



דו"ח פעילות – מיני פרויקט בבסיסי נתונים השכרת רכב



תוכן עניינים

- שער
- תיאור המערכת
- ERD
- DSD
- Create tables
- Data generators
- Excel
- שאלות
- Indexes
- הרשאות גישה
- שאלות על פרויקט של אחרים
- Views
- תרשימים
- פרוצדורות
- פונקציות



תיאור המערכת

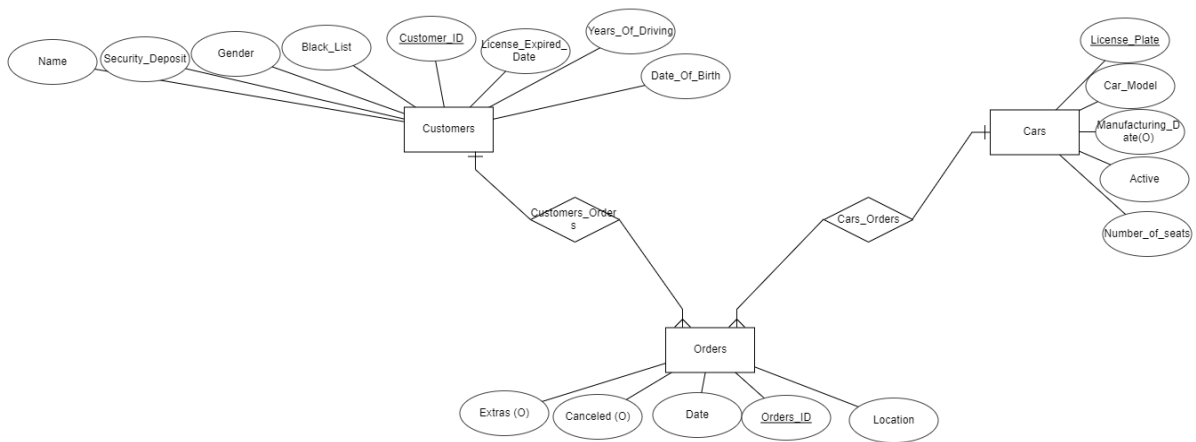


המערכת להשכרת רכב אחראית על מספר דברים

- 1 בהזמנות צריך לבדוק שללקוח יש רישיון
שאין לו עבר מפוקפק שיש את הרכב שהוא
רוצה ואת דרך התשלום**
- 2 טיפולים מלאי רכבים ולבדוק שהרכבים
טובים ועוברים טיפולים שותפים**
- 3 שירות לקוחות הזמנות ביטולים תאונות
מלאי רכבים סניפים**

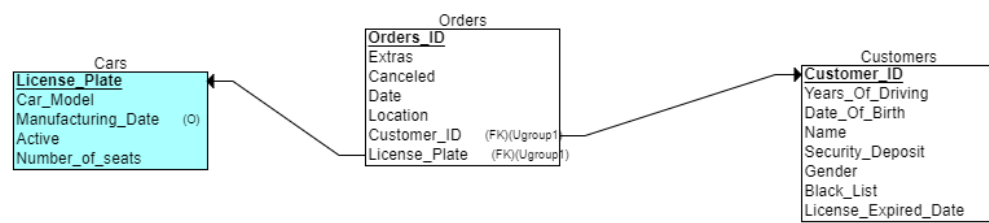


ERD





DSD





CREATE TABLES



```
CREATE TABLE Customers
(
  Years_Of_Driving NUMERIC(2) NOT NULL,
  Date_Of_Birth DATE NOT NULL,
  Name VARCHAR(20) NOT NULL,
  Security_Deposit NUMERIC(1) NOT NULL,
  Gender VARCHAR(10) NOT NULL,
  Black_List NUMERIC(1) NOT NULL,
  Customer_ID INT NOT NULL,
  License_Expired_Date DATE NOT NULL,
  PRIMARY KEY (Customer_ID)
);

CREATE TABLE Cars
(
  License_Plate NUMERIC(20) NOT NULL,
  Car_Model VARCHAR(10) NOT NULL,
  Manufacturing_Date DATE,
  Active NUMERIC(1) NOT NULL,
  Number_of_seats NUMERIC(2) NOT NULL,
  PRIMARY KEY (License_Plate)
);

CREATE TABLE Orders
(
  Extras VARCHAR(20) NOT NULL,
  Canceled NUMERIC(1) NOT NULL,
  Date_Of_Orders DATE NOT NULL,
  Orders_ID INT NOT NULL,
  Location VARCHAR(20) NOT NULL,
  Customer_ID INT NOT NULL,
  License_Plate NUMERIC(20) NOT NULL,
  PRIMARY KEY (Orders_ID),
  FOREIGN KEY (Customer_ID) REFERENCES Customers(Customer_ID),
  FOREIGN KEY (License_Plate) REFERENCES Cars(License_Plate),
  UNIQUE (Customer_ID, License_Plate)
);
```



DATA GENERATORS



CARS

Owner	Table	Number of records
DASTRAUS	CARS	20000

Name	Type	Size	Data	Master
LICENSE_PLATE	NUMBER	20	Sequence(0)	xxx
CAR_MODEL	VARCHAR2	10	Components.Code	xxx
MANUFACTURING_DATE	DATE		Random('01/01/1948', '01/01/2005')	xxx
ACTIVE	NUMBER	1	Random(0, 1)	xxx
NUMBER_OF_SEATS	NUMBER	2	Random(1, 8)	xxx
*				xxx

ORDERS

Owner	Table	Number of records
DASTRAUS	ORDERS	20000

Name	Type	Size	Data	Master
EXTRAS	VARCHAR2	20	List('Booster', 'handicapped', 'Nothing')	xxx
CANCELED	NUMBER	1	Random(0, 1)	xxx
DATE_OF_ORDERS	DATE		Random('01/05/2022', '01/01/2023')	xxx
ORDERS_ID	NUMBER		Sequence(0)	xxx
LOCATION	CHAR	20	Address1	xxx
CUSTOMER_ID	NUMBER		List(select Customer_ID from Customers)	xxx
LICENSE_PLATE	NUMBER	20	List(select License_Plate from Cars)	xxx
*				xxx

CUSTOMERS

Owner	Table	Number of records
DASTRAUS	CUSTOMERS	20000

Name	Type	Size	Data	Master
YEARS_OF_DRIVING	NUMBER	2	Random(0, 30)	xxx
DATE_OF_BIRTH	DATE		Random('01/01/1950', '01/01/2005')	xxx
NAME	CHAR	20	FirstName + ' ' + LastName	xxx
SECURITY_DEPOSIT	NUMBER	1	Random(0, 1)	xxx
GENDER	VARCHAR2	10	List('male', 'female')	xxx
BLACK_LIST	NUMBER	1	Random(0, 1)	xxx
CUSTOMER_ID	NUMBER		Sequence(0)	xxx
LICENSE_EXPIRED_DATE	DATE		Random('01/01/2022', '01/01/2030')	xxx
*				xxx

Daniel strauss 212126312
Shmuel verse 1666859



EXCEL



	A	B	C	D	E	F
1	License_PL	Car_Model	Manufacture	Active	Number_of_seats	
2	20000	AA-0002	08/10/1996	0	4	
3	20001	AA-0002	08/12/1967	0	4	
4	20002	AA-0003	05/10/1950	0	4	
5	20003	AA-0004	26/02/1996	1	4	
6	20004	AA-0005	20/12/1996	0	7	
7	20005	AA-0006	23/04/1969	0	2	
8	20006	AA-0007	21/12/2003	0	4	
9	20007	AA-0008	18/07/1998	1	4	
10	20008	AA-0009	09/07/1979	0	4	
11	20009	AA-0010	28/07/1994	0	4	
12	20010	AA-0011	24/11/1948	0	4	

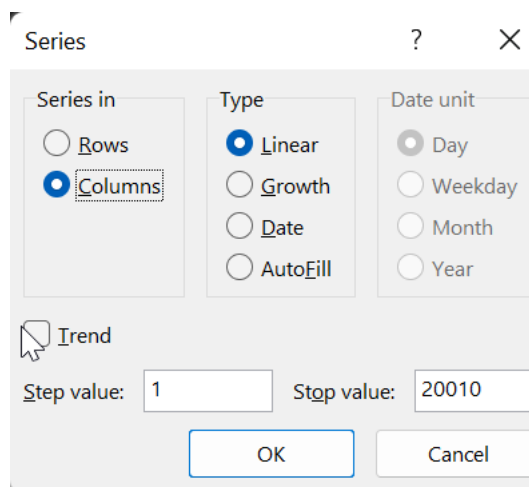
Daniel strauss 212126312
Shmuel verse 1666859



נסביר כיצד למלא כל טור

License Plate

אנו צריכים לצור סדרה פשוטה אפשר להשתמש באפשרויות שיש בתוכנה
הוספות- <מילוי
(FILL)



Car Model

אנו צריכים סידרה יותר מסובכת שהיא מורכבת מהאותיות ואז קו אמצעי ואז
סידרה מספרים אז נשתמש בנוסחה הבא
="AA-"&TEXT(ROWS(A\$4:A4),"0000")



Manufacturing Date

אנו צריכים ליצור תאריך אקראי בין שני תאריכים נשתמש בנוסחה הבא
=RANDBETWEEN(DATE(1970,1,1),DATE(2022,5,5))
(צריך לבדוק שההגדרות על מצב
(SHORT DATE

Active

אנו צריכים ליצור מספר אקראי שהוא 0 או 1
=randbetween(0,1)

Number of seats

אנו צריכים ליצור מספר אקראי שהוא בין 1 ל 8
=randbetween(1,8)



Update Orders SET Date_Of_ ... Text Importer ODBC Importer

Data from ODBC Data to Oracle

Connection

User / System DSN Excel Files

User Name

Password

Connect Disconnect

Table / Query

☒ Import Table ☐ Import Query Result

"C:\USERS\DASTRAUS\DESKTOP\Excel.xlsx".Sheet1

View Data

Result Preview

License_Plate	Car_Model	Manufacturing_Date	Active	Number_of_seats
20000.0	AA-0002	1996-10-08 00:00:00	0.0	4.0

Import Import to Script Close dastraus@labdbwin Help

Daniel strauss 212126312
Shmuel verse 1666859



Update Orders SET Date_Of_... Text Importer ODBC Importer

Data from ODBC Data to Oracle

General

Owner: Table: CARS

Commit every...: 100

☒ Overwrite duplicates ☐ Delete records

☐ Ignore duplicates ☐ Truncate table

Initializing Script: ...

Finalizing Script: ...

Fields

License_Plate -> LICENSE_PLATE

Car_Model -> CAR_MODEL

Manufacturing_Date -> MANUFACTURING_DATE

Active -> ACTIVE

Number_of_seats -> NUMBER_OF_SEATS

Field: LICENSE_PLATE

Fieldtype: (Float)

Create SQL

Result Preview

License_Plate	Car_Model	Manufacturing_Date	Active	Number_of_seats
20000.0	AA-0002	1996-10-08 00:00:00	0.0	4.0

Daniel strauss 212126312
Shmuel verse 1666859



שאלות



שאלתה 1:

מחזיר את כל ההזמנות כך שהלקוחות לא נמצאים ברשימה השחורה וגם יש להם משכון
והרכב שלהם תקין

```
select *
from Orders
where Customer_ID in (select Customer_ID
                      from customers
                      where Black_List = 0 and Security_Deposit = 0 )

Intersect
select *
from Orders
where license_plate in (select license_plate
                      from cars
                      where Active = 1);
```

The screenshot shows a database query tool interface. The SQL query is displayed in the top pane, and the results are shown in a table in the bottom pane. The table has columns: EXTRAS, CANCELED, DATE_OF_ORDERS, ORDERS_ID, LOCATION, CUSTOMER_ID, and LICENSE_PLATE. The results show 22 rows of data, all with 'Booster' as the extra and '0' as the canceled status. The status bar at the bottom indicates that 261 rows were selected in 0.558 seconds.

EXTRAS	CANCELED	DATE_OF_ORDERS	ORDERS_ID	LOCATION	CUSTOMER_ID	LICENSE_PLATE
Booster	0	13/05/2022	8913	21 Copenhagen Street	19598	19412
Booster	0	17/05/2022	616	3 Mifune Street	14096	3428
Booster	0	18/05/2022	3598	23 Shearer Road	477	1745
Booster	0	19/05/2022	6590	23rd Street	13509	10224
Booster	0	22/05/2022	19584	23 Meryl Street	12766	277
Booster	0	14/06/2022	11100	33 Connors Street	16148	12056
Booster	0	14/06/2022	19293	96 Ernie Blvd	13676	10033
Booster	0	18/06/2022	12578	33 Weir Drive	1018	19560
Booster	0	19/06/2022	1084	25 Englund Street	9246	4826
Booster	0	20/06/2022	17132	42 Londrina Ave	569	18475
Booster	0	27/06/2022	14036	11 Tcheky Street	7566	8161
Booster	0	03/07/2022	2435	88 Hearst Road	8987	4072
Booster	0	07/07/2022	3974	9 Kirshner Blvd	14248	1433
Booster	0	13/07/2022	5664	7 Stewart Street	11329	6535
Booster	0	24/07/2022	8681	90 Ammons Road	5736	18819
Booster	0	25/07/2022	12752	171 Donovan Street	16407	12678
Booster	0	31/07/2022	6240	927 Cozier Road	16967	16998
Booster	0	03/08/2022	2628	93 Lodi Road	8596	18388
Booster	0	11/08/2022	3510	2 Mirren Street	4517	16298
Booster	0	16/08/2022	1922	91 Foster Drive	6058	4433
Booster	0	31/08/2022	5050	23 Guadalajara Ave	12766	8629
Booster	0	07/09/2022	11082	36 Ryder Road	5337	8597

Daniel strauss 212126312
Shmuel verse 1666859



שאלתה 2

כל הלקוחות שיש להם יותר מהזמנה אחת

```
select Customer_ID
from Orders
group by Customer_ID
having count(*) > 1;
```

5332 rows selected in 1.408 seconds

שאלתה 3

כל הזמנות שיש להם לקוח שיש לו יותר מי 10 שנים ניסיון בנהיגה

```
select *
from Orders
where Customer_ID in (select Customer_ID
from customers
where Years_Of_Driving >= 10 );
```

13401 rows selected in 6.582 seconds

שאלתה 4

מחזיר את כל ההזמנות שהזמינו בוסטר ילד

```
select *
from Orders
where Extras = 'Booster';
```

6551 rows selected in 2.847 seconds



שאלתה 5

כל לקוח שיש לו יותר מי 2 הזמנות

```
select Customer_ID, count(Customer_ID)
from Orders natural join customers
group by Customer_ID
having count(Customer_ID)>2;
```

1584 rows selected in 0.550 seconds

שאלתה 16

כמות המכוניות שיש להם אותו מספר מושבים

```
select Number_of_seats, count(*) as Number_of_seats
from cars
group by Number_of_seats
```

8 rows selected in 0.012 seconds

שאלתה 7

מחזיר פרטי הלקוחות חוץ מאלה לא רלוונטים להצגה כלומר פקדון רשימה שחורה ומספר זהות שלא שכרו שום רכב

```
select t.years_of_driving, t.date_of_birth, t.name, t.gender, t.license_expired_date from DASTRAUS.CUSTOMERS t
where NOT EXISTS(
select b.license_plate from DASTRAUS.CARS b where EXISTS(
select o.orders_id from DASTRAUS.ORDERS o
| where o.license_plate=b.license_plate and o.customer_id=t.customer_id)
```

7403 rows selected in 2.302 seconds



שאלתא 8

מחזיר אותם פרטי הלקוחות של 7 של הלקוחות שכרו כל הרכבים שהאקסטרא הוא נכה ושהמיקום מתחיל ב1

```
select t.years_of_driving,t.date_of_birth,t.name,t.gender,t.license_expired_date from DASTRAUS.CUSTOMERS t
where EXISTS(select b.license_plate from DASTRAUS.CARS b
where EXISTS(select o.orders_id from DASTRAUS.ORDERS o where o.license_plate=b.license_plate
and o.customer_id=t.customer_id and o.extras='handicapped' and o.location LIKE '1%')) |
```

796 rows selected in 0.291 seconds

שאלתה 9

מספר הלקוחות אם אותם שנות נהיגה

```
select Years_Of_Driving,count(*) as Years
from Customers
group by Years_Of_Driving
order by Years_Of_Driving
```

31 rows selected in 0.058 seconds



שאלתה 10

מחזיר את הלקוחות ומספר אקסטרא שהזמינו כך שהמספר רישוי שלהם גדול ממאה
ושהזמינו יותר משני אקסטרא אבל שנולדו לפני ראשון של אוקטובר 1951

The screenshot shows a SQL query execution window with the following SQL code:

```
(select t.CUSTOMER_ID,s.extra
from DASTRAUS.CUSTOMERS t,(select P.CUSTOMER_ID,count(*) as extra
from DASTRAUS.ORDERS P
group by P.CUSTOMER_ID )s
where exists (select * from DASTRAUS.ORDERS R where R.LICENSE_PLATE>100 and R.CUSTOMER_ID=t.customer_id) and s.extra>2 and s.CUSTOMER_ID=t.CUSTOMER_ID)
minus
(select t.CUSTOMER_ID,s.extra
from DASTRAUS.CUSTOMERS t,(select P.CUSTOMER_ID,count(*) as extra
from DASTRAUS.ORDERS P
group by P.CUSTOMER_ID )s
where t.date_of_birth>'01-OCT-1951' )
```

The results table shows 13 rows of data:

CUSTOMER_ID	EXTRA
1	299
2	676
3	811
4	1266
5	1380
6	1966
7	2593
8	3013
9	3056
10	3320
11	3585
12	3688
13	4377

The status bar at the bottom indicates: 1:53 verse@labdbwin 50 rows selected in 113.386 seconds.

The status bar shows: 1:53 verse@labdbwin 50 rows selected in 113.386 seconds.



שאלתה 11

מחזיר את מספר הזמנות וסכום מושבים ברכב של ההזמנות עם רכב בו יש רק מושב יחיד
ושמספר ההזמנה גדול מ 19550

The screenshot shows the SQL Developer interface with a query window and a results grid. The query is as follows:

```
(select t.orders_id,1
from DASTRAUS.CARS s,DASTRAUS.ORDERS t
intersect
select distinct P.ORDERS_ID, 1
from DASTRAUS.ORDERS P)
intersect
(select t.orders_id,1
from DASTRAUS.ORDERS t
where t.orders_id>19550)
```

The results grid displays the following data:

	ORDERS_ID	SUM(S.NUMBER_OF_SEATS)
1	19552	1
2	19560	1
3	19562	1
4	19565	1
5	19573	1
6	19574	1
7	19576	1
8	19582	1
9	19590	1
10	19599	1
11	19604	1
12	19611	1
13	19614	1
14	19610	1

The status bar at the bottom indicates: 9:31, 2:07, verse@labdbwin, 53 rows selected in 127.285 seconds.

9:31, 2:07, verse@labdbwin, 53 rows selected in 127.285 seconds



שאלתה 12

מחזיר את הלקוחות וסכום מספר שנות נהיגה כך שמספר ההזמנה שלהם גדול מ 19960 ומספר השנות נהיגה שווה 2

Query data DASTRAUS.CARS@LABDBWIN Query data DASTRAUS.CUSTOMERS@LABDBWIN select t.customer_id

SQL Output Statistics

```
select t.customer_id,sum(u.years_of_driving)
from DASTRAUS.CARS s,DASTRAUS.ORDERS t,DASTRAUS.CUSTOMERS u
where s.license_plate=t.license_plate and t.customer_id=u.customer_id
group by t.customer_id

union
(select t.customer_id,2
from DASTRAUS.CARS s,DASTRAUS.ORDERS t
intersect
select distinct P.customer_id, 2
from DASTRAUS.ORDERS P)
intersect
(select t.customer_id,2
from DASTRAUS.ORDERS t
```

	CUSTOMER_ID	SUM(U.YEARS_OF_DRIVING)
1	18	2
2	155	2
3	676	2
4	871	2
5	1895	2
6	2519	2
7	2970	2
8	3641	2
9	5431	2

12:10 0:52 verse@labdbwin 39 rows selected in 52.395 seconds

12:10 0:52 verse@labdbwin 39 rows selected in 52.395 seconds

Daniel strauss 212126312
Shmuel verse 1666859



UPDATE שאילתה
מחליף NULL במקום
Nothing

```
Update Orders  
set Extras = NULL  
where Extras = 'Nothing';
```

שאילתה עם פרמטרים

מקבל קלט של מספר שנות נהיגה מחזיר את כל הלקוחות שיש להם יותר ניסיון

```
select *  
from Orders  
where Customer_ID in (select Customer_ID  
from customers  
where Years_Of_Driving >= &num );
```



INDEX



Index 1

-- Create/Recreate indexes

```
create index bl on CUSTOMERS (security_deposit, black_list);
```

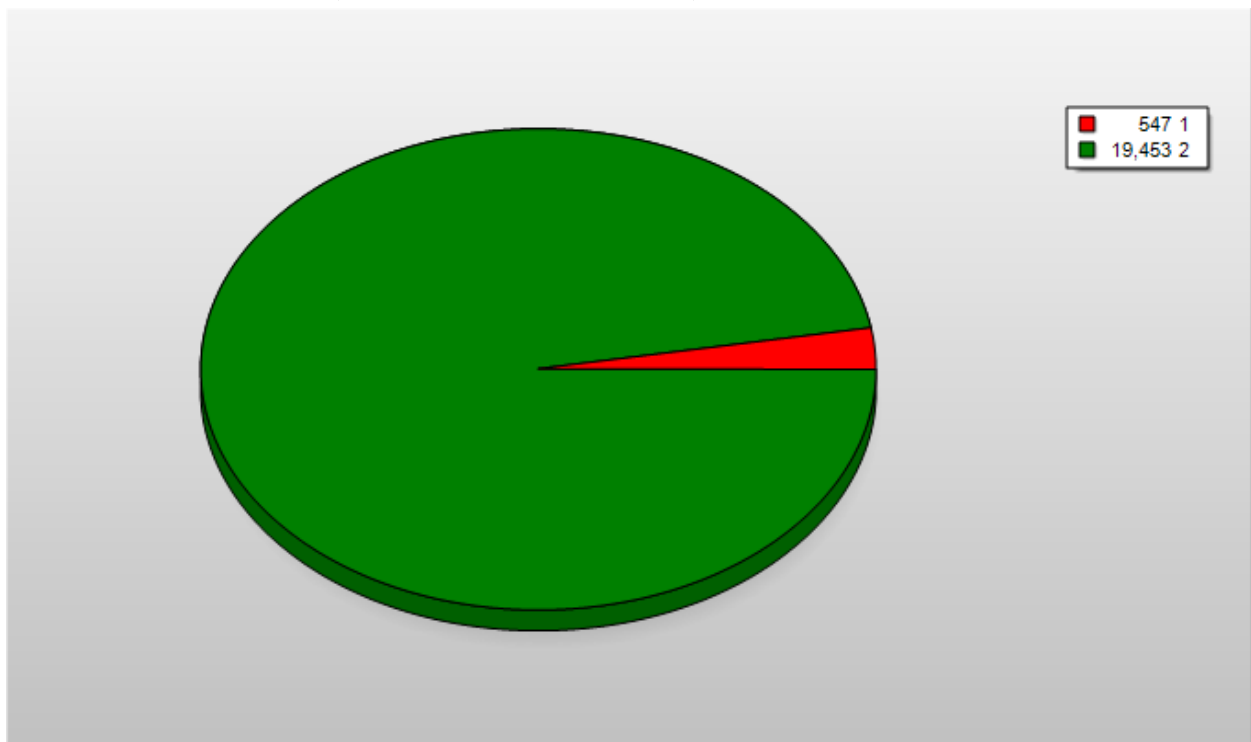
כאשר אנו נריץ את שאילתה 1 אנו נקבל את התוצאה 0.157 במקום התוצאה 0.558 שזה שיפור של 355%

261 rows selected in 0.157 seconds

זה עובד משום שהשדות שלקחנו הם בין 2% ל4% מסך הנתונים שלנו (שכאשר אנו נשתמש בחלק של השאילתה שעלב עובד האינדקס)

```
select *  
from Orders  
where Customer_ID in (select Customer_ID  
                      from customers  
where Black_List = 0 and Security_Deposit = 0 );
```

נקבל 547 תשובות מתוך 20000 נתונים (בין 2% ל4% מסך הנתונים)





Index 2

```
-- Create/Recreate indexes  
create index ext on ORDERS (extras);
```

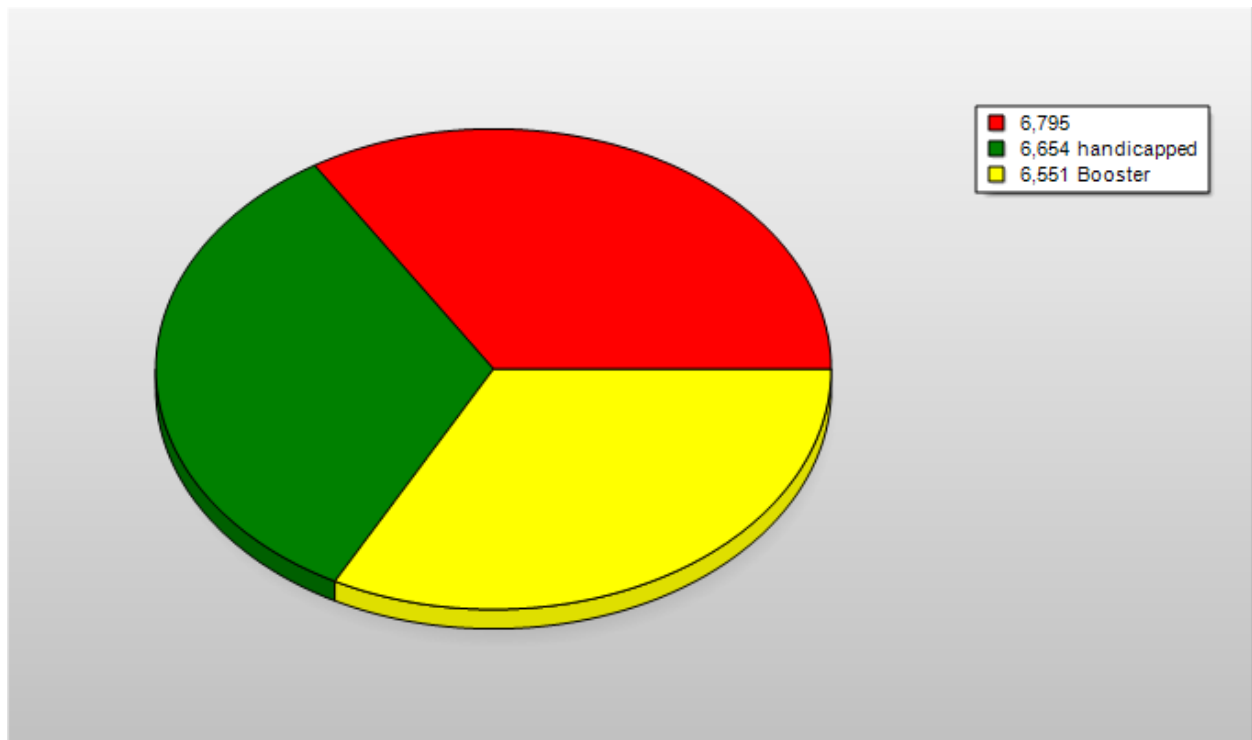
כאשר אנו נריץ את שאילתא 4 אנו נקבל את התוצאה 2.445 במקום התוצאה 2.847 שזה שיפור של 14%

6551 rows selected in 2.445 seconds

זה לא עובד משום שהשדות שלקחנו הם לא בין 2% ל4% מסך הנתונים שלנו

```
select Extras ,count(*)  
from Orders  
group by Extras
```

נקבל 6551 תשובות מתוך 20000 נתונים שזה הרבה יותר מי 2% ל4%





Index 3

```
-- Create/Recreate indexes  
create index INDEXONDATE on ORDERS (Date_Of_Orders);
```

כאשר אנו נריץ את שאילתה הזו(שאילתה שתפקידה לתת לנו את כל ההזמנות שיש באותו החדש)

```
select Date_Of_Orders  
from Orders  
where EXTRACT(MONTH FROM Date_Of_Orders) = &dob;
```

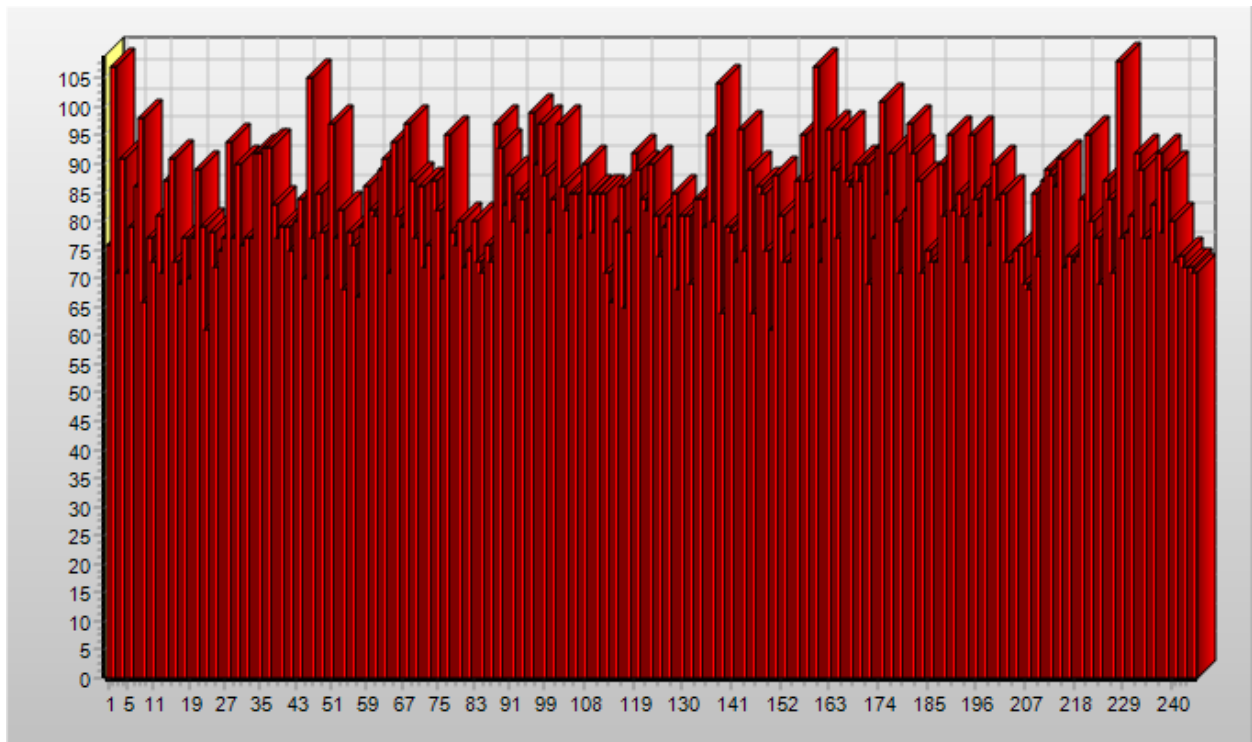
582 rows selected in 0.550 seconds

ואחרי האינדקס

582 rows selected in 0.291 seconds

אנו נקבל את התוצאה 0.291 במקום התוצאה 0.550 שזה שיפור של 89%
זה עובד משום שהשדות שלקחנו להם בין 2% ל4% מסך הנתונים שלנו שכאשר אנו נישתמש
בחלק של השאילתה שעליו עובד האינדקס
כדי להוכיח את זה אנו נריץ את השאילתה הבא ונוצא ממנה גרף שירע שזה מתפלג נורמלית

```
select Date_Of_Orders  
from Orders  
where Date_Of_Orders = TO_DATE('&dob', 'YYYY/MM/DD');
```



Daniel strauss 212126312
Shmuel verse 1666859



הרשאות גישה

Daniel strauss 212126312
Shmuel verse 1666859



```
-- Create table
create table CARS
(
  license_plate      NUMBER(20) not null,
  car_model          VARCHAR2(10) not null,
  manufacturing_date DATE,
  active             NUMBER(1) not null,
  number_of_seats    NUMBER(2) not null
)
tablespace USERS
pctfree 10
initrans 1
maxtrans 255
storage
(
  initial 64K
  next 1M
  minextents 1
  maxextents unlimited
);

-- Create/Recreate primary, unique and foreign key constraints
alter table CARS
add primary key (LICENSE_PLATE)
using index
tablespace USERS
pctfree 10
initrans 2
maxtrans 255
storage
(
  initial 64K
  next 1M
  minextents 1
  maxextents unlimited
);

-- Grant/Revoke object privileges
grant select, insert, update, delete, references, alter, index, debug, read
on CARS to VERSE;
```



General		Columns	Keys	Checks	Indexes	Privileges	Triggers		
Grantee	Select	Insert	Update	Delete	References	Alter	Index	Read	Debug
verse	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
*									

-- Grant/Revoke object privileges

```
grant select, insert, update, delete, references, alter, index, debug, read
on CUSTOMERS to VERSE;
```

General Columns Keys Checks Indexes Privileges Triggers										
	Grantee	Select	Insert	Update	Delete	References	Alter	Index	Read	Debug
▶	verse	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
*										

-- Grant/Revoke object privileges

```
grant select, insert, update, delete, references, alter, index, debug, read
on ORDERS to verse;
```



שאלות על הפרויקט של אחרים



שאלתה 1

מקבל את המספר הזמנה ומחזיר את התוספות שצריך

```
select DESCRIPTION, PRICE
from ELAFISHE.EXTRAS
where extra_id in (select extra_id
                   from ELAFISHE.EXTRASFORORDERS
                   where ORDER_ID = &ORDER_ID);
```

שאלתה 2

מקבל את מספר הלקוח ומחזיר את כל ההזמנות שיש לו

```
select *
from ELAFISHE.ORDERS
where costumer_id = &costumer_id;
```

שאלתה 3

מחזיר את כמות הזמנות שיש להם אותו מספר תשלומים

```
select PAYMENTS, count(*)
from ELAFISHE.ORDERS
group by PAYMENTS
```



VIEWS



View 1

והשאילתה נותנת לנו את המכוניות וזה VIEW נותן לנו את המכוניות בפעילות שבהזמנה הפעילות וגם לקוחות פעילים והזמנה

```
--VIEW
CREATE VIEW view_Active AS
select *
from Orders
where license_plate in (select license_plate
                        from cars
                        where Active = 1);

--Q
select *
from Orders
where Customer_ID in (select Customer_ID
                     from customers
                     where Black_List = 0 and Security_Deposit = 0 )

Intersect
select *
from view_Active;

--DROP VIEW view_Active;
```



View 2

כל הזמנות שיש להם לקוח שיש לו יותר מ 10 שנים ניסיון בנהיגה

```
--VIEW
CREATE VIEW view_Years_Of_Driving AS
select *
from Orders
where Customer_ID in (select Customer_ID
from customers
where Years_Of_Driving >= 10 );

--Q
select *
from Orders
where Customer_ID in (select Customer_ID
from customers
where Black_List = 0 and Security_Deposit = 0 )

Intersect
select *
from view_Years_Of_Driving;

--DROP VIEW view_Years_Of_Driving;
```




View 3

מחזיר את כל ההזמנות שהזמינו בוסטר לילד

```
--VIEW
CREATE VIEW view_Booster AS
select *
from Orders
where Extras = 'Booster';

--Q
select *
from Orders
where Customer_ID in (select Customer_ID
                      from customers
                      where Black_List = 0 and Security_Deposit = 0 )

Intersect
select *
from view_Booster;

--DROP VIEW view_Booster;
```



View 4

כל הלקוחות שיש להם יותר מהזמנה אחת

```
--VIEW
CREATE VIEW view_count_Customer_ID AS
select Customer_ID
from Orders
group by Customer_ID
having count(*) > 1;

--Q
select Customer_ID
from Orders
where Customer_ID in (select Customer_ID
                      from customers
                      where Black_List = 0 and Security_Deposit = 0 )

Intersect
select *
from view_count_Customer_ID;

--DROP VIEW view_count_Customer_ID;
```



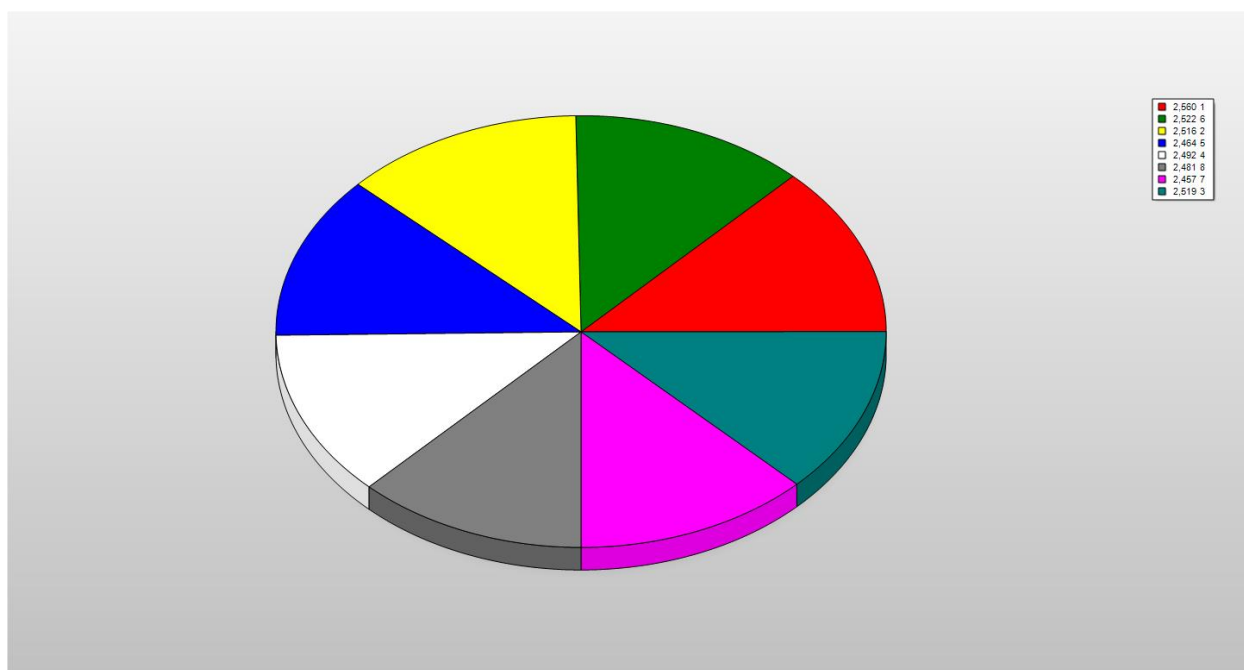
תרשימים



גרף 1

כמות המכוניות שיש להם אותו מספר מושבים

```
select Number_of_seats,count(*) as Number_of_seats  
from cars  
group by Number_of_seats
```

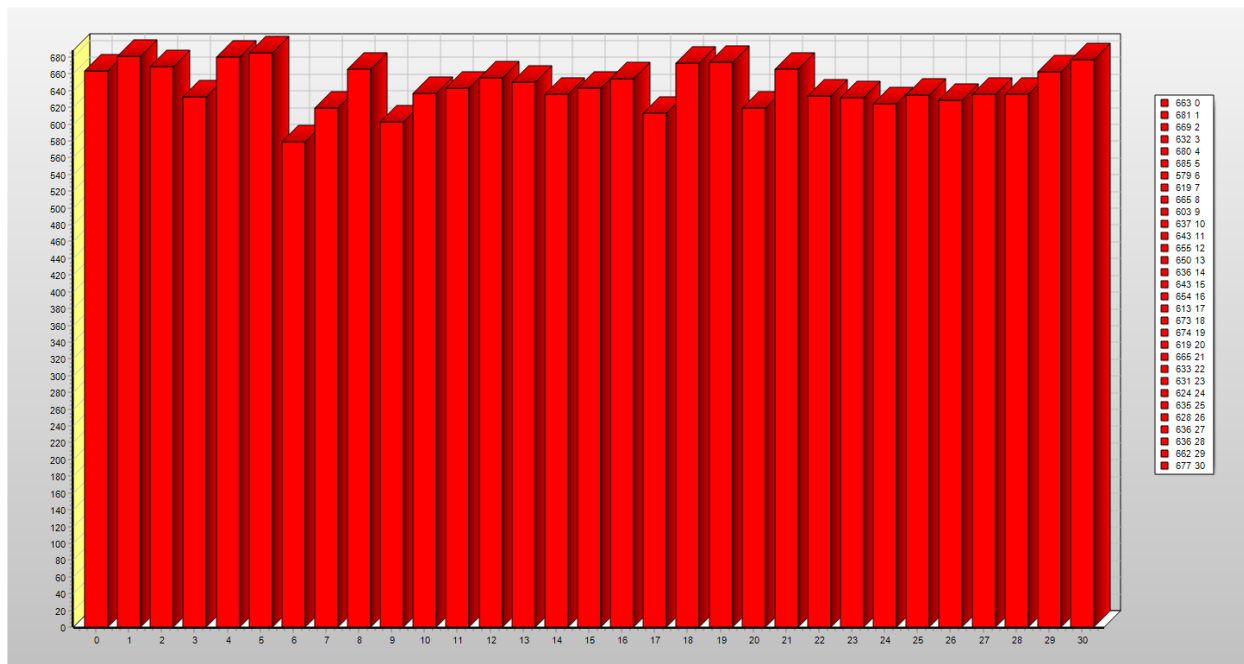




גרף 2

מספר הלקוחות אם אותם שנות נהיגה

```
select Years_Of_Driving, count(*) as Years
from Customers
group by Years_Of_Driving
order by Years_Of_Driving
```

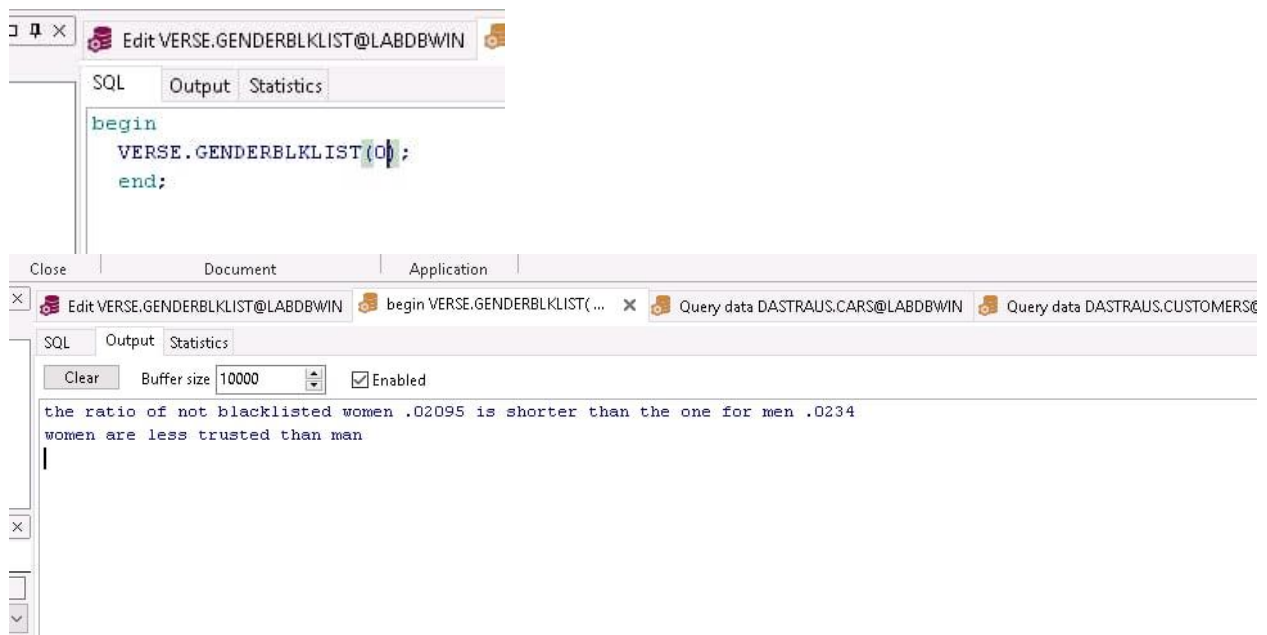




פרוצדורות

Procedure 1

Check if the ratio of a gender is more blacklisted or not than another

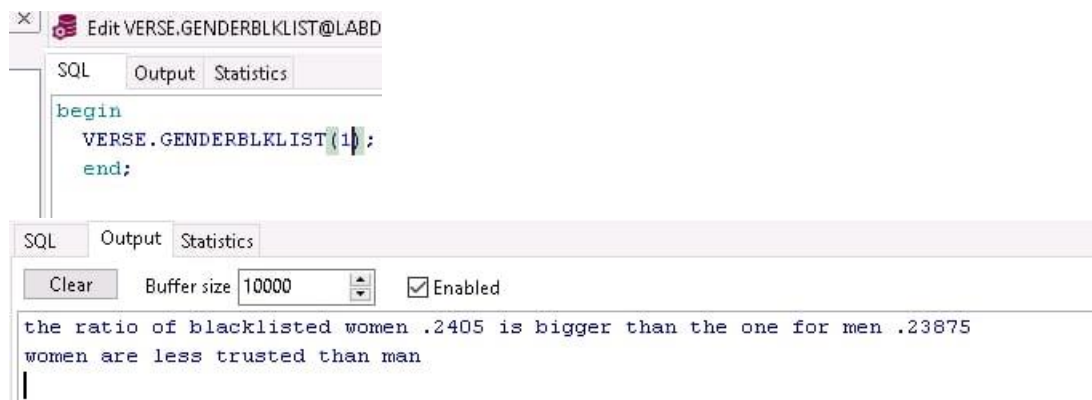


The screenshot shows the SQL Developer interface. The top window is titled "Edit VERSE.GENDERBLKLIST@LABDBWIN" and contains the following SQL code:

```
begin
  VERSE.GENDERBLKLIST(0);
end;
```

The bottom window is titled "begin VERSE.GENDERBLKLIST(...)" and shows the output of the query:

```
the ratio of not blacklisted women .02095 is shorter than the one for men .0234
women are less trusted than man
```



The screenshot shows the SQL Developer interface. The top window is titled "Edit VERSE.GENDERBLKLIST@LABD" and contains the following SQL code:

```
begin
  VERSE.GENDERBLKLIST(1);
end;
```

The bottom window is titled "Output" and shows the output of the query:

```
the ratio of blacklisted women .2405 is bigger than the one for men .23875
women are less trusted than man
```



```
create or replace procedure genderBlklist(blk in number) is
women number:=0;
men number:=0;
total number:=0;
begin
  select count(*) into women from DASTRAUS.CUSTOMERS t where t.gender = 'female' and t.black_list=blk;
  select count(*) into men from DASTRAUS.CUSTOMERS t where t.gender = 'male' and t.black_list=blk;
  select count(*) into total from DASTRAUS.CUSTOMERS t ;

  if(women>men and blk=1)
  then dbms_output.put_line('the ratio of blacklisted women || women/total || is bigger than the one for men
'||men/total);
    dbms_output.put_line('women are less trusted than man');
  else if(women<men and blk=1)
  then dbms_output.put_line('the ratio of blacklisted women || women/total || is shorter than the one for men
'||men/total);
    dbms_output.put_line('women are more trusted than man');
  else if(women>men and blk=0)
  then dbms_output.put_line('the ratio of not blacklisted women || women/total || is shorter than the one for men
'||men/total);
    dbms_output.put_line('women are more trusted than man');
  else if(women<men and blk=0)
  then dbms_output.put_line('the ratio of not blacklisted women || women/total || is shorter than the one for men
'||men/total);
    dbms_output.put_line('women are less trusted than man');
  end if;end if;end if;end if;
end genderBlklist;
```




Procedure 2

Check if given an extra the probability to cancel is bigger

```
begin
verse.cancelhandicaped('handicapped');
end;
```

Clear Buffer size 10000 ☒ Enabled

number of cancellation from handicapped is bigger than other extras
handicapped are much likely to cancel

Clear Buffer size 10000 ☒ Enabled

Booster are not particulartly likely to cancel



```
create or replace procedure cancelHandicaped(extra in varchar) is
x number:=0;
y number:=0;

cursor orders is
    select * from DASTRAUS.ORDERS t where t.extras=extra;
s1 orders%rowtype;
begin
    select count(*) into y from DASTRAUS.ORDERS t where t.canceled=1 and t.extras!=extra;
    open orders;
    loop
        fetch orders into s1;
        exit when orders%notfound;
        if(s1.canceled=1) then x:=x+1; end if;
    end loop;
    close orders;
    if(x>y) then dbms_output.put_line('number of cancellation from '||extra||' is bigger than other extras');
    dbms_output.put_line(extra||' are much likely to cancel');
    else dbms_output.put_line(extra||' are not particularly likely to cancel');
    end if;
end cancelHandicaped;
```



פונקציות



Function 1

Return the number of active cars with 8 seats and print info about each

```
SQL Output Statistics
declare
result number;
begin
result:= VERSE.ACTIVECARSEATS;
dbms_output.put_line('number of active cars with 8 seats '||result);
end;
```

```
Code section Loop Code section If Code section Statement
1 create or replace function activeCar8seats return number is
2 FunctionResult number:=0;
3 cursor activeCars is
4 select * from Dastraus.Cars t where t.active=1;
5 s1 activeCars%rowtype;
6 begin
7 open activeCars;
8 loop
9 fetch activeCars into s1;
10 exit when activeCars%notfound;
11 if(s1.number_of_seats=8) then FunctionResult:=FunctionResult+1; dbms_output.put_line('license plate: '||s1.license_plate||' car model:
12 end loop;
13 return(FunctionResult);
14 end activeCar8seats;
```



Clear	Buffer size	100000	<input checked="" type="checkbox"/> Enabled
license plate:	19558	car model:	MB-016 manufacturing date: 08-JAN-65
license plate:	19565	car model:	UP-005 manufacturing date: 01-JUN-04
license plate:	19567	car model:	ABB-057 manufacturing date: 18-JUL-98
license plate:	19591	car model:	ABB-062 manufacturing date: 13-MAY-60
license plate:	19599	car model:	SC-003 manufacturing date: 15-MAY-68
license plate:	19612	car model:	CMI-120 manufacturing date: 27-JUL-53
license plate:	19643	car model:	MS-006 manufacturing date: 15-DEC-86
license plate:	19665	car model:	CS-033 manufacturing date: 07-APR-49
license plate:	19669	car model:	IBB-031 manufacturing date: 29-MAY-83
license plate:	19685	car model:	CMA-130 manufacturing date: 20-DEC-96
license plate:	19697	car model:	CP-043 manufacturing date: 27-NOV-01
license plate:	19703	car model:	ME-017 manufacturing date: 23-JAN-86
license plate:	19729	car model:	UP-001 manufacturing date: 07-DEC-78
license plate:	19742	car model:	ABB-101 manufacturing date: 25-FEB-96
license plate:	19829	car model:	CMA-140 manufacturing date: 27-NOV-92
license plate:	19847	car model:	IBB-044 manufacturing date: 17-NOV-78
license plate:	19869	car model:	MB-010 manufacturing date: 11-DEC-58
license plate:	19879	car model:	VC-016 manufacturing date: 07-AUG-64
license plate:	19899	car model:	CS-031 manufacturing date: 11-SEP-04
license plate:	19927	car model:	ML-037 manufacturing date: 28-JAN-84
license plate:	19930	car model:	ABB-073 manufacturing date: 10-APR-81
license plate:	19947	car model:	CMI-108 manufacturing date: 14-SEP-83
license plate:	19951	car model:	YS-019 manufacturing date: 28-JUN-01
license plate:	19957	car model:	CS-095 manufacturing date: 27-SEP-53
license plate:	19969	car model:	CMI-102 manufacturing date: 06-DEC-82
license plate:	19985	car model:	NC-001 manufacturing date: 31-JUL-69
number of active cars with 8 seats 1247			

Daniel strauss 212126312
Shmuel verse 1666859



Function 2

Return number of men without security deposit and print info about each

```
declare
    result number;
begin
    result:= VERSE.Numbermanwithoutsecurity;
    dbms_output.put_line('number of man without security deposit'||result );
end;
```

```
1 create or replace function numberManWithoutSecurity return number is
2   FunctionResult number:=0;
3   cursor menCust is
4       select * from Dastraus.Customers t where t.gender='male';
5   s1 menCust%rowtype;
6   begin
7       open menCust;
8       loop
9           fetch menCust into s1;
10          exit when menCust%notfound;
11          if(s1.security_deposit=0) then FunctionResult:=FunctionResult+1; dbms_output.put_line('name: '||s1.name||' years of driving: '||s1.year
12          end if;
13          end loop;
14          return(FunctionResult);
15 end numberManWithoutSecurity;
```



SQL		Output	Statistics
Clear		Buffer size 1000000	<input checked="" type="checkbox"/> Enabled
		name: Trace Molina years of driving: 30 date of birth: 21-SEP-69 license expired date: 14-JAN-26	
		name: Rachid Rauhofer years of driving: 14 date of birth: 22-JAN-59 license expired date: 01-JAN-27	
		name: Trace Fender years of driving: 18 date of birth: 04-DEC-97 license expired date: 16-SEP-29	
		name: Anita Carrere years of driving: 26 date of birth: 25-MAR-99 license expired date: 27-MAR-25	
		name: Machine Foxx years of driving: 8 date of birth: 11-MAR-54 license expired date: 20-JUL-27	
		name: Vendetta Pony years of driving: 17 date of birth: 27-DEC-69 license expired date: 02-JUN-24	
		name: Timothy Irving years of driving: 21 date of birth: 26-SEP-97 license expired date: 25-OCT-29	
		name: Edgar Cagle years of driving: 19 date of birth: 21-SEP-98 license expired date: 13-JUL-28	
		name: Julia Jones years of driving: 9 date of birth: 26-JUN-57 license expired date: 06-NOV-24	
		name: Alex Crystal years of driving: 0 date of birth: 04-JUL-54 license expired date: 23-APR-25	
		name: Annie Maxwell years of driving: 24 date of birth: 17-SEP-73 license expired date: 13-FEB-25	
		name: Kasey Baldwin years of driving: 23 date of birth: 21-JUN-63 license expired date: 10-MAY-29	
		name: Alan Diesel years of driving: 11 date of birth: 02-MAR-91 license expired date: 14-AUG-26	
		name: Denny Stewart years of driving: 12 date of birth: 12-FEB-52 license expired date: 06-AUG-29	
		name: Millie Lonsdale years of driving: 6 date of birth: 15-AUG-95 license expired date: 31-AUG-27	
		name: Kid Ness years of driving: 16 date of birth: 08-FEB-87 license expired date: 22-DEC-23	
		name: Brad Sedaka years of driving: 1 date of birth: 18-AUG-73 license expired date: 05-JUN-27	
		name: Nicholas Wahlberg years of driving: 0 date of birth: 13-DEC-04 license expired date: 03-JUN-25	
		name: Maria Barnett years of driving: 21 date of birth: 30-APR-65 license expired date: 27-AUG-22	
		name: Roberta Greene years of driving: 7 date of birth: 26-FEB-84 license expired date: 21-OCT-29	
		name: Winona Gleeson years of driving: 21 date of birth: 25-APR-89 license expired date: 02-SEP-23	
		name: Sheena Gold years of driving: 20 date of birth: 18-AUG-64 license expired date: 14-SEP-28	
		name: Kirk Brock years of driving: 4 date of birth: 23-AUG-66 license expired date: 28-MAR-26	
		name: Julio Diddley years of driving: 21 date of birth: 10-NOV-77 license expired date: 10-FEB-22	
		name: Ernest Byrne years of driving: 25 date of birth: 19-NOV-92 license expired date: 01-MAY-28	
		name: Mickey Tah years of driving: 30 date of birth: 15-DEC-04 license expired date: 15-APR-24	
		name: Stanley Gambon years of driving: 25 date of birth: 02-SEP-04 license expired date: 29-MAY-24	
		number of man without security deposit 4016	

Daniel strauss 212126312
Shmuel verse 1666859



THE END

