customer

```
(
  Customer_Id NUMERIC(5) NOT NULL,
  Name VARCHAR(15) NOT NULL,
  Email VARCHAR(15) NOT NULL,
  Address VARCHAR(15) NOT NULL,
  PRIMARY KEY (Customer_Id)
);
```

CREATE TABLE Instrument

```
(
  Instrument_Name VARCHAR(15) NOT
NULL,
  Price NUMERIC(5) NOT NULL,
  Instrument_Id NUMERIC(5) NOT NULL,
  PRIMARY KEY (Instrument_Id)
);
```

CREATE TABLE Payment\_type

```
(
  Payment_Id NUMERIC(5) NOT NULL,
  Ptype VARCHAR(15) NOT NULL,
  PRIMARY KEY (Payment_Id)
);
```

CREATE TABLE Producer

```
(
  Producer_Id NUMERIC(5) NOT NULL,
  Producer_Name VARCHAR(15) NOT
NULL,
  Price NUMERIC(5) NOT NULL,
  PRIMARY KEY (Producer_Id)
);
```

CREATE TABLE Event

```
(
  Event_Date DATE NOT NULL,
  Location VARCHAR(15) NOT NULL,
  Total_price_ NUMERIC(5) NOT NULL,
  Event_Id NUMERIC(5) NOT NULL,
  Producer_Id NUMERIC(5) NOT NULL,
  Singer_Id NUMERIC(5) NOT NULL,
  Customer_Id NUMERIC(5) NOT NULL,
  Payment_Id NUMERIC(5) NOT NULL,
  PRIMARY KEY (Event_Id),
  FOREIGN KEY (Producer_Id)
REFERENCES Producer(Producer_Id),
  FOREIGN KEY (Id) REFERENCES
Singer(Id),
  FOREIGN KEY (Customer_Id)
REFERENCES Customer(Customer_Id),
  FOREIGN KEY (Payment_Id)
REFERENCES
Payment_type(Payment_Id)
);
```

CREATE TABLE Instrument\_Event

```
(
  Instrument_Id NUMERIC(5) NOT NULL,
  Event_Id NUMERIC(5) NOT NULL,
  PRIMARY KEY (Instrument_Id, Event_Id),
  FOREIGN KEY (Instrument_Id)
REFERENCES Instrument(Instrument_Id),
  FOREIGN KEY (Event_Id) REFERENCES
Event(Event_Id)
);
```

# dropTables.sql

```
drop table INSTRUMENT_EVENT;  
drop table EVENT;  
drop table PRODUCER;  
drop table PAYMENT_TYPE;  
drop table INSTRUMENT;  
drop table CUSTOMER;  
drop table SINGER;
```

# insertTables.sql - 1

```
insert into singer (id, sname, price)
values (1, ' John Doe', 5000);
```

```
insert into singer (id, sname, price)
values (2, ' Jane Smith', 4500);
```

```
insert into singer (id, sname, price)
values (3, ' Alice Johnson', 4800);
```

```
insert into singer (id, sname, price)
values (4, ' Robert Brown', 5200);
```

```
insert into singer (id, sname, price)
values (5, ' Emily Davis', 4700);
```

```
insert into singer (id, sname, price)
values (6, ' Michael Wilson', 4900);
```

```
insert into singer (id, sname, price)
values (7, ' Sarah Lee', 5300);
```

```
insert into singer (id, sname, price)
values (8, ' David White', 4600);
```

```
insert into singer (id, sname, price)
values (9, ' Laura Harris', 5100);
```

```
insert into singer (id, sname, price)
values (10, ' James Clark', 5400);
```

```
insert into producer (producer_id,
producer_name, price)
values (201, ' Jon Doe', 3000);
```

```
insert into producer (producer_id,
producer_name, price)
values (202, ' Jane Roe', 3200);
```

```
insert into producer (producer_id,
producer_name, price)
values (203, ' Alice Li', 3400);
```

```
insert into producer (producer_id,
producer_name, price)
values (204, ' Bob Lin', 3100);
```

```
insert into producer (producer_id,
producer_name, price)
values (205, ' Carol Yu', 3300);
```

```
insert into producer (producer_id,
producer_name, price)
values (206, ' Dan Kim', 3500);
```

```
insert into producer (producer_id,
producer_name, price)
values (207, ' Eve Wu', 3600);
```

```
insert into producer (producer_id,
producer_name, price)
values (208, ' Frank Ho', 3700);
```

```
insert into producer (producer_id,
producer_name, price)
values (209, ' Grace Ma', 3800);
```

```
insert into producer (producer_id,
producer_name, price)
values (210, ' Henry Xu', 3900);
```



## insertTables.sql -2

```
INSERT INTO Payment_type (Payment_Id, Ptype) VALUES (1, 'Cash');  
INSERT INTO Payment_type (Payment_Id, Ptype) VALUES (2, 'Credit Card');  
INSERT INTO Payment_type (Payment_Id, Ptype) VALUES (3, 'Check');  
INSERT INTO Payment_type (Payment_Id, Ptype) VALUES (4, 'PayPal');  
INSERT INTO Payment_type (Payment_Id, Ptype) VALUES (5, 'Bank Transfer');  
INSERT INTO Payment_type (Payment_Id, Ptype) VALUES (6, 'Bit');
```

```
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (32, 330);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (44, 173);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (24, 344);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (21, 37);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (29, 59);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (9, 90);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (19, 274);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (26, 133);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (15, 133);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (48, 319);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (25, 25);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (27, 107);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (8, 103);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (41, 289);  
INSERT INTO Instrument_Event (Instrument_Id, Event_Id) VALUES (2, 50);
```

יש עוד המשך ארוך אבל לא נלאה אתכם. בגיטהאב מצורף הקובץ המלא.

# selectAll.sql

```
select * from event;  
select * from instrument_event;  
select * from instrument;  
select * from producer;  
select * from customer;  
select * from singer;  
select * from payment_type;
```

# desc

```
Command Window - New
Dialog Editor
Connected as eti@XE

SQL> desc customer
Name          Type          Nullable Default Comments
-----
CUSTOMER_ID   NUMBER(5)
NAME          VARCHAR2(15)
EMAIL         VARCHAR2(15)
ADDRESS       VARCHAR2(15)

SQL> desc producer
Name          Type          Nullable Default Comments
-----
PRODUCER_ID   NUMBER(5)
PRODUCER_NAME VARCHAR2(15)
PRICE         NUMBER(5)

SQL> desc singer
Name          Type          Nullable Default Comments
-----
SNAME         VARCHAR2(15)
SINGER_ID     NUMBER(5)
PRICE         NUMBER(5)

SQL> desc event
Name          Type          Nullable Default Comments
-----
EVENT_DATE    DATE
LOCATION        VARCHAR2(15)
TOTAL_PRICE_  NUMBER(5)
EVENT_ID      NUMBER(5)
PRODUCER_ID   NUMBER(5)
SINGER_ID     NUMBER(5)
CUSTOMER_ID   NUMBER(5)
PAYMENT_ID    NUMBER(5)

SQL> desc instrument
Name          Type          Nullable Default Comments
-----
INSTRUMENT_NAME VARCHAR2(15)
PRICE         NUMBER(5)
INSTRUMENT_ID NUMBER(5)
```

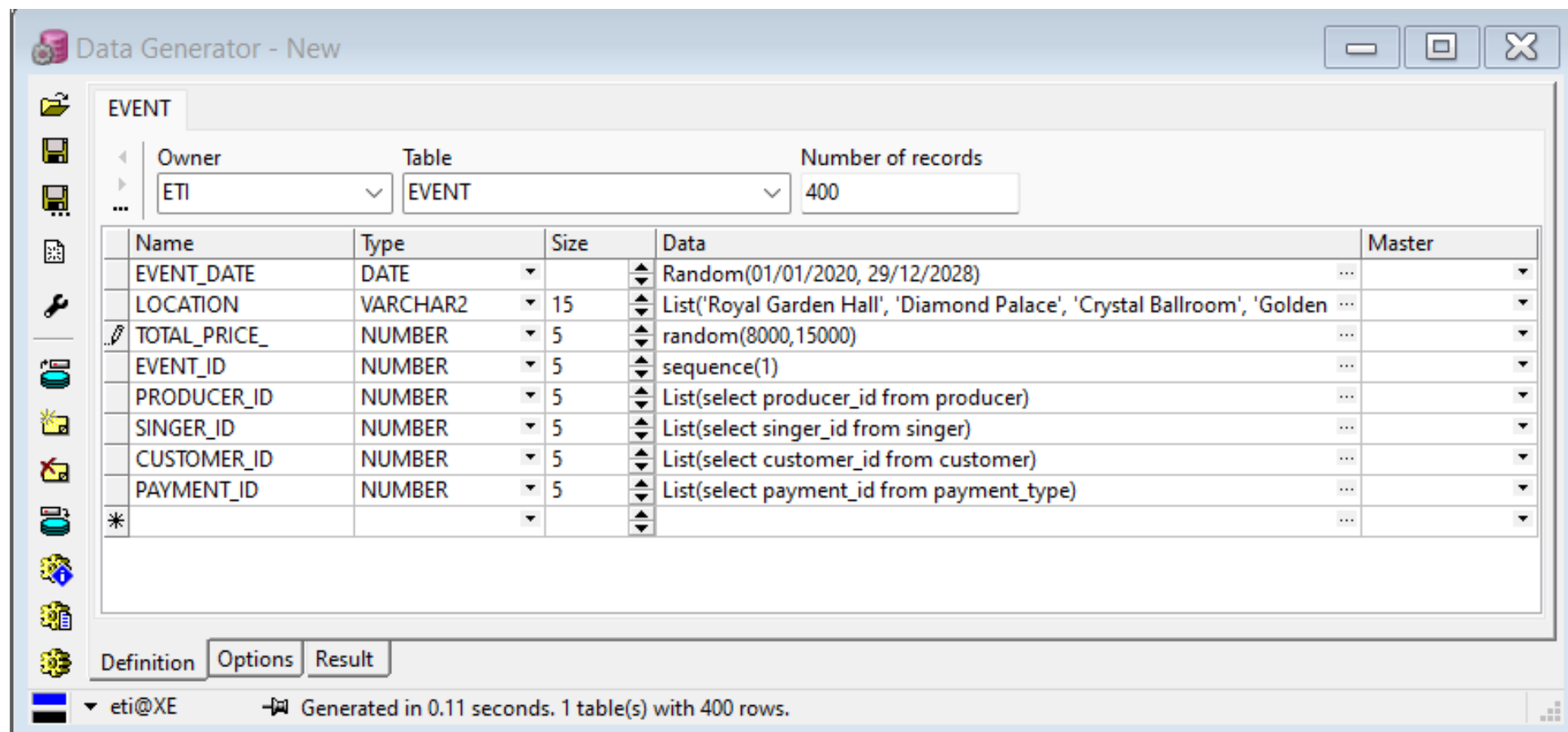
# מחולל נתונים וייבוא קבצים

שם המערכת:

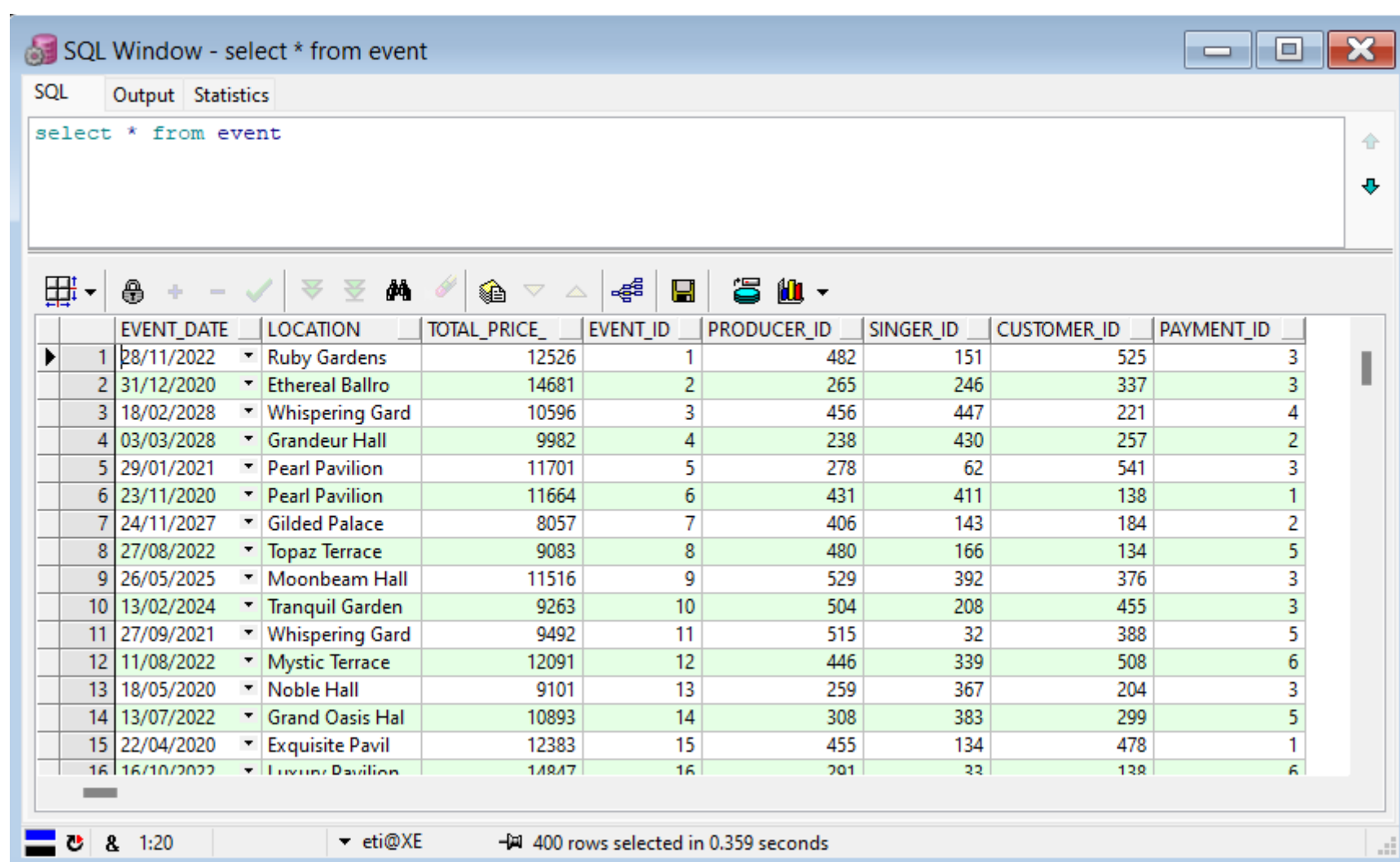
מילאנו את הטבלאות ב3 דרכים: קבצי טקסט, data generator וקוד פייתון.

כעת נציג דוגמא לכל אחת מהדרכים:

דוגמא לשימוש בdata generator עבור הטבלה EVENT:



כעת הטבלה EVENT מכילה 400 רשומות:



דוגמא לשימוש בייבוא נתונים מקובץ טקסט עבור הטבלה CUSTOMER:

101, Alice Brown, alice@ex.com, 123 Maple St  
102, Bob Smith, bob@ex.com, 456 Oak St  
103, Carol Johnson, carol@ex.com, 789 Pine St  
104, David Wilson, david@ex.com, 321 Elm St  
105, Eve Davis, eve@ex.com, 654 Cedar St  
106, Frank Miller, frank@ex.com, 987 Birch St  
107, Grace Lee, grace@ex.com, 111 Cherry St  
108, Henry Clark, henry@ex.com, 222 Willow St  
109, Irene Lewis, irene@ex.com, 333 Aspen St  
110, Jack Walker, jack@ex.com, 444 Poplar St

Text Importer - customerTxt.txt

Data from Textfile Data to Oracle

General

Owner Table ☐ Clear Table

Commit every... 100 ☐ Overwrite duplicates ☒ Ignore duplicates

Initializing Script

Finalizing Script

Fields

Field1 -> CUSTOMER\_ID (NUMBER) Field ADDRESS (VARCHAR2)

Field2 -> NAME (VARCHAR2) Fieldtype String

Field3 -> EMAIL (VARCHAR2)

Field4 -> ADDRESS (VARCHAR2)

SQL function

Create SQL

Result Preview

1	2	3	4
101	Alice Brown	alice@ex.com	123 Maple St
102	Bob Smith	bob@ex.com	456 Oak St
103	Carol Johnson	carol@ex.com	789 Pine St
104	David Wilson	david@ex.com	321 Elm St
105	Eve Davis	eve@ex.com	654 Cedar St
106	Frank Miller	frank@ex.com	987 Birch St
107	Grace Lee	grace@ex.com	111 Cherry St

Import Import to Script Close eti@XE customerTxt.txt loaded, 1 KB

כעת הטבלה CUSTOMER מכילה את הרשומות:

SQL Window - select \* from customer

SQL Output Statistics

```
select * from customer
```

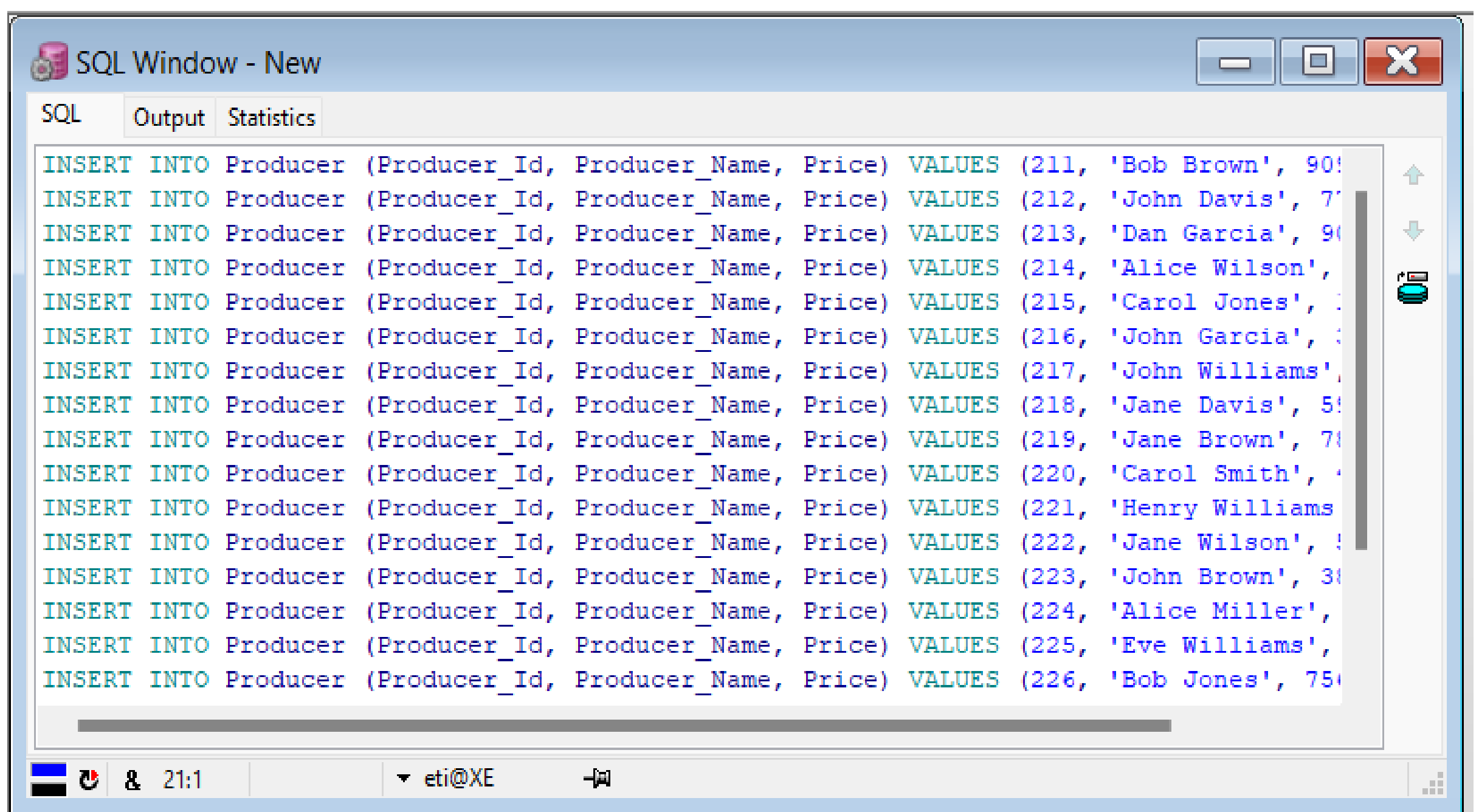
	CUSTOMER_ID	NAME	EMAIL	ADDRESS
1	101	Alice Brown	alice@ex.com	123 Maple St
2	102	Bob Smith	bob@ex.com	456 Oak St
3	103	Carol Johnson	carol@ex.com	789 Pine St
4	104	David Wilson	david@ex.com	321 Elm St
5	105	Eve Davis	eve@ex.com	654 Cedar St
6	106	Frank Miller	frank@ex.com	987 Birch St
7	107	Grace Lee	grace@ex.com	111 Cherry St
8	108	Henry Clark	henry@ex.com	222 Willow St
9	109	Irene Lewis	irene@ex.com	333 Aspen St
10	110	Jack Walker	jack@ex.com	444 Poplar St

eti@XE 449 rows selected in 0.281 seconds

דוגמא לשימוש בייבוא נתונים מקובץ שנוצר ע"י פייתון עבור הטבלה PRODUCER:

```
1 import random
2
3 # פונקציה ליצירת שמות אקראיים
4 def generate_name():
5     first_names = ['John', 'Jane', 'Alice', 'Bob', 'Carol', 'Dan', 'Eve', 'Frank', 'Grace', 'Henry']
6     last_names = ['Smith', 'Doe', 'Johnson', 'Brown', 'Williams', 'Jones', 'Miller', 'Davis', 'Garcia', 'Wilson']
7     return random.choice(first_names) + ' ' + random.choice(last_names)
8
9 # פונקציה ליצירת מחירים אקראיים
10 def generate_price():
11     return random.randint(1000, 10000) # מחירים בין 1000 ל-10000
12
13 # INSERT יצירת פקודות
14 producers = []
15 for i in range(211, 601):
16     name = generate_name()
17     price = generate_price()
18     insert_statement = f"INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES ({i}, '{name}', {price});"
19     producers.append(insert_statement)
20
21 # כתיבת INSERT לקובץ
22 with open("producerPy.txt", "w") as file:
23     for insert in producers:
24         file.write(f"{insert}\n")
```

קובץ הטקסט שנוצר:
















The screenshot shows a window titled "SQL Window - New" with three tabs: "SQL", "Output", and "Statistics". The "SQL" tab is active, displaying a list of generated INSERT statements for the "Producer" table. The statements are formatted as follows:

```
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (211, 'Bob Brown', 909)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (212, 'John Davis', 709)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (213, 'Dan Garcia', 909)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (214, 'Alice Wilson', 909)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (215, 'Carol Jones', 909)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (216, 'John Garcia', 909)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (217, 'John Williams', 909)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (218, 'Jane Davis', 509)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (219, 'Jane Brown', 709)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (220, 'Carol Smith', 909)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (221, 'Henry Williams', 909)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (222, 'Jane Wilson', 909)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (223, 'John Brown', 309)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (224, 'Alice Miller', 909)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (225, 'Eve Williams', 909)
INSERT INTO Producer (Producer_Id, Producer_Name, Price) VALUES (226, 'Bob Jones', 759)
```

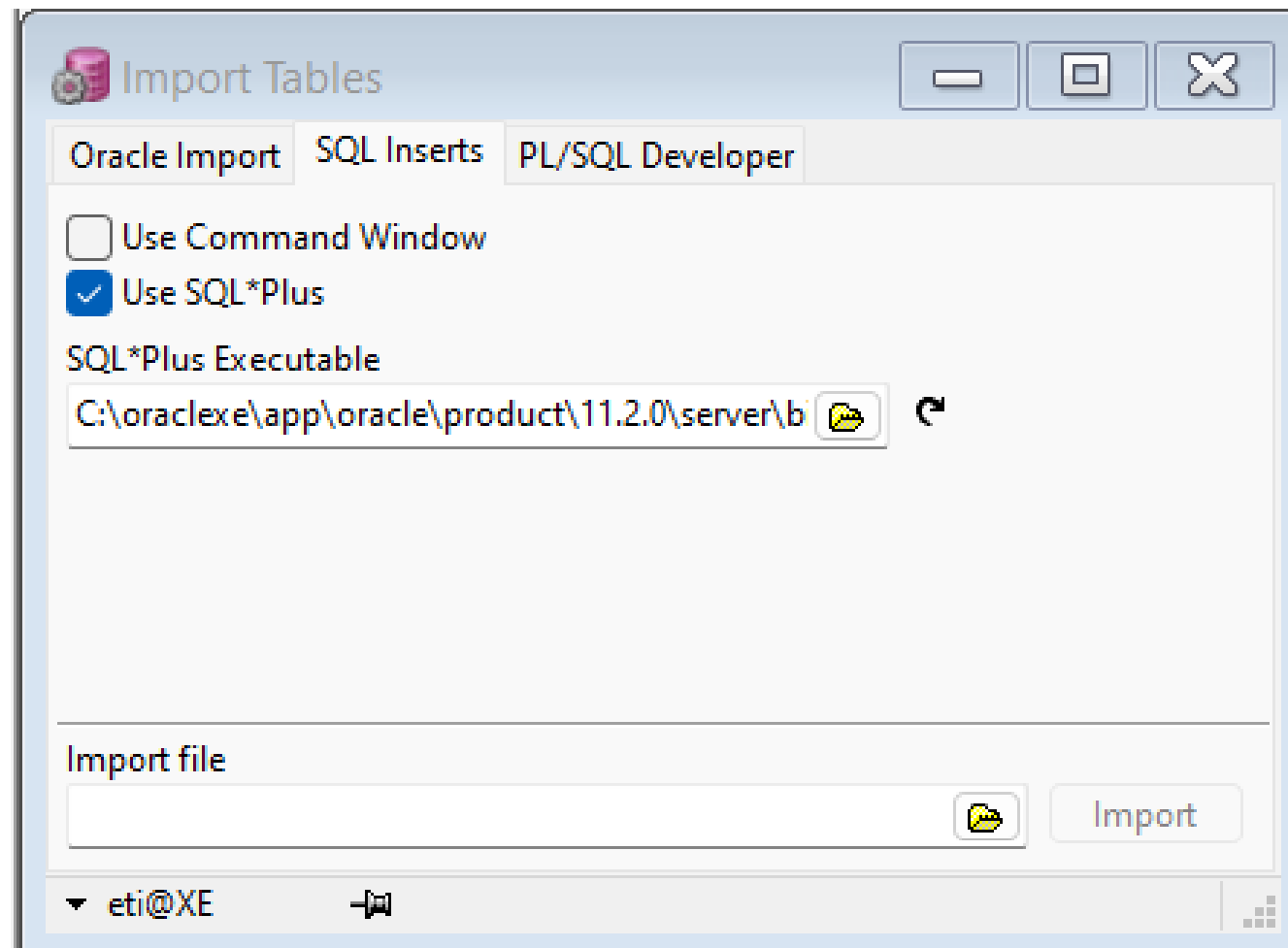
The window also features a status bar at the bottom with icons for undo, redo, and other standard editing functions, along with the text "eti@XE".

כעת הטבלה PRODUCER מכילה את הרשומות:

SQL Window - select * from producer				
SQL    Output    Statistics				
select * from producer				
            				
		PRODUCER_ID	PRODUCER_NAME	PRICE
11		211	Bob Brown	9094
12		212	John Davis	7793
13		213	Dan Garcia	9069
14		214	Alice Wilson	6092
15		215	Carol Jones	1590
16		216	John Garcia	3999
17		217	John Williams	7314
18		218	Jane Davis	5922
19		219	Jane Brown	7800
20		220	Carol Smith	4346
21		221	Henry Williams	9817
22		222	Jane Wilson	5523
23		223	John Brown	3830
24		224	Alice Miller	8357
25		225	Eve Williams	4617
26		226	Bob Jones	7566
27		227	Grace Williams	2408
28		228	Jane Davis	1506
29		229	Bob Johnson	3309

## גיבוי ושיחזור

עשינו גיבוי בשיטת sql insert ושמרנו אותו בקובץ backup1.sql  
לאחר מכן מחקנו את הטבלאות ע"י drop table ויבאנו מחדש ע"י import tables.



לאחר השחזור בדקנו וראינו שכל הטבלאות והרשומות שבתוכן שוחזרו:

