פרויקט בבסיסי נתונים

מחלקת IT של מכון לב

<u>מגישים:</u>

ישראל דזיקוב 316481514

מרדכי כהן 206958035

תוכן עניינים

שלב א'

תיאור כללי של הארגון

בפרויקט נבנה בסיס נתונים למרכז התמיכה והתקשוב של מכון לב, מחלקת ה IT.

צוות ה IT של המרכז האקדמי לב דואג לכל החלק הטכנולוגי התפעולי של המכון.

צוות ה IT אחראי:

1) לעזור ולטפל בתקלות הסטודנטים, המרצים וההנהלה.
2) לתחזק ולתפעל את אתרי המכון כגון מודל, לב נט, מידע ורישום.
3) לטפל במעבדות ובביתות הלימוד מבחינת ציוד טכני של מחשבים, מצלמות, מקרנים ומסכים.
4) לתחזק את המדפסות הפזורות במכון.
5) לתחזק ולהתקין תוכנות הנדרשות למחשבי המכון.
6) לתחזק את ה WIFI.

תיאור מילולי של הארגון

לכל עובד יש תפקיד והערכה (בלומר ותק ואיכות עבודה שנתית). בכל צוות יש עובדים המשויכים אליו, ולכל צוות יש ראש צוות שמנהל אותו ואחראי עליו.

לכל צוות יש חדר אחד בו הם יושבים ופרויקטים שהוא אחראי עליהם (יכול להיות יותר מפרויקט אחד לצוות).

לכל עובד יש מחשב אחד ובו מותקנים תוכנות שונות שנצרכות לצורך עבודה במכון וכן מחוברים אליו מדפסות.

לכל תוכנה ולכל מדפסת יש ספק אחד שאחראי עליה ועל התחזוקה שלה.

תיאור מילולי של הטבלאות

1) **Employee** (EmID, EmName, EmPhone, EmMail, DataOfBirth)

2) **Team** (TeID, TeName)

3) **Role** (RoleID, RoleName)

4) **Evaluation** (EvID, Grade, Year)

5) **Room** (RoomNumber, Space, Floor)

6) **Project** (proID, ProName, DueData, Profit, Cost)

7) **Computer** (C_ID, Procssor, RAM, SSD, YearOfPurchase)

8) **Printer** (PriID, Model, Compeny)

9) **Connected_to**(C_ID, PriID)

10) **Software** (SoID, So_Name, Version)

11) **Installed_on** (C_ID, SoID)

12) **Supplier** (SuID, Su_Name, Addres, Su_phone, Su_mail)

פירוט הישויות

Employee - עובדים

EmID	**תעודת זהות (מפתח)**
EmName	שם
EmPhone	טלפון
EmMail	מייל
DataOfBirth	תאריך הלידה
RoleID	מזהה תפקיד (מפתח זר)
TeID	מזהה צוות (מפתח זר)
C_ID	מזהה מחשב (מפתח זר)

Team – צוות

TeID	**מספר מזהה (מפתח)**
TeName	שם
RoomNumber	מספר חדר (מפתח זר)

Role – תפקיד

RoleID	**מספר מזהה (מפתח)**
RoleName	שם תפקיד

Evaluation – הערכה

EvID	**מספר מזהה (מפתח)**
Grade	ציון
Year	וותק (בשנים)
EmID	מזהה עובד (מפתח זר)

Room – חדר

RoomNumber	**מספר חדר (מפתח)**
Space	שטח
Floor	קומה

Project – פרויקט

proID	**מספר מזהה (מפתח)**
ProName	שם
DueData	תאריך יעד
Profit	רווח
Cost	עלויות
TeID	מזהה צוות (מפתח זר)

Computer – מחשבים

C_ID	מספר מזהה (מפתח)
Procssor	סוג מעבד
RAM	זיכרון גישה אקראית
SSD	כונן שבבי
YearOfPurchase	תאריך יצור

Printer – מדפסת

PriID	מספר מזהה (מפתח)
Model	דגם
Compeny	חברה מייצרת
SuID	מזהה ספק (מפתח זר)

Connected_To – מחשב מחובר למדפסת

PriID	מספר מדפסת (מפתח) , (מפתח זר)
CID	מספר מחשב (מפתח) , (מפתח זר)

Software – תוכנות

SoID	מספר מזהה (מפתח)
So_Name	שם
Version	גרסה
SuID	מזהה ספק (מפתח זר)

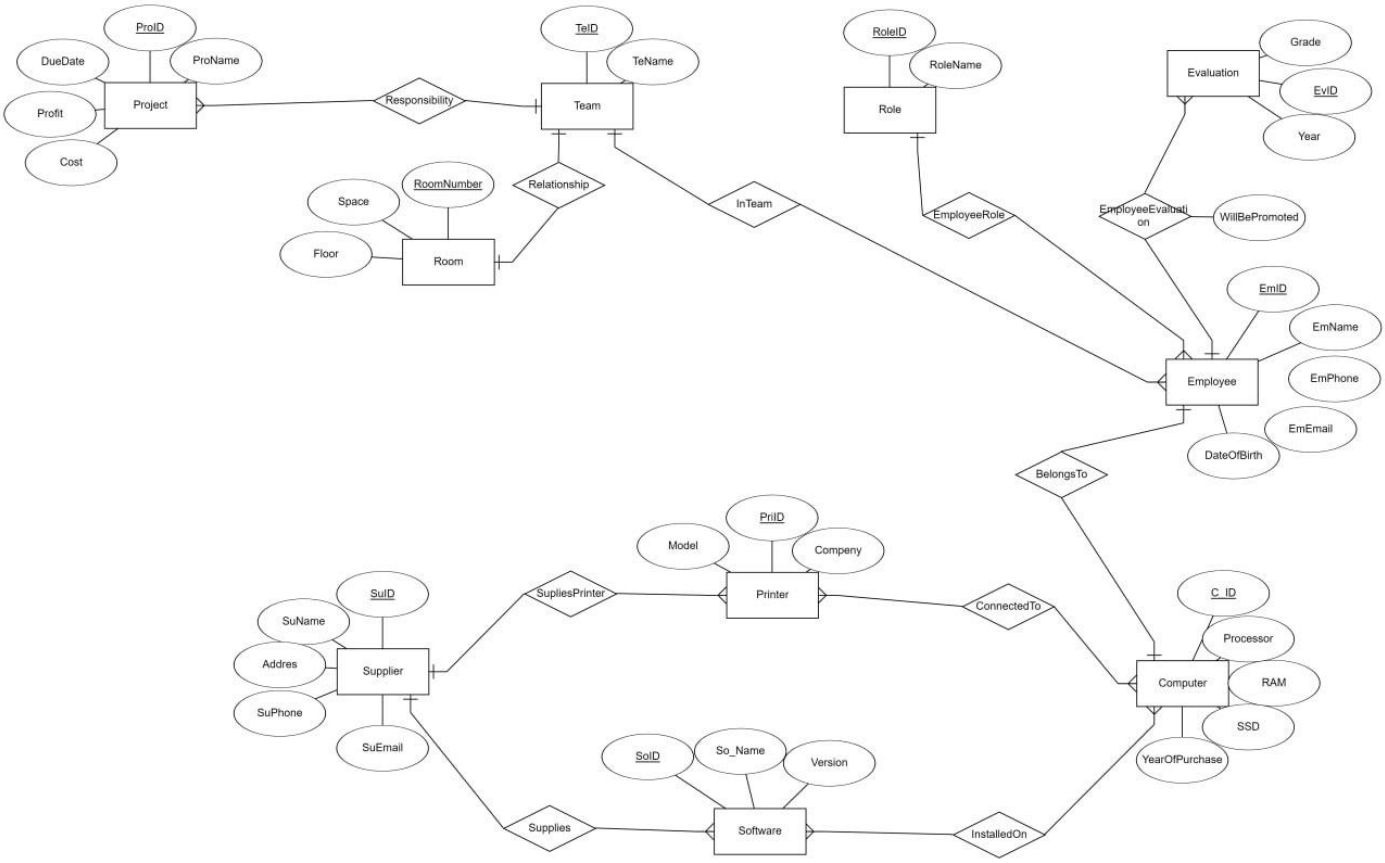
Installed_On – תוכנה מותקנת על מחשב

SoID	מספר תוכנה (מפתח) , (מפתח זר)
CID	מספר מחשב (מפתח) , (מפתח זר)

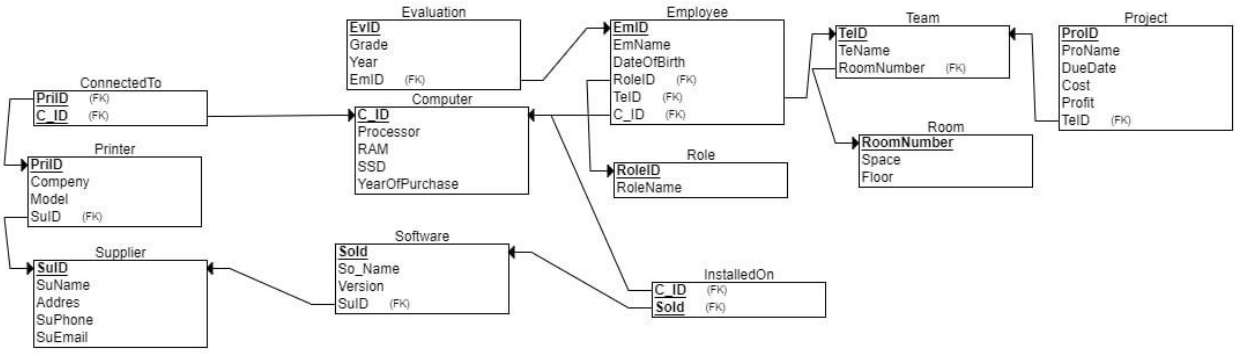
Supplier – ספק

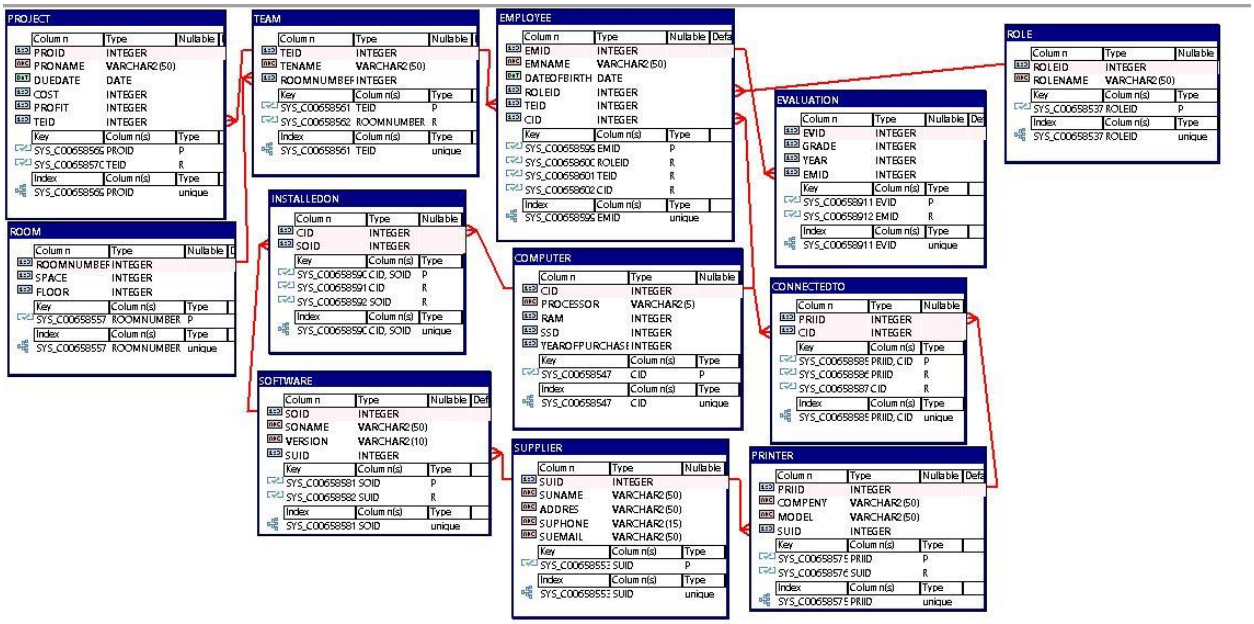
SuID	מספר ספק (מפתח)
Su_Name	שם
Addres	כתובת
Su_phone	טלפון
Su_mail	מייל

דיאגרמת ERD


ProID
DueDate
ProName
Profit
Project
Cost
Responsibility
TeID
TeName
Team
RoleID
RoleName
Role
Evaluation
Grade
EvID
Year
RoomNumber
Space
Floor
Room
Relationship
InTeam
EmployeeRole
EmployeeEvaluation
WillBePromoted
EmID
EmName
EmPhone
Employee
EmEmail
DateOfBirth
BelongsTo
PriID
Model
Compeny
Printer
SuliesPrinter
ConnectedTo
SuID
SuName
Addres
Supplier
SuPhone
SuEmail
C_ID
Processor
RAM
Computer
SSD
YearOfPurchase
SoID
So_Name
Version
Software
Supplies
InstalledOn

תרשים DSD


Evaluation
EvID
Grade
Year
EmID (FK)
Employee
EmID
EmName
DateOfBirth
RoleID (FK)
TeID (FK)
C_ID (FK)
Team
TeID
TeName
RoomNumber (FK)
Project
ProID
ProName
DueDate
Cost
Profit
TeID (FK)
ConnectedTo
PriID (FK)
C_ID (FK)
Computer
C_ID
Processor
RAM
SSD
YearOfPurchase
Room
RoomNumber
Space
Floor
Printer
PriID
Compeny
Model
SuID (FK)
Role
RoleID
RoleName
Supplier
SuID
SuName
Addres
SuPhone
SuEmail
Software
Sold
So_Name
Version
SuID (FK)
InstalledOn
C_ID (FK)
Sold (FK)


PROJECT
TEAM
EMPLOYEE
ROLE
EVALUATION
INSTALLEDON
ROOM
COMPUTER
CONNECTEDTO
SOFTWARE
SUPPLIER
PRINTER

קשרים בין ישויות

שם הקשר	פירוט
Employee_Evaluation	קשר יחיד לרבים בין עובד להערכה. לכל עובד יכולות להיות כמה הערכות
Employee_Role	קשר יחיד לרבים בין תפקיד לעובד. לכל תפקיד יכולים להיות מספר עובדים באותו תפקיד
Employee_Team	קשר יחיד לרבים בין צוות לעובד. כל צוות מכיל מספר עובדים
Team_Room	קשר יחיד ליחיד בין צוות לחדר. כל צוות יושב לבדו בחדר מסוים
Team_responsibility_Project	קשר יחיד לרבים בין צוות לפרויקט. כל צוות אחראי על מספר פרויקטים
Computer_belongs_To_Employee	קשר יחיד ליחיד בין עובד למחשב. לכל עובד יש מחשב אישי שלו
Computer_Connected_To_Printer	קשר רבים לרבים בין מחשב למדפסת. כל מחשב מחובר לכמה מדפסות וכל מדפסת מחוברת לכמה מחשבים
Software_InstalledOn_Computer	קשר רבים לרבים בין תוכנה למחשב. כל תוכנה מותקנת על כמה מחשבים ועל מחשב מותקנים כמה תוכנות
Printer_Suplied_By_Suplier	קשר יחיד לרבים בין ספק למדפסת. כל ספק מספק כמה מדפסות
Software_Suplied_By_Suplier	קשר יחיד לרבים בין ספק לתוכנה. כל ספק מספק כמה תוכנות

פקודות

Create

```
CREATE TABLE Evaluation
(
  EvID INT NOT NULL,
  Grade INT NOT NULL,
  Year INT NOT NULL,
  EmID INT NOT NULL,
  PRIMARY KEY (EvID),
  FOREIGN KEY (EmID) REFERENCES Employee(EmID)
);
```

```
CREATE TABLE Computer
(
  CID INT NOT NULL,
  Processor VARCHAR(5) NOT NULL,
  RAM INT NOT NULL,
  SSD INT NOT NULL,
  YearOfPurchase INT NOT NULL,
  PRIMARY KEY (CID)
);
```

```
CREATE TABLE Team
(
  TeID INT NOT NULL,
  TeName VARCHAR(50) NOT NULL,
  RoomNumber INT NOT NULL,
  PRIMARY KEY (TeID),
  FOREIGN KEY (RoomNumber) REFERENCES Room(RoomNumber)
);
```

```
CREATE TABLE Supplier
(
  SuID INT NOT NULL,
  SuName VARCHAR(50) NOT NULL,
  Addres VARCHAR(50) NOT NULL,
  SuPhone VARCHAR(15) NOT NULL,
  SuEmail VARCHAR(50) NOT NULL,
  PRIMARY KEY (SuID)
);
```

```
CREATE TABLE Software
(
  SoId INT NOT NULL,
  SoName VARCHAR(50) NOT NULL,
  Version VARCHAR(10) NOT NULL,
  SuID INT NOT NULL,
  PRIMARY KEY (SoId),
  FOREIGN KEY (SuID) REFERENCES Supplier(SuID)
);
```

```
CREATE TABLE Room
(
  RoomNumber INT NOT NULL,
  Space INT NOT NULL,
  Floor INT NOT NULL,
  PRIMARY KEY (RoomNumber)
);
```

```
CREATE TABLE Project
(
  ProID INT NOT NULL,
  ProName VARCHAR(50) NOT NULL,
  DueDate DATE NOT NULL,
  Cost INT NOT NULL,
  Profit INT NOT NULL,
  TeID INT NOT NULL,
  PRIMARY KEY (ProID),
  FOREIGN KEY (TeID) REFERENCES Team(TeID)
);
```

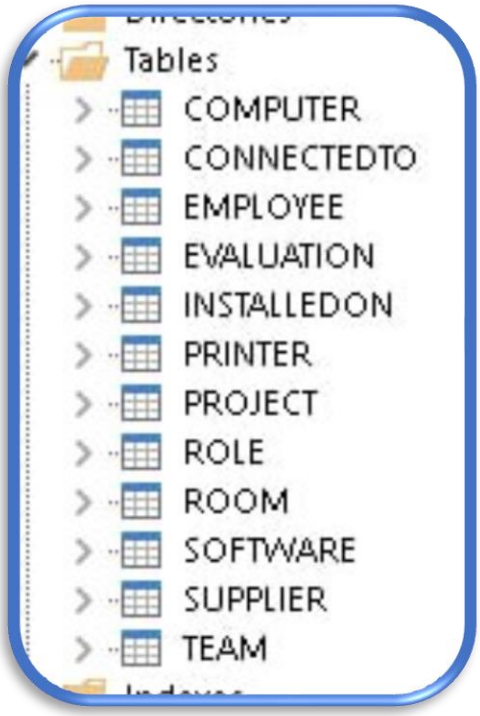
```
CREATE TABLE Printer
(
  PriID INT NOT NULL,
  Compeny VARCHAR(50) NOT NULL,
  Model VARCHAR(50) NOT NULL,
  SuID INT NOT NULL,
  PRIMARY KEY (PriID),
  FOREIGN KEY (SuID) REFERENCES Supplier(SuID)
);
```

```sql
CREATE TABLE Role
(
  RoleID INT NOT NULL,
  RoleName VARCHAR(50) NOT NULL,
  PRIMARY KEY (RoleID)
);
```

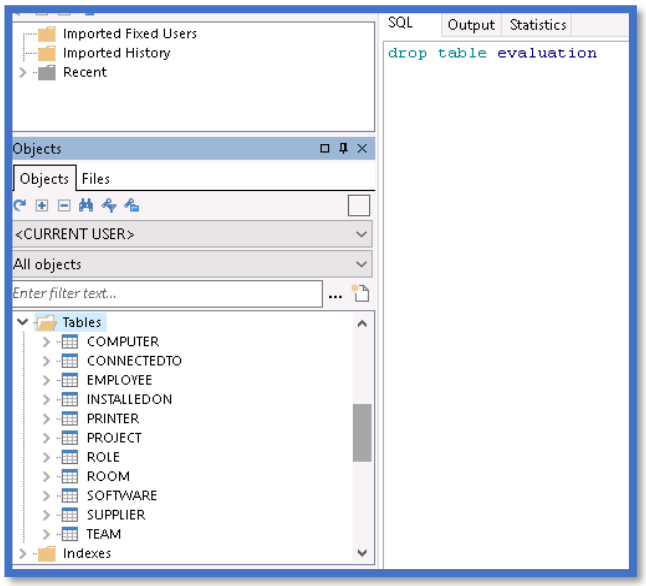
```sql
CREATE TABLE ConnectedTo
(
  PriID INT NOT NULL,
  CID INT NOT NULL,
  PRIMARY KEY (PriID, CID),
  FOREIGN KEY (PriID) REFERENCES Printer(PriID),
  FOREIGN KEY (CID) REFERENCES Computer(CID)
);
```

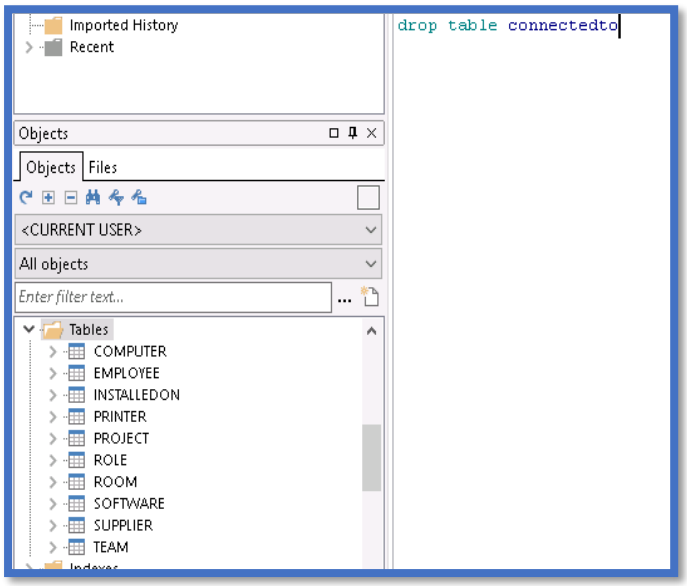
```sql
CREATE TABLE Employee
(
  EmID INT NOT NULL,
  EmName VARCHAR(50) NOT NULL,
  DateOfBirth DATE NOT NULL,
  RoleID INT NOT NULL,
  TeID INT NOT NULL,
  CID INT NOT NULL,
  PRIMARY KEY (EmID),
  FOREIGN KEY (RoleID) REFERENCES Role(RoleID),
  FOREIGN KEY (TeID) REFERENCES Team(TeID),
  FOREIGN KEY (CID) REFERENCES Computer(CID)
);
```

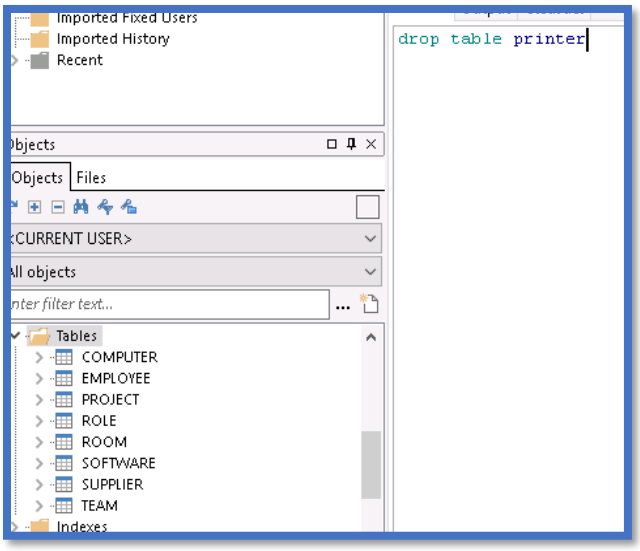
```sql
CREATE TABLE InstalledOn
(
  CID INT NOT NULL,
  SoId INT NOT NULL,
  PRIMARY KEY (CID, SoId),
  FOREIGN KEY (CID) REFERENCES Computer(CID),
  FOREIGN KEY (SoId) REFERENCES Software(SoId)
);
```

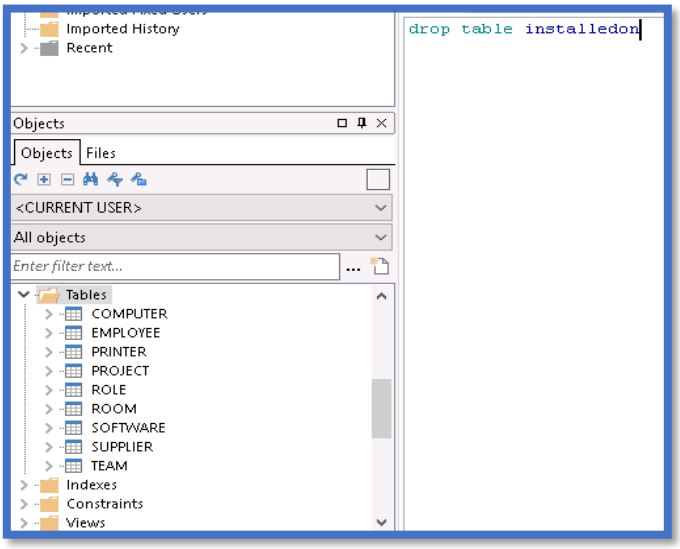


Drop


Imported Fixed Users
Imported History
Recent
SQL
Output
Statistics
drop table evaluation
Objects
Objects
Files
<CURRENT USER>
All objects
Enter filter text...
Tables
COMPUTER
CONNECTEDTO
EMPLOYEE
INSTALLEDON
PRINTER
PROJECT
ROLE
ROOM
SOFTWARE
SUPPLIER
TEAM
Indexes


Imported History
Recent
drop table connectedto
Objects
Objects
Files
<CURRENT USER>
All objects
Enter filter text...
Tables
COMPUTER
EMPLOYEE
INSTALLEDON
PRINTER
PROJECT
ROLE
ROOM
SOFTWARE
SUPPLIER
TEAM


Imported Fixed Users
Imported History
Recent
drop table printer
Objects
Files
<CURRENT USER>
All objects
Tables
COMPUTER
EMPLOYEE
PROJECT
ROLE
ROOM
SOFTWARE
SUPPLIER
TEAM
Indexes


Imported History
Recent
drop table installedon
Objects
Objects
Files
<CURRENT USER>
All objects
Enter filter text...
Tables
COMPUTER
EMPLOYEE
PRINTER
PROJECT
ROLE
ROOM
SOFTWARE
SUPPLIER
TEAM
Indexes
Constraints
Views

Insert

ConnectedTo.sql | Software.sql | Computer.sql

C: > Users > cohenmo1 > Downloads > ConnectedTo.sql

```
insert into IJACOB.CONNECTEDTO (PRIID, CID)
values (103, 304);

insert into IJACOB.CONNECTEDTO (PRIID, CID)
values (103, 303);

insert into IJACOB.CONNECTEDTO (PRIID, CID)
values (100, 307);
```

Software.sql | Computer.sql | Team.sql | Suplier.sql

C: > Users > cohenmo1 > Downloads > Software.sql

```
insert into IJACOB.SOFTWARE (SOID, SONAME, VERSION, SUID)
values (200, 'InsurMark', '16.2', 2238);

insert into IJACOB.SOFTWARE (SOID, SONAME, VERSION, SUID)
values (201, 'Travizon', '8.2', 2136);
values (201, 'Travizon', '8.2', 2136);
```

Computer.sql | Team.sql | Suplier.sql | Room.sql | Role.sql

C: > Users > cohenmo1 > Downloads > Computer.sql

```
insert into IJACOB.COMPUTER (CID, PROCESSOR, RAM, SSD, YEAROFPURCHASE)
values (300, 'i3', 16, 256, 2014);

insert into IJACOB.COMPUTER (CID, PROCESSOR, RAM, SSD, YEAROFPURCHASE)
values (301, 'i7', 8, 512, 2018);
```

Team.sql | Suplier.sql | Room.sql | Role.sql

C: > Users > cohenmo1 > Downloads > Team.sql

```
insert into IJACOB.TEAM (TEID, TENAME, ROOMNUMBER)
values (1, 'lanthanum', 9);

insert into IJACOB.TEAM (TEID, TENAME, ROOMNUMBER)
values (2, 'cadmium', 12);
```

Suplier.sql | Room.sql | Role.sql | Project.sql | Printer.sql | InstalledOn.sql

C: > Users > cohenmo1 > Downloads > Suplier.sql

```
insert into IJACOB.SUPPLIER (SUID, SUNAME, ADDRES, SUPHONE, SUEMAIL)
values (2000, 'Visa International', '616 Paxton Street', 514816272, 'martin.crimson@visainter

insert into IJACOB.SUPPLIER (SUID, SUNAME, ADDRES, SUPHONE, SUEMAIL)
values (2034, 'Arkidata', '16 Jude', 589855889, 'v.loggia@arkidata.com');
```

Role.sql | Project.sql | Printer.sql | Insta

C: > Users > cohenmo1 > Downloads > Role.sql

```
insert into IJACOB.ROLE (ROLEID, ROLENAME)
values (100, 'Network architect');

insert into IJACOB.ROLE (ROLEID, ROLENAME)
values (125, 'Wireless network engineer');
```

Room.sql | Role.sql | Project.sql | Printer.sql

C: > Users > cohenmo1 > Downloads > Room.sql

```
insert into IJACOB.ROOM (ROOMNUMBER, SPACE, FLOOR)
values (1, 34, 3);

insert into IJACOB.ROOM (ROOMNUMBER, SPACE, FLOOR)
values (2, 55, 2);
```

Project.sql | Printer.sql | InstalledOn.sql | Evaluation.sql | Employee.sql

C: > Users > cohenmo1 > Downloads > Project.sql

```
insert into IJACOB.PROJECT (PROID, PRONAME, DUEDATE, COST, PROFIT, TEID)
values (1, '2 Year Warranty On Combo''s.', to_date('03-03-2022', 'dd-mm-yyyy'), 6980, 9961, 1)

insert into IJACOB.PROJECT (PROID, PRONAME, DUEDATE, COST, PROFIT, TEID)
values (2, 'Combo AMD Duron 1.2Ghz cpu Gigabyte GA-7VKMLS m/b ', to_date('17-01-2021', 'dd-mm-
```

Printer.sql | InstalledOn.sql | Evaluation.sql | Employee.sql

C: > Users > cohenmo1 > Downloads > Printer.sql

```
insert into IJACOB.PRINTER (PRIID, COMPENY, MODEL, SUID)
values (100, 'National Bankcard Systems', '14"/15" Filter Screen', 2408);

insert into IJACOB.PRINTER (PRIID, COMPENY, MODEL, SUID)
values (101, 'ConAgra', 'Achieve Gold Dual Fan 550Watt PowerSupply.', 2340);
```

Evaluation.sql | Employee.sql

C: > Users > cohenmo1 > Downloads > Evaluation.sql

```
insert into IJACOB.EVALUATION (EVID, GRADE, YEAR, EMID)
values (500, 5, 2021, 920);

insert into IJACOB.EVALUATION (EVID, GRADE, YEAR, EMID)
values (501, 9, 2023, 1030);
```

InstalledOn.sql | Evaluation.sql | Employee.sql

C: > Users > cohenmo1 > Downloads > InstalledOn.sql

```
insert into IJACOB.INSTALLEDON (CID, SOID)
values (312, 212);

insert into IJACOB.INSTALLEDON (CID, SOID)
values (302, 200);
```

Employee.sql

C: > Users > cohenmo1 > Downloads > Employee.sql

```
insert into IJACOB.EMPLOYEE (EMID, EMNAME, DATEOFBIRTH, ROLEID, TEID, CID, EmPhone, EmEmail)
values (900, 'MikiBarrymore', to_date('05-07-2002', 'dd-mm-yyyy'), 150, 5, 315, 0536542816, '

insert into IJACOB.EMPLOYEE (EMID, EMNAME, DATEOFBIRTH, ROLEID, TEID, CID, EmPhone, EmEmail)
values (910, 'VictoriaDupree', to_date('17-09-1976', 'dd-mm-yyyy'), 225, 9, 314, 0523660895,
```

	EMID	EMNAME	DATEOFBIRTH	ROLEID	TEID	CID	EMPHONE	EMEMAIL	ROWID
1	900	MikiBarrymore	05/07/2002	150	5	315	536542816	miki@hfn.com	AACjrzAAGAAAsM0AAA
2	910	VictoriaDupree	17/09/1976	225	9	314	523660895	victoria.dupree@uem.com	AACjrzAAGAAAsM0AAB
3	920	WillemBelles	25/02/1998	150	13	304	51893739	willem.belles@genghisgrill.au	AACjrzAAGAAAsM0AAC
4	930	RosannaFeore	28/11/2002	200	7	311	531457495	rosanna.feore@royalgold.com	AACjrzAAGAAAsM0AAD
5	940	WesDuschel	14/01/1998	425	2	311	514215033	wes.d@ezecastlesoftware.de	AACjrzAAGAAAsM0AAE
6	950	BobbiWeaving	31/03/1994	375	5	307	552292873	bweaving@ntas.com	AACjrzAAGAAAsM0AAF
7	960	JulianaRyder	14/11/1981	425	2	314	544381215	juliana.ryder@loreal.com	AACjrzAAGAAAsM0AAG
8	970	MurrayNoseworthy	09/12/1975	275	11	314	504554326	mnoseworthy@sfgo.com	AACjrzAAGAAAsM0AAH
9	980	PabloShandling	28/07/1989	175	13	306	551336703	pablos@unica.com	AACjrzAAGAAAsM0AAI
10	990	AlecKapanka	09/07/1978	100	3	306	548118428	alec.kapanka@clorox.com	AACjrzAAGAAAsM0AAJ
11	1000	DenzelBradford	23/12/1990	325	5	309	501988384	denzel.bradford@atxforms.dk	AACjrzAAGAAAsM0AAK
12	1010	GeneNelligan	18/02/1973	275	13	302	518200503	g.nelligan@staffforce.fr	AACjrzAAGAAAsM0AAL
13	1020	NedStone	17/04/1993	225	7	302	514272506	n.stone@ris.de	AACjrzAAGAAAsM0AAM
14	1030	KaronTinsley	09/11/1985	150	11	314	51643292	ktinsley@wyeth.fr	AACjrzAAGAAAsM0AAN

	VID	GRADE	YEAR	EMID	ROWID
1	500	5	2021	920	AACkI5AAGAAAGE2AAA
2	501	9	2023	1030	AACkI5AAGAAAGE2AAB
3	502	4	2023	1000	AACkI5AAGAAAGE2AAC
4	503	7	2022	940	AACkI5AAGAAAGE2AAD
5	504	7	2024	920	AACkI5AAGAAAGE2AAE
6	505	9	2022	1000	AACkI5AAGAAAGE2AAF
7	506	4	2023	1010	AACkI5AAGAAAGE2AAG
8	507	10	2020	940	AACkI5AAGAAAGE2AAH
9	508	3	2021	1030	AACkI5AAGAAAGE2AAI
10	509	6	2025	980	AACkI5AAGAAAGE2AAJ
11	510	10	2025	1020	AACkI5AAGAAAGE2AAK
12	511	2	2020	930	AACkI5AAGAAAGE2AAL
13	512	3	2023	1030	AACkI5AAGAAAGE2AAM
14	513	8	2024	1020	AACkI5AAGAAAGE2AAN
15	514	3	2020	930	AACkI5AAGAAAGE2AAO
16	515	10	2021	990	AACkI5AAGAAAGE2AAP
17	516	4	2023	980	AACkI5AAGAAAGE2AAQ
18	517	1	2020	930	AACkI5AAGAAAGE2AAR
19	518	3	2023	970	AACkI5AAGAAAGE2AAS
20	519	3	2023	960	AACkI5AAGAAAGE2AAT

	PRIID	CID	ROWID
1	100	307	AACkI9AAGAAAGEmAAC
2	101	303	AACkI9AAGAAAGEmAAH
3	101	309	AACkI9AAGAAAGEmAAY
4	101	313	AACkI9AAGAAAGEmAAa
5	103	303	AACkI9AAGAAAGEmAAB
6	103	304	AACkI9AAGAAAGEmAAA
7	104	307	AACkI9AAGAAAGEmAAL
8	104	312	AACkI9AAGAAAGEmAAG
9	104	315	AACkI9AAGAAAGEmAAJ
10	105	309	AACkI9AAGAAAGEmAAZ
11	105	313	AACkI9AAGAAAGEmAAR
12	106	303	AACkI9AAGAAAGEmAAS
13	106	306	AACkI9AAGAAAGEmAAP
14	106	307	AACkI9AAGAAAGEmAAT
15	107	302	AACkI9AAGAAAGEmAAO
16	107	310	AACkI9AAGAAAGEmAAU
17	107	311	AACkI9AAGAAAGEmAAX
18	107	312	AACkI9AAGAAAGEmAAE
19	108	310	AACkI9AAGAAAGEmAAF
20	108	315	AACkI9AAGAAAGEmAAK
21	109	304	AACkI9AAGAAAGEmAAN
22	109	308	AACkI9AAGAAAGEmAAQ

	CID	PROCESSOR	RAM	SSD	YEAROFPURCHASE	ROWID
1	300	i3	16	256	2014	AACjrhAAGAAAsMEAAA
2	301	i7	8	512	2018	AACjrhAAGAAAsMEAAB
3	302	i7	8	256	2022	AACjrhAAGAAAsMEAAC
4	303	i7	8	512	2017	AACjrhAAGAAAsMEAAD
5	304	i5	32	256	2023	AACjrhAAGAAAsMEAAE
6	305	i9	16	512	2023	AACjrhAAGAAAsMEAAF
7	306	i7	16	256	2017	AACjrhAAGAAAsMEAAG
8	307	i5	16	256	2023	AACjrhAAGAAAsMEAAH
9	308	i3	32	512	2015	AACjrhAAGAAAsMEAAI
10	309	i3	32	128	2016	AACjrhAAGAAAsMEAAJ
11	310	i7	8	256	2016	AACjrhAAGAAAsMEAAK
12	311	i3	8	128	2023	AACjrhAAGAAAsMEAAL
13	312	i5	8	256	2016	AACjrhAAGAAAsMEAAM
14	313	i9	16	128	2019	AACjrhAAGAAAsMEAAN
15	314	i3	16	256	2014	AACjrhAAGAAAsMEAAO
16	315	i5	32	256	2023	AACjrhAAGAAAsMEAAP

Select

```
select duedate
from project
```

	DUEDATE
1	03/03/2022
2	17/01/2021
3	29/01/2020
4	01/05/2021
5	31/07/2024
6	12/03/2022
7	31/01/2025
8	17/03/2020
9	05/01/2023
10	21/06/2021
11	03/11/2020
12	13/04/2023
13	11/11/2021
14	02/10/2021

```
select cid
from computer
```

	CID
1	300
2	301
3	302
4	303
5	304
6	305
7	306
8	307
9	308
10	309
11	310
12	311
13	312
14	313
15	314
16	315

```
select dateofbirth
from employee
```

	DATEOFBIRTH
1	05/07/2002
2	17/09/1976
3	25/02/1998
4	28/11/2002
5	14/01/1998
6	31/03/1994
7	14/11/1981
8	09/12/1975
9	28/07/1989
10	09/07/1978
11	23/12/1990
12	18/02/1973
13	17/04/1993
14	09/11/1985

```
select suemail
from supplier
```

	SUEMAIL
1	martin.crimson@visainternational.de
2	v.loggia@arkidata.com
3	terry@labradanutrition.de
4	russell.gandolfini@waltdisney.th
5	pam.blanchett@abs.com
6	l.nakai@ssi.br
7	neneh.a@pib.com
8	dave.latifah@pioneerdatasystems.com
9	markr@tarragonrealty.com
10	laura.chambers@qssgroup.com
11	cevin.serbedzija@ibm.de
12	ahmad.koteas@mls.cz
13	carrie@newmedia.com
14	mikok@spd.com

Delete

SQL | Output | Statistics

```
delete from ev109ation
where grade < 5

delete from employee
where emid = 930

delete from connectedto
where priID = 109

delete from installedon
where cid = 303
```

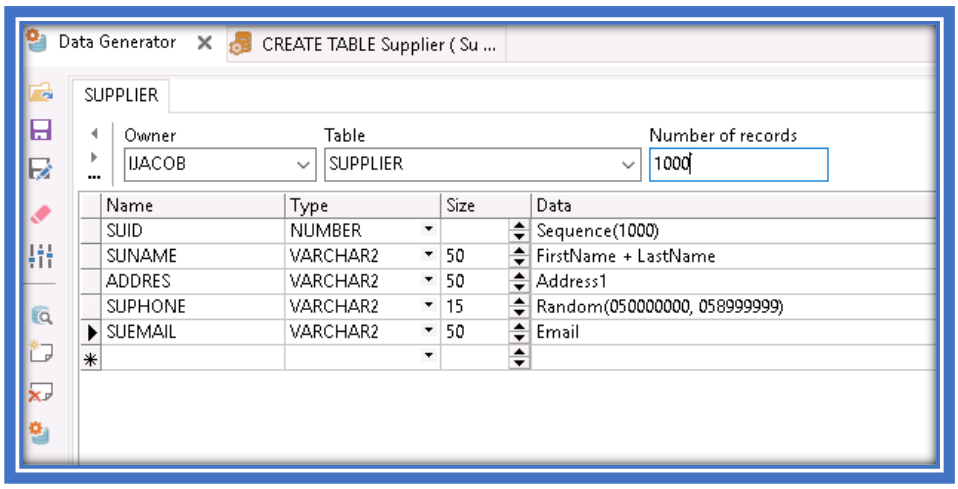
Update

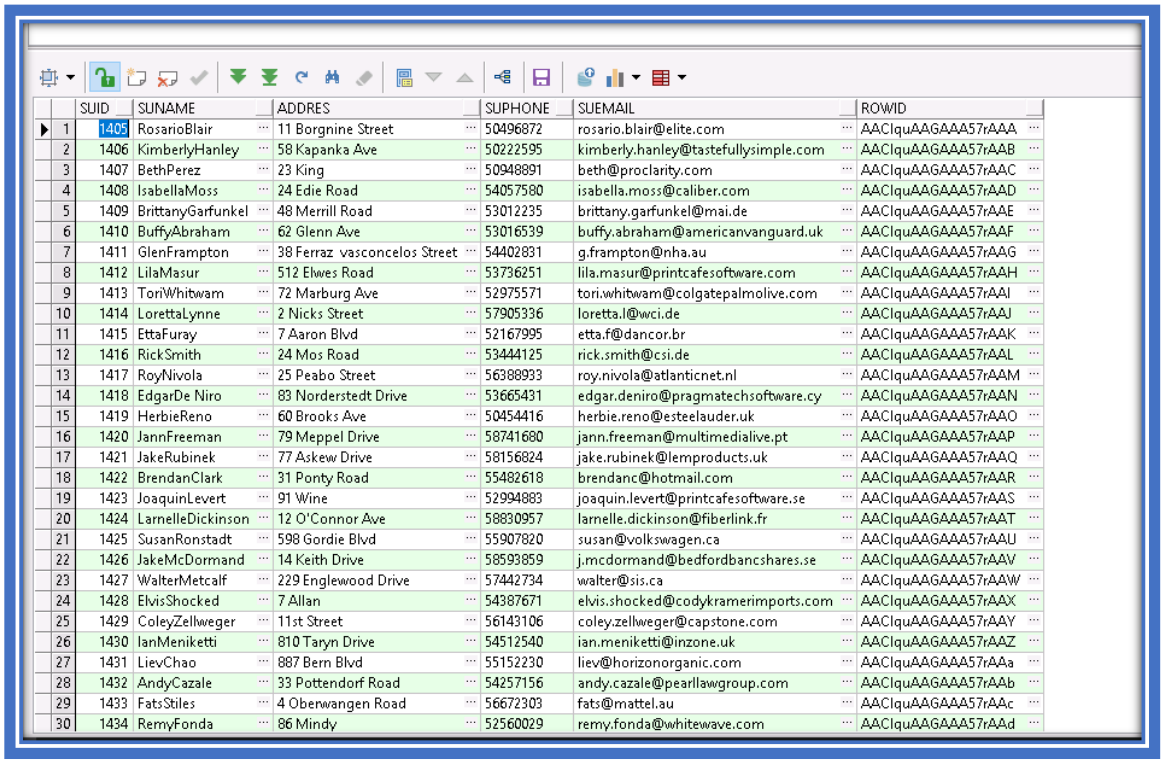
```
update evaluation
set grade = grade + 1

update project
set cost = 30000
where proID = 4

update employee
set RoleID = 175
where RoleID = 150

update supplier
set suName 'Associated business'
where suName = 'Associated business System'
```





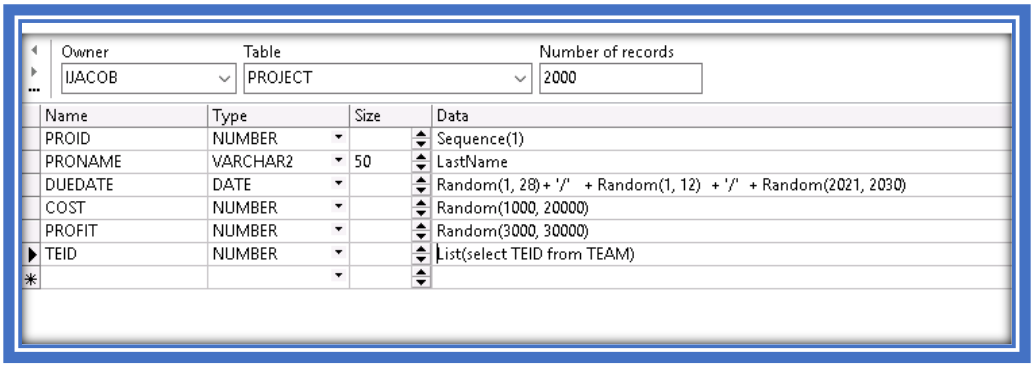
	SUID	SUNAME	ADDRES	SUPHONE	SUEMAIL	ROWID
1	1405	RosarioBlair	11 Borgnine Street	50496872	rosario.blair@elite.com	AAClquAAGAAA57rAAA
2	1406	KimberlyHanley	58 Kapanka Ave	50222595	kimberly.hanley@tastefullysimple.com	AAClquAAGAAA57rAAB
3	1407	BethPerez	23 King	50948891	beth@proclarity.com	AAClquAAGAAA57rAAC
4	1408	IsabellaMoss	24 Edie Road	54057580	isabella.moss@caliber.com	AAClquAAGAAA57rAAD
5	1409	BrittanyGarfunkel	48 Merrill Road	53012235	brittany.garfunkel@mai.de	AAClquAAGAAA57rAAE
6	1410	BuffyAbraham	62 Glenn Ave	53016539	buffy.abraham@americanvanguard.uk	AAClquAAGAAA57rAAF
7	1411	GlenFrampton	38 Ferraz vasconcelos Street	54402831	g.frampton@nha.au	AAClquAAGAAA57rAAG
8	1412	LilaMasur	512 Elwes Road	53736251	lila.masur@printcafesoftware.com	AAClquAAGAAA57rAAH
9	1413	ToriWhitwam	72 Marburg Ave	52975571	tori.whitwam@colgatepalmolive.com	AAClquAAGAAA57rAAI
10	1414	LorettaLynne	2 Nicks Street	57905336	loretta.l@wci.de	AAClquAAGAAA57rAAJ
11	1415	EttaFuray	7 Aaron Blvd	52167995	etta.f@dancor.br	AAClquAAGAAA57rAAK
12	1416	RickSmith	24 Mos Road	53444125	rick.smith@csi.de	AAClquAAGAAA57rAAL
13	1417	RoyNivola	25 Peabo Street	56388933	roy.nivola@atlanticnet.nl	AAClquAAGAAA57rAAM
14	1418	EdgarDe Niro	83 Norderstedt Drive	53665431	edgar.deniro@pragmatechsoftware.cy	AAClquAAGAAA57rAAN
15	1419	HerbieReno	60 Brooks Ave	50454416	herbie.reno@esteelauder.uk	AAClquAAGAAA57rAAO
16	1420	JannFreeman	79 Meppel Drive	58741680	jann.freeman@multimedialive.pt	AAClquAAGAAA57rAAP
17	1421	JakeRubinek	77 Askew Drive	58156824	jake.rubinek@lemproducts.uk	AAClquAAGAAA57rAAQ
18	1422	BrendanClark	31 Ponty Road	55482618	brendanc@hotmail.com	AAClquAAGAAA57rAAR
19	1423	JoaquinLevert	91 Wine	52994883	joaquin.levert@printcafesoftware.se	AAClquAAGAAA57rAAS
20	1424	LarnelleDickinson	12 O'Connor Ave	58830957	larnelle.dickinson@fiberlink.fr	AAClquAAGAAA57rAAT
21	1425	SusanRonstadt	598 Gordie Blvd	55907820	susan@volkswagen.ca	AAClquAAGAAA57rAAU
22	1426	JakeMcDormand	14 Keith Drive	58593859	j.mcdormand@bedfordbancshares.se	AAClquAAGAAA57rAAV
23	1427	WalterMetcalf	229 Englewood Drive	57442734	walter@sis.ca	AAClquAAGAAA57rAAW
24	1428	ElvisShocked	7 Allan	54387671	elvis.shocked@codykramerimports.com	AAClquAAGAAA57rAAX
25	1429	ColeyZellweger	11st Street	56143106	coley.zellweger@capstone.com	AAClquAAGAAA57rAAY
26	1430	IanMeniketti	810 Taryn Drive	54512540	ian.meniketti@inzone.uk	AAClquAAGAAA57rAAZ
27	1431	LievChao	887 Bern Blvd	55152230	liev@horizonorganic.com	AAClquAAGAAA57rAAa
28	1432	AndyCazale	33 Pottendorf Road	54257156	andy.cazale@pearllawgroup.com	AAClquAAGAAA57rAAb
29	1433	FatsStiles	4 Oberwangen Road	56672303	fats@mattel.au	AAClquAAGAAA57rAAc
30	1434	RemyFonda	86 Mindy	52560029	remy.fonda@whitewave.com	AAClquAAGAAA57rAAd

TEAM

Owner	Table	Number of records
IJACOB	TEAM	1000

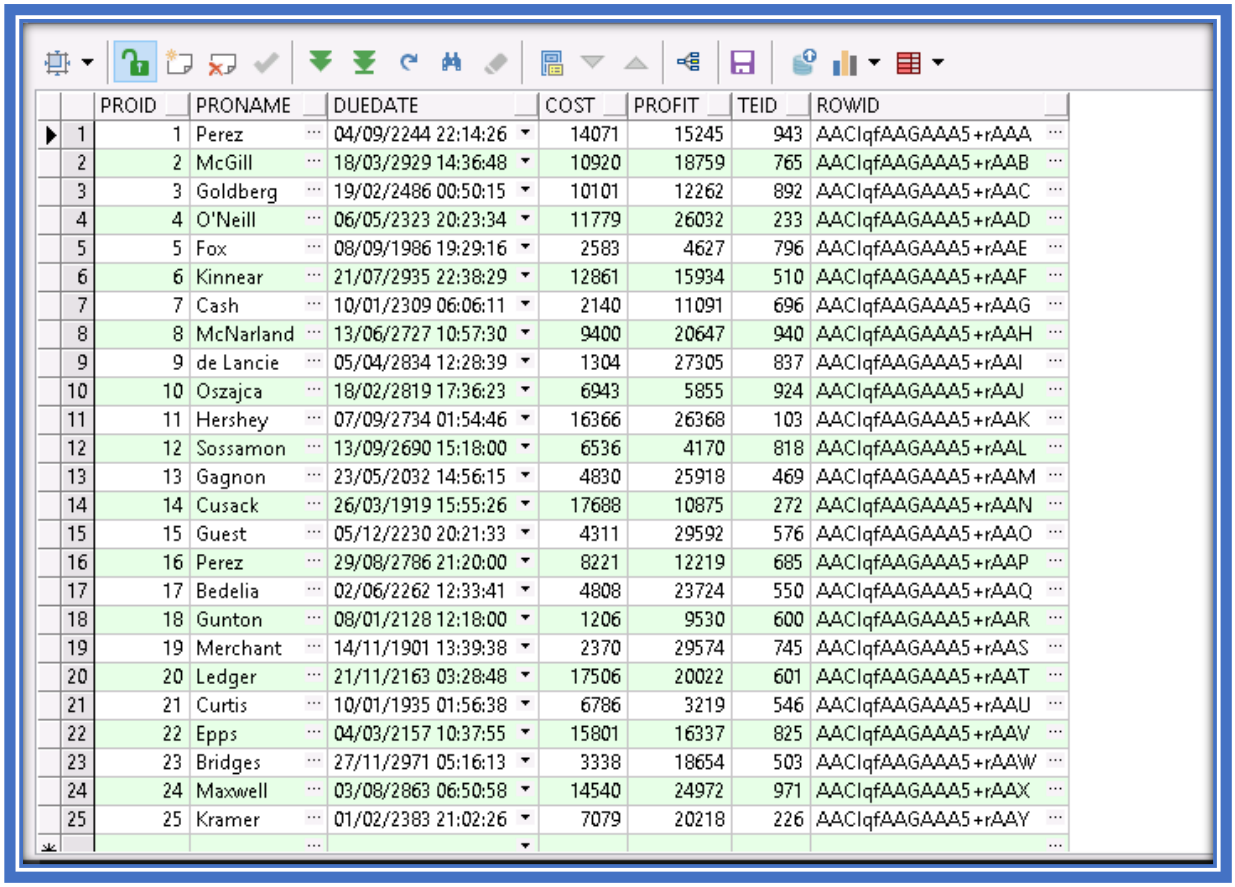
Name	Type	Size	Data
TEID	NUMBER		Sequence(1)
TENAME	VARCHAR2	50	City
ROOMNUMBER	NUMBER		List(select ROOMNUMBER from ROOM)

	TEID	TENAME	ROOMNUMBER	ROWID
1	1	Sparrows Point	760	AAClqdAAGAAA5+bAAA
2	2	Purley	363	AAClqdAAGAAA5+bAAB
3	3	Birkenhead	251	AAClqdAAGAAA5+bAAC
4	4	Roanoke	153	AAClqdAAGAAA5+bAAD
5	5	California	632	AAClqdAAGAAA5+bAAE
6	6	Grand-mere	897	AAClqdAAGAAA5+bAAF
7	7	Algermissen	82	AAClqdAAGAAA5+bAAG
8	8	Sale	327	AAClqdAAGAAA5+bAAH
9	9	Braintree	243	AAClqdAAGAAA5+bAAI
10	10	Niles	808	AAClqdAAGAAA5+bAAJ
11	11	West Chester	294	AAClqdAAGAAA5+bAAK
12	12	Takamatsu	810	AAClqdAAGAAA5+bAAL
13	13	Dubai	293	AAClqdAAGAAA5+bAAM
14	14	King of Prussia	586	AAClqdAAGAAA5+bAAN
15	15	Belgrad	9	AAClqdAAGAAA5+bAAO
16	16	Ittigen	416	AAClqdAAGAAA5+bAAP
17	17	Trieste	639	AAClqdAAGAAA5+bAAQ
18	18	Suberg	406	AAClqdAAGAAA5+bAAR
19	19	Amherst	619	AAClqdAAGAAA5+bAAS
20	20	Brentwood	527	AAClqdAAGAAA5+bAAT
21	21	Burgess Hill	904	AAClqdAAGAAA5+bAAU
22	22	Rorschach	564	AAClqdAAGAAA5+bAAV
23	23	Chapeco	21	AAClqdAAGAAA5+bAAW
24	24	Tokushima	719	AAClqdAAGAAA5+bAAX
25	25	Bad Camberg	120	AAClqdAAGAAA5+bAAY

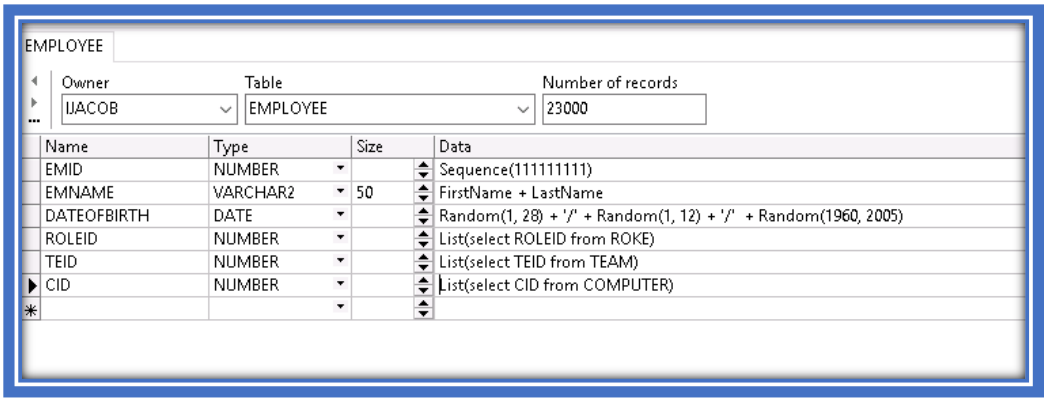


Owner: IJACOB | Table: PROJECT | Number of records: 2000

Name	Type	Size	Data
PROID	NUMBER		Sequence(1)
PRONAME	VARCHAR2	50	LastName
DUEDATE	DATE		Random(1, 28)+ '/' + Random(1, 12) + '/' + Random(2021, 2030)
COST	NUMBER		Random(1000, 20000)
PROFIT	NUMBER		Random(3000, 30000)
TEID	NUMBER		List(select TEID from TEAM)



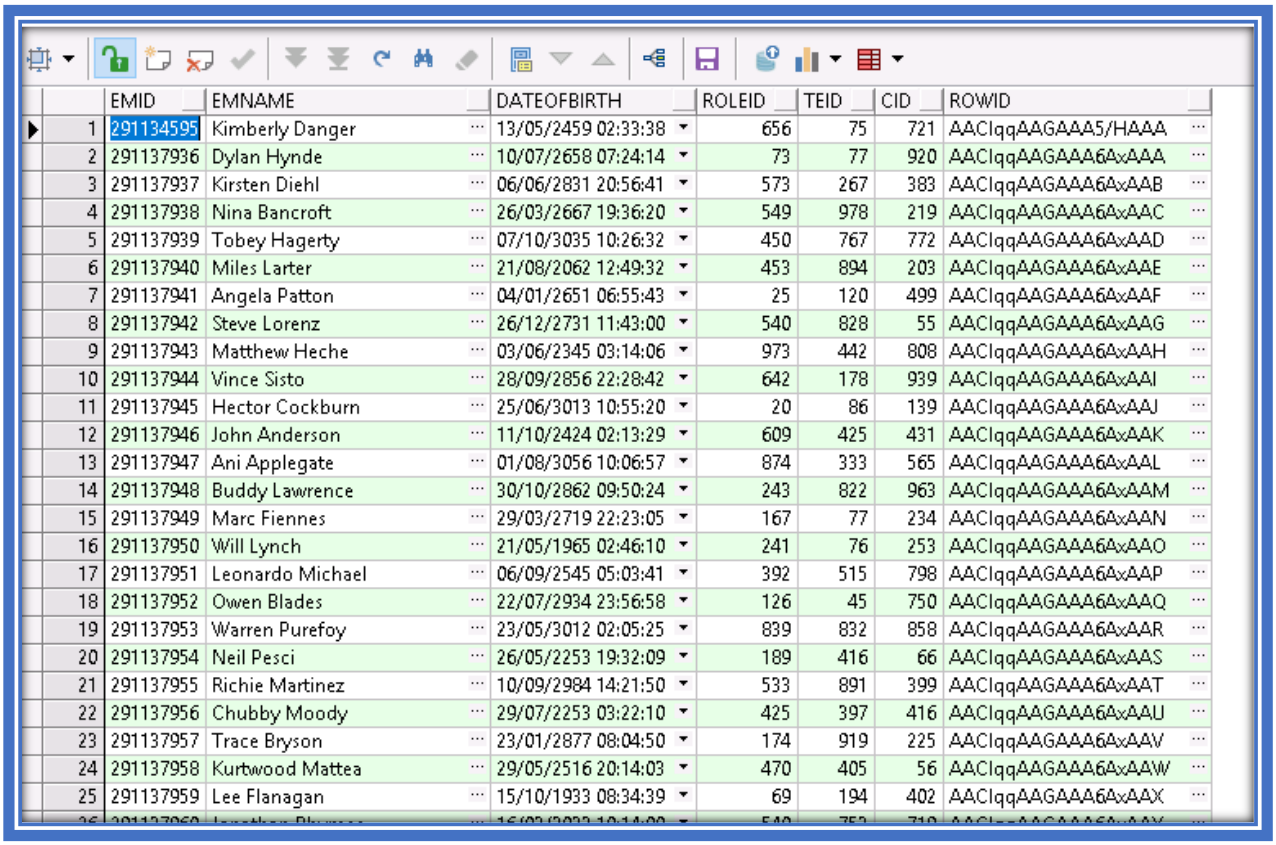
	PROID	PRONAME	DUEDATE	COST	PROFIT	TEID	ROWID
1	1	Perez	04/09/2244 22:14:26	14071	15245	943	AAClqfAAGAAA5+rAAA
2	2	McGill	18/03/2929 14:36:48	10920	18759	765	AAClqfAAGAAA5+rAAB
3	3	Goldberg	19/02/2486 00:50:15	10101	12262	892	AAClqfAAGAAA5+rAAC
4	4	O'Neill	06/05/2323 20:23:34	11779	26032	233	AAClqfAAGAAA5+rAAD
5	5	Fox	08/09/1986 19:29:16	2583	4627	796	AAClqfAAGAAA5+rAAE
6	6	Kinnear	21/07/2935 22:38:29	12861	15934	510	AAClqfAAGAAA5+rAAF
7	7	Cash	10/01/2309 06:06:11	2140	11091	696	AAClqfAAGAAA5+rAAG
8	8	McNarland	13/06/2727 10:57:30	9400	20647	940	AAClqfAAGAAA5+rAAH
9	9	de Lancie	05/04/2834 12:28:39	1304	27305	837	AAClqfAAGAAA5+rAAI
10	10	Oszajca	18/02/2819 17:36:23	6943	5855	924	AAClqfAAGAAA5+rAAJ
11	11	Hershey	07/09/2734 01:54:46	16366	26368	103	AAClqfAAGAAA5+rAAK
12	12	Sossamon	13/09/2690 15:18:00	6536	4170	818	AAClqfAAGAAA5+rAAL
13	13	Gagnon	23/05/2032 14:56:15	4830	25918	469	AAClqfAAGAAA5+rAAM
14	14	Cusack	26/03/1919 15:55:26	17688	10875	272	AAClqfAAGAAA5+rAAN
15	15	Guest	05/12/2230 20:21:33	4311	29592	576	AAClqfAAGAAA5+rAAO
16	16	Perez	29/08/2786 21:20:00	8221	12219	685	AAClqfAAGAAA5+rAAP
17	17	Bedelia	02/06/2262 12:33:41	4808	23724	550	AAClqfAAGAAA5+rAAQ
18	18	Gunton	08/01/2128 12:18:00	1206	9530	600	AAClqfAAGAAA5+rAAR
19	19	Merchant	14/11/1901 13:39:38	2370	29574	745	AAClqfAAGAAA5+rAAS
20	20	Ledger	21/11/2163 03:28:48	17506	20022	601	AAClqfAAGAAA5+rAAT
21	21	Curtis	10/01/1935 01:56:38	6786	3219	546	AAClqfAAGAAA5+rAAU
22	22	Epps	04/03/2157 10:37:55	15801	16337	825	AAClqfAAGAAA5+rAAV
23	23	Bridges	27/11/2971 05:16:13	3338	18654	503	AAClqfAAGAAA5+rAAW
24	24	Maxwell	03/08/2863 06:50:58	14540	24972	971	AAClqfAAGAAA5+rAAX
25	25	Kramer	01/02/2383 21:02:26	7079	20218	226	AAClqfAAGAAA5+rAAY



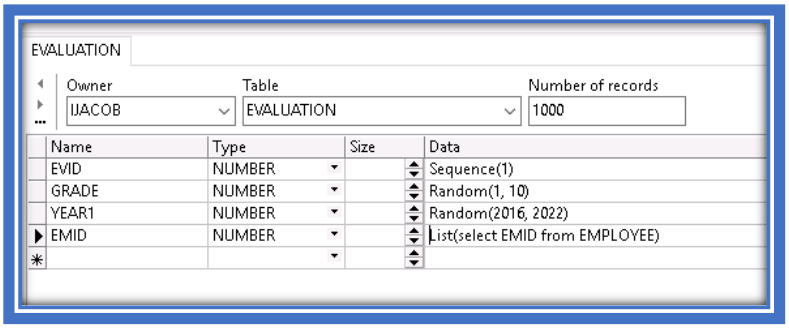
EMPLOYEE

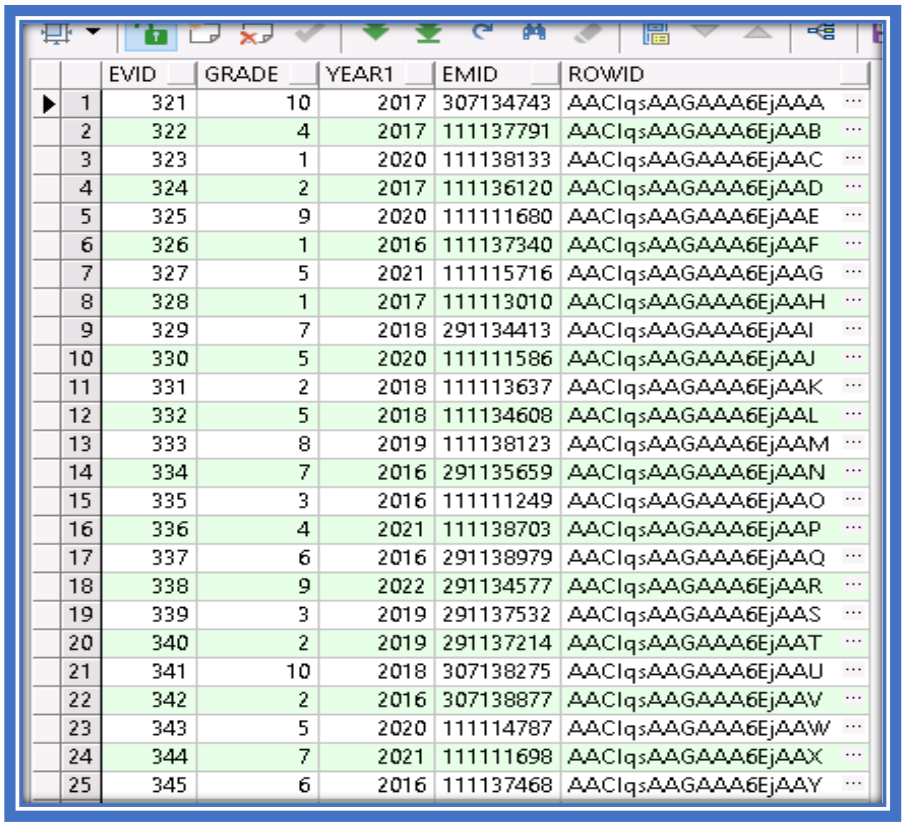
Owner: IJACOB | Table: EMPLOYEE | Number of records: 23000

Name	Type	Size	Data
EMID	NUMBER		Sequence(111111111)
EMNAME	VARCHAR2	50	FirstName + LastName
DATEOFBIRTH	DATE		Random(1, 28) + '/' + Random(1, 12) + '/' + Random(1960, 2005)
ROLEID	NUMBER		List(select ROLEID from ROKE)
TEID	NUMBER		List(select TEID from TEAM)
CID	NUMBER		List(select CID from COMPUTER)



	EMID	EMNAME	DATEOFBIRTH	ROLEID	TEID	CID	ROWID
1	291134595	Kimberly Danger	13/05/2459 02:33:38	656	75	721	AACIqgAAGAAA5/HAAA
2	291137936	Dylan Hynde	10/07/2658 07:24:14	73	77	920	AACIqgAAGAAA6AxAAA
3	291137937	Kirsten Diehl	06/06/2831 20:56:41	573	267	383	AACIqgAAGAAA6AxAAB
4	291137938	Nina Bancroft	26/03/2667 19:36:20	549	978	219	AACIqgAAGAAA6AxAAC
5	291137939	Tobey Hagerty	07/10/3035 10:26:32	450	767	772	AACIqgAAGAAA6AxAAD
6	291137940	Miles Larter	21/08/2062 12:49:32	453	894	203	AACIqgAAGAAA6AxAAE
7	291137941	Angela Patton	04/01/2651 06:55:43	25	120	499	AACIqgAAGAAA6AxAAF
8	291137942	Steve Lorenz	26/12/2731 11:43:00	540	828	55	AACIqgAAGAAA6AxAAG
9	291137943	Matthew Heche	03/06/2345 03:14:06	973	442	808	AACIqgAAGAAA6AxAAH
10	291137944	Vince Sisto	28/09/2856 22:28:42	642	178	939	AACIqgAAGAAA6AxAAI
11	291137945	Hector Cockburn	25/06/3013 10:55:20	20	86	139	AACIqgAAGAAA6AxAAJ
12	291137946	John Anderson	11/10/2424 02:13:29	609	425	431	AACIqgAAGAAA6AxAAK
13	291137947	Ani Applegate	01/08/3056 10:06:57	874	333	565	AACIqgAAGAAA6AxAAL
14	291137948	Buddy Lawrence	30/10/2862 09:50:24	243	822	963	AACIqgAAGAAA6AxAAM
15	291137949	Marc Fiennes	29/03/2719 22:23:05	167	77	234	AACIqgAAGAAA6AxAAN
16	291137950	Will Lynch	21/05/1965 02:46:10	241	76	253	AACIqgAAGAAA6AxAAO
17	291137951	Leonardo Michael	06/09/2545 05:03:41	392	515	798	AACIqgAAGAAA6AxAAP
18	291137952	Owen Blades	22/07/2934 23:56:58	126	45	750	AACIqgAAGAAA6AxAAQ
19	291137953	Warren Purefoy	23/05/3012 02:05:25	839	832	858	AACIqgAAGAAA6AxAAR
20	291137954	Neil Pesci	26/05/2253 19:32:09	189	416	66	AACIqgAAGAAA6AxAAS
21	291137955	Richie Martinez	10/09/2984 14:21:50	533	891	399	AACIqgAAGAAA6AxAAT
22	291137956	Chubby Moody	29/07/2253 03:22:10	425	397	416	AACIqgAAGAAA6AxAAU
23	291137957	Trace Bryson	23/01/2877 08:04:50	174	919	225	AACIqgAAGAAA6AxAAV
24	291137958	Kurtwood Mattea	29/05/2516 20:14:03	470	405	56	AACIqgAAGAAA6AxAAW
25	291137959	Lee Flanagan	15/10/1933 08:34:39	69	194	402	AACIqgAAGAAA6AxAAX





	EVID	GRADE	YEAR1	EMID	ROWID
1	321	10	2017	307134743	AACIqsAAGAAA6EjAAA
2	322	4	2017	111137791	AACIqsAAGAAA6EjAAB
3	323	1	2020	111138133	AACIqsAAGAAA6EjAAC
4	324	2	2017	111136120	AACIqsAAGAAA6EjAAD
5	325	9	2020	111111680	AACIqsAAGAAA6EjAAE
6	326	1	2016	111137340	AACIqsAAGAAA6EjAAF
7	327	5	2021	111115716	AACIqsAAGAAA6EjAAG
8	328	1	2017	111113010	AACIqsAAGAAA6EjAAH
9	329	7	2018	291134413	AACIqsAAGAAA6EjAAI
10	330	5	2020	111111586	AACIqsAAGAAA6EjAAJ
11	331	2	2018	111113637	AACIqsAAGAAA6EjAAK
12	332	5	2018	111134608	AACIqsAAGAAA6EjAAL
13	333	8	2019	111138123	AACIqsAAGAAA6EjAAM
14	334	7	2016	291135659	AACIqsAAGAAA6EjAAN
15	335	3	2016	111111249	AACIqsAAGAAA6EjAAO
16	336	4	2021	111138703	AACIqsAAGAAA6EjAAP
17	337	6	2016	291138979	AACIqsAAGAAA6EjAAQ
18	338	9	2022	291134577	AACIqsAAGAAA6EjAAR
19	339	3	2019	291137532	AACIqsAAGAAA6EjAAS
20	340	2	2019	291137214	AACIqsAAGAAA6EjAAT
21	341	10	2018	307138275	AACIqsAAGAAA6EjAAU
22	342	2	2016	307138877	AACIqsAAGAAA6EjAAV
23	343	5	2020	111114787	AACIqsAAGAAA6EjAAW
24	344	7	2021	111111698	AACIqsAAGAAA6EjAAX
25	345	6	2016	111137468	AACIqsAAGAAA6EjAAY

SOFTWARE

Owner: IJACOB | Table: SOFTWARE | Number of records: 1000

Name	Type	Size	Data
SOID	NUMBER		Sequence(1)
SONAME	VARCHAR2	50	FirstName
VERSION	VARCHAR2	10	Random(1, 19) + '.' + Random(0, 9)
SUID	NUMBER		List(select SUID from SUPPLIER)

	SOID	SONAME	VERSION	SUID	ROWID
1	1	Stewart	5.4	1443	AAClqiAAGAAA58TAAA
2	2	Oliver	6.7	1575	AAClqiAAGAAA58TAAB
3	3	Karon	5.1	1333	AAClqiAAGAAA58TAAC
4	4	Rhona	9.8	1984	AAClqiAAGAAA58TAAD
5	5	Gene	7.2	1653	AAClqiAAGAAA58TAAE
6	6	Chuck	1.2	1230	AAClqiAAGAAA58TAAF
7	7	Marina	2.9	1241	AAClqiAAGAAA58TAAG
8	8	Amy	15.2	1020	AAClqiAAGAAA58TAAH
9	9	Ceili	13.3	1815	AAClqiAAGAAA58TAAI
10	10	Wayne	16.7	1668	AAClqiAAGAAA58TAAJ
11	11	Raul	1.8	1190	AAClqiAAGAAA58TAAK
12	12	Corey	11.3	1588	AAClqiAAGAAA58TAAL
13	13	Vonda	5.4	1552	AAClqiAAGAAA58TAAM
14	14	Phoebe	3.2	1860	AAClqiAAGAAA58TAAN
15	15	Liam	14.6	1809	AAClqiAAGAAA58TAAO
16	16	Jackson	8.9	1848	AAClqiAAGAAA58TAAP
17	17	Sigourney	9.2	1987	AAClqiAAGAAA58TAAQ
18	18	Loretta	16.5	1888	AAClqiAAGAAA58TAAR
19	19	CeCe	10.5	1701	AAClqiAAGAAA58TAAS
20	20	Murray	3.7	1038	AAClqiAAGAAA58TAAT
21	21	Edgar	11.1	1681	AAClqiAAGAAA58TAAU
22	22	Ramsey	15.1	1883	AAClqiAAGAAA58TAAV
23	23	Sinead	2.9	1370	AAClqiAAGAAA58TAAW
24	24	Kelly	7.0	1414	AAClqiAAGAAA58TAAX
25	25	Miles	6.6	1572	AAClqiAAGAAA58TAAY
26	26	Jonny	6.5	1960	AAClqiAAGAAA58TAAZ

INSTALLEDON

Owner: IJACOB | Table: INSTALLEDON | Number of records: 1000

Name	Type	Size	Data
CID	NUMBER		List(select CID from COMPUTER)
SOID	NUMBER		List(select SOID from SOFTWARE)

	CID	SOID	ROWID
1	2	39	AAClqkAAGAAA58jAGf
2	3	772	AAClqkAAGAAA58jAIG
3	5	280	AAClqkAAGAAA58lACV
4	5	309	AAClqkAAGAAA58lACi
5	5	471	AAClqkAAGAAA58jAA7
6	6	753	AAClqkAAGAAA58lADN
7	7	52	AAClqkAAGAAA58jADl
8	8	712	AAClqkAAGAAA58jABF
9	9	646	AAClqkAAGAAA58lADg
10	9	777	AAClqkAAGAAA58jABw
11	10	675	AAClqkAAGAAA58jAEn
12	10	805	AAClqkAAGAAA58lADR
13	11	983	AAClqkAAGAAA58jAGz
14	12	105	AAClqkAAGAAA58lAFZ
15	12	536	AAClqkAAGAAA58lACH
16	15	494	AAClqkAAGAAA58jACS
17	15	662	AAClqkAAGAAA58lAGQ
18	18	258	AAClqkAAGAAA58jAAx
19	25	4	AAClqkAAGAAA58jABR
20	25	283	AAClqkAAGAAA58jAEa
21	26	641	AAClqkAAGAAA58lAF1
22	26	647	AAClqkAAGAAA58lAB/
23	26	756	AAClqkAAGAAA58jAEw
24	26	991	AAClqkAAGAAA58jAAr
25	27	771	AAClqkAAGAAA58jACp

PRINTER

Owner: IJACOB | Table: PRINTER | Number of records: 1000

Name	Type	Size	Data
PRIID	NUMBER		Sequence(1)
COMPENY	VARCHAR2	50	List('HP', 'Canon', 'Epson', 'Brother', 'Lexmark', 'Samsung', 'Xerox', 'Ricoh', 'Konica Minolta', 'Dell', 'Panasonic', 'Kyocera', 'Oki', 'Toshiba', 'Sharp', 'Fuj
MODEL	VARCHAR2	50	List('OfficeJet Pro 9015e', 'PIXMA TS9120', 'Expression Photo XP-8600', 'HL-L2390DW', 'EcoTank ET-3760', 'Color LaserJet Pro MFP M479fdw', 'imageR
SUID	NUMBER		List(select SUID from SUPPLIER)

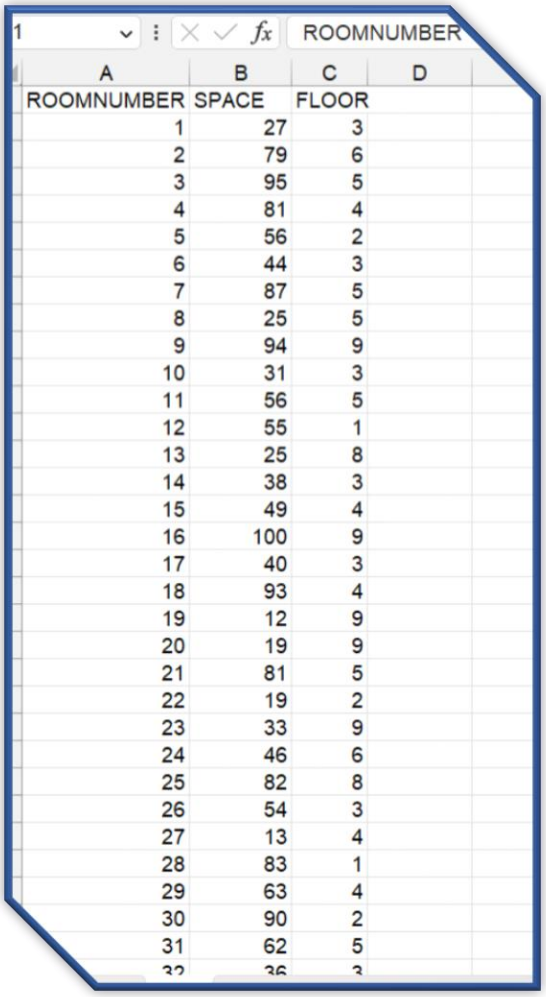
	PRIID	COMPENY	MODEL	SUID	ROWID
1	1	Konica Minolta	KX-MB1520	1421	AACkI7AAGAAAGFDAAA
2	2	Fujitsu	SP C360SFNw	1778	AACkI7AAGAAAGFDAAB
3	3	Fujitsu	KX-MB1520	1511	AACkI7AAGAAAGFDAAC
4	4	Oki	PIXMA TS9120	1349	AACkI7AAGAAAGFDAAD
5	5	Konica Minolta	PIXMA TS9120	1389	AACkI7AAGAAAGFDAAE
6	6	Lexmark	OfficeJet Pro 9015e	1044	AACkI7AAGAAAGFDAAF
7	7	Epson	MX-5141N	1896	AACkI7AAGAAAGFDAAG
8	8	Oki	HL-L2390DW	1081	AACkI7AAGAAAGFDAAH
9	9	Oki	Color LaserJet Pro MFP M479fdw	1065	AACkI7AAGAAAGFDAAI
10	10	Dell	Color LaserJet Pro MFP M479fdw	1612	AACkI7AAGAAAGFDAAJ
11	11	Oki	HL-L2390DW	1584	AACkI7AAGAAAGFDAAK
12	12	Sharp	OfficeJet Pro 9015e	1033	AACkI7AAGAAAGFDAAL
13	13	Samsung	KX-MB1520	1540	AACkI7AAGAAAGFDAAM
14	14	Sharp	OfficeJet Pro 9015e	1388	AACkI7AAGAAAGFDAAN
15	15	Kyocera	KX-MB1520	1304	AACkI7AAGAAAGFDAAO
16	16	Sharp	PIXMA TS9120	1323	AACkI7AAGAAAGFDAAP
17	17	HP	C1760nw	1164	AACkI7AAGAAAGFDAAQ
18	18	Fujitsu	ScanSnap iX1500	1873	AACkI7AAGAAAGFDAAR
19	19	Kyocera	Color LaserJet Pro MFP M479fdw	1408	AACkI7AAGAAAGFDAAS
20	20	Toshiba	HL-L2390DW	1274	AACkI7AAGAAAGFDAAT
21	21	Sharp	C1760nw	1505	AACkI7AAGAAAGFDAAU
22	22	Epson	SP C360SFNw	1218	AACkI7AAGAAAGFDAAV
23	23	Toshiba	DocuPrint P365 dw	1961	AACkI7AAGAAAGFDAAW
24	24	Canon	OfficeJet Pro 9015e	1370	AACkI7AAGAAAGFDAAX
25	25	Samsung	imageRUNNER ADVANCE C5235A	1813	AACkI7AAGAAAGFDAAY

CONNECTEDTO

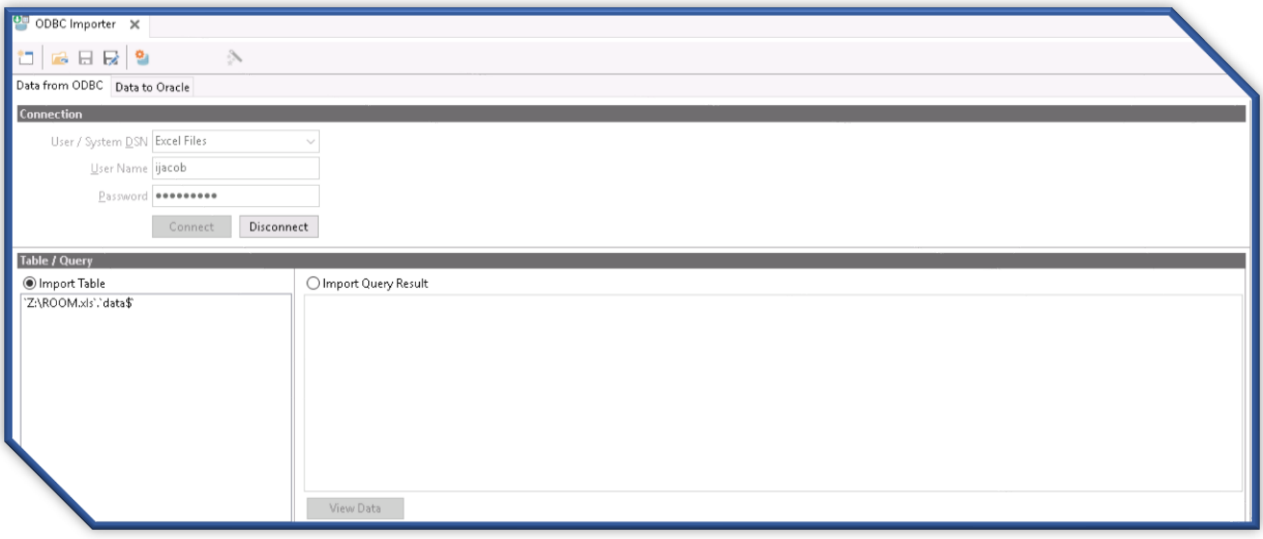
Owner	Table	Number of records
IJACOB	CONNECTEDTO	20000

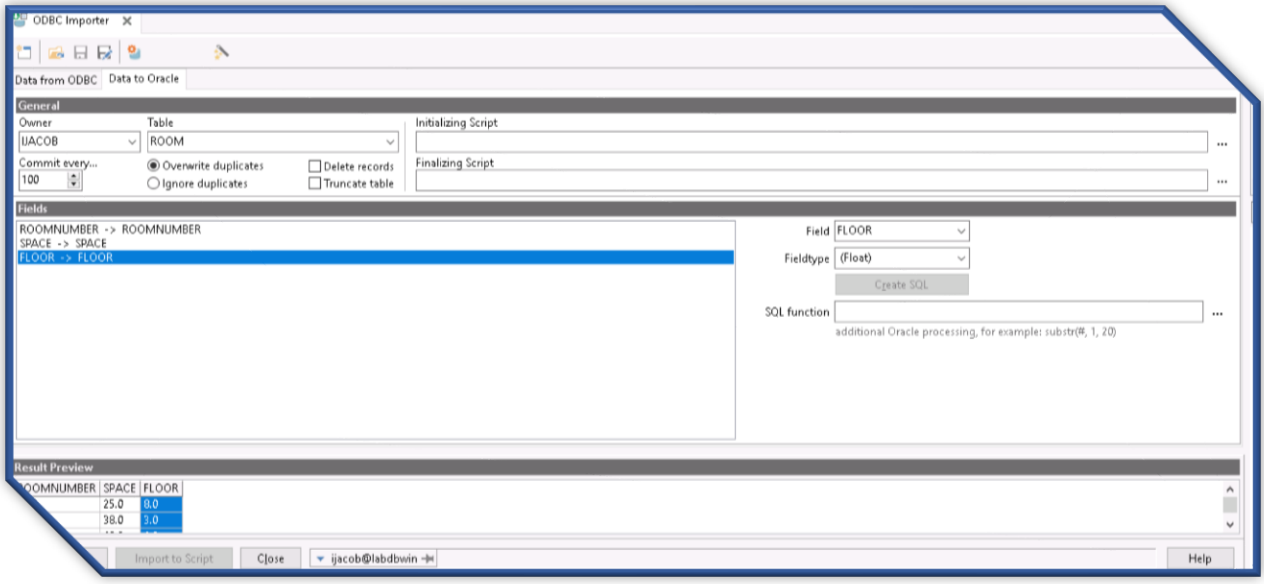
Name	Type	Size	Data
PRIID	NUMBER		List(select PRIID from PRINTER)
CID	NUMBER		List(select CID from COMPUTER)

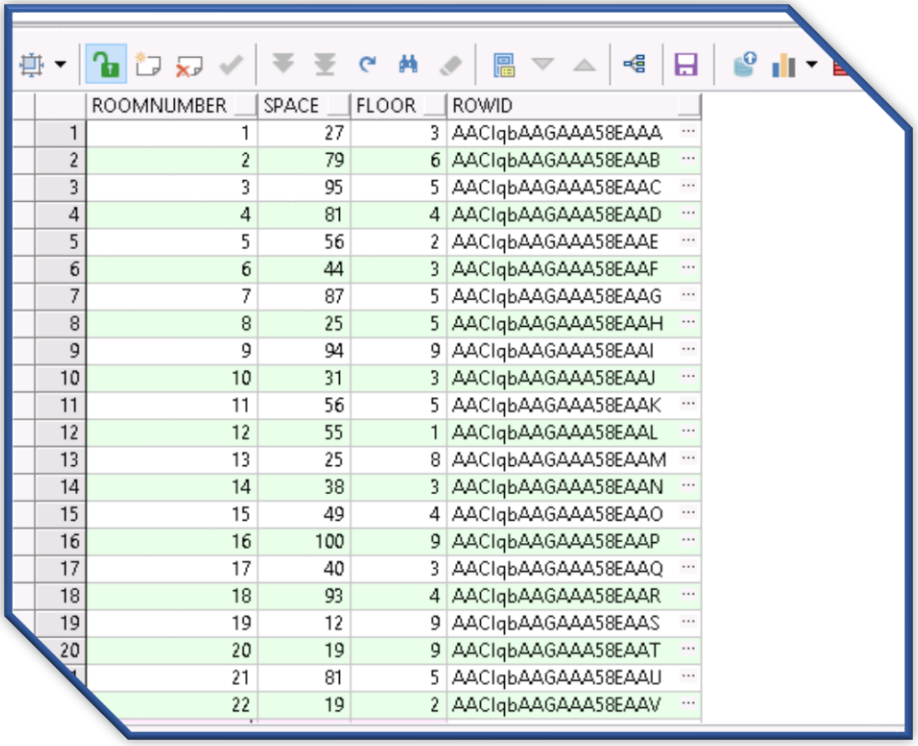
	PRIID	CID	ROWID
1	1	68	AACkI9AAGAAAGEIACw
2	1	162	AACkI9AAGAAA59eACz
3	1	180	AACkI9AAGAAA59sAGb
4	1	228	AACkI9AAGAAA5+NAHe
5	1	238	AACkI9AAGAAA59DACo
6	1	297	AACkI9AAGAAA59AAB0
7	1	407	AACkI9AAGAAA59uAD5
8	1	432	AACkI9AAGAAA5+OAAL
9	1	466	AACkI9AAGAAA59pABB
10	1	588	AACkI9AAGAAA59vAFh
11	1	589	AACkI9AAGAAA5+MAHr
12	1	645	AACkI9AAGAAA59DAI0
13	1	670	AACkI9AAGAAAGEmAG/
14	1	777	AACkI9AAGAAA59GAF8
15	1	822	AACkI9AAGAAA59qAA3
16	1	948	AACkI9AAGAAA59cAEI
17	2	78	AACkI9AAGAAA59uACP
18	2	88	AACkI9AAGAAA59pAGp
19	2	298	AACkI9AAGAAA59bAE8
20	2	302	AACkI9AAGAAA59GAH/
21	2	304	AACkI9AAGAAA59bAFM
22	2	329	AACkI9AAGAAA59aABs
23	2	338	AACkI9AAGAAAGEnADU
24	2	390	AACkI9AAGAAA5+OAFo
25	2	456	AACkI9AAGAAA59qAHo
26	2	546	AACkI9AAGAAA59sAGv



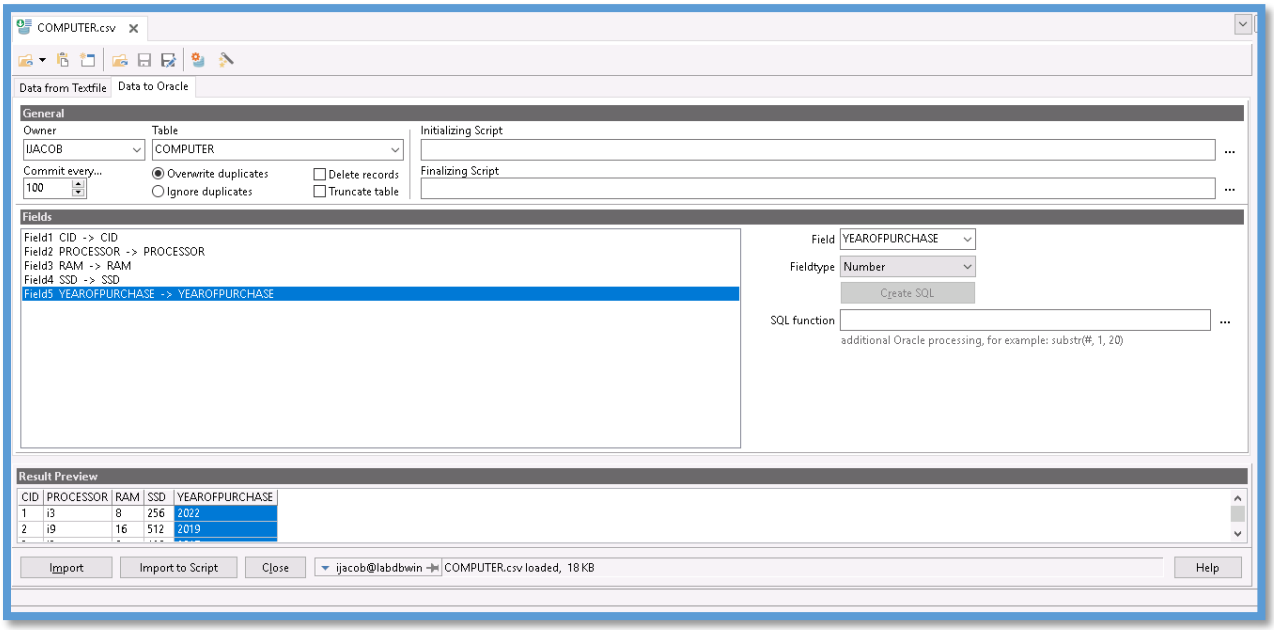
	A	B	C	D
	ROOMNUMBER	SPACE	FLOOR	
1	1	27	3	
2	2	79	6	
3	3	95	5	
4	4	81	4	
5	5	56	2	
6	6	44	3	
7	7	87	5	
8	8	25	5	
9	9	94	9	
10	10	31	3	
11	11	56	5	
12	12	55	1	
13	13	25	8	
14	14	38	3	
15	15	49	4	
16	16	100	9	
17	17	40	3	
18	18	93	4	
19	19	12	9	
20	20	19	9	
21	21	81	5	
22	22	19	2	
23	23	33	9	
24	24	46	6	
25	25	82	8	
26	26	54	3	
27	27	13	4	
28	28	83	1	
29	29	63	4	
30	30	90	2	
31	31	62	5	

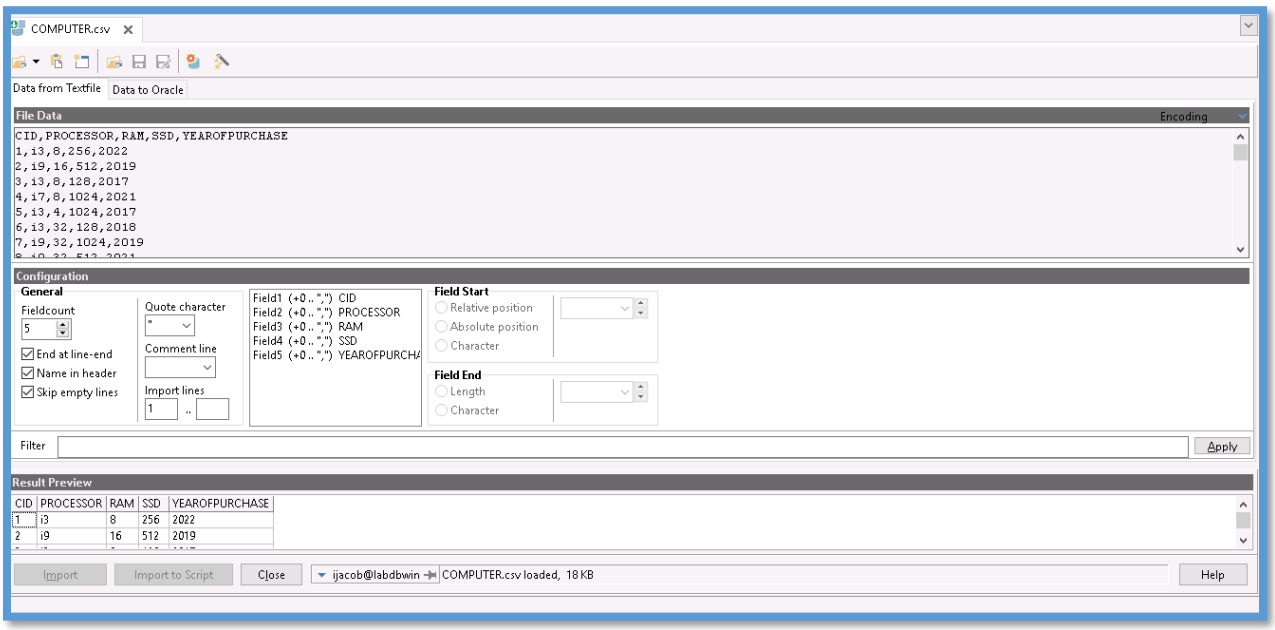


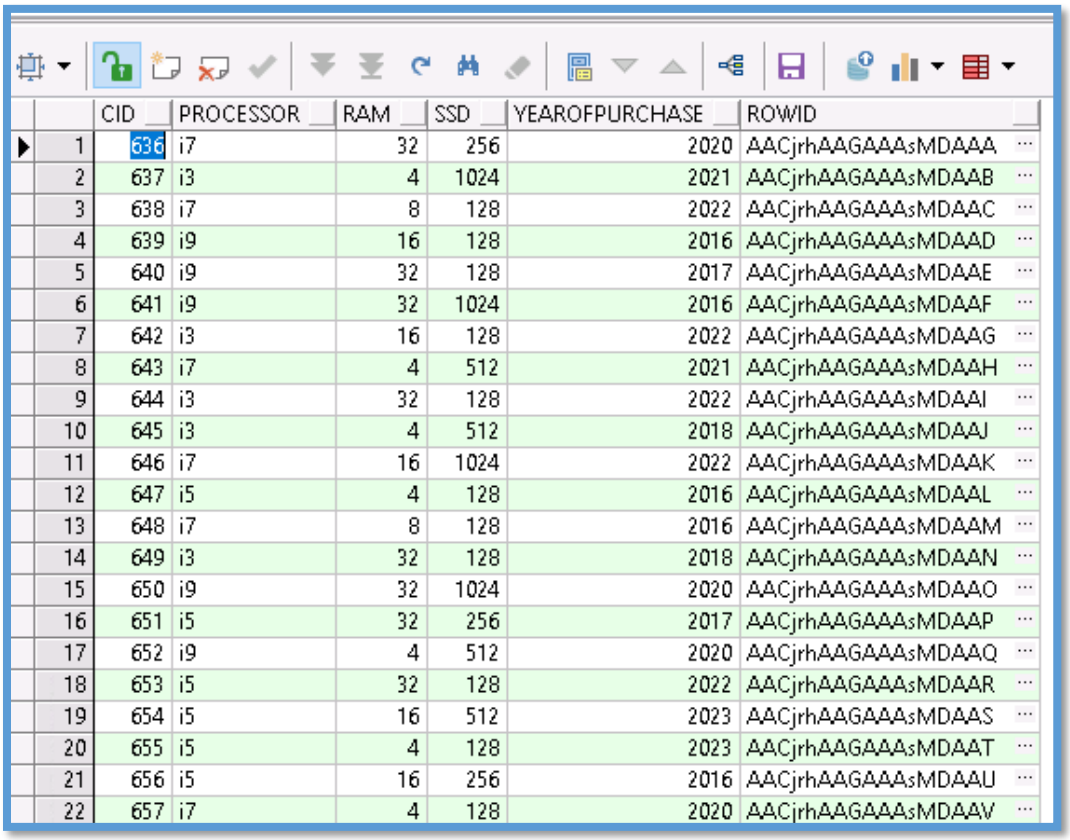




	ROOMNUMBER	SPACE	FLOOR	ROWID
1	1	27	3	AACIqbAAGAAA58EAAA
2	2	79	6	AACIqbAAGAAA58EAAB
3	3	95	5	AACIqbAAGAAA58EAAC
4	4	81	4	AACIqbAAGAAA58EAAD
5	5	56	2	AACIqbAAGAAA58EAAE
6	6	44	3	AACIqbAAGAAA58EAAF
7	7	87	5	AACIqbAAGAAA58EAAG
8	8	25	5	AACIqbAAGAAA58EAAH
9	9	94	9	AACIqbAAGAAA58EAAI
10	10	31	3	AACIqbAAGAAA58EAAJ
11	11	56	5	AACIqbAAGAAA58EAAK
12	12	55	1	AACIqbAAGAAA58EAAL
13	13	25	8	AACIqbAAGAAA58EAAM
14	14	38	3	AACIqbAAGAAA58EAAN
15	15	49	4	AACIqbAAGAAA58EAAO
16	16	100	9	AACIqbAAGAAA58EAAP
17	17	40	3	AACIqbAAGAAA58EAAQ
18	18	93	4	AACIqbAAGAAA58EAAR
19	19	12	9	AACIqbAAGAAA58EAAS
20	20	19	9	AACIqbAAGAAA58EAAT
21	21	81	5	AACIqbAAGAAA58EAAU
22	22	19	2	AACIqbAAGAAA58EAAV


COMPUTER.csv
Data from Textfile
Data to Oracle
General
Owner
IJACOB
Table
COMPUTER
Initializing Script
Commit every...
100
Overwrite duplicates
Ignore duplicates
Delete records
Truncate table
Finalizing Script
Fields
Field1 CID -> CID
Field2 PROCESSOR -> PROCESSOR
Field3 RAM -> RAM
Field4 SSD -> SSD
Field5 YEAROFPURCHASE -> YEAROFPURCHASE
Field
YEAROFPURCHASE
Fieldtype
Number
Create SQL
SQL function
additional Oracle processing, for example: substr(#, 1, 20)
Result Preview
CID PROCESSOR RAM SSD YEAROFPURCHASE
1 i3 8 256 2022
2 i9 16 512 2019
Import
Import to Script
Close
ijacob@labdbwin
COMPUTER.csv loaded, 18 KB
Help


COMPUTER.csv
Data from Textfile
Data to Oracle
File Data
Encoding
CID,PROCESSOR,RAM,SSD,YEAROFPURCHASE
1,i3,8,256,2022
2,i9,16,512,2019
3,i3,8,128,2017
4,i7,8,1024,2021
5,i3,4,1024,2017
6,i3,32,128,2018
7,i9,32,1024,2019
Configuration
General
Fieldcount
5
End at line-end
Name in header
Skip empty lines
Quote character
"
Comment line
Import lines
1
Field1 (+0.. ",") CID
Field2 (+0.. ",") PROCESSOR
Field3 (+0.. ",") RAM
Field4 (+0.. ",") SSD
Field5 (+0.. ",") YEAROFPURCHA
Field Start
Relative position
Absolute position
Character
Field End
Length
Character
Filter
Apply
Result Preview
CID PROCESSOR RAM SSD YEAROFPURCHASE
1 i3 8 256 2022
2 i9 16 512 2019
Import
Import to Script
Close
ijacob@labdbwin
COMPUTER.csv loaded, 18 KB
Help



	CID	PROCESSOR	RAM	SSD	YEAROFPURCHASE	ROWID
1	636	i7	32	256	2020	AACjrhAAGAAAsMDAAA
2	637	i3	4	1024	2021	AACjrhAAGAAAsMDAAB
3	638	i7	8	128	2022	AACjrhAAGAAAsMDAAC
4	639	i9	16	128	2016	AACjrhAAGAAAsMDAAD
5	640	i9	32	128	2017	AACjrhAAGAAAsMDAAE
6	641	i9	32	1024	2016	AACjrhAAGAAAsMDAAF
7	642	i3	16	128	2022	AACjrhAAGAAAsMDAAG
8	643	i7	4	512	2021	AACjrhAAGAAAsMDAAH
9	644	i3	32	128	2022	AACjrhAAGAAAsMDAAI
10	645	i3	4	512	2018	AACjrhAAGAAAsMDAAJ
11	646	i7	16	1024	2022	AACjrhAAGAAAsMDAAK
12	647	i5	4	128	2016	AACjrhAAGAAAsMDAAL
13	648	i7	8	128	2016	AACjrhAAGAAAsMDAAM
14	649	i3	32	128	2018	AACjrhAAGAAAsMDAAN
15	650	i9	32	1024	2020	AACjrhAAGAAAsMDAAO
16	651	i5	32	256	2017	AACjrhAAGAAAsMDAAP
17	652	i9	4	512	2020	AACjrhAAGAAAsMDAAQ
18	653	i5	32	128	2022	AACjrhAAGAAAsMDAAR
19	654	i5	16	512	2023	AACjrhAAGAAAsMDAAS
20	655	i5	4	128	2023	AACjrhAAGAAAsMDAAT
21	656	i5	16	256	2016	AACjrhAAGAAAsMDAAU
22	657	i7	4	128	2020	AACjrhAAGAAAsMDAAV

ROLE (1).sql

SQL | Output | Statistics

```
insert into ROLE (ROLEID, ROLENAME) values (1, 'Analyst Galleh Manda');
insert into ROLE (ROLEID, ROLENAME) values (2, 'Developer Kura');
insert into ROLE (ROLEID, ROLENAME) values (3, 'Administrator Botlhapatlou');
insert into ROLE (ROLEID, ROLENAME) values (4, 'Designer Kyustendil');
insert into ROLE (ROLEID, ROLENAME) values (5, 'Developer Sungai Nyamuk');
insert into ROLE (ROLEID, ROLENAME) values (6, 'Designer Rossosh'');
insert into ROLE (ROLEID, ROLENAME) values (7, 'Developer Abricots');
insert into ROLE (ROLEID, ROLENAME) values (8, 'Manager Anserma');
insert into ROLE (ROLEID, ROLENAME) values (9, 'Designer Zakan-Yurt');
insert into ROLE (ROLEID, ROLENAME) values (10, 'Developer Malabugas');
insert into ROLE (ROLEID, ROLENAME) values (11, 'Analyst Kampungraja');
insert into ROLE (ROLEID, ROLENAME) values (12, 'Administrator Tiepu');
insert into ROLE (ROLEID, ROLENAME) values (13, 'Designer Krzczonów');
insert into ROLE (ROLEID, ROLENAME) values (14, 'Designer Maguan');
insert into ROLE (ROLEID, ROLENAME) values (15, 'Administrator Tambac');
insert into ROLE (ROLEID, ROLENAME) values (16, 'Designer Baoshui');
insert into ROLE (ROLEID, ROLENAME) values (17, 'Manager Selydove');
insert into ROLE (ROLEID, ROLENAME) values (18, 'Designer Rājshāhi');
insert into ROLE (ROLEID, ROLENAME) values (19, 'Manager Zhongxian');
insert into ROLE (ROLEID, ROLENAME) values (20, 'Administrator Tafo');
insert into ROLE (ROLEID, ROLENAME) values (21, 'Designer Saint-Jean-de-Luz');
insert into ROLE (ROLEID, ROLENAME) values (22, 'Administrator Novobiryusinskiy');
insert into ROLE (ROLEID, ROLENAME) values (23, 'Manager Gangou');
insert into ROLE (ROLEID, ROLENAME) values (24, 'Developer Oslo');
insert into ROLE (ROLEID, ROLENAME) values (25, 'Developer Krasnoye');
insert into ROLE (ROLEID, ROLENAME) values (26, 'Manager Donja Brela');
insert into ROLE (ROLEID, ROLENAME) values (27, 'Analyst Tebingtinggi');
insert into ROLE (ROLEID, ROLENAME) values (28, 'Manager Mogi das Cruzes');
insert into ROLE (ROLEID, ROLENAME) values (29, 'Developer Garwolin');
insert into ROLE (ROLEID, ROLENAME) values (30, 'Manager La Ravoire');
insert into ROLE (ROLEID, ROLENAME) values (31, 'Administrator Florencia');
insert into ROLE (ROLEID, ROLENAME) values (32, 'Analyst Daejeon');
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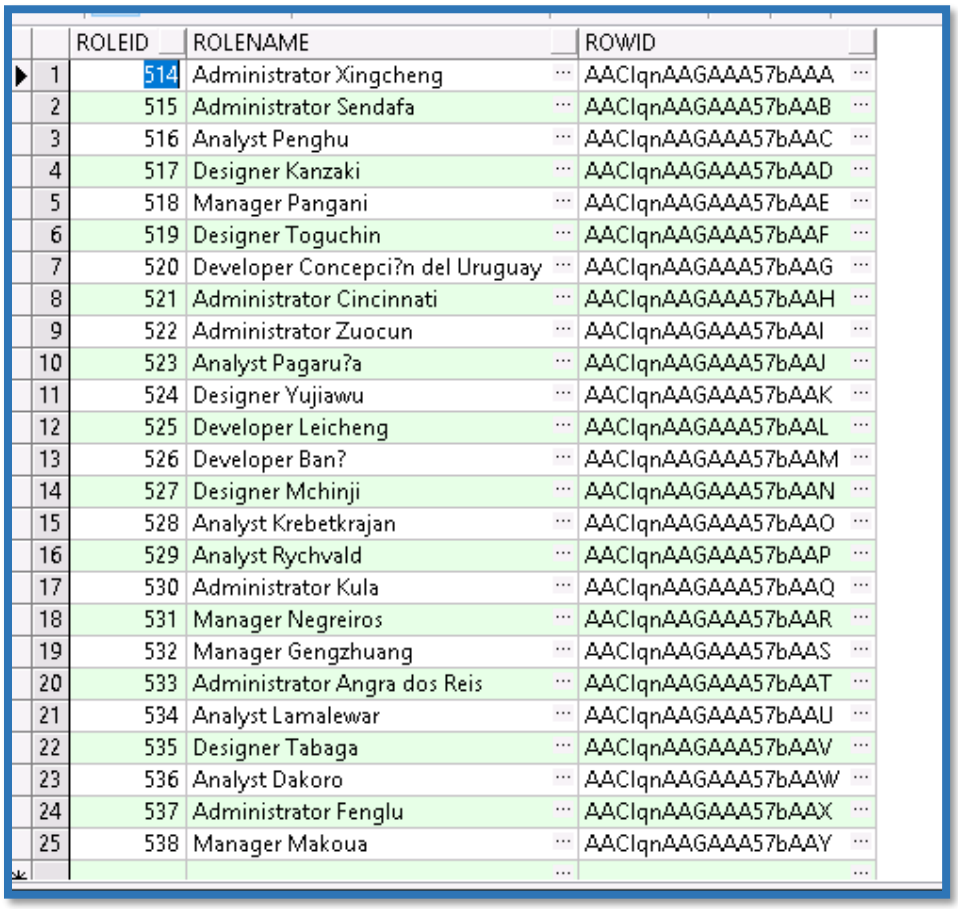


	ROLEID	ROLENAME	ROWID
1	514	Administrator Xingcheng	AAClqnAAGAAA57bAAA
2	515	Administrator Sendafa	AAClqnAAGAAA57bAAB
3	516	Analyst Penghu	AAClqnAAGAAA57bAAC
4	517	Designer Kanzaki	AAClqnAAGAAA57bAAD
5	518	Manager Pangani	AAClqnAAGAAA57bAAE
6	519	Designer Toguchin	AAClqnAAGAAA57bAAF
7	520	Developer Concepci?n del Uruguay	AAClqnAAGAAA57bAAG
8	521	Administrator Cincinnati	AAClqnAAGAAA57bAAH
9	522	Administrator Zuocun	AAClqnAAGAAA57bAAI
10	523	Analyst Pagaru?a	AAClqnAAGAAA57bAAJ
11	524	Designer Yujiawu	AAClqnAAGAAA57bAAK
12	525	Developer Leicheng	AAClqnAAGAAA57bAAL
13	526	Developer Ban?	AAClqnAAGAAA57bAAM
14	527	Designer Mchinji	AAClqnAAGAAA57bAAN
15	528	Analyst Krebetkrajan	AAClqnAAGAAA57bAAO
16	529	Analyst Rychvald	AAClqnAAGAAA57bAAP
17	530	Administrator Kula	AAClqnAAGAAA57bAAQ
18	531	Manager Negreiros	AAClqnAAGAAA57bAAR
19	532	Manager Gengzhuang	AAClqnAAGAAA57bAAS
20	533	Administrator Angra dos Reis	AAClqnAAGAAA57bAAT
21	534	Analyst Lamalewar	AAClqnAAGAAA57bAAU
22	535	Designer Tabaga	AAClqnAAGAAA57bAAV
23	536	Analyst Dakoro	AAClqnAAGAAA57bAAW
24	537	Administrator Fenglu	AAClqnAAGAAA57bAAX
25	538	Manager Makoua	AAClqnAAGAAA57bAAY

שאילתות

שאילתה ראשונה – החלפת מדפסות

תיאור מילולי: רוצים להחליף את המדפסות בקומה 3 ורוצים לדעת כמה מדפסות סיפק כל ספק

הקוד:

```
SELECT Supplier.SuName, COUNT(ConnectedTo.PriID) as PrinterCount
FROM Supplier
JOIN Printer ON Supplier.SuID = Printer.SuID
JOIN ConnectedTo ON Printer.PriID = ConnectedTo.PriID
JOIN Computer ON ConnectedTo.CID = Computer.CID
JOIN Employee ON Computer.CID = Employee.CID
JOIN Team ON Employee.TeID = Team.TeID
JOIN Room ON Team.RoomNumber = Room.RoomNumber
WHERE Room.Floor = 3
GROUP BY Supplier.SuName
```

תוצאות וזמן ריצה:

SQL | Output | Statistics

```
SELECT Supplier.SuName, COUNT(ConnectedTo.PriID) as PrinterCount
FROM Supplier
JOIN Printer ON Supplier.SuID = Printer.SuID
JOIN ConnectedTo ON Printer.PriID = ConnectedTo.PriID
JOIN Computer ON ConnectedTo.CID = Computer.CID
JOIN Employee ON Computer.CID = Employee.CID
JOIN Team ON Employee.TeID = Team.TeID
JOIN Room ON Team.RoomNumber = Room.RoomNumber
WHERE Room.Floor = 3
GROUP BY Supplier.SuName
```

	SUNAME	PRINTERCOUNT
1	Frances Rebhorn	63
2	Curtis Garber	54
3	Laurence Coburn	154
4	Roscoe Rydell	53
5	Oro Logue	87
6	Kylie Kimball	74
7	Fats Armatrading	98
8	Forest Mohr	51
9	Mint Tankard	98
10	Anthony Suvari	73
11	Cameron Van Damme	39
12	Nathan Irving	44

10:25 | 0:21 | ijacob@labdbwin | 624 row selected in 21.694 seconds

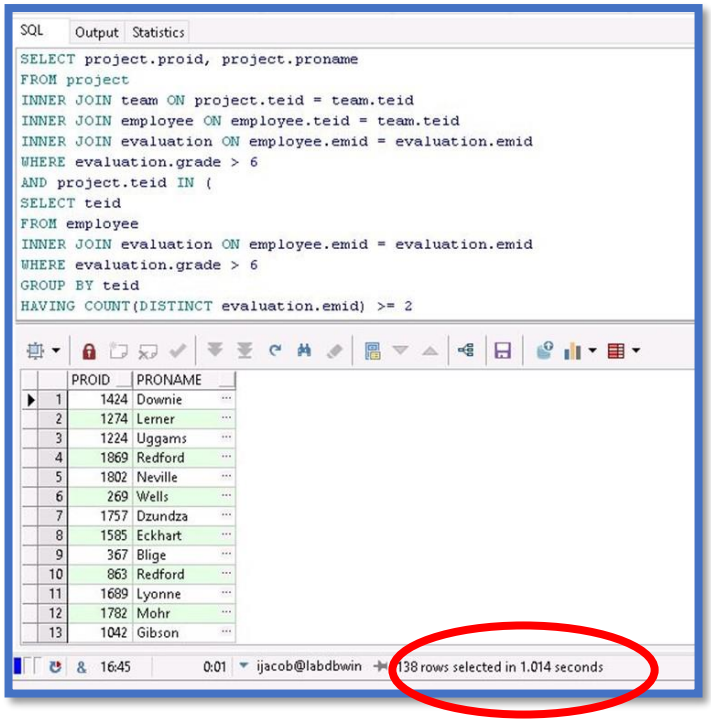
שאילתה שניה – איזון בין הצוותים

תיאור מילולי: יש צוותים בקומה 2 שלא כל כך מצליחים ורוצים למגז אותם עם צוותים טובים ולכן מחפשים צוותים שיש בהם לפחות 2 עובדים שיש להם הערכה עם ציון מעל 6 והצוות יושב בקומה 2

הקוד:

```
SELECT Project.ProID, Project.ProName
FROM Project
INNER JOIN Team ON Project.TeID = Team.TeID
INNER JOIN Employee ON Team.TeID = Employee.TeID
INNER JOIN Evaluation ON Employee.EmID = Evaluation.EmID
WHERE Employee.TeID = Team.Teid
  AND Evaluation.Grade > 6
  AND Project.TeID IN (
    SELECT TeID
    FROM Employee
    INNER JOIN Evaluation ON Employee.EmID = Evaluation.EmID
    WHERE Evaluation.Grade > 6
    GROUP BY TeID
    HAVING COUNT(DISTINCT Employee.EmID) >= 2
    )
GROUP BY Project.ProID, Project.ProName
HAVING COUNT(DISTINCT Employee.EmID) >= 2;
```

התוצאות וזמן הריצה:



שאילתה שלישית – שדרוג מחשבים

תיאור מילולי: רוצים להחליף מחשבים איטיים (RAM 4) עבור עובדים שנמצאים בצוותים מצטיינים שהביאו רווחים של מעל 10000 לחברה ולנתק את הישנים מהמדפסות שלהם.

הקוד:

```
SQL   Output   Statistics
SELECT c.cid
FROM Computer c
JOIN Employee e ON e.cid = c.cid
JOIN Team t ON e.teid = t.teid
JOIN Project p ON p.teid = t.teid
JOIN Connectedto con ON  c.cid = con.cid
WHERE c.ram = 4
group by c.cid, e.emid, e.emname
having sum(p.profit) > 10000;
```

תוצאות וזמן ריצה:

```
SQL   Output   Statistics
SELECT c.cid
FROM computer c
JOIN employee e ON e.cid = c.cid
JOIN team t ON e.teid = t.teid
JOIN project p ON p.teid = t.teid
JOIN connectedTo con ON c.cid = con.cid
WHERE c.ram = 4
GROUP BY c.cid, e.emid, e.emname
HAVING SUM(p.profit) > 10000;
```

	CID
1	356
2	218
3	316
4	509
5	66
6	75
7	337
8	645
9	540
10	797
11	84
12	59
13	913
14	60

7:16 0:01 ijacob@labdbwin 180 rows selected in 1.235 seconds

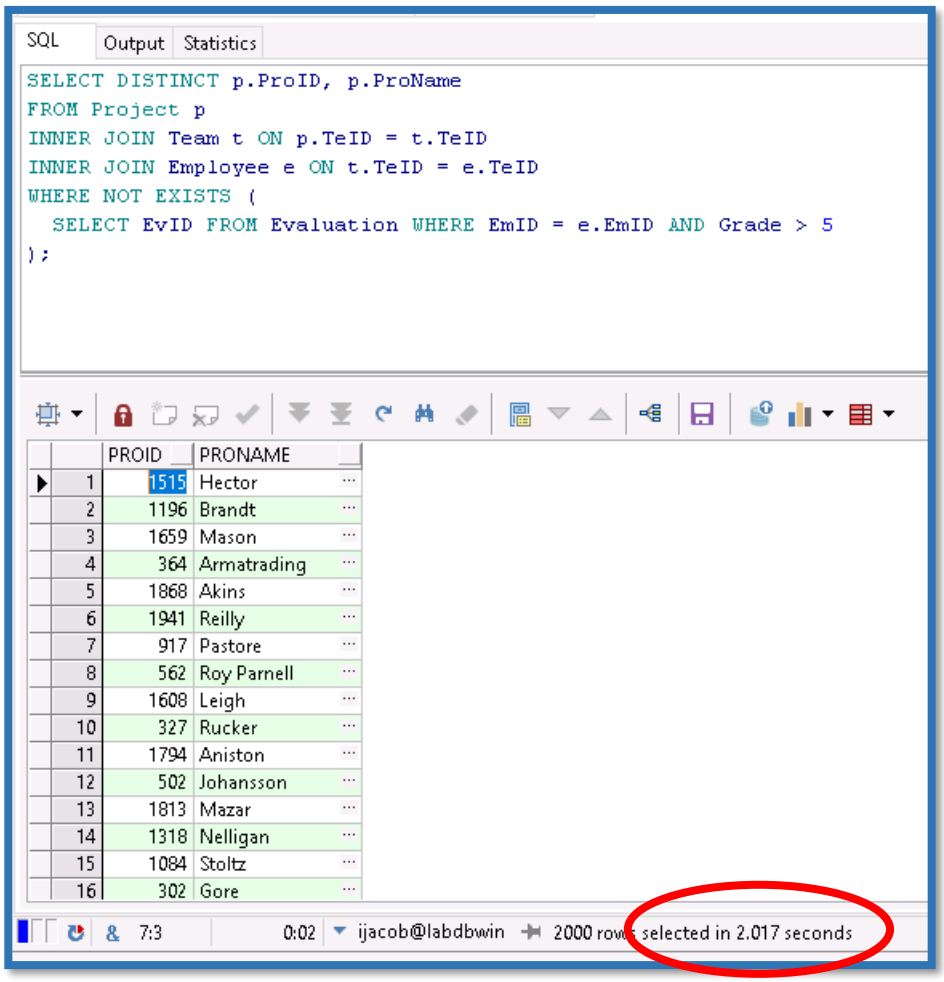
שאילתה רביעית – תמונת מצב

תיאור מילולי: רוצים לקבל את כל הפרויקטים שיש בצוות שלהם עובדים חלשים (אף פעם לא קיבלו הערכה של מעל 5)

הקוד:

```
SELECT DISTINCT p.ProID, p.ProName
FROM Project p
INNER JOIN Team t ON p.TeID = t.TeID
INNER JOIN Employee e ON t.TeID = e.TeID
WHERE NOT EXISTS (
  SELECT EvID FROM Evaluation WHERE EmID = e.EmID AND Grade > 5
);
```

תוצאות וזמן ריצה:



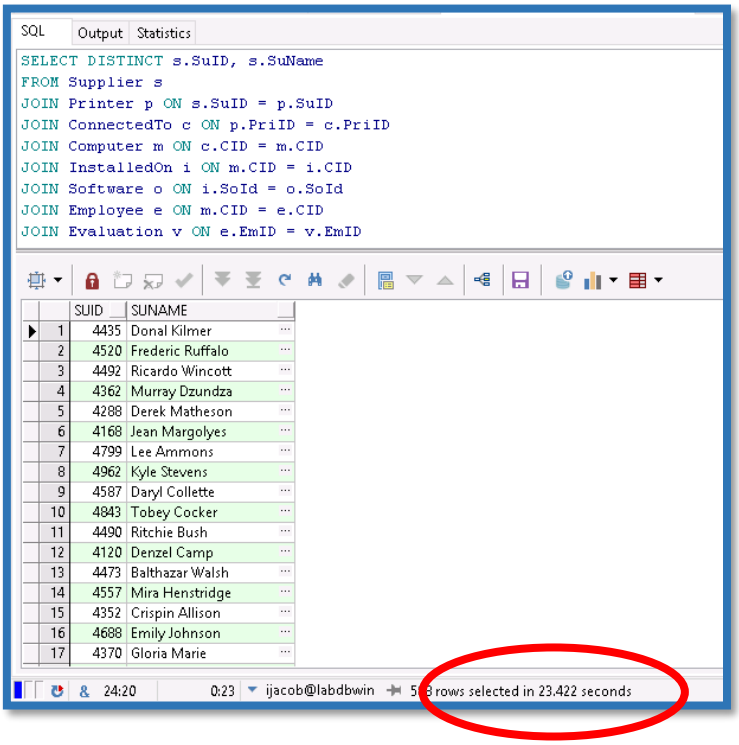
שאילתה חמישית – הספקים המובילים

תיאור מילולי: רוצים למצוא את כל הספקים שמספקים מוצרים טובים – מוצרים שמותקנים או מחוברים ל10 מחשבים שהעובד שהמחשב שייך לו קיבל לפחות פעם אחת ציון של מעל 7

הקוד:

```
SELECT DISTINCT s.SuID, s.SuName
FROM Supplier s
JOIN Printer p ON s.SuID = p.SuID
JOIN ConnectedTo c ON p.PriID = c.PriID
JOIN Computer m ON c.CID = m.CID
JOIN InstalledOn i ON m.CID = i.CID
JOIN Software o ON i.SoId = o.SoId
JOIN Employee e ON m.CID = e.CID
JOIN Evaluation v ON e.EmID = v.EmID
WHERE (p.PriID IN (
    SELECT PriID
    FROM ConnectedTo
    GROUP BY PriID
    HAVING COUNT(DISTINCT CID) > 10
  ) OR o.SoId IN (
    SELECT SoId
    FROM InstalledOn
    GROUP BY SoId
    HAVING COUNT(DISTINCT CID) > 10
  )) AND e.EmID IN (
    SELECT EmID
    FROM Employee
    WHERE CID = m.CID
  ) AND v.Grade > 7
```

תוצאות וזמן ריצה:



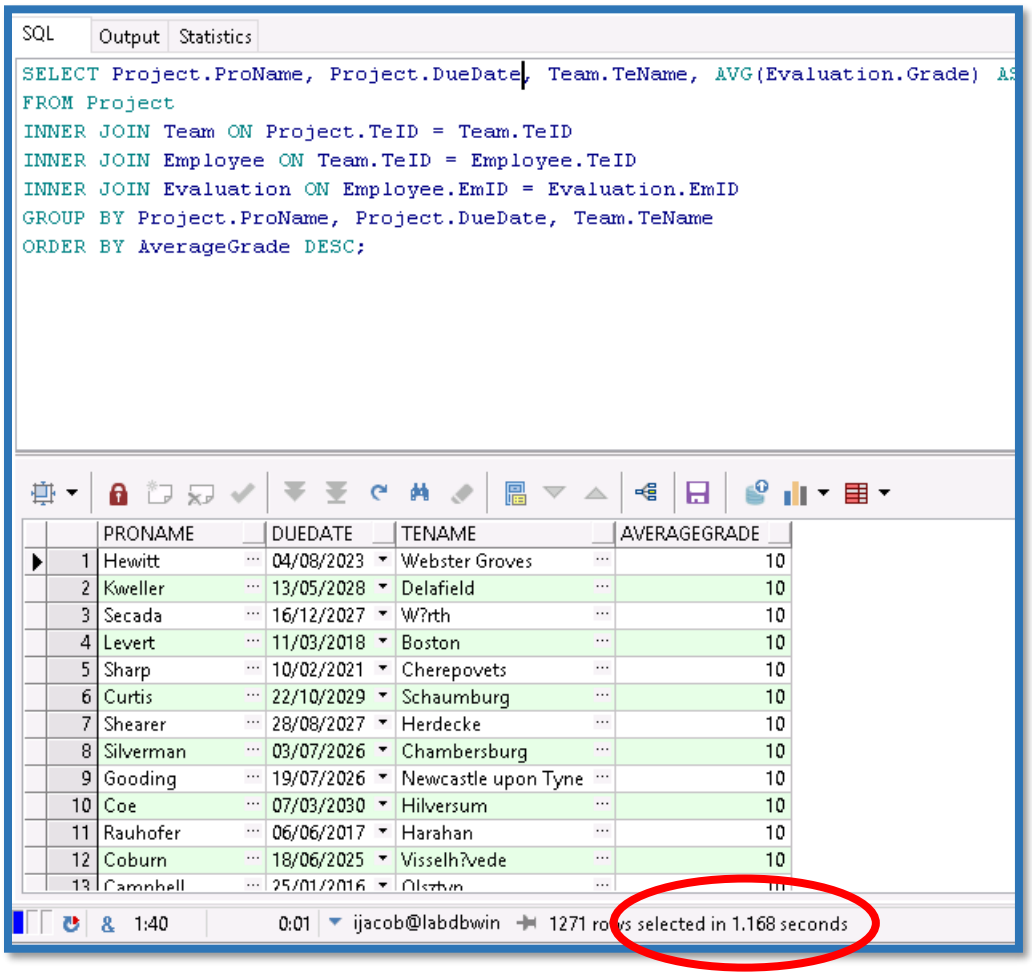
שאילתה שישית – מיון הפרויקטים

תיאור מילולי: רוצים למיין את הפרויקטים לפי טיב העובדים שעובדים עליו. נבקש את כל הפרויקטים עם הממוצע הערכות של העובדים של הצוות שמשויך לפרויקט הספציפי.

הקוד:

```
SELECT Project.ProName, Project.DueDate, Team.TeName, AVG(Evaluation.Grade) AS AverageGrade
FROM Project
INNER JOIN Team ON Project.TeID = Team.TeID
INNER JOIN Employee ON Team.TeID = Employee.TeID
INNER JOIN Evaluation ON Employee.EmID = Evaluation.EmID
GROUP BY Project.ProName, Project.DueDate, Team.TeName
ORDER BY AverageGrade DESC;
```

התוצאות וזמן הריצה:



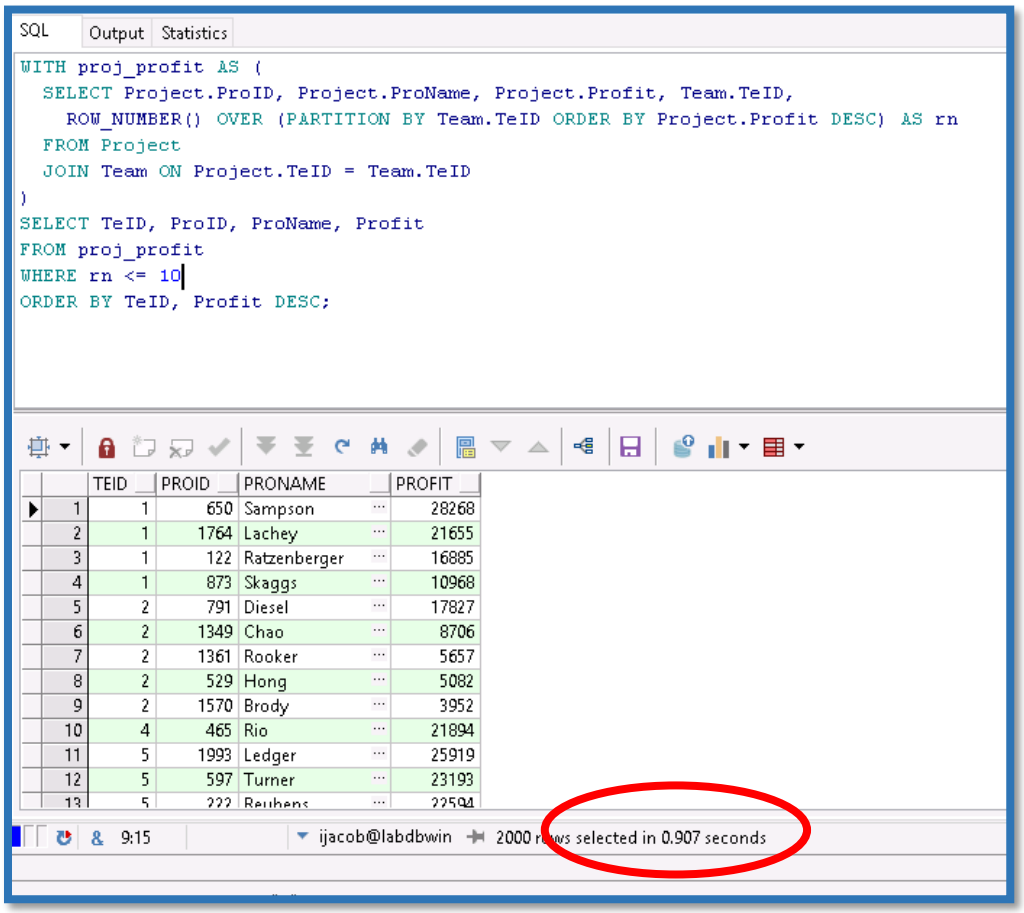
שאילתה שביעית – הפרויקטים הרווחיים

תיאור מילולי: רוצים למצוא את 10 הפרויקטים הרווחיים של כל צוות כדי לקבל אינדיקציה על התועלת שהחברה מקבלת מכל צוות.

הקוד:

```
WITH proj_profit AS (
  SELECT Project.ProID, Project.ProName, Project.Profit, Team.TeID,
    ROW_NUMBER() OVER (PARTITION BY Team.TeID ORDER BY Project.Profit DESC) AS rn
  FROM Project
  JOIN Team ON Project.TeID = Team.TeID
)
SELECT TeID, ProID, ProName, Profit
FROM proj_profit
WHERE rn <= 10
ORDER BY TeID, Profit DESC;
```

התוצאות וזמן ריצה:



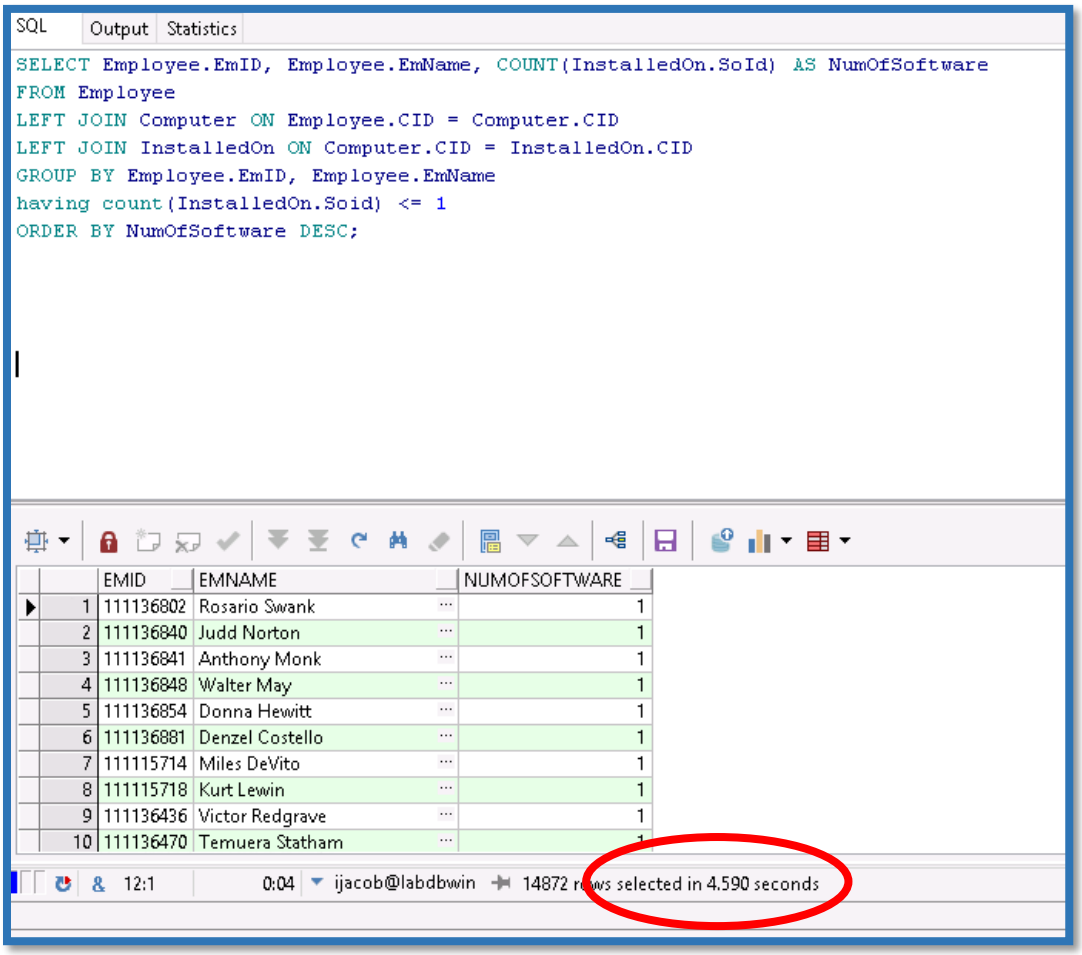
שאילתה שמינית – הדרכת שימוש בתוכנות

תיאור מילולי: רוצים לדעת מיהם העובדים שעל המחשב שלהם מותקנים מקסימום תוכנה אחת, כדי להעביר להם הדרכה בעיין שימוש בתוכנות.

הקוד:

```
SELECT Employee.EmID, Employee.EmName, COUNT(InstalledOn.SoId) AS NumOfSoftware
FROM Employee
LEFT JOIN Computer ON Employee.CID = Computer.CID
LEFT JOIN InstalledOn ON Computer.CID = InstalledOn.CID
GROUP BY Employee.EmID, Employee.EmName
having count(InstalledOn.Soid) <= 1
ORDER BY NumOfSoftware DESC;
```

התוצאות וזמן ריצה:



אינדקסים

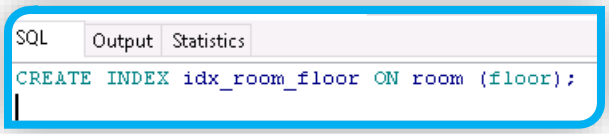
<u>הסבר קצר מה זה אינדקסים:</u> אינדקס הוא שיטת כוונון ביצועים המאפשרת שליפה מהירה יותר של רשומות.
אינדקס יוצר ערך עבור כל ערך המופיע בעמודות האינדקס.

אינדקסים שמשפרים את זמן הריצה

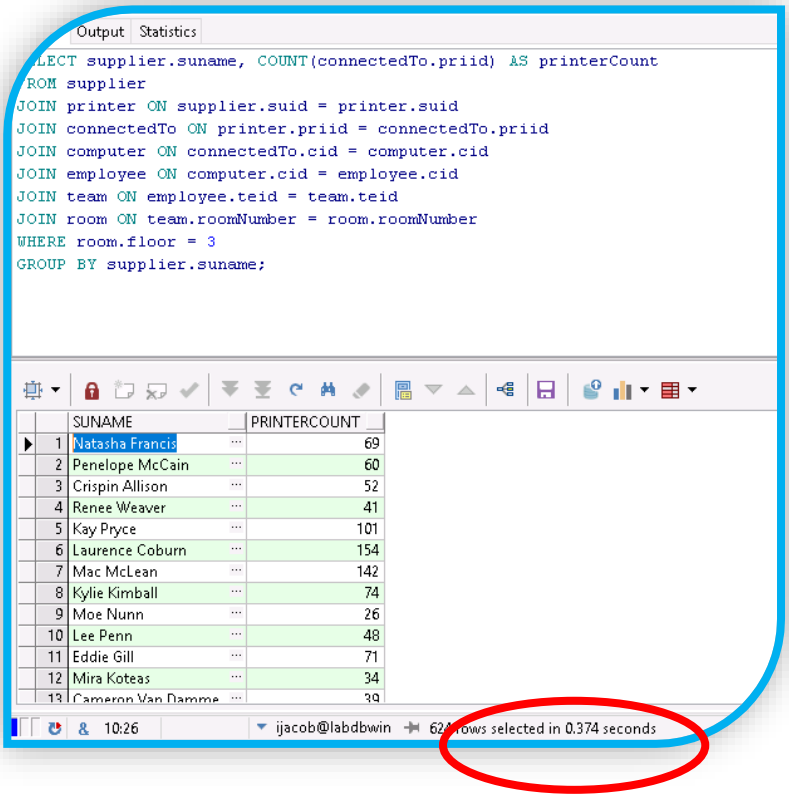
נשפר את הביצוע של השאילתה הראשונה – החלפת מדפסות

לפני השינוי:

נוסיף אינדקס שמחלק את הטבלה ROOM לפי קומות:

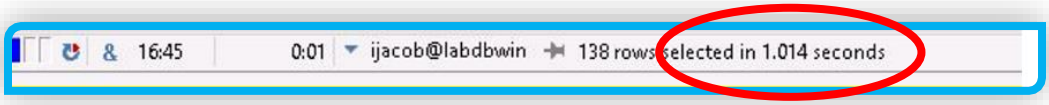


אחרי השינוי:

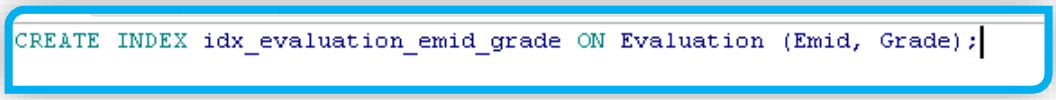


נשפר את הביצוע של השאילתה השנייה – איזון בין הצוותים

לפני השינוי:

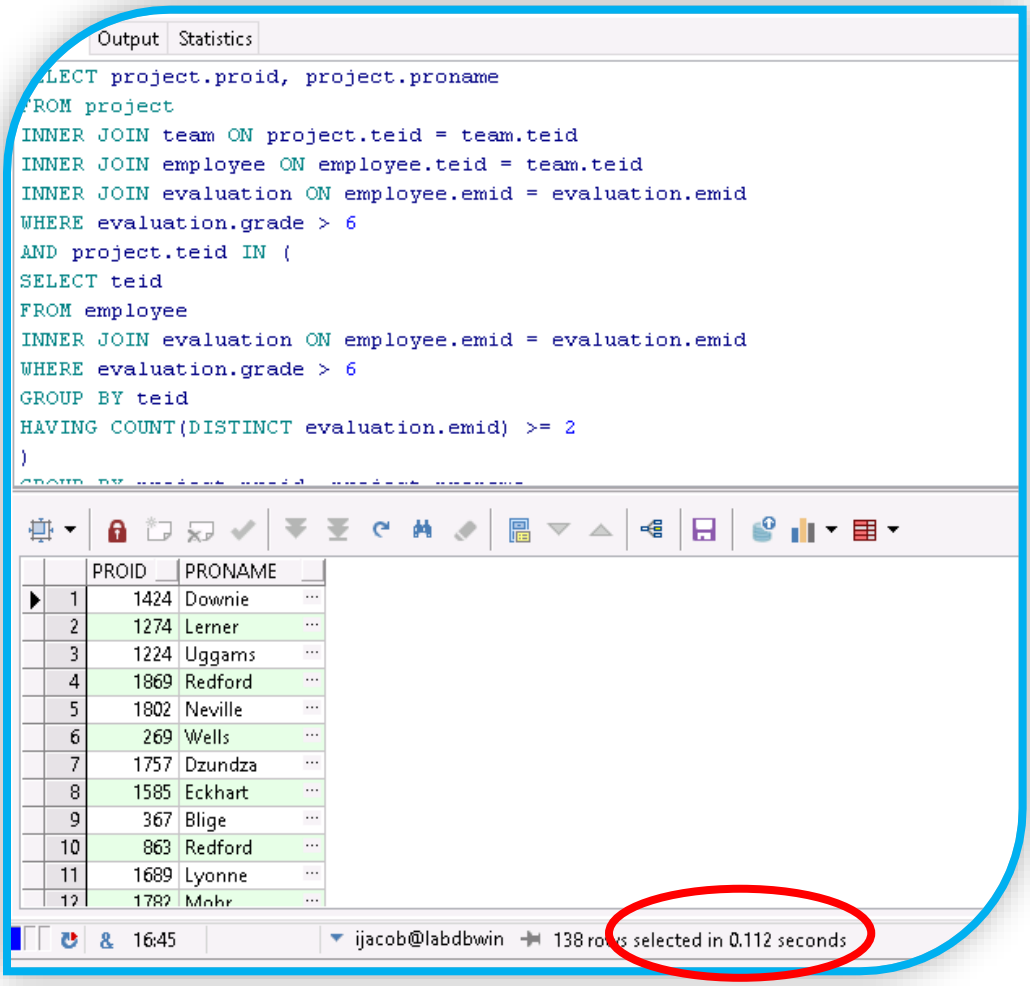


נוסיף אינדקס שמחלק את הטבלה EVALUATION לפי ציונים של כל עובד:



```
CREATE INDEX idx_evaluation_emid_grade ON Evaluation (Emid, Grade);
```

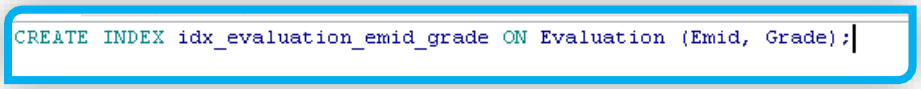
אחרי השינוי:



נשפר את הביצועים של השאילתה הרביעית – תמונת מצב

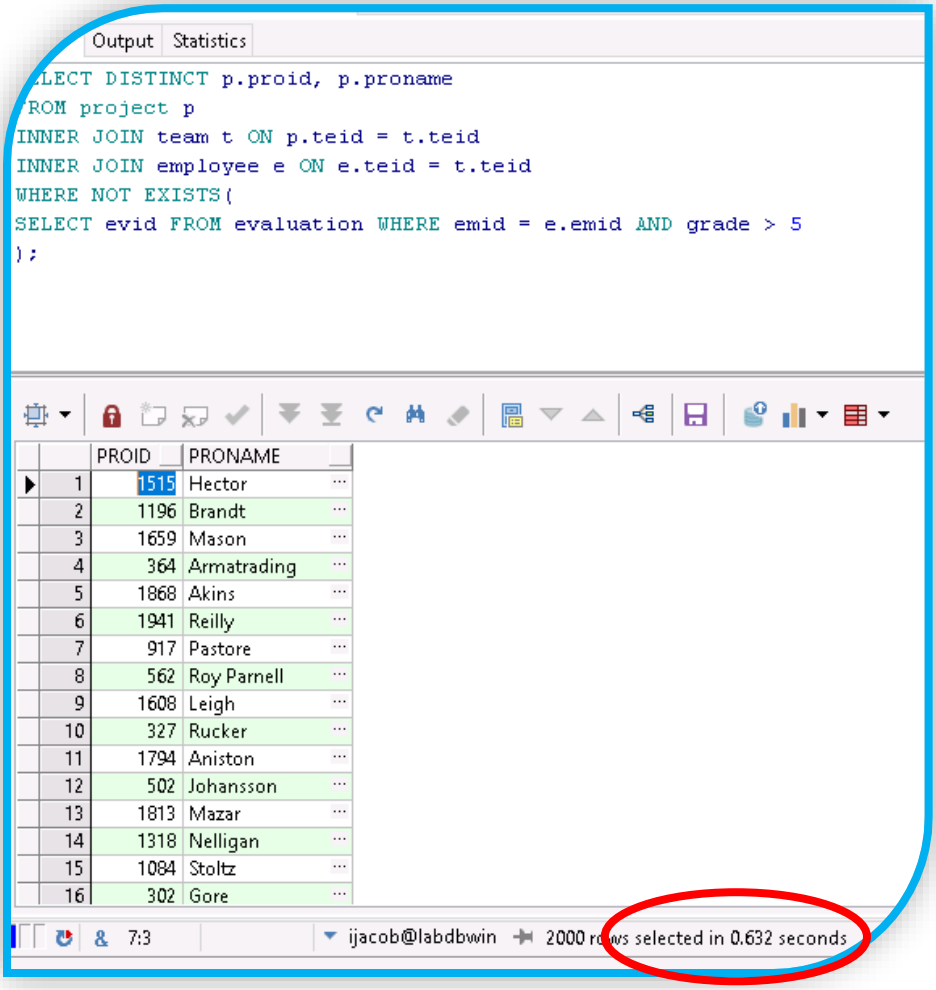
לפני השינוי:

נוסיף אינדקס שמחלק את הטבלה EVALUATION לפי ציונים של כל עובד:



```
CREATE INDEX idx_evaluation_emid_grade ON Evaluation (Emid, Grade);
```

אחרי השינוי:



```
SELECT DISTINCT p.proid, p.proname
FROM project p
INNER JOIN team t ON p.teid = t.teid
INNER JOIN employee e ON e.teid = t.teid
WHERE NOT EXISTS(
SELECT evid FROM evaluation WHERE emid = e.emid AND grade > 5
);
```

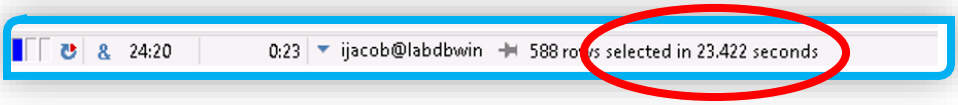
Output | Statistics

	PROID	PRONAME
1	1515	Hector
2	1196	Brandt
3	1659	Mason
4	364	Armatrading
5	1868	Akins
6	1941	Reilly
7	917	Pastore
8	562	Roy Parnell
9	1608	Leigh
10	327	Rucker
11	1794	Aniston
12	502	Johansson
13	1813	Mazar
14	1318	Nelligan
15	1084	Stoltz
16	302	Gore

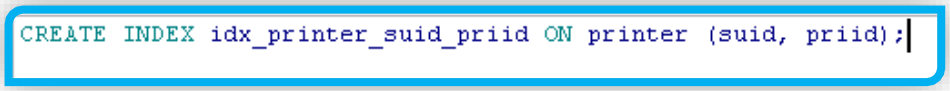
7:3 ijacob@labdbwin 2000 rows selected in 0.632 seconds

נשפר את הביצוע של השאילתה החמישית – הספקים המובילים

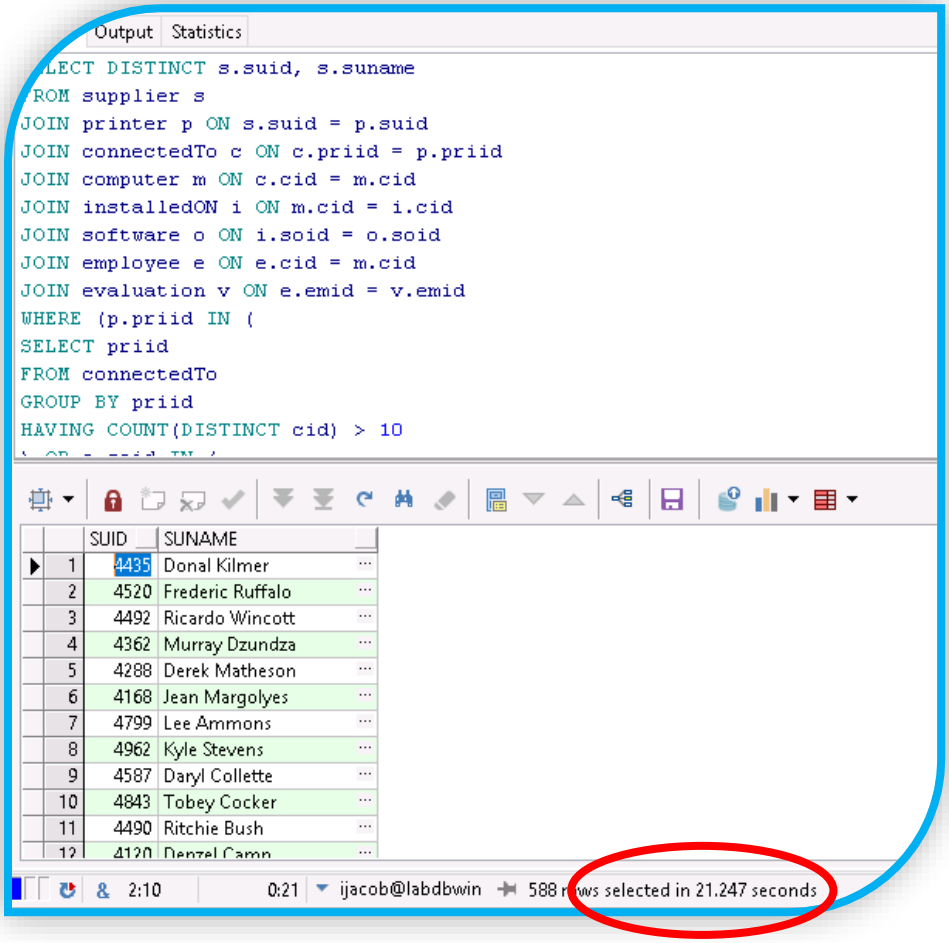
לפני שינוי:



נוסיף אינדקס שמחלק את הטבלה PRINTER לפי ספק ומדפסת:



אחרי שינוי:



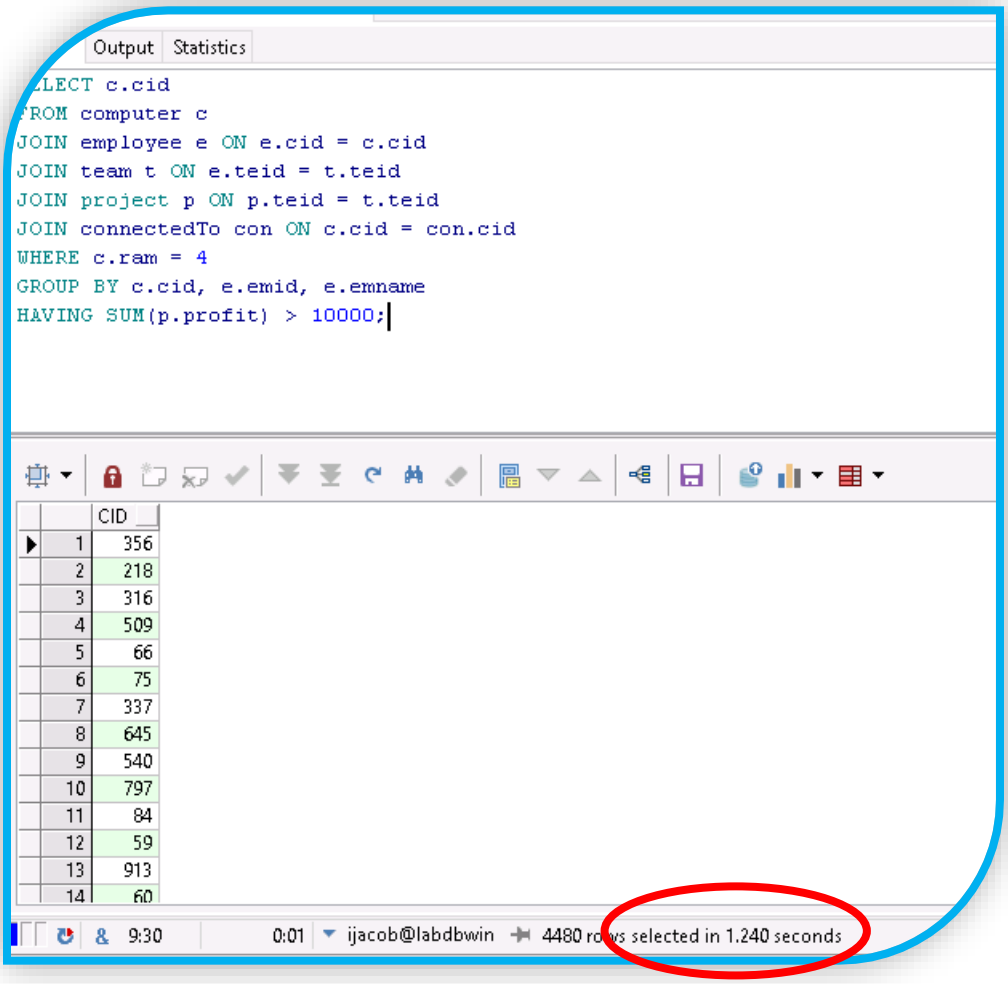
אינדקסים לא מועילים

אינדקס לא מועיל בשאילתה השלישית – שדרוג מחשבים

לפני שינוי:

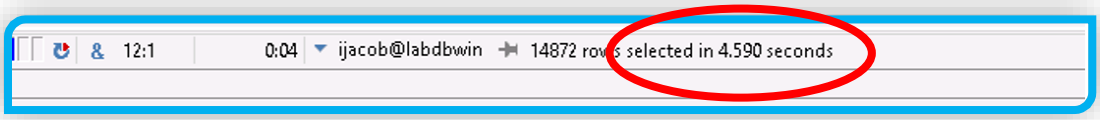
נוסיף אינדקס שמחלק את הטבלה COMPUTER לפי מספר מזהה ומעבד:

אחרי שינוי:



אינדקס לא מועיל בשאילתה השמינית – הדרכת שימוש בתוכנות

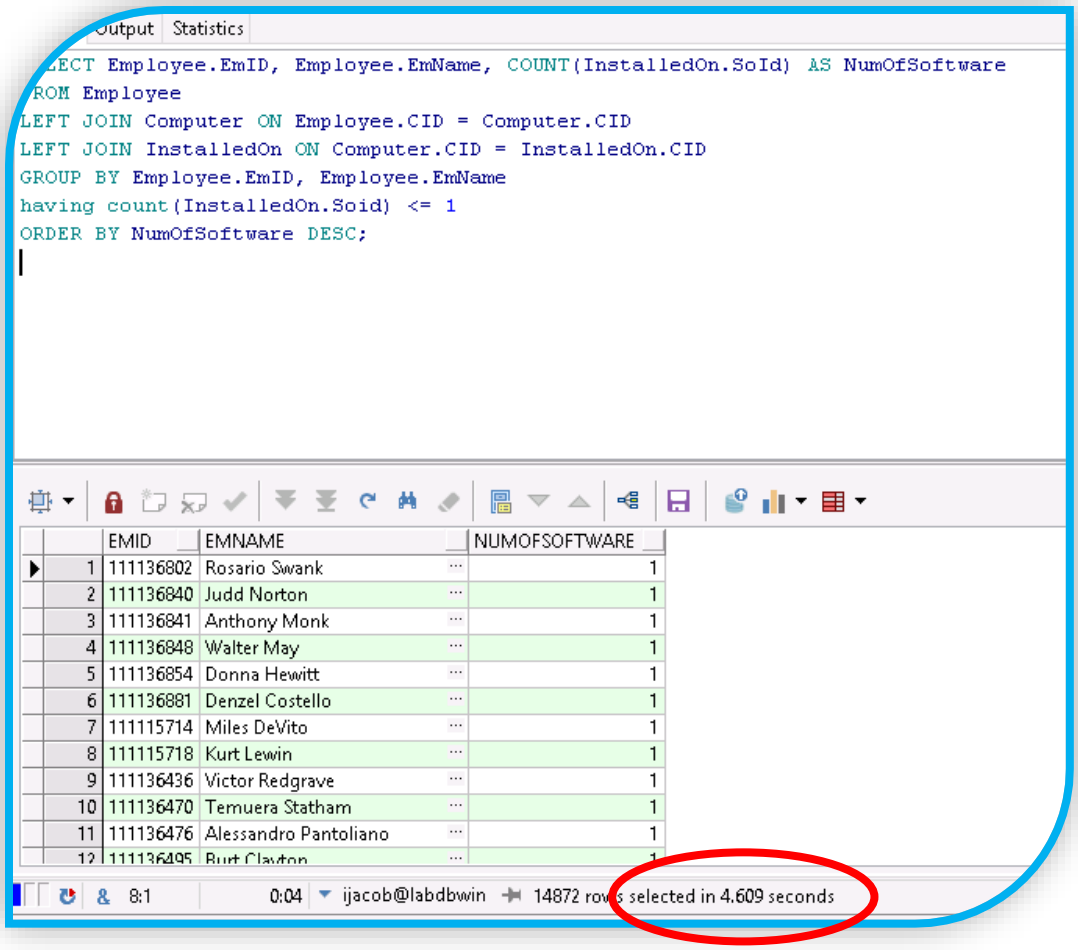
לפני שינוי:



נוסיף אינדקס שמחלק את הטבלה EMPLOYEE לפי ת.ז ושם:

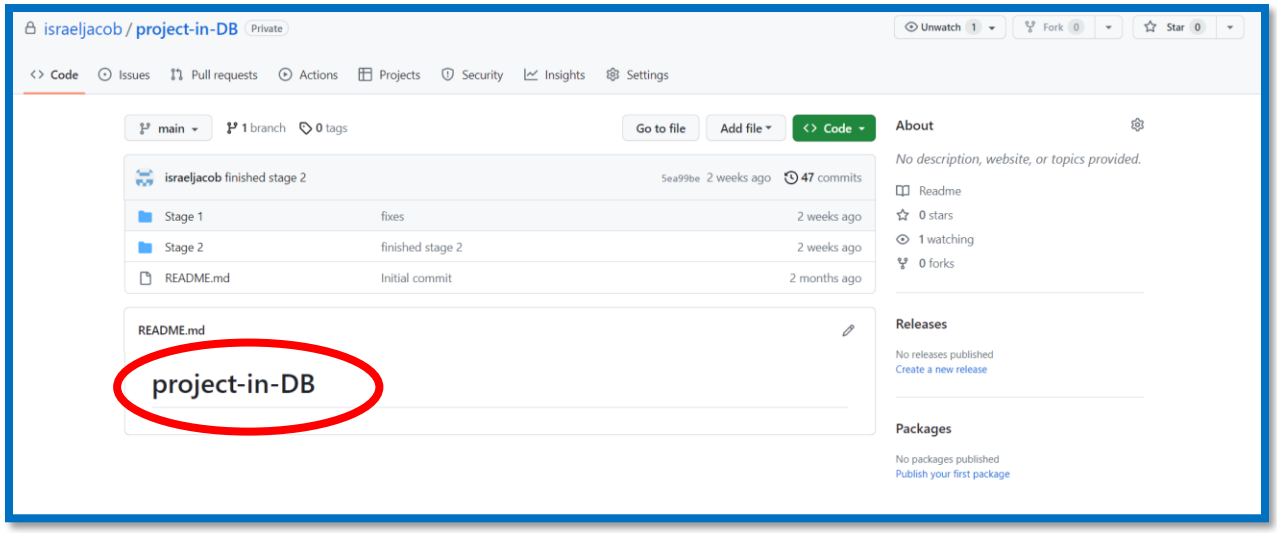
```
CREATE INDEX idx_Employee_emid_emname ON EMPloyee(Emid, Emname)
```

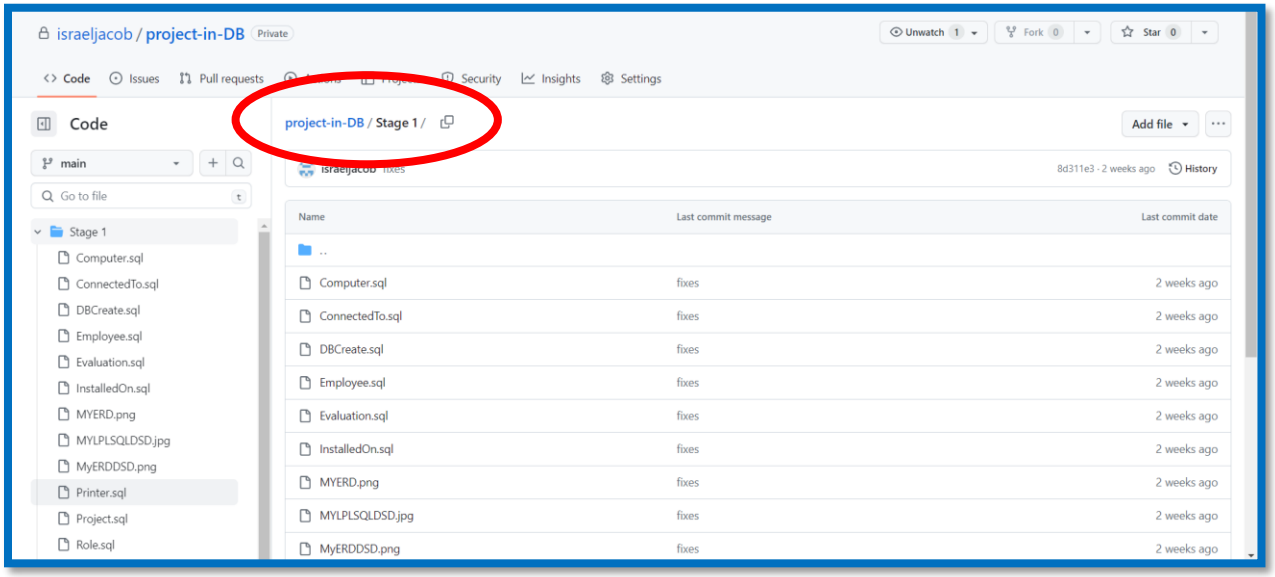
אחרי שינוי:

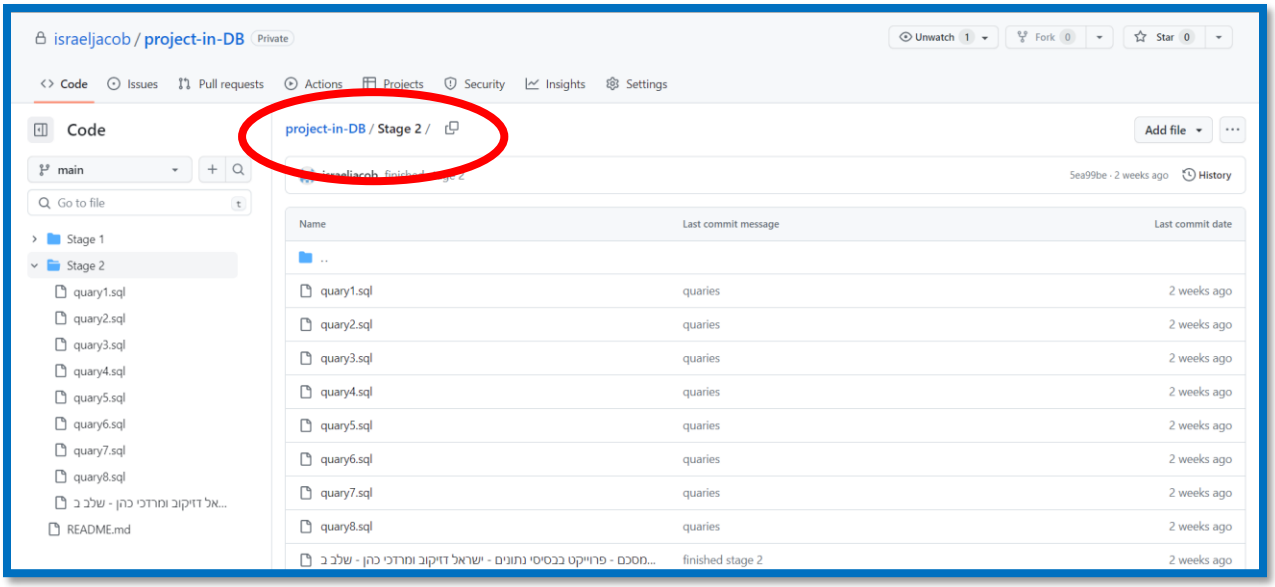


שלב ג'

שמירת הפרויקט בGitHub:

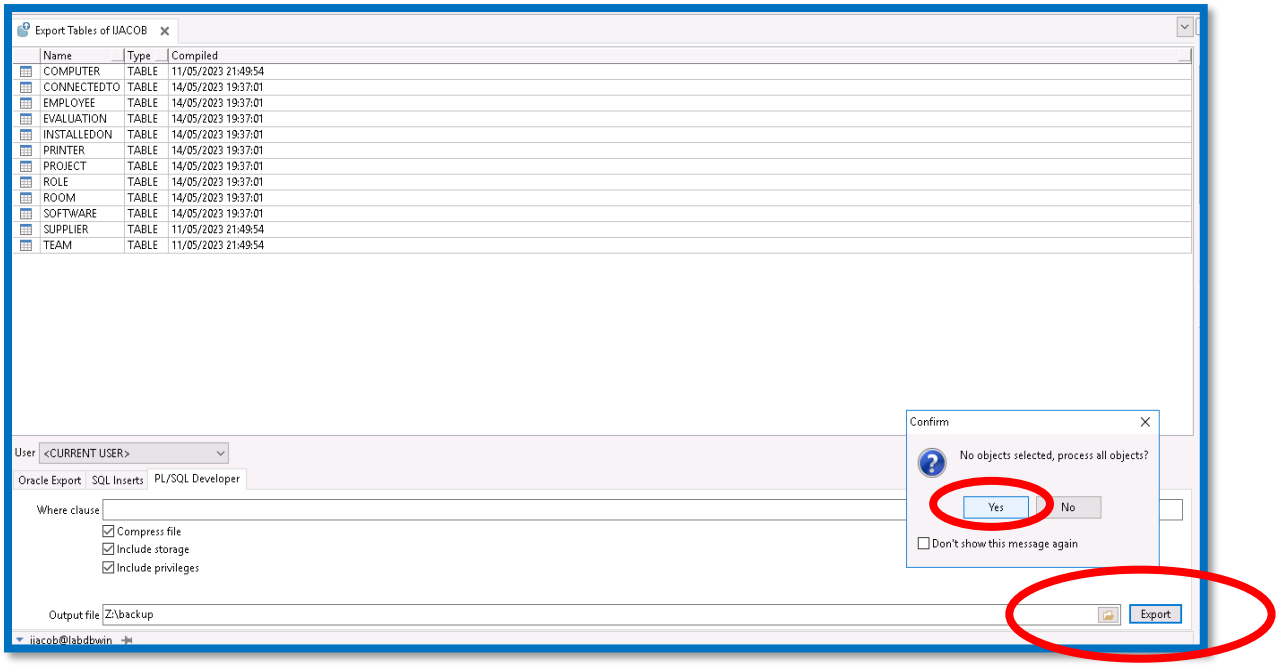


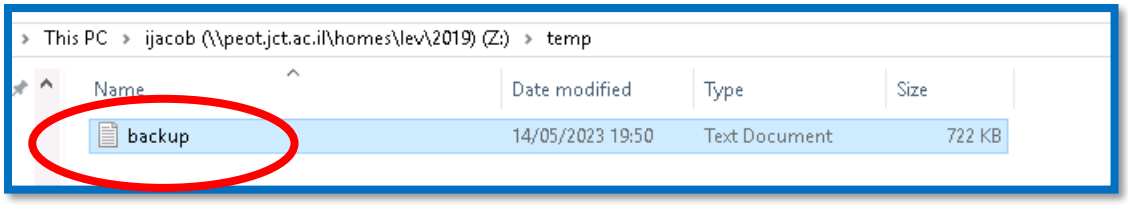




גיבוי הנתונים:

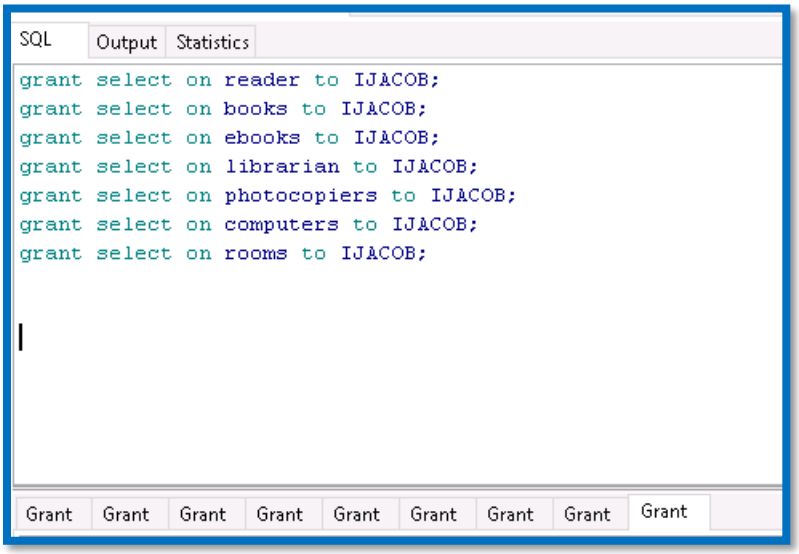
נכנסנו ללשונית tools ובחרנו export tables . בחרנו את הלשונית PL/SQL developer והכנסנו את כתובת היעד בה יישמר הגיבוי. לאחר לחיצה על export נשאלנו האם ברצוני לגבות את כל הטבלאות לחצנו על אישור Yes ונוצר קובץ הגיבוי ובו נתוני כל הטבלאות.




This PC
ijacob (\\peot.jct.ac.il\homes\lev\2019) (Z:)
temp
Name
Date modified
Type
Size
backup
14/05/2023 19:50
Text Document
722 KB

:Grants

:הקוד


SQL
Output
Statistics
grant select on reader to IJACOB;
grant select on books to IJACOB;
grant select on ebooks to IJACOB;
grant select on librarian to IJACOB;
grant select on photocopiers to IJACOB;
grant select on computers to IJACOB;
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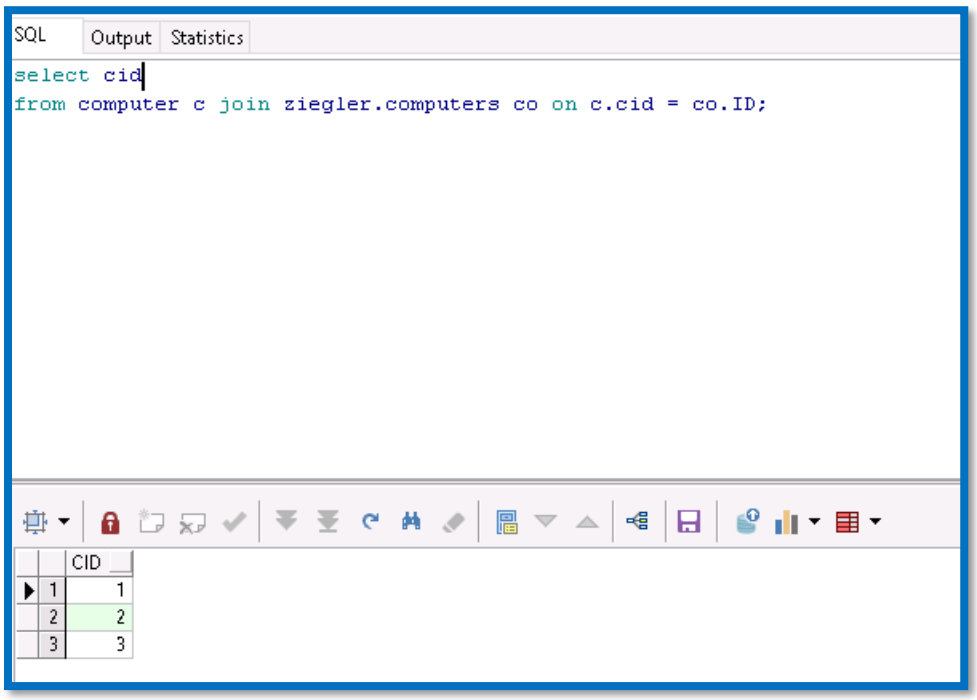
שאילתות שמשתמשות במידע החדש מהטבלאות של המשתמש ZIEGLER:

שאילתה ראשונה:

מעוניינים לקבל את הרשימה של כל המחשבים ששייכים לעובדים וגם משתמשים בהם בספרייה:

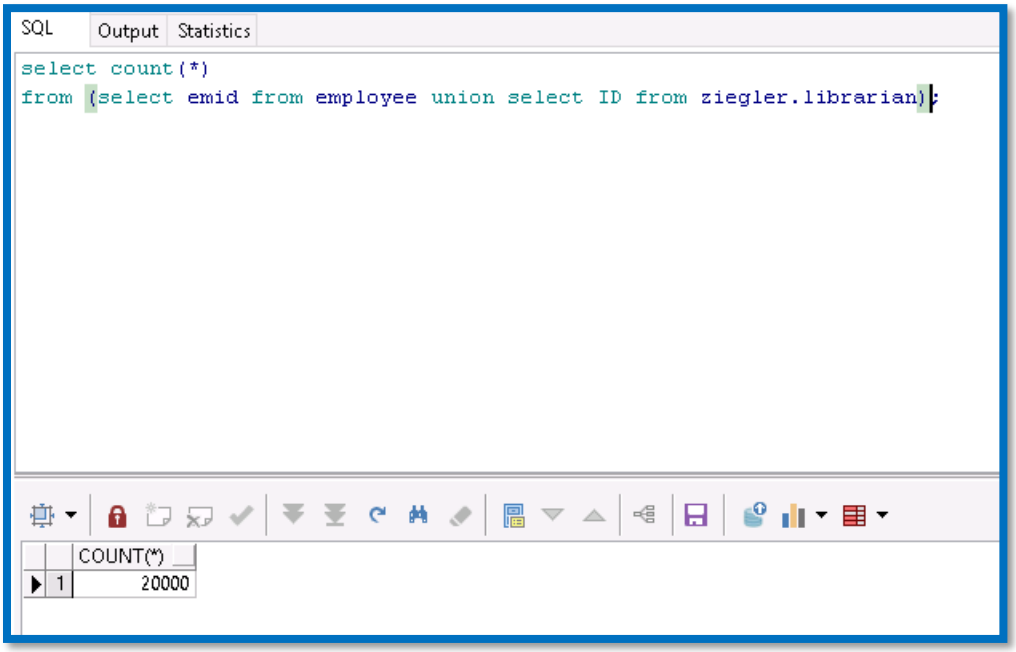
הקוד והתוצאה:



שאילתה שניה:

רוצים להוציא לגיבוש את עובדי הIT ואת הספרנים יחד ורוצים לדעת מה הכמות שלהם

הקוד והתוצאה:



שאילתה שלישית:

רוצים למדר בין המדפסות של הIT למדפסות של הספרייה ולכן רוצים לדעת האם ישנם מדפסות משותפות.

הקוד והתוצאה: