

מיני פרויקט בסיסי נתונים

קק"ל טיולים ומסלולים

אסתר מלכה נוסבכר 213672132

תפארת זוננברג 212886956



קרן קימת לישראל

K K L - J N F

תוכן עניינים:

שלב א
מבוא- תיאור מילולי
תרשים ERD
תרשים DSD
פירוט על החלטות עיצוב
פקודות ה createTable
טבלאות מלאות בנתונים
הגדרות Data Generator
גייבוי

שלב א

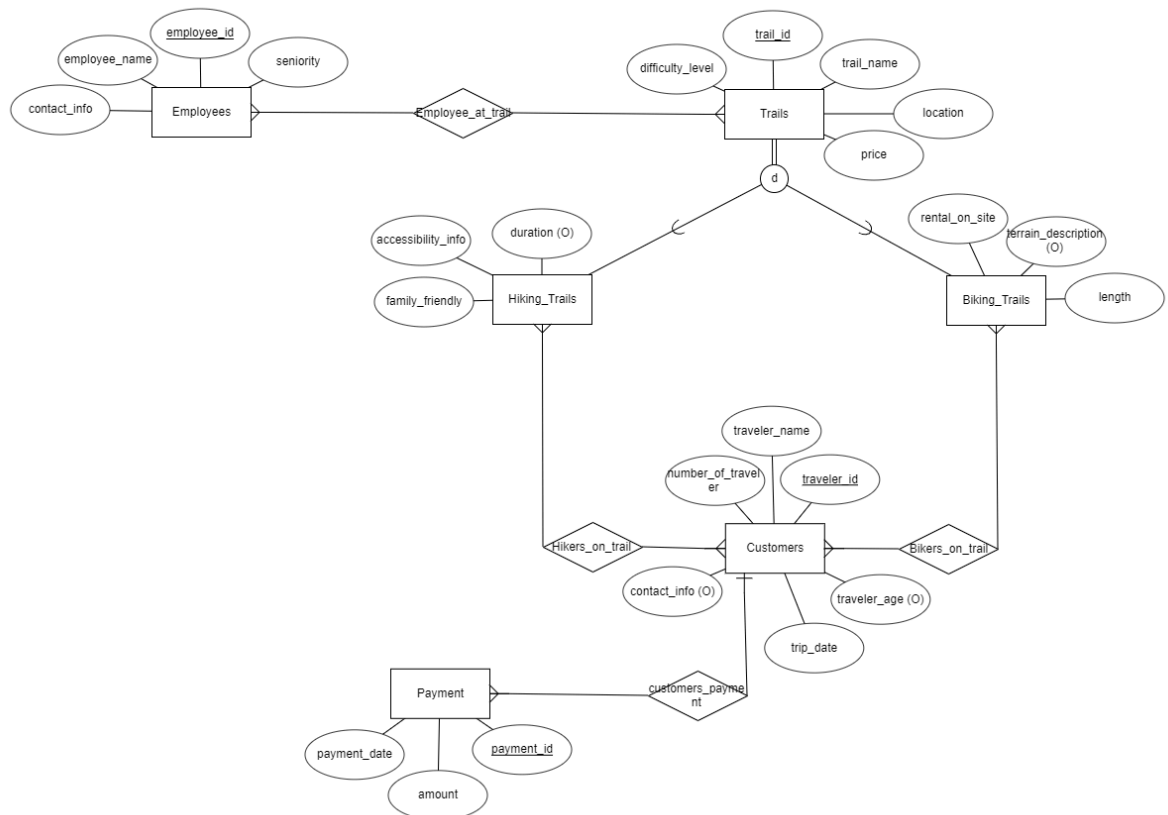
תיאור הצעת הארגון

ארגון קק"ל (קרן קיימת לישראל) מתמקד בפיתוח ושימור מסלולי טיולים ושטחים פתוחים לציבור הרחב. כל אדם יכול לצאת למסלול טיול, ליהנות מהנוף ומהטבע, וללמוד על האזור.

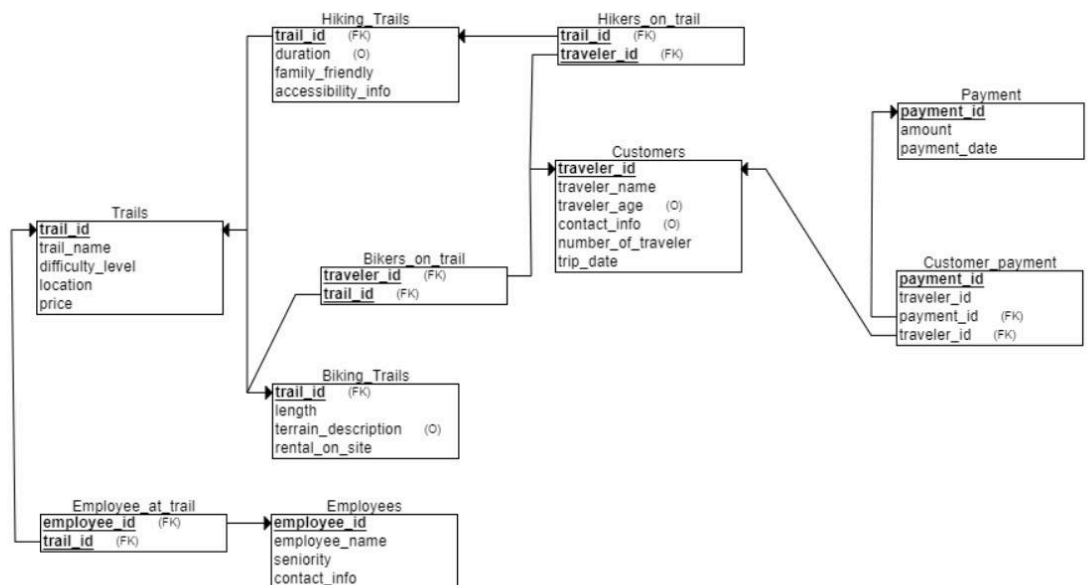
- ניהול מסלולים: המערכת מנהלת מידע על מסלולי טיול שונים כולל פרטים כמו שם, דרגת קושי, מיקום ומחיר. המסלולים מחולקים לשני סוגים עיקריים: מסלולי הליכה ומסלולי רכיבה על אופניים, כאשר כל סוג מכיל פרטים ספציפיים כמו משך המסלול (במסלולי הליכה) או תיאור השטח (במסלולי רכיבה).
- ניהול מטיילים: המערכת שומרת מידע על מטיילים, כולל שם, גיל, פרטי קשר, מספר המטיילים ותאריך הטיול. כמו כן, המערכת מנהלת את הקשר בין מטיילים למסלולים בהם הם טיולים.
- ניהול עובדים: המערכת כוללת מידע על עובדים המוצבים במסלולים שונים, כולל שם, ותק ופרטי קשר.
- ניהול תשלומים: המערכת מנהלת תשלומים של מטיילים עבור הטיולים, כולל סכום התשלום, תאריך התשלום וקישור בין המטייל לתשלום.

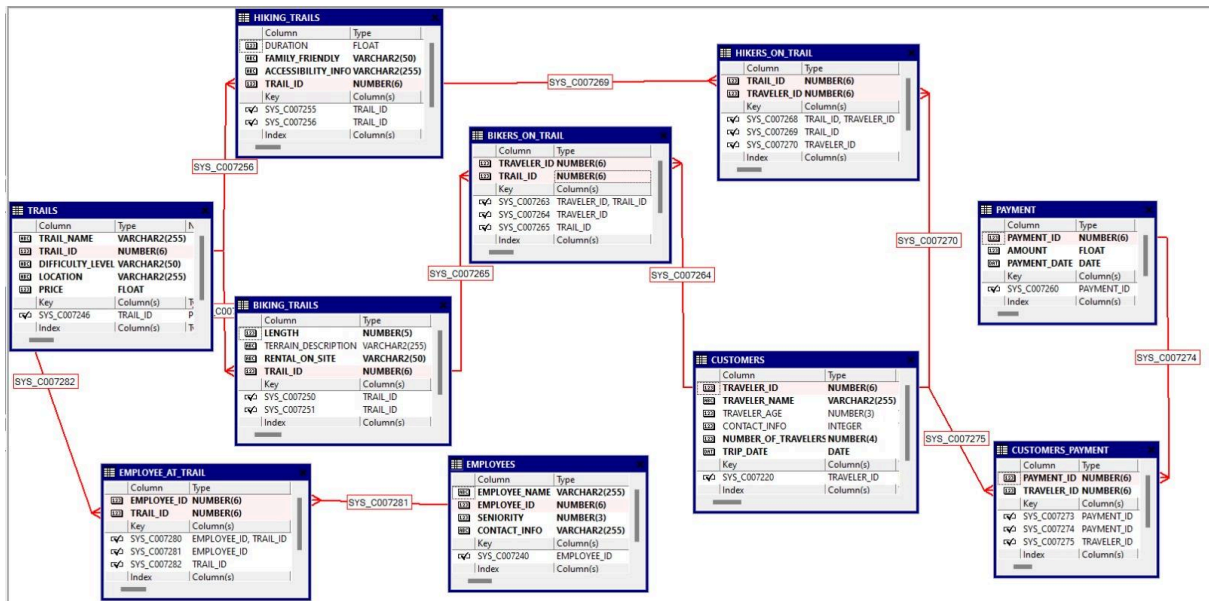
המערכת תוכננה כדי לייעל את ניהול הטיולים והמסלולים, לנהל את פרטי המטיילים והתשלומים בצורה מסודרת ולספק מידע מעודכן ושירות טוב יותר למטיילים.

תרשים ERD:



תרשים DSD:





החלטות עיצוב ונימוקים:

1. בחירת ישויות מרכזיות:

- מסלולים: מייצג את המסלולים השונים שקק"ל מציעה, והם חשובים מאוד לפעילות הארגון ודורשים ניהול מדויק.
- מסלולי הליכה ומסלולי רכיבה: הפיצול מאפשר ניהול משופר של סוגי המסלולים השונים, עם מידע ייחודי (למשל אורך, קשיים למסלולי רכיבה, ונגישות למסלולי הליכה).
- מטיילים: מייצג את המטיילים השונים המשתמשים במסלולים, כדי להתאים שירותים ולעקוב אחרי שימוש במסלולים.
- עובדים: חיוניים לתחזוקת המסלולים לתפעול, וניהול מידע עליהם חשוב.
- תשלומים: תיעוד התשלומים חיוני לניהול כלכלי ולמעקב אחרי השימוש במסלולים.

2. בחירת שדות ומאפיינים:

- מזהים ייחודיים (trail_id, traveler_id, employee_id, payment_id): מבטיחים ייחודיות ומעקב מדויק עבור כל ישות.
- רמת קושי ותיאור השטח (difficulty_level, terrain_description): מסייעים למטיילים לבחור את המסלול המתאים להם בהתאם לרמת הקושי ולתנאי השטח.
- מתאים למשפחות ומידע על נגישות (family_friendly, accessibility_info): מאפשרים למטיילים עם צרכים מיוחדים ולמשפחות לבחור מסלולים המתאימים להם.
- סכום תשלום ותאריך (amount, payment_date): התיעוד מאפשר ניהול כלכלי יעיל ומעקב אחרי העסקאות.

3. יחסים בין הישויות:

- מטיילים במסלול רכיבה והליכה: מייצגים את הקשרים בין המטיילים למסלולים, למעקב אחרי המשתתפים ומניעת כפילויות.
- עובד במסלול: מאפשר שיוך של עובדים לתחזוקת וניהול מסלולים מסוימים, מבטיח ניהול ובקרה יעילים בשטח.

4. ניהול תשלומים:

- התיעוד המפורט של התשלומים, כולל מזהה המטייל והתשלום, מאפשר מעקב אחרי הכנסות הארגון ווידוא תשלומים עבור שימוש במסלולים.

נימוקים:

- דיוק וייחודיות: מזהים ייחודיים לכל ישות ויחס מבטיחים אחסון מדויק וייחודי, מונעים כפילויות ושגיאות.
- גמישות והתאמה: הפיצול של מסלולים לסוגי פעילות מאפשר התאמה משופרת לצרכי המטיילים ומשפר את החיפוש וההתאמה למסל.

פעולות creatTable:

```

CREATE TABLE Employees
(
    employee_name VARCHAR(255) NOT NULL,
    employee_id NUMERIC(6) NOT NULL,
    seniority NUMERIC(3) NOT NULL,
    contact_info VARCHAR(255) NOT NULL,
    PRIMARY KEY (employee_id)
);

CREATE TABLE Trails
(
    trail_name VARCHAR(255) NOT NULL,
    trail_id NUMERIC(6) NOT NULL,
    difficulty_level VARCHAR(50) NOT NULL,
    location VARCHAR(255) NOT NULL,
    price FLOAT NOT NULL,
    PRIMARY KEY (trail_id)
);

CREATE TABLE Biking_Trails
(
    length NUMERIC(5) NOT NULL,
    terrain_description VARCHAR(255),
    rental_on_site VARCHAR(50) NOT NULL,
    trail_id NUMERIC(6) NOT NULL,
    PRIMARY KEY (trail_id),
    FOREIGN KEY (trail_id) REFERENCES Trails(trail_id)
);

CREATE TABLE Hiking_Trails
(
    duration FLOAT,
    family_friendly VARCHAR(50) NOT NULL,
    accessibility_info VARCHAR(255) NOT NULL,
    trail_id NUMERIC(6) NOT NULL,
    PRIMARY KEY (trail_id),
    FOREIGN KEY (trail_id) REFERENCES Trails(trail_id)
);

CREATE TABLE Employee_at_trail
(
    employee_id NUMERIC(6) NOT NULL,
    trail_id NUMERIC(6) NOT NULL,
    PRIMARY KEY (employee_id, trail_id),
    FOREIGN KEY (employee_id) REFERENCES Employees(employee_id),
    FOREIGN KEY (trail_id) REFERENCES Trails(trail_id)
);

CREATE TABLE Customers_payment
(
    payment_id NUMERIC(6) NOT NULL,
    traveler_id NUMERIC(6) NOT NULL,
    PRIMARY KEY (payment_id),
    FOREIGN KEY (payment_id) REFERENCES Payment(payment_id),
    FOREIGN KEY (traveler_id) REFERENCES Customers(traveler_id)
);

```

```
CREATE TABLE Customers
(
    traveler_id NUMERIC(6) NOT NULL,
    traveler_name VARCHAR(255) NOT NULL,
    traveler_age NUMERIC(3),
    contact_info INT,
    number_of_travelers NUMERIC(4) NOT NULL,
    trip_date DATE NOT NULL,
    PRIMARY KEY (traveler_id)
);

CREATE TABLE Bikers_on_trail
(
    traveler_id NUMERIC(6) NOT NULL,
    trail_id NUMERIC(6) NOT NULL,
    PRIMARY KEY (traveler_id, trail_id),
    FOREIGN KEY (traveler_id) REFERENCES Customers(traveler_id),
    FOREIGN KEY (trail_id) REFERENCES Biking_Trails(trail_id)
);

CREATE TABLE Hikers_on_trail
(
    trail_id NUMERIC(6) NOT NULL,
    traveler_id NUMERIC(6) NOT NULL,
    PRIMARY KEY (trail_id, traveler_id),
    FOREIGN KEY (trail_id) REFERENCES Hiking_Trails(trail_id),
    FOREIGN KEY (traveler_id) REFERENCES Customers(traveler_id)
);
```


פעולות Desc:

Connected to Oracle Database 21c Express Edition Release 21.0.0.0.0
 Connected as sys@XE AS SYSDBA

SQL>

SQL> DESC TRAILS;

Name	Type	Nullable	Default	Comments
------	------	----------	---------	----------

TRAIL_NAME	VARCHAR2(255)			
------------	---------------	--	--	--

TRAIL_ID	NUMBER(6)			
----------	-----------	--	--	--

DIFFICULTY_LEVEL	VARCHAR2(50)			
------------------	--------------	--	--	--

LOCATION	VARCHAR2(255)			
----------	---------------	--	--	--

PRICE	FLOAT			
-------	-------	--	--	--

SQL> DESC BIKING_TRAILS;

Name	Type	Nullable	Default	Comments
------	------	----------	---------	----------

LENGTH	NUMBER(5)			
--------	-----------	--	--	--

TERRAIN_DESCRIPTION	VARCHAR2(255)	Y		
---------------------	---------------	---	--	--

RENTAL_ON_SITE	VARCHAR2(50)			
----------------	--------------	--	--	--

TRAIL_ID	NUMBER(6)			
----------	-----------	--	--	--

SQL> DESC CUSTOMERS;

Name	Type	Nullable	Default	Comments
------	------	----------	---------	----------

TRAVELER_ID	NUMBER(6)			
-------------	-----------	--	--	--

TRAVELER_NAME	VARCHAR2(255)			
---------------	---------------	--	--	--

TRAVELER_AGE	NUMBER(3)	Y		
--------------	-----------	---	--	--

CONTACT_INFO	INTEGER	Y		
--------------	---------	---	--	--

NUMBER_OF_TRAVELERS	NUMBER(4)			
---------------------	-----------	--	--	--

TRIP_DATE	DATE			
-----------	------	--	--	--

SQL> DESC BIKERS_ON_TRAIL;

```

Name          Type          Nullable Default Comments
-----
TRAVELER_ID NUMBER(6)
TRAIL_ID      NUMBER(6)
SQL> DESC PAYMENT;
Name          Type          Nullable Default Comments
-----
PAYMENT_ID    NUMBER(6)
AMOUNT        FLOAT
PAYMENT_DATE  DATE
SQL> DESC CUSTOMERS_PAYMENT;
Name          Type          Nullable Default Comments
-----
PAYMENT_ID    NUMBER(6)
TRAVELER_ID   NUMBER(6)
SQL> DESC EMPLOYEES;
Name          Type          Nullable Default Comments
-----
EMPLOYEE_NAME VARCHAR2(255)
EMPLOYEE_ID   NUMBER(6)
SENIORITY     NUMBER(3)
CONTACT_INFO  VARCHAR2(255)
SQL> DESC EMPLOYEE_AT_TRAIL;
Name          Type          Nullable Default Comments
-----
EMPLOYEE_ID   NUMBER(6)
TRAIL_ID      NUMBER(6)
SQL> DESC HIKING_TRAILS;
Name          Type          Nullable Default Comments
-----
DURATION      FLOAT          Y
FAMILY_FRIENDLY VARCHAR2(50)
ACCESSIBILITY_INFO VARCHAR2(255)
TRAIL_ID      NUMBER(6)
SQL> DESC HIKERS_ON_TRAIL;
Name          Type          Nullable Default Comments
-----
TRAIL_ID      NUMBER(6)
TRAVELER_ID   NUMBER(6)

```

מהנתונים בטבלות לאחר הרצת פקודות selectAll

טבלת Employees

	EMPLOYEE_NAME	EMPLOYEE_ID	SENIORITY	CONTACT_INFO
1	Faith Ticehurst	1	2	695-994-8103
2	Eugene Lythgoe	2	45	406-809-9168
3	Meridel Yackiminie	3	18	109-680-4599
4	Davin Cusworth	4	44	889-138-1922
5	Willem Abrahamson	5	31	583-787-0290
6	Dedie Davydochkin	6	30	213-750-8261
7	Riccardo Orring	7	1	389-194-9923
8	Gabbi Cerman	8	24	504-130-5202
9	Elia Snoxill	9	46	721-547-7894
10	Matthus Scranny	10	26	530-852-1870
11	Aylmer Carnalan	11	49	846-826-4965
12	Kerr Amyes	12	44	523-981-6712
13	Nananne Tebbet	13	40	610-406-1522
14	Clevey Tilly	14	19	108-754-4451
15	Murvyn Prime	15	11	851-523-2449
16	Ricky Thoresby	16	31	711-539-6660
17	Siegfried Deetlof	17	25	624-765-6731
18	Timoteo Gander	18	23	325-734-6319
19	Channa Melmar	19	33	819-626-7442
20	Mead Warnes	20	20	420-889-0318
21	Wilfrid MacAlees	21	7	191-700-1432
22	Freedman Pavlovsky	22	36	846-326-5548

13:1 sys@XE AS SYSDBA [2:47:00 PM] 399 rows selected in 0.272 seconds

Trails

	TRAIL_NAME	TRAIL_ID	DIFFICULTY_LEVEL	LOCATION	PRICE
1	Mount Meron Trail	20001	Easy	Upper Galilee	25
2	Masada Summit Trail	20002	Moderate	Dead Sea	30
3	Ein Gedi Nature Reserve	20003	Moderate	Dead Sea	20
4	Banias Waterfall Trail	20004	Moderate	Golan Heights	35
5	Ramon Crater Rim Trail	20005	Difficult	Negev Desert	50
6	Nahal Snir Nature Trail	20006	Easy	Upper Galilee	15
7	Wadi Qelt Trail	20007	Moderate	Judean Desert	40
8	Ein Avdat Canyon Trail	20008	Moderate	Negev Desert	30
9	Mount Tabor Trail	20009	Difficult	Lower Galilee	45
10	Mount Arbel Trail	20010	Difficult	Lower Galilee	55
11	Tel Dan Nature Reserve	20011	Easy	Upper Galilee	20
12	En Gedi Waterfalls Trail	20012	Moderate	Dead Sea	35
13	Sataf Nature Trail	20013	Easy	Jerusalem Hills	10
14	Yehudiya Forest Nature R	20014	Moderate	Golan Heights	25
15	Ein Hod Artists' Trail	20015	Easy	Carmel Mountains	20
16	Nahal Kziv Trail	20016	Moderate	Upper Galilee	30
17	Mount Carmel Ridge Path	20017	Difficult	Carmel Mountains	60
18	Ein Gedi Ein Gedi Oasis	20018	Moderate	Dead Sea	35
19	Banias River Trail	20019	Easy	Golan Heights	15
20	Har HaAri (Lion Mountai	20020	Difficult	Lower Galilee	50
21	Nahal Amud Trail	20021	Moderate	Upper Galilee	40
22	Wadi Zin Trail	20022	Moderate	Negev Desert	25

1 of 956 sys@XE AS SYSDBA [2:49:28 PM] 956 rows selected in 0.859 seconds

טבלת Hikers_on_taril

	TRAIL_ID	TRAVELER_ID
1	20005	362489
2	20006	347614
3	20007	337485
4	20007	358368
5	20008	382744
6	20010	341258
7	20011	304909
8	20011	343493
9	20012	320582
10	20012	356309
11	20013	304368
12	20013	351731
13	20015	327072
14	20015	371040
15	20015	382090
16	20016	320716
17	20017	336289
18	20020	352966
19	20021	313501
20	20021	317503
21	20021	381015
22	20022	372179

1 of 457 0:01 sys@XE AS SYSDBA [2:54:24 PM] 457 rows selected in 1.149 seconds

טבלת Bikers_on_taril

	TRAVELER_ID	TRAIL_ID
1	300840	20063
2	301134	20337
3	302370	20308
4	302463	20269
5	302840	20004
6	303084	20185
7	303108	20629
8	304083	20020
9	304532	20274
10	304628	20193
11	305177	20111
12	306033	20290
13	306247	21153
14	307301	20274
15	307988	20237
16	308099	20306
17	308240	20021
18	308572	20190
19	309051	20032
20	309080	21076
21	309142	20228
22	309318	21143

1 of 440 0:01 sys@XE AS SYSDBA [2:54:50 PM] 440 rows selected in 1.409 seconds

טבלת Customers

	TRAVELER_ID	TRAVELER_NAME	TRAVELER_AGE	CONTACT_INFO	NUMBER_OF_TRAVELERS	TRIP_DATE	
1059	397327	Josh Travolta	94	-4877	35	10/17/2023	***
1285	347234	Jerry Stanton	4	-4875	59	9/10/2022	***
5289	363846	Angie Guinness	74	-4874	58	8/12/2020	***
4665	378571	Shannon Scaggs	5	-4873	100	1/17/2023	***
2134	357905	Hazel Midler	2	-4872	38	9/22/2023	***
1473	376818	Lois Nolte	98	-4872	67	2/28/2023	***
3904	321675	Loren O'Sullivan	8	-4871	76	6/13/2020	***
5794	316371	Jesus Wayans	60	-4868	6	8/15/2021	***
2390	313465	Campbell O'Donnell	25	-4867	54	2/8/2020	***
6449	355082	Tea Leto	57	-4866	46	5/23/2021	***
2524	309232	Bebe Bosco	93	-4866	84	11/16/2021	***
740	398830	Ivan Vaughn	100	-4864	7	11/15/2023	***
5357	333076	Brent Numan	15	-4862	21	4/1/2020	***
1518	337140	Charlize Hobson	77	-4861	43	11/30/2023	***
3889	398363	Greg Brown	49	-4860	86	8/6/2022	***
6376	314137	Eric Caviezel	57	-4858	2	7/17/2022	***
5269	394021	Cole Frampton	43	-4858	22	1/6/2021	***
5264	300112	Scott Davidson	59	-4858	68	7/10/2022	***
6044	301600	Emily Galecki	54	-4856	89	9/17/2022	***
543	322515	Brooke Sartain	10	-4855	11	5/5/2020	***
9	391175	Delbert Belles	66	-4854	20	7/12/2023	***
4072	343515	Rickie Ryder	28	-4853	42	8/19/2020	***

00 & 3603 of 6467 0:06 sys@XE AS SYSDBA traveler_age, number(3), optional

טבלת Payment

	PAYMENT_ID	AMOUNT	PAYMENT_DATE	
1	567962	2	8/26/2020	***
2	572495	3	12/21/2021	***
3	507570	2	12/24/2022	***
4	518548	4	5/4/2023	***
5	554578	4	10/7/2023	***
6	567886	4	12/3/2023	***
7	554641	4	2/10/2023	***
8	558268	2	2/9/2024	***
9	543001	5	12/14/2022	***
10	576551	2	1/5/2020	***
11	598201	2	4/21/2021	***
12	525490	3	11/13/2022	***
13	510939	4	12/5/2023	***
14	550008	2	10/12/2022	***
15	584875	4	5/19/2022	***
16	561573	2	1/22/2020	***
17	586286	4	2/4/2020	***
18	511517	3	6/7/2022	***
19	585361	1	4/18/2022	***
20	599002	2	4/20/2024	***
21	589834	3	7/30/2022	***
22	538123	1	10/9/2022	***

00 & 1 of 6006 0:09 sys@XE AS SYSDBA [2:57:41 PM] 6006 rows selected in 9.769 seconds

טבלת Customer_payment

	PAYMENT_ID	TRAVELER_ID
1	554578	395846
2	507420	315234
3	595977	341520
4	599002	328007
5	505149	352609
6	533678	340097
7	593568	320113
8	569830	350418
9	580286	348023
10	550741	336751
11	599141	307301
12	544150	379142
13	591761	331611
14	598260	307530
15	593984	393770
16	511158	331597
17	597113	352760
18	585051	399024
19	550706	392136
20	588422	362331
21	535493	323078
22	576551	370072

100 & 1 of 544 0:10 sys@XE AS SYSDBA [2:58:01 PM] 544 rows selected in 10.070 seconds

טבלת Hiking_trails

	DURATION	FAMILY_FRIENDLY	ACCESSIBILITY_INFO	TRAIL_ID
1	9	no	not wheelchair accessible	20325
2	2	no	wheelchair accessible	20322
3	3	no	wheelchair accessible	20174
4	1	yes	wheelchair accessible	20261
5	5	yes	not wheelchair accessible	20112
6	13	yes	not wheelchair accessible	20262
7	15	no	not wheelchair accessible	20210
8	2	yes	not wheelchair accessible	20205
9	10	no	wheelchair accessible	20608
10	6	no	wheelchair accessible	20122
11	14	yes	not wheelchair accessible	20637
12	12	yes	wheelchair accessible	20632
13	7	no	wheelchair accessible	20329
14	5	no	not wheelchair accessible	20237
15	9	no	wheelchair accessible	20088
16	8	no	wheelchair accessible	20415
17	8	no	not wheelchair accessible	20056
18	1	no	not wheelchair accessible	20079
19	12	yes	wheelchair accessible	20275
20	7	yes	wheelchair accessible	20296
21	9	yes	not wheelchair accessible	20215
22	14	yes	wheelchair accessible	20401

100 & 1 of 519 0:10 sys@XE AS SYSDBA [2:58:20 PM] 519 rows selected in 10.416 seconds

טבלת Biking_trails

	LENGTH	TERRAIN_DESCRIPTION	RENTAL_ON_SITE	TRAIL_ID
1	8	hilly	no	20164
2	3	hilly	no	20188
3	1	hilly	no	20293
4	2	rocky	yes	20037
5	7	smooth	yes	20143
6	8	hilly	no	20336
7	4	flat	yes	20217
8	2	hilly	yes	20404
9	7	rocky	no	20638
10	2	flat	no	20280
11	10	flat	yes	20607
12	9	rocky	yes	20165
13	3	smooth	no	20249
14	2	flat	yes	20061
15	9	smooth	no	20283
16	2	hilly	yes	20163
17	3	rocky	no	20306
18	4	flat	yes	20298
19	10	hilly	no	20281
20	6	smooth	yes	20058
21	2	smooth	yes	20234
22	8	rocky	yes	20601

1 of 479 0:10 sys@XE AS SYSDBA [2:58:40 PM] 479 rows selected in 10.695 seconds

טבלת Employee_at_trail

	EMPLOYEE_ID	TRAIL_ID
1	2	20105
2	2	20300
3	2	20835
4	6	20969
5	8	20639
6	9	20306
7	9	21010
8	11	20831
9	11	21221
10	12	20141
11	12	20700
12	16	20974
13	16	21225
14	17	20322
15	18	20322
16	19	20730
17	19	20808
18	22	21045
19	22	21114
20	24	20136
21	24	20708
22	24	21170

1 of 400 0:10 sys@XE AS SYSDBA [2:58:59 PM] 400 rows selected in 10.922 seconds

:data generator

PAYMENT				
Owner	Table		Number of records	
SYS	PAYMENT		5000	
Name	Type	Size		Data
PAYMENT_ID	NUMBER	6		Random(500000, 599999)
AMOUNT	FLOAT	22		Random(40, 200)
PAYMENT_DATE	DATE			Random(1/1/2020, 1/6/2024)
*				

EMPLOYEE_AT_TRAIL				
Owner	Table		Number of records	
SYS	EMPLOYEE_AT_TRAIL		400	
Name	Type	Size		Data
EMPLOYEE_ID	NUMBER	6		List(select employee_id from employees)
TRAIL_ID	NUMBER	6		List(select trail_id from trails)
*				

CUSTOMERS_PAYMENT				
Owner	Table		Number of records	
SYS	CUSTOMERS_PAYMENT		400	
Name	Type	Size		Data
PAYMENT_ID	NUMBER	6		List(select payment_id from Payment)
TRAVELER_ID	NUMBER	6		List(select traveler_id from Customers)
*				

BIKERS_ON_TRAIL				
Owner	Table		Number of records	
SYS	BIKERS_ON_TRAIL		400	
Name	Type	Size		Data
TRAVELER_ID	NUMBER	6		List(select traveler_id from Customers)
TRAIL_ID	NUMBER	6		List(select trail_id from trails)
*				

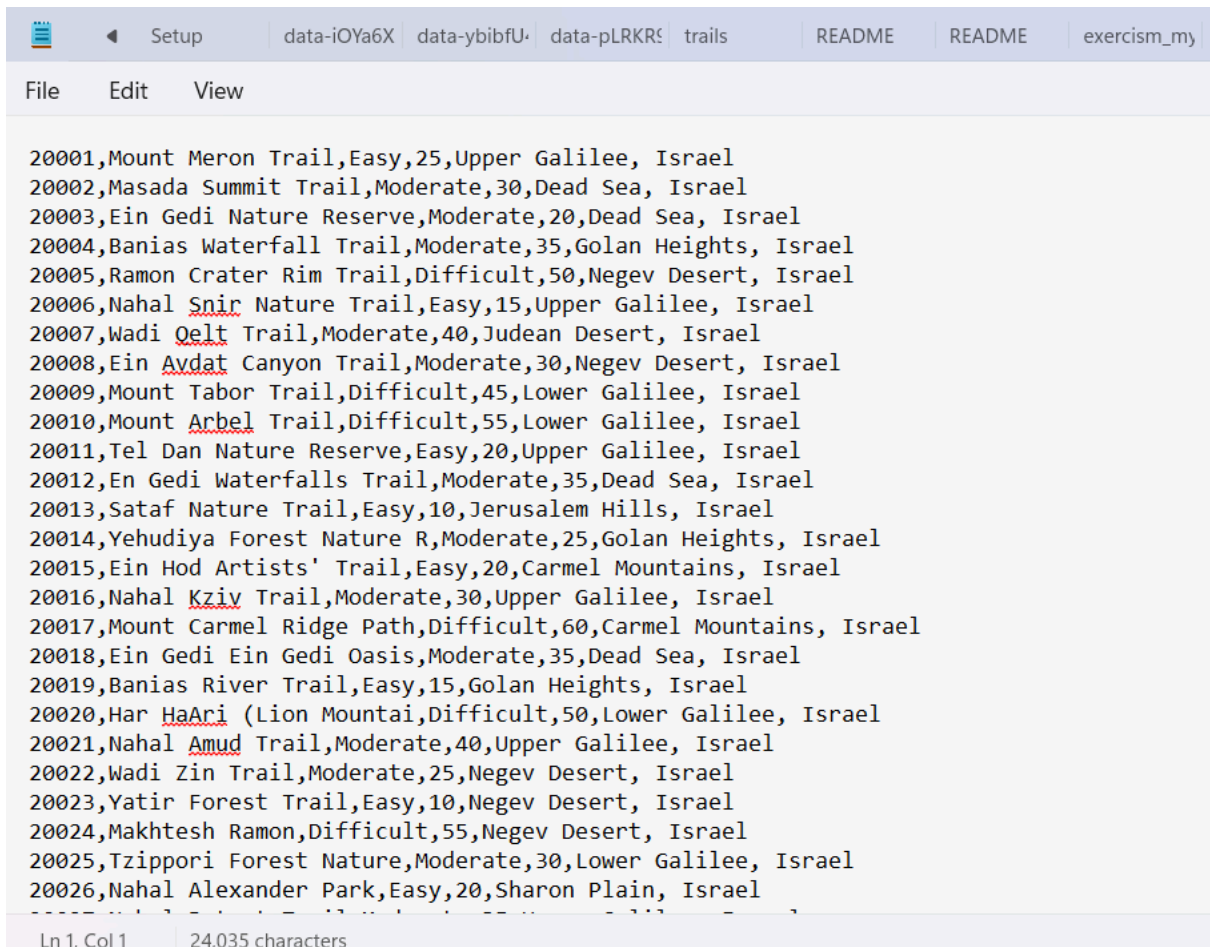
HIKERS_ON_TRAIL				
Owner		Table		Number of records
SYS		HIKERS_ON_TRAIL		400
Name	Type	Size		Data
TRAIL_ID	NUMBER	6		List(select trail_id from Trails)
TRAVELER_ID	NUMBER	6		List(select traveler_id from Customers)
*				

BIKING_TRAILS				
Owner		Table		Number of records
SYS		BIKING_TRAILS		400
Name	Type	Size		Data
LENGTH	NUMBER	5		Random(1, 10)
TERRAIN_DESCRIPTION	VARCHAR2	255		List('rocky', 'smooth', 'hilly', 'flat')
RENTAL_ON_SITE	VARCHAR2	50		List('yes', 'no')
TRAIL_ID	NUMBER	6		List(select trail_id from Trails)
*				

HIKING_TRAILS				
Owner		Table		Number of records
SYS		HIKING_TRAILS		400
Name	Type	Size		Data
DURATION	FLOAT	22		Random(1, 15)
FAMILY_FRIENDLY	VARCHAR2	50		List('yes', 'no')
ACCESSIBILITY_INFO	VARCHAR2	255		List('wheelchair accessible', 'not wheelchair accessible')
TRAIL_ID	NUMBER	6		List(select trail_id from Trails)
*				

CUSTOMERS				
Owner		Table		Number of records
SYS		CUSTOMERS		3000
Name	Type	Size		Data
TRAVELER_ID	NUMBER	6		Random(300000, 399999)
TRAVELER_NAME	VARCHAR2	255		FirstName ' ' LastName
TRAVELER_AGE	NUMBER	3		Random(1, 100)
CONTACT_INFO	NUMBER			'05' [0] '-' [000] '-' [0000]
NUMBER_OF_TRAVELE	NUMBER	4		Random(1, 100)
TRIP_DATE	DATE			Random(1/1/2020, 1/6/2024)
*				

העלאת נתונים מקובץ txt.

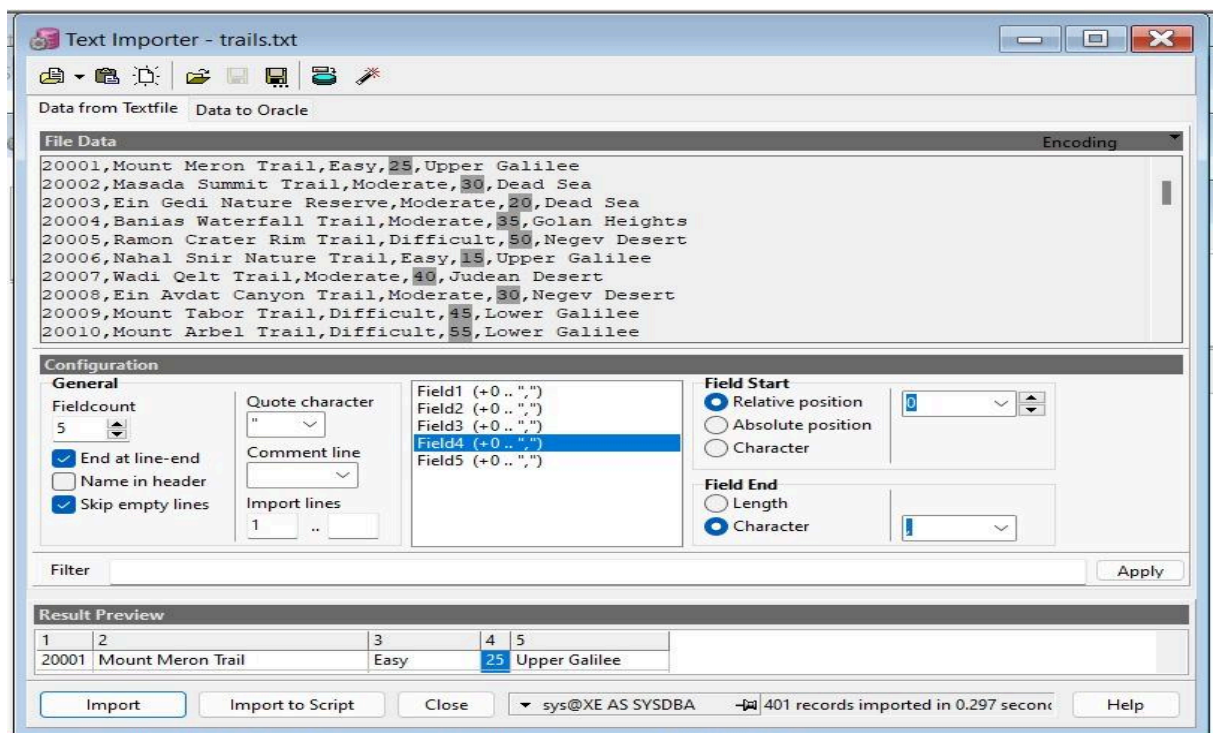


```

20001,Mount Meron Trail,Easy,25,Upper Galilee, Israel
20002,Masada Summit Trail,Moderate,30,Dead Sea, Israel
20003,Ein Gedi Nature Reserve,Moderate,20,Dead Sea, Israel
20004,Banias Waterfall Trail,Moderate,35,Golan Heights, Israel
20005,Ramon Crater Rim Trail,Difficult,50,Negev Desert, Israel
20006,Nahal Snir Nature Trail,Easy,15,Upper Galilee, Israel
20007,Wadi Qelt Trail,Moderate,40,Judean Desert, Israel
20008,Ein Avdat Canyon Trail,Moderate,30,Negev Desert, Israel
20009,Mount Tabor Trail,Difficult,45,Lower Galilee, Israel
20010,Mount Arbel Trail,Difficult,55,Lower Galilee, Israel
20011,Tel Dan Nature Reserve,Easy,20,Upper Galilee, Israel
20012,En Gedi Waterfalls Trail,Moderate,35,Dead Sea, Israel
20013,Sataf Nature Trail,Easy,10,Jerusalem Hills, Israel
20014,Yehudiya Forest Nature R,Moderate,25,Golan Heights, Israel
20015,Ein Hod Artists' Trail,Easy,20,Carmel Mountains, Israel
20016,Nahal Kziv Trail,Moderate,30,Upper Galilee, Israel
20017,Mount Carmel Ridge Path,Difficult,60,Carmel Mountains, Israel
20018,Ein Gedi Ein Gedi Oasis,Moderate,35,Dead Sea, Israel
20019,Banias River Trail,Easy,15,Golan Heights, Israel
20020,Har HaAri (Lion Mountai,Difficult,50,Lower Galilee, Israel
20021,Nahal Amud Trail,Moderate,40,Upper Galilee, Israel
20022,Wadi Zin Trail,Moderate,25,Negev Desert, Israel
20023,Yatir Forest Trail,Easy,10,Negev Desert, Israel
20024,Makhtesh Ramon,Difficult,55,Negev Desert, Israel
20025,Tzipori Forest Nature,Moderate,30,Lower Galilee, Israel
20026,Nahal Alexander Park,Easy,20,Sharon Plain, Israel

```

Ln 1, Col 1 24,035 characters



הכנסת נתונים דרך mockaroo:

SQL Window - Employees.sql

SQL	Output	Statistics
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Roch Keenleyside', 372, 45, '432-486-0134');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Kacie Kaser', 373, 41, '905-925-4724');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Brandea Rodwell', 374, 49, '683-853-8958');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Lulita Cameron', 375, 35, '947-483-3207');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Charline Cusack', 376, 47, '789-787-3865');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Elizabeth Finnan', 377, 48, '223-586-3374');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Bil Barge', 378, 27, '740-710-2800');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Anna-diane Elby', 379, 12, '966-302-8737');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Clarinda Domesday', 380, 38, '760-374-4886');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Buffy Alpe', 381, 4, '173-667-9705');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Mable Phayre', 382, 38, '634-243-1785');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Barthel Bowbrick', 383, 7, '416-961-4477');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Schuyler Sollon', 384, 7, '998-660-3611');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Urban Giovannetti', 385, 13, '971-756-9421');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Arleyne Treadgall', 386, 18, '763-653-2623');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Carlene Brennon', 387, 21, '433-461-1321');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Otha Moreton', 388, 38, '913-577-2801');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Deck Collins', 389, 38, '517-850-4646');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Georgi Crackel', 390, 25, '104-923-5821');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Garret Gilchrest', 391, 28, '912-145-9376');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Jeffy Harewood', 392, 33, '436-717-7630');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Karlie Maplethorpe', 393, 39, '618-198-4797');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Maura Grainger', 394, 7, '862-831-2174');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Alys Brearton', 395, 23, '483-689-1467');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Dew Grimbleby', 396, 24, '589-380-7036');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Ursala Wilsdon', 397, 13, '423-912-6644');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Christina Scatchar', 398, 41, '850-815-6622');		
insert into Employees (employee_name, employee_id, seniority, contact_info) values ('Devonne Rebillard', 399, 7, '602-604-1562');		

S

400:2 sys@XE AS SYSDBA ORA-00001: unique constraint (SYS.SYS_C007240) violated

תהליך הגייבוי:

Name	Type	Compiled
BC_ATTRIBUTES\$	TABLE	9/28/2021 4:39:59 AM
BC_CHAIN\$	TABLE	9/28/2021 4:39:59 AM
BC_PEERS\$	TABLE	9/28/2021 4:39:59 AM
BC_TOMBSTONES\$	TABLE	9/28/2021 4:39:59 AM
BDSQL_USER_MAP	TABLE	9/28/2021 4:44:57 AM
BIKERS_ON_TRAIL	TABLE	5/26/2024 3:08:15 PM
BIKING_TRAILS	TABLE	5/26/2024 3:08:15 PM
BLOCKCHAIN_TABLES\$	TABLE	9/28/2021 4:40:00 AM
BLOCKCHAIN_TABLE_CHAIN\$	TABLE	9/28/2021 4:40:00 AM
BLOCKCHAIN_TABLE_DROPPED\$	TABLE	9/28/2021 4:40:00 AM
BLOCKCHAIN_TABLE_EPOCH\$	TABLE	9/28/2021 4:40:00 AM
BOOTSTRAP\$	TABLE	9/28/2021 4:31:16 AM
CACHE_STATS\$	TABLE	9/28/2021 4:33:35 AM

User: <CURRENT USER>

Oracle Export SQL Inserts PL/SQL Developer

☐ Drop tables
☒ Create tables
☐ Truncate tables
☒ Delete records
☒ Disable triggers

☒ Disable foreign key constraints
☒ Include storage
☒ Include privileges

Commit every 0 records (0 = never)

☐ Zip Where clause

Output file: C:\Users\USER\Desktop\Data Base\BackUp1.sql

Export

☐ Use Command Window
☒ Use SQL*Plus

SQL*Plus Executable

C:\app\USER\product\21c\dbhomeXE\bin\sqlpl

Import file

C:\Users\USER\Desktop\Data Base\BackUp.sql

Import

sys@XE AS SYSDBA Executing Oracle SQL*Plus Utility, please wait... Done


```

prompt PL/SQL Developer import file
prompt Created on Sunday, 26 May 2024 by Esther Malka
set feedback off
set define off
prompt Creating TRAILS...
create table TRAILS
(
    trail_name          VARCHAR2(255) not null,
    trail_id            NUMBER(6) not null,
    difficulty_level    VARCHAR2(50) not null,
    location            VARCHAR2(255) not null,
    price              FLOAT not null
)
;
alter table TRAILS
    add primary key (TRAIL_ID)
;

prompt Creating BIKING_TRAILS...
create table BIKING_TRAILS
(
    length              NUMBER(5) not null,
    terrain_description VARCHAR2(255),
    rental_on_site      VARCHAR2(50) not null,
    trail_id            NUMBER(6) not null
)
;
alter table BIKING_TRAILS
    add primary key (TRAIL_ID)
;
alter table BIKING_TRAILS
    add foreign key (TRAIL_ID)
        references TRAILS (TRAIL_ID);

prompt Creating CUSTOMERS...
create table CUSTOMERS
(
    traveler_id        NUMBER(6) not null,
    traveler_name      VARCHAR2(255) not null,
    traveler_age       NUMBER(3),
    contact_info       INTEGER,
    number_of_travelers NUMBER(4) not null,
    trip_date          DATE not null
)
;
alter table CUSTOMERS
    add primary key (TRAVELER_ID)

```

שלב ב

שאלות:

שאלתה 1:

שאלתה זו מחשבת את הסכום הכולל של הכסף שכל שביל הרוויח מרוכבי אופניים ומטיילים. היא מסננת את השבילים שיש בהם לפחות תשלום אחד וממיינת את התוצאות לפי שם השביל.

```
--calculating the amount of money evrery trail made
SELECT trail_name,
       COALESCE(
         (SELECT SUM(P.amount)
          FROM Bikers_on_trail B
          JOIN Customers_payment CP ON B.traveler_id = CP.traveler_id
          JOIN Payment P ON CP.payment_id = P.payment_id
          WHERE B.trail_id = T.trail_id), 0)
      +
       COALESCE(
         (SELECT SUM(P.amount)
          FROM Hikers_on_trail H
          JOIN Customers_payment CP ON H.traveler_id = CP.traveler_id
          JOIN Payment P ON CP.payment_id = P.payment_id
          WHERE H.trail_id = T.trail_id), 0)
      AS total_amount
FROM Trails T
WHERE (SELECT COUNT(*)
       FROM Bikers_on_trail B
       JOIN Customers_payment CP ON B.traveler_id = CP.traveler_id
       JOIN Payment P ON CP.payment_id = P.payment_id
       WHERE B.trail_id = T.trail_id) > 0
      OR
      (SELECT COUNT(*)
       FROM Hikers_on_trail H
       JOIN Customers_payment CP ON H.traveler_id = CP.traveler_id
       JOIN Payment P ON CP.payment_id = P.payment_id
       WHERE H.trail_id = T.trail_id) > 0
ORDER BY trail name ASC;
```

000 & 19:30 sys@XE AS SYSDBA [7:56:10 PM] 5 rows selected in 0.366 seconds (more...)

	TRAIL_NAME	TOTAL_AMOUNT
1	Ein Avdat Canyon Trail	185
2	Har Amasa Summit Trail	73
3	Har Avital Summit Trail	109
4	Har Gilboa Summit Trail	181
5	Har Horshan	2

שאלתה 2:

השאלתה מחשבת את סכום הטיולים לכל שביל במהלך ה-12 חודשים האחרונים על ידי ספירת מספר המטיילים בודדים עבור כל סוג של טיול – הליכה ורכיבה על אופניים. לאחר מכן, השאלתה מוצאת את השביל שסך המטיילים בו הכי גבוה.

```
SELECT
    trail_name,
    MAX(total_hikers + total_bikers) AS total_hikers_and_bikers
FROM (
    SELECT
        T.trail_name,
        (
            SELECT COUNT(DISTINCT HOT.traveler_id)
            FROM Hikers_on_trail HOT
            JOIN Hiking_Trails HT ON HOT.trail_id = HT.trail_id
            JOIN Customers C ON HOT.traveler_id = C.traveler_id
            WHERE HT.trail_id = T.trail_id
            AND C.trip_date >= ADD_MONTHS(SYSDATE, -12)
        ) AS total_hikers,
        (
            SELECT COUNT(DISTINCT BOT.traveler_id)
            FROM Bikers_on_trail BOT
            JOIN Biking_Trails BT ON BOT.trail_id = BT.trail_id
            JOIN Customers C ON BOT.traveler_id = C.traveler_id
            WHERE BT.trail_id = T.trail_id
            AND C.trip_date >= ADD_MONTHS(SYSDATE, -12)
        ) AS total_bikers
    FROM
        Trails T
) subquery
GROUP BY
    trail_name
ORDER BY
    total hikers and bikers DESC;
```

000 & 27:11 sys@XE AS SYSDBA [7:56:15 PM] 10 rows selected in 0.045 seconds (more...)

	TRAIL_NAME	TOTAL_HIKERS_AND_BIKERS
1	Nahal Zivon	3
2	Adulam Park Trail	2
3	Nahal Kziv Trail	2
4	Nahal Kadesh Trail	2
5	Mount Tavor Ridge Trail	2

שאלתה 3:

השאלתה מחשבת את מחיר השבילים בממוצע לפי מיקומם. היא מבחרת את כל המחירים של השבילים בכל מיקום ומחשבת את הממוצע, ולבסוף מקבצת את התוצאות לפי המיקום ומסדרת אותן.

```
--Average price of trails by location
SELECT
    location,
    CEIL(AVG(price)) AS average_price
FROM (
    SELECT
        T.location,
        T.price
    FROM
        Trails T
    WHERE EXISTS (
        SELECT 1
        FROM Biking_Trails BT
        WHERE BT.trail_id = T.trail_id
    )
    UNION ALL
    SELECT
        T.location,
        T.price
    FROM
        Trails T
    WHERE EXISTS (
        SELECT 1
        FROM Hiking_Trails HT
        WHERE HT.trail_id = T.trail_id
    )
) TrailPricesByLocation
GROUP BY
    location
```

		LOCATION		AVERAGE_PRICE	
▶	1	Carmel Coast	***	9	
	2	Carmel Mountains	***	15	
	3	Dead Sea Region	***	16	
	4	Eilat Mountains	***	10	
	5	Ein Gedi	***	28	

שאלתה 4:

השאלתה מחשבת את מספר הנוסעים על כל שבילי הטיולים לפי תאריך הטיול, ומסדרת את התוצאות לפי התאריך ואת מספר הנוסעים בסדר יורד.

```
-- Total number of travelers on hiking and biking trails by date
```

```
SELECT
    T.trail_name,
    C.trip_date,
    SUM(C.number_of_travelers) AS total_travelers
FROM
    Trails T
JOIN
    (
        SELECT
            B.trail_id,
            B.traveler_id
        FROM
            Bikers_on_trail B
        UNION
        SELECT
            H.trail_id,
            H.traveler_id
        FROM
            Hikers_on_trail H
    ) All_Trails ON T.trail_id = All_Trails.trail_id
JOIN
    Customers C ON All_Trails.traveler_id = C.traveler_id
GROUP BY
    T.trail_name,
    C.trip_date
ORDER BY
    C.trip_date DESC,
    total_travelers DESC;
```

	TRAIL_NAME	TRIP_DATE	TOTAL_TRAVELERS
1	Nahal Betzet Trail	6/29/2024	8
2	Nahal Gilbon Trail	6/29/2024	8
3	Nahal Mishmar HaYarden Trail	6/28/2024	6
4	Nahal Keshet Trail	6/23/2024	10
5	Har Negev Summit Trail	6/22/2024	9

שאלת מחיקה 1:

שאלת מחיקה מטבלה אבא ובן, מחיקת כל העובדים מעל גיל 65.

```
DELETE FROM employee_at_trail t
WHERE t.employee_id IN (
    SELECT e.employee_id
    FROM employees e
    WHERE e.age > 65
    AND (
        SELECT COUNT(*)
        FROM employee_at_trail t2
        WHERE t2.employee_id = e.employee_id
    ) < 5
);

DELETE FROM employees e
WHERE age > 65
AND (
    SELECT COUNT(*)
    FROM employee_at_trail t
    WHERE t.employee_id = e.employee_id
) < 5;
```

לפני מחיקה:

Employee_at_trail:

	EMPLOYEE_ID	TRAIL_ID
1	2	20105
2	2	20300
3	2	20835
4	6	20969
5	8	20639
6	9	20306
7	9	21010
8	11	20831

1 of 400

sys@XE AS SYSDBA [11:15:55 PM] 400 rows selected in 0.275 seconds

אחרי:

	EMPLOYEE_ID	TRAIL_ID
▶ 1	2	20105
2	2	20300
3	2	20835
4	6	20969
5	8	20639
6	9	20306

1 of 313 sys@XE AS SYSDBA [11:19:27 PM] 313 rows selected in 0.481 seconds

לפני מחיקה:

Employees:

	EMPLOYEE_NAME	EMPLOYEE_ID	SENIORITY	CONTACT_INFO	AGE
▶ 1	Faith Ticehurst	1	2	695-994-8103	38
2	Eugene Lythgoe	2	45	406-809-9168	61
3	Meridel Yackiminie	3	18	109-680-4599	18
4	Davin Cusworth	4	44	889-138-1922	22
5	Willem Abrahamson	5	31	583-787-0290	29
6	Dedie Davydochkin	6	30	213-750-8261	62
7	Riccardo Orring	7	1	389-194-9923	26
8	Gabbi Cerman	8	24	504-130-5202	53
9	Elia Snoxill	9	46	721-547-7894	62

1 of 399 sys@XE AS SYSDBA [11:16:43 PM] 399 rows selected in 0.535 seconds

אחרי:

	EMPLOYEE_NAME	EMPLOYEE_ID	SENIORITY	CONTACT_INFO	AGE
▶ 1	Faith Ticehurst	1	2	695-994-8103	38
2	Eugene Lythgoe	2	45	406-809-9168	61
3	Meridel Yackiminie	3	18	109-680-4599	18
4	Davin Cusworth	4	44	889-138-1922	22
5	Willem Abrahamson	5	31	583-787-0290	29
6	Dedie Davvdochkin	6	30	213-750-8261	62

1 of 301 sys@XE AS SYSDBA [11:19:24 PM] 301 rows selected in 0.251 seconds

] 98 rows deleted in 0.015 seconds

הרצה:

87 rows deleted in 0.019 seconds

שאלת מחיקה 2:

מחיקת תשלומים שלא נעשו השנה, מטבלת האבא ובן.

```
DELETE FROM customers_payment cp
WHERE cp.payment_id IN (
  SELECT p.payment_id
  FROM payment p
  WHERE EXTRACT(YEAR FROM p.payment_date) != EXTRACT(YEAR FROM SYSDATE));

--DeletePayment that wasnt in this past year
DELETE FROM payment p
WHERE EXTRACT(YEAR FROM p.payment_date) != EXTRACT(YEAR FROM SYSDATE);
```

לפני מחיקה:

Payment:

Select customers_payment		Select payment	
	PAYMENT_ID	AMOUNT	PAYMENT_DATE
1	567962	2	8/26/2020
2	572495	3	12/21/2021
3	507570	2	12/24/2022
4	518548	4	5/4/2023
5	554578	4	10/7/2023
6	567886	4	12/3/2023

1 of 6006 0:04 sys@XE AS SYSDBA [11:43:48 PM] 6006 rows selected in 4.017 seconds

אחרי:

Select customers_payment		Select payment	
	PAYMENT_ID	AMOUNT	PAYMENT_DATE
1	558268	2	2/9/2024
2	599002	2	4/20/2024
3	559329	4	1/14/2024
4	501008	1	1/7/2024
5	570869	3	4/3/2024
6	585613	3	3/25/2024
7	571338	3	5/12/2024

1 of 573 sys@XE AS SYSDBA [12:24:06 AM] 573 rows selected in 0.370 seconds

לפני מחיקה:

customer_payment

Select customers_payment Select payment

		PAYMENT_ID	TRAVELER_ID
▶	1	541151	300412
	2	522322	302940
	3	559817	300914
	4	590179	302909
	5	554209	302305
	6	567849	302046

1 of 384 0:03 sys@XE AS SYSDBA [12:22:28 AM] 384 rows selected in 3.837 seconds

אחרי:

Select customers_payment Select payment

		PAYMENT_ID	TRAVELER_ID
▶	1	543977	301584
	2	554151	302768
	3	550230	302186
	4	500975	302782
	5	564137	301817
	6	528371	301748
	7	507396	300154

1 of 36 sys@XE AS SYSDBA [12:24:23 AM] 36 rows selected in 0.390 seconds

הרצאה:

5433 rows deleted in 1.002 seconds

348 rows deleted in 0.052 seconds

שאלת עדכון 1:

עדכון גיל הנוסע בטבלת **customers** לפי ההפרש בין השנה הנוכחית לשנת הלידה, בהתחשב אם החודש והיום הנוכחיים לפני תאריך הלידה המדויק.

```
UPDATE customers c
SET c.traveler_age = EXTRACT(YEAR FROM SYSDATE) - EXTRACT(YEAR FROM c.birth_date)
- CASE
    WHEN EXTRACT(MONTH FROM SYSDATE) < EXTRACT(MONTH FROM c.birth_date) THEN 1
    WHEN EXTRACT(MONTH FROM SYSDATE) = EXTRACT(MONTH FROM c.birth_date)
    AND EXTRACT(DAY FROM SYSDATE) < EXTRACT(DAY FROM c.birth_date) THEN 1
    ELSE 0
END;
```

לפני עדכון:

	TRAVELER_ID	TRAVELER_NAME	TRAVELER_AGE	CONTACT_INFO	NUMBER_OF_TRAVELERS	TRIP_DATE	BIRTH_DATE
▶ 1	300000	Donald Jones	24	054-488-0205	93	4/16/2023	8/8/1942
2	300001	Garland Apple	11	058-816-2462	18	8/18/2021	2/24/1977
3	300002	Crispin Bacon	64	050-209-0491	17	10/4/2020	3/29/1954
4	300003	Madeline Ontiveros	28	059-948-4620	20	8/22/2023	2/23/1998
5	300004	Edgar Suvari	44	050-983-1092	9	6/6/2023	12/11/1962
6	300005	Elijah Fehr	55	052-457-6593	72	9/27/2021	1/15/1954
7	300006	Heath Kirkwood	64	056-506-6452	51	3/31/2023	9/20/1943

אחרי:

	TRAVELER_ID	TRAVELER_NAME	TRAVELER_AGE	CONTACT_INFO	NUMBER_OF_TRAVELERS	TRIP_DATE	BIRTH_DATE
▶ 1	300000	Donald Jones	81	054-488-0205	93	4/16/2023	8/8/1942
2	300001	Garland Apple	47	058-816-2462	18	8/18/2021	2/24/1977
3	300002	Crispin Bacon	70	050-209-0491	17	10/4/2020	3/29/1954
4	300003	Madeline Ontiveros	26	059-948-4620	20	8/22/2023	2/23/1998
5	300004	Edgar Suvari	61	050-983-1092	9	6/6/2023	12/11/1962
6	300005	Elijah Fehr	70	052-457-6593	72	9/27/2021	1/15/1954
7	300006	Heath Kirkwood	80	056-506-6452	51	3/31/2023	9/20/1943
8	300007	Dermot Linney	79	054-357-6556	34	1/18/2023	9/12/1944

2:1 [23] 0:01 sys@XE AS SYSDBA [12:32:54 AM] 3000 rows selected in 1.340 seconds

הרצאה:

3000 rows updated in 0.064 seconds

שאלת עדכון 2:

עדכון מצב פתיחה של מסלול בגלל המלחמה, לפי כמה נתונים.
 המיקום של המסלול הוא ב"גליל העליון".
 משך המסלול (מסלולי הליכה) עולה על 10 שעות.
 אורך המסלול (מסלולי אופניים) עולה על 8 קילומטרים.

```
UPDATE trails t
SET t.open_closed = 'closed'
WHERE t.location = 'Upper Galilee'
   OR t.trail_id IN (
    SELECT ht.trail_id
    FROM Hiking_Trails ht
    WHERE ht.duration > 10
  )
   OR t.trail_id IN (
    SELECT bt.trail_id
    FROM Biking_Trails bt
    WHERE bt.length > 8
  );
```

לפני עדכון:

	TRAIL_NAME	TRAIL_ID	DIFFICULTY_LEVEL	LOCATION	PRICE	OPEN_CLOSED
▶ 1	Mount Meron Trail	20001	Easy	Upper Galilee	25	open
2	Masada Summit Trail	20002	Moderate	Dead Sea	30	open
3	Ein Gedi Nature Reserve	20003	Moderate	Dead Sea	20	open
4	Banias Waterfall Trail	20004	Moderate	Golan Heights	35	open
5	Ramon Crater Rim Trail	20005	Difficult	Negev Desert	50	open
6	Nahal Snir Nature Trail	20006	Easy	Upper Galilee	15	open
7	Wadi Qelt Trail	20007	Moderate	Judean Desert	40	open
8	Ein Avdat Canyon Trail	20008	Moderate	Negev Desert	30	open

15:12 sys@XE AS SYSDBA [12:38:57 AM] 956 rows selected in 0.327 seconds

אחרי:

	TRAIL_NAME	TRAIL_ID	DIFFICULTY_LEVEL	LOCATION	PRICE	OPEN_CLOSED
▶ 1	Mount Meron Trail	20001	Easy	Upper Galilee	25	closed
2	Masada Summit Trail	20002	Moderate	Dead Sea	30	open
3	Ein Gedi Nature Reserve	20003	Moderate	Dead Sea	20	open
4	Banias Waterfall Trail	20004	Moderate	Golan Heights	35	open
5	Ramon Crater Rim Trail	20005	Difficult	Negev Desert	50	closed
6	Nahal Snir Nature Trail	20006	Easy	Upper Galilee	15	closed
7	Wadi Qelt Trail	20007	Moderate	Judean Desert	40	open
8	Ein Avdat Canyon Trail	20008	Moderate	Negev Desert	30	closed
9	Mount Tabor Trail	20009	Difficult	Lower Galilee	45	open

283 rows updated in 0.010 seconds

הרצה:

שאלות עם פרמטרים: 1.

שאלתא מביאה את נתוני המטיילים שיש להם יום הולדת ביום הנתון.

```
--params query customers birthday
SELECT
    customer.traveler_id,
    customer.traveler_name,
    customer.traveler_age,
    customer.contact_info,
    customer.trip_date,
    TO_CHAR(SYSDATE, 'YYYY') - TO_CHAR(customer.trip_date, 'YYYY') AS trip_years_ago,
    customer.birth_date
FROM
    Customers customer
WHERE
    TO_CHAR(&name="Enter Date" type="date" default=sysdate>, 'DD-MM') = TO_CHAR(customer.birth_date, 'DD-MM')
ORDER BY
    customer.birth_date;
```

Name	Value
Enter Date	sysdate

	TRAVELER_ID	TRAVELER_NAME	TRAVELER_AGE	CONTACT_INFO	TRIP_DATE	TRIP_YEARS_AGO	BIRTH_DATE
1	300555	Ricardo Blackmore	87	058-032-1910	5/28/2021	3	6/16/1929
2	301208	Chuck Heron	92	054-289-8987	11/28/2023	1	6/16/1934
3	301695	Woody Lynne	25	052-833-2607	1/14/2020	4	6/16/1936
4	301612	Gina McLean	17	052-806-2610	9/30/2022	2	6/16/1951
5	301962	Fisher Mueller-Stahl	67	051-968-3962	1/31/2022	2	6/16/1965
6	301528	Rachael Vince	49	059-041-5873	7/14/2023	1	6/16/1984

2.

שאלתא מביאה את הנתונים על המסלולים לפי רמת קושי ומחיר.

--params query trails by level and price

```

SELECT
    t.trail_name,
    t.location,
    t.price
FROM
    Trails t
WHERE
    t.difficulty_level = &<name="difficulty level" list="Easy, Moderate, Difficult"
    type="string">
    and t.price between &<name="minimum price" type=integer>
    and &<name="maximum price" type=integer>
ORDER BY t.price;

```

Name	Value
difficulty level	Moderate
minimum price	10
✓ maximum price	35

		TRAIL_NAME		LOCATION		PRICE	
▶	1	Ein Gedi Nature Reserve	***	Dead Sea	***	20	
	2	Wadi Zin Trail	***	Negev Desert	***	25	
	3	Tavor Stream Trail	***	Lower Galilee	***	25	
	4	Yehudiya Forest Nature R	***	Golan Heights	***	25	
	5	Nahal Dishon Trail	***	Upper Galilee	***	30	
	6	Ein Avdat Canyon Trail	***	Negev Desert	***	20	

3.

שאלתא מביאה נתונים על מסלולי רכיבה לפי סוג פני השטח ואורך המסלול.

```

SELECT
  t.trail_name,
  t.location,
  b.length,
  b.terrain_description,
  t.price
FROM
  Biking_Trails b
JOIN
  Trails t ON b.trail_id = t.trail_id
WHERE
  b.terrain_description = &<name="terrain description" list="flat, hilly, smooth, rocky" type="string">
  AND b.length BETWEEN &<name="minimum length" type="integer"> AND &<name="maximum length" type="integer">
ORDER BY
  b.length;

```

Name	Value
terrain description	smooth
minimum length	3
✓ maximum length	15

OK Cancel Clear

		TRAIL_NAME		LOCATION		LENGTH		TERRAIN_DESCRIPTION		PRICE	
▶	1	Nahal Zippori Trail	***	Western Galilee	***	3		smooth	***	60	
	2	Nahal Hatzbani Trail	***	Upper Galilee	***	3		smooth	***	60	
	3	Mount Tabor Summit Trail	***	Mount Tabor	***	3		smooth	***	45	
	4	Mount Tabor Trail	***	Mount Tabor	***	3		smooth	***	45	
	5	Nahal Levanon Trail	***	Lower Galilee	***	3		smooth	***	55	
	6	Jerusalem Hills Trail	***	Beit Shimon	***	3		smooth	***	15	

.4

שאלתא מחזירה נתונים של כל התשלומים מסכום מסוים בין תאריכים ספציפיים.

```
-- all payments made from min price between dates
SELECT
    cp.payment_id,
    c.traveler_name,
    c.contact_info,
    p.amount,
    p.payment_date
FROM
    Customers_payment cp
JOIN
    Payment p ON cp.payment_id = p.payment_id
JOIN
    Customers c ON cp.traveler_id = c.traveler_id
WHERE
    p.amount >= &<name="min_amount" type="integer">
    AND p.payment_date BETWEEN TO_DATE(&<name="start_date" type="string
default="01/01/2024"> , 'DD/MM/YYYY')
                                AND TO_DATE(&<name="end_date" type="string
default="1/06/2024"> , 'DD/MM/YYYY')
ORDER BY
    p.payment_date DESC;
```

Name	Value
min_amount	10
start_date	01/01/2024
end_date	1/06/2024

OK Cancel Clear

		PAYMENT_ID	TRAVELER_NAME	CONTACT_INFO	AMOUNT	PAYMENT_DATE	
▶	1	501577	Roddy Byrne	057-694-3978	194	5/29/2024	...
	2	500975	Kitty Hobson	056-816-4643	95	5/28/2024	...
	3	567146	Carlene Heald	054-670-9150	80	5/22/2024	...
	4	583774	Claude Winans	051-867-0807	88	5/21/2024	...
	5	548467	Renee Paul	054-505-2170	191	5/16/2024	...
	6	576610	Lori Finn	052-044-5828	172	5/12/2024	...

אילוצים:

1.

SQL Output Statistics

```
ALTER TABLE Employees
ADD CONSTRAINT age_check
CHECK (age <= 64);

INSERT INTO Employees (employee_name, employee_id, seniority, contact_info, age)
VALUES ('Josef Smith', 400, 40, '054-251-9150', 65);
```

Error

ORA-02293: cannot validate (SYS.AGE_CHECK) - check constraint violated

OK Cancel Help

2.

```
ALTER TABLE Trails
ADD CONSTRAINT price_check
CHECK (price >= 0);
```

```
INSERT INTO Trails (trail_name, trail_id, difficulty_level, location, price, open_closed)
VALUES ('Nachal Achziv', 21239, 'Moderate', 'Northern District HaZafon', -5, 'Open');
```

Error

ORA-02290: check constraint (SYS.PRICE_CHECK) violated

OK Cancel Help

.3

```
ALTER TABLE Customers  
ADD CONSTRAINT phone_starts_with_zero  
CHECK (contact_info LIKE '0%');
```

```
INSERT INTO Customers (traveler_id, traveler_name, traveler_age, contact_info, number_of_travelers, trip_date)  
VALUES (326550, 'Nikki Smith', 15, '453-729-1771', 3, TO_DATE('2023-12-09', 'YYYY-MM-DD'));
```

