

[שנה]

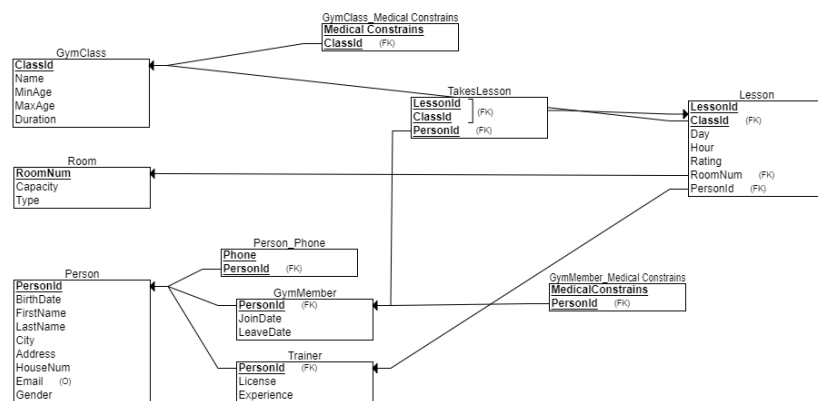
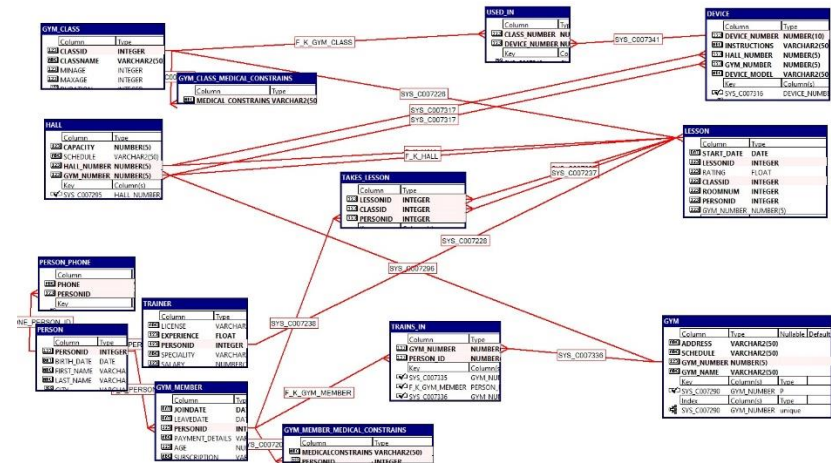
מיניפ בסנ"ת שלב 4

נועה לשס והדס קרמן

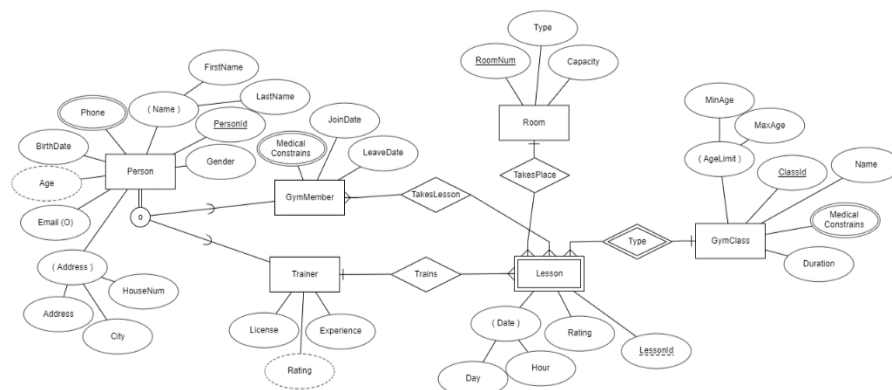
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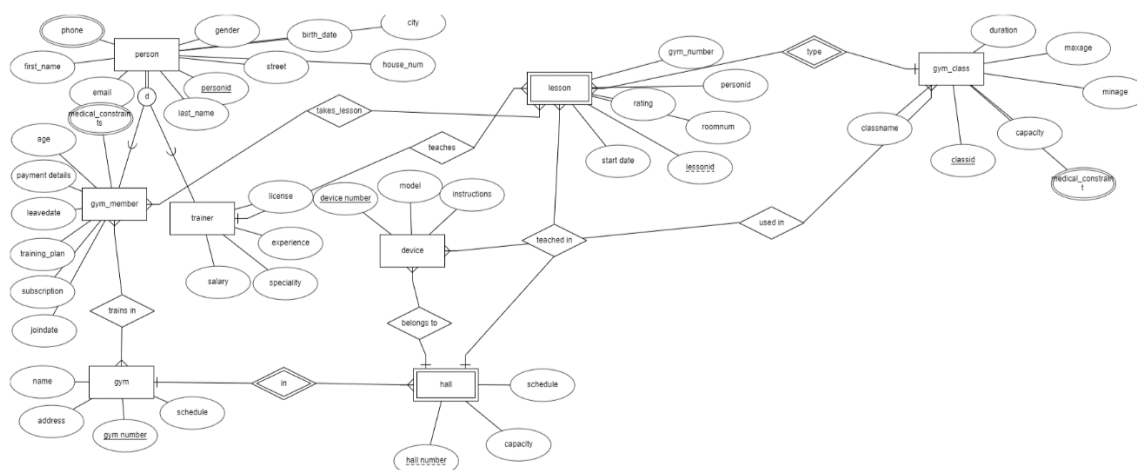
דיאגרמת DSD



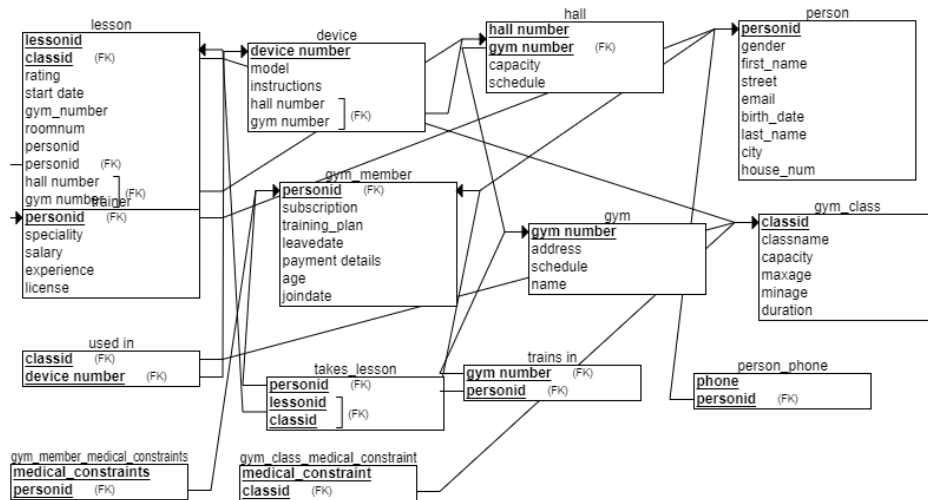
דיאגרמת ERD



דיאגרמת ERD משולבת



דיאגרמת DSD משולבת



שינויים בטבלאות ואיחוד הנתונים

הנחות

טבלת person - person:

נשאיר שם person נמזג את הטבלאות:

1. Address = street

הגדרנו את house_num, first_name, birth_date להיות nullable.

טבלת coach – trainer:

לקחנו את trainer:

1. הוספנו specialty

2. הוספנו salary

הגדרנו את license להיות nullable.

טבלת trainee – gym_member:

לקחנו את gym_member:

1. הוספנו payment_details

2. הוספנו age

3. הוספנו subscription

4. הוספנו training_plan

טבלת class_lesson – טבלאות gym_class ו lesson:

לקחנו את gym_class ו lesson.

ניקח את הנתונים של class_lesson ונחליץ משם את מה שנחוץ לתוך הטבלה gym_class בלבד. class_lesson הוא קורס כללי, gym_class הוא גם קורס כללי ו lesson זה מופעים של הקורס. לכן

נוסיף ערכים מclass_lesson רק לתוך gym_class ול lesson לא נוסיף נתונים.

1. הוספנו capacity לטבלה gym_class.

2. הוספנו gym_number ל lesson.

טבלת hall – room:

לקחנו את טבלת hall והשארנו אותה כמו שהיא.

מצאנו gym_number קיים מתוך הטבלה gym עבור כל room שלקחנו מבסיס הנתונים של הטבלה room מפני ש gym_number ו hall_number הם מפתח ראשי של hall ולא יכולנו לקחת את room כמו שהוא ולהשאיר את gym_number בתור null.

טבלת Lesson:

מחקנו את המפתח זר שהתאים ל room והוספנו במקומו מפתח זר ל hall כי בחרנו לא להשתמש ב room. ועדכנו את כל ה gym_number שיתאימו ל hall_number מטבלת hall שאליו הם מחוברים.

טבלת trains_in:

נמחק את המפתח הזר person_id שהתאים ל trainee (הטבלה שלנו) ונוסיף מפתח זר שמתאים לטבלת gym_member (הטבלה החדשה).

טבלת Takes_lesson - takes:

ניקח את Takes_lesson בגלל שיש שם lesson_id ו class_id וב takes יש רק class_id והרי בחרנו להשאיר את הטבלה lesson. הוספנו ערכים כך שלכל class_id מטבלת takes מצאנו ערך מתאים בטבלת lesson והוספנו אותו ואת שאר הערכים לתוך takes_lesson.

טבלת used_in:

נמחק את המפתח הזר class_number של טבלת class_lesson ונוסיף מפתח זר class_id מתוך טבלת gym_class.

השינויים והכנסת הנתונים

טבלאות PERSON ו- PERDON לפני השינויים:

	Name	Type	Nullable	Default	Comments
1	PERSON_ID	NUMBER(10)			
2	GENDER	VARCHAR2(15)			
3	FULL_NAME	VARCHAR2(50)			
4	PHONE	NUMBER(10)			
5	ADDRESS	VARCHAR2(50)			
6	EMAIL	VARCHAR2(50)			

השינויים:

```
-- Add/modify columns - PERSON
alter table PERSON rename column address to street;
alter table PERSON modify "street" null;
```

הטבלה לאחר השינויים:

	Name	Type	Nullable	Default	Comments
1	PERSONID	INTEGER			
2	BIRTH_DATE	DATE	Y		
3	FIRST_NAME	VARCHAR2(20)	Y		
4	LAST_NAME	VARCHAR2(30)	Y		
5	CITY	VARCHAR2(30)	Y	'Unknown'	
6	STREET	VARCHAR2(50)	Y		
7	HOUSE_NUM	INTEGER	Y		
8	EMAIL	VARCHAR2(40)			
9	GENDER	VARCHAR2(1)			

הכנסת הנתונים:

```
-- insert data into PERSON
INSERT INTO PERSON (PERSON_ID, BIRTH_DATE, FIRST_NAME, LAST_NAME, CITY, STREET, HOUSE_NUM, EMAIL, GENDER)
SELECT PERSON_ID,
       NULL,
       NULL,
       FULL_NAME,
       'Unknown',
       ADDRESS,
       NULL,
       EMAIL,
       CASE
         WHEN GENDER = 'Female' THEN 'f'
         WHEN GENDER = 'Male' THEN 'm'
         ELSE NULL
       END
FROM PERSON
WHERE PERSON_ID NOT IN (SELECT PERSON_ID FROM PERSON2);
```

טבלאות TRAINER ו- COACH לפני השינויים:

	Name	Type	Nullable	Default	Comments
1	LICENSE	VARCHAR2(20)			
2	EXPERIENCE	FLOAT			
3	PERSONID	INTEGER			

	Name	Type	Nullable	Default	Comments
1	SPECIALITY	VARCHAR2(50)			
2	SALARY	NUMBER(15)			
3	EXPERIENCE	VARCHAR2(50)			
4	PERSON_ID	NUMBER(10)			

השינויים:

```
-- Add/modify columns - TRAINER
alter table TRAINER add speciality varchar2(50);
alter table TRAINER add salary number(15);
-- adjust foreign keys
alter table trainer
add constraint F_K_TPERSON_ID foreign key (PERSONID)
references PERSON (PERSONID);
```

הטבלה לאחר השינויים:

	Name	Type	Nullable	Default	Comments
1	LICENSE	VARCHAR2(20)	Y		
2	EXPERIENCE	FLOAT			
3	PERSONID	INTEGER			
4	SPECIALITY	VARCHAR2(50)	Y		
5	SALARY	NUMBER(15)	Y		

הכנסת הנתונים:

```
-- insert data into TRAINER
INSERT INTO TRAINER (LICENSE, EXPERIENCE, PERSONID, SPECIALITY, SALARY)
SELECT LICENSE,
       TO_NUMBER(REGEXP_SUBSTR(EXPERIENCE, '[0-9]+')), -- Extract the numeric part of the experience
       PERSON_ID,
       SPECIALITY,
       SALARY
FROM COACH
WHERE PERSON_ID NOT IN (SELECT PERSONID FROM TRAINER);
```

טבלאות GYM_MEMBER ו-TRAINEE לפני השינויים:

	Name	Type	Nullable	Default	Comments
1	JOINDATE	DATE			
2	LEAVEDATE	DATE	Y		
3	PERSONID	INTEGER			

	Name	Type	Nullable	Default	Comments
1	SUBSCRIPTION	VARCHAR2(50)			
2	TRAINING_PLAN	VARCHAR2(50)			
3	HEALTH	VARCHAR2(50)			
4	PAYMENT_DETAILS	VARCHAR2(50)			
5	AGE	NUMBER(5)			
6	JOINING_DATE	DATE			
7	PERSON_ID	NUMBER(10)			

השינויים:

```
-- Add/modify columns - GYM_MEMBER
alter table GYM_MEMBER add payment_details varchar2(50);
alter table GYM_MEMBER add age number(5);
alter table GYM_MEMBER add subscription varchar2(50);
alter table GYM_MEMBER add training_plan varchar2(50);

-- adjust foreign keys
alter table gym_member
add constraint f_k_person_id
foreign key (personid) references person(personid)
```

הטבלה לאחר השינויים:

	Name	Type	Nullable	Default	Comments
1	JOINDATE	DATE			
2	LEAVEDATE	DATE	Y		
3	PERSONID	INTEGER			
4	PAYMENT_DETAILS	VARCHAR2(50)	Y		
5	AGE	NUMBER(5)	Y		
6	SUBSCRIPTION	VARCHAR2(50)	Y		
7	TRAINING_PLAN	VARCHAR2(50)	Y		

הכנסת הנתונים:

```
-- insert data into GYM_MEMBER
INSERT INTO gym_member (JOINDATE, LEAVEDATE, PERSONID, PAYMENT_DETAILS,age,subscription,training_plan)
SELECT
       t.joining_date,
       null,
       t.person_id,
       t.payment_details,
       t.age,
       t.subscription,
       t.training_plan
FROM trainee t
WHERE t.person_id NOT IN (SELECT personid FROM GYM_member);
```

טבלאות GYM_CLASS ו-CLASS_LESSON לפני השינויים:

	Name	Type	Nullable	Default	Comments
1	CLASSID	INTEGER			
2	CLASSNAME	VARCHAR2(50)			
3	MINAGE	INTEGER			
4	MAXAGE	INTEGER			
5	DURATION	INTEGER			

	Name	Type	Nullable	Default	Comments
1	START_DATE	DATE			
2	CAPACITY	NUMBER(5)		10	
3	TERMS	VARCHAR2(100)			
4	CLASS_NAME	VARCHAR2(15)			
5	CLASS_NUMBER	NUMBER(5)			
6	FINISH_DATE	DATE			
7	CLASS_DAY	VARCHAR2(15)			
8	CLASS_HOUR	VARCHAR2(15)			
9	PERSON_ID	NUMBER(10)			
10	HALL_NUMBER	NUMBER(5)			
11	GYM_NUMBER	NUMBER(5)			

השינויים:

```
-- Add/modify columns - GYM_CLASS
alter table GYM_CLASS add capacity number(5);
```

הטבלה לאחר השינויים:

	Name	Type	Nullable	Default	Comments
1	CLASSID	INTEGER			
2	CLASSNAME	VARCHAR2(50)			
3	MINAGE	INTEGER	Y		
4	MAXAGE	INTEGER	Y		
5	DURATION	INTEGER	Y		
6	CAPACITY	NUMBER(5)	Y		

הכנסת הנתונים:

```
-- insert data into GYM_CLASS
INSERT INTO GYM_CLASS (classid, classname, minage, maxage, duration, capacity)
SELECT class_number,
       class_name,
       CASE
         WHEN REGEXP_LIKE(TRIM(TERMS), 'Age:\s*([0-9]+)\s*[-]\s*([0-9]+)') THEN TO_NUMBER(REGEXP_SUBSTR(TRIM(TERMS), 'Age:\s*([0-9]+)\s*[-]\s*([0-9]+)', 1, 1, NULL, 1))
         WHEN REGEXP_LIKE(TRIM(TERMS), 'Age:\s*([0-9]+)\s*\s*') THEN TO_NUMBER(REGEXP_SUBSTR(TRIM(TERMS), 'Age:\s*([0-9]+)\s*\s*', 1, 1, NULL, 1))
         ELSE NULL
       END AS MINAGE,
       CASE
         WHEN REGEXP_LIKE(TRIM(TERMS), 'Age:\s*([0-9]+)\s*\s*') THEN 99
         WHEN REGEXP_LIKE(TRIM(TERMS), 'Age:\s*([0-9]+)\s*[-]\s*([0-9]+)') THEN TO_NUMBER(REGEXP_SUBSTR(TRIM(TERMS), 'Age:\s*([0-9]+)\s*[-]\s*([0-9]+)', 1, 1, NULL, 1))
         ELSE NULL
       END AS MAXAGE,
       (FINISH_DATE - START_DATE) AS DURATION,
       capacity
FROM class_lesson
WHERE class_number NOT IN (SELECT classid FROM GYM_CLASS);
```

טבלאות LESSON ו- CLASS_LESSON לפני השינויים:

	Name	Type	Nullable	Default	Comments
1	LESSONDATE	DATE			
2	LESSONID	INTEGER			
3	RATING	FLOAT			
4	CLASSID	INTEGER			
5	ROOMNUM	INTEGER			
6	PERSONID	INTEGER			

	Name	Type	Nullable	Default	Comments
1	START_DATE	DATE			
2	CAPACITY	NUMBER(5)		10	
3	TERMS	VARCHAR2(100)			
4	CLASS_NAME	VARCHAR2(15)			
5	CLASS_NUMBER	NUMBER(5)			
6	FINISH_DATE	DATE			
7	CLASS_DAY	VARCHAR2(15)			
8	CLASS_HOUR	VARCHAR2(15)			
9	PERSON_ID	NUMBER(10)			
10	HALL_NUMBER	NUMBER(5)			
11	GYM_NUMBER	NUMBER(5)			

השינויים:

```
-- Add/modify columns - LESSON
alter table LESSON rename column lessondate to START_DATE;
alter table LESSON add gym_number number(5);
-- adjust foreign keys
alter table lesson drop constraint SYS_C007227
alter table lesson
add constraint f_k_hall
foreign key (ROOMNUM, gym_number) references hall(hall_number, gym_number)
```

הטבלה לאחר השינויים:

	Name	Type	Nullable	Default	Comments
1	START_DATE	DATE			
2	LESSONID	INTEGER			
3	RATING	FLOAT	Y		
4	CLASSID	INTEGER			
5	ROOMNUM	INTEGER			
6	PERSONID	INTEGER			
7	GYM_NUMBER	NUMBER(5)	Y		

הכנסת הנתונים:

```

-- insert data into LESSON
INSERT INTO lesson (start_date, lessonid, rating, classid, roomnum, personid, finish_date, class_day, class_hour, gym_number)
SELECT
  cl.start_date,
  (SELECT COALESCE(MAX(lessonid), 0) + ROW_NUMBER() OVER (ORDER BY cl.start_date) FROM lesson) AS lessonid,
  NULL AS rating,
  cl.class_number AS classid,
  cl.hall_number AS roomnum,
  cl.person_id AS personid,
  cl.finish_date AS finish_date,
  cl.class_day AS class_day,
  cl.class_hour AS class_hour,
  cl.gym_number AS gym_number
FROM
  class_lesson cl
WHERE
  cl.class_number IN (SELECT classid FROM lesson)
-- update data in LESSON
UPDATE lesson l
SET l.gym_number = (
  SELECT h.gym_number
  FROM hall h
  WHERE h.hall_number = l.roomnum)
WHERE EXISTS (
  SELECT l
  FROM hall h
  WHERE h.hall_number = l.roomnum);

```

טבלאות HALL ו- ROOM לפני השינויים:

	Name	Type	Nullable	Default	Comments
1	CAPACITY	INTEGER			
2	ROOMNUM	INTEGER			
3	ROOMTYPE	VARCHAR2(50)			

	Name	Type	Nullable	Default	Comments
1	CAPACITY	NUMBER(5)			
2	SCHEDULE	VARCHAR2(50)			
3	HALL_NUMBER	NUMBER(5)			
4	GYM_NUMBER	NUMBER(5)			

אין שינויים.

הטבלה לאחר השינויים:

בחרנו בHALL.

	Name	Type	Nullable	Default	Comments
1	CAPACITY	NUMBER(5)			
2	SCHEDULE	VARCHAR2(50)			
3	HALL_NUMBER	NUMBER(5)			
4	GYM_NUMBER	NUMBER(5)			

הכנסת הנתונים:

```
-- insert data into HALL
INSERT INTO HALL (CAPACITY, SCHEDULE, HALL_NUMBER, GYM_NUMBER)
SELECT
    r.CAPACITY,
    null,
    r.ROOMNUM AS HALL_NUMBER,
    (SELECT GYM_NUMBER
     FROM (SELECT GYM_NUMBER FROM GYM ORDER BY DBMS_RANDOM.VALUE)
     WHERE ROWNUM = 1) AS GYM_NUMBER
FROM ROOM r
WHERE NOT EXISTS (
    SELECT 1
    FROM HALL h
    WHERE h.HALL_NUMBER = r.ROOMNUM);
```

טבלאות TAKES ו-TAKES_LESSON לפני השינויים:

	Name	Type	Nullable	Default	Comments
1	LESSONID	INTEGER			
2	CLASSID	INTEGER			
3	PERSONID	INTEGER			

	Name	Type	Nullable	Default	Comments
1	PERSON_ID	NUMBER(10)			
2	CLASS_NUMBER	NUMBER(5)			

אין שינויים.

הטבלה לאחר השינויים:

בחרנו ב TAKES_LESSON .

	Name	Type	Nullable	Default	Comments
1	LESSONID	INTEGER			
2	CLASSID	INTEGER			
3	PERSONID	INTEGER			

הכנסת הנתונים:

```
-- Add/modify columns - TAKES_LESSON
-- insert data into TAKES_LESSON
INSERT INTO takes_lesson (lessonid, classid, PERSONID)
SELECT
    l.lessonid,
    t.class_number,
    t.person_id
FROM takes t
inner join lesson l on t.class_number = l.classid
WHERE t.person_id NOT IN (SELECT personid FROM GYM_member);
```

טבלת TRAINS_IN לפני השינויים:

	Name	Type	Nullable	Default	Comments
1	GYM_NUMBER	NUMBER(5)			
2	PERSON_ID	NUMBER(10)			

השינויים:

```
-- Add/modify columns - TRAINS_IN
-- adjust foreign keys
alter table trains_in drop constraint SYS_C007525
alter table trains_in
add constraint f_k_gym_member
foreign key (PERSON_ID) references gym_member (PERSONID)
```

רק טיפלו במפתחות זרים.

אין הכנסת נתונים.

טבלת USED_IN לפני השינויים:

	Name	Type	Nullable	Default	Comments
1	CLASS_NUMBER	NUMBER(5)			
2	DEVICE_NUMBER	NUMBER(10)			

השינויים:

```
-- Add/modify columns - USED_IN
-- adjust foreign keys
alter table used_in drop constraint SYS_C007342
alter table used_in
add constraint f_k_gym_class
foreign key (class_number) references gym_class(classid)
```

רק טיפלו במפתחות זרים.

אין הכנסת נתונים.

טבלת PERSON_PHONE לפני השינויים:

	Name	Type	Nullable	Default	Comments
1	PHONE	VARCHAR2(20)			
2	PERSONID	INTEGER			

השינויים:

```
-- Add/modify columns - PERSON_PHONE
-- adjust foreign keys
alter table person_phone
add constraint f_k_phone_person_id
foreign key (personid) references person(personid)
```

רק טיפלו במפתחות זרים.

אין הכנסת נתונים

בטבלאות GYM_CLASS_MEDICAL_CONSTRAINS, DEVICE, GYM_MEMBER_MEDICAL_CONSTRAINS לא שינינו כלום.

מבטים

מבט 1

תיאור מילולי:

מחזיר מידע על מיקום ושימוש במכשירים בחדרי כושר.

המבט:

```
--view 1:--

CREATE VIEW device_info AS
SELECT
    d.device_number,
    d.device_model,
    d.instructions,
    d.hall_number,
    d.gym_number,
    h.schedule AS hall_schedule,
    g.address AS gym_address,
    g.gym_name AS gym_name,
    l.lessonid,
    l.classid,
    l.start_date AS lesson_start_date,
    gc.classname
FROM
    device d
LEFT JOIN hall h ON d.hall_number = h.hall_number AND d.gym_number = h.gym_number
LEFT JOIN gym g ON d.gym_number = g.gym_number
LEFT JOIN used_in ui ON d.device_number = ui.device_number
LEFT JOIN lesson l ON ui.class_number = l.classid
LEFT JOIN gym_class gc ON l.classid = gc.classid;

select * from device_info
```

שליפת נתונים עם select* :

select * from device_info												
	DEVICE_NUMBER	DEVICE_MODEL	INSTRUCTIONS	HALL_NUMBER	GYM_NUMBER	HALL_SCHEDULE	GYM_ADDRESS	GYM_NAME	LESSONID	CLASSID	LESSON_S	
1	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop	683	47	27/09/201	
2	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop	613	47	19/04/202	
3	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop	553	47	17/03/200	
4	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop	440	47	19/12/201	
5	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop	436	47	11/11/201	
6	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop	212	47	22/07/200	
7	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop	238	47	21/08/201	
8	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop	554	47	28/08/202	
9	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop	530	47	16/06/200	
10	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop	488	47	24/10/201	
11	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop	434	47	24/05/201	
12	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop	426	47	28/06/200	
13	1	Treadmill	Mind Your Hands and Feet Don't Overextend	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop				
14	2	Spinning Bike	Secure Your Grip Use Full Range of Motion	6	35	Pilates13:00 Lift and Tone16:00	3838 Hickory Avenue	Fit Body Gym				
15	3	Cable Machine	Adjust Seat and Settings Stay Balanced	36	41	Pilates11:00 Body Sculpt19:00	5050 Walnut Boulevard	Cardio Blast				
16	4	Dumbbells	Stay Balanced No Jumping or Leaning	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop				
17	4	Dumbbells	Stay Balanced No Jumping or Leaning	35	30	Lift and Tone13:00 Pilates18:00	2828 Birch Boulevard	The Fit Stop				

CLASSID	LESSON_START_DATE	CLASSNAME
47	27/09/2011 12:31:58	Walking Group
47	19/04/2024 06:54:25	Walking Group
47	17/03/2007 15:32:06	Walking Group
47	19/12/2012 10:19:29	Walking Group
47	11/11/2011 20:50:55	Walking Group
47	22/07/2008 01:14:09	Walking Group
47	21/08/2014 02:44:09	Walking Group
47	28/08/2021 21:07:46	Walking Group
47	16/06/2009 01:57:21	Walking Group
47	24/10/2014 03:26:38	Walking Group
47	24/05/2012 11:15:38	Walking Group
47	28/06/2008 12:49:23	Walking Group
59	18/03/2002 18:57:27	Water Aerobics
59	01/09/2021 15:32:15	Water Aerobics

שאלתה 1

תיאור מילולי:

מחזירה עבור כל חדר כושר כמה מכשירים יש בו ומספר השיעורים שמשתמשים במכשירים האלו.

השאלתה:

```
--query 1:--  
  
SELECT  
    gym_name,  
    COUNT(DISTINCT device_number) AS total_devices,  
    COUNT(DISTINCT classid) AS classes_using_devices  
FROM  
    device_info  
GROUP BY  
    gym_name  
ORDER BY  
    total_devices DESC;
```

פלט השאלתה:

	GYM_NAME	TOTAL_DEVICES	CLASSES_USING_DEVICES
1	Fitness Zone	47	20
2	Fit & Fine	42	16
3	Endurance Edge	42	18
4	Fit Body Gym	37	17
5	Strength Station	31	18
6	Health Hub	28	10
7	The Fit Stop	24	16
8	Power Performance	20	16
9	Total Body Gym	18	6
10	Elite Fitness	16	8
11	Strength Haven	16	10
12	Muscle Matters	15	13
13	Flex Gym	15	8
14	Fit Factory	15	12
15	Total Fitness	14	9
16	Cardio Kings	10	5
17	Fitness Planet	5	4
18	Endurance Gym	4	3
19	Fitness Pro	4	1
20	Iron Paradise	4	5

שאלתה 2

תיאור מילולי:

מחזירה מידע כללי עבור כל מכשיר כושר- חדר הכושר והאולם בהם הוא נמצא, מס' וסוג מכשיר.

השאלתה:

```
--query 2:--

SELECT
    di.gym_name,
    di.device_number,
    di.device_model,
    di.hall_number
FROM
    device_info di
WHERE
    di.lessonid IS NULL
    OR di.lesson_start_date > SYSDATE
GROUP BY
    di.gym_name,
    di.device_number,
    di.device_model,
    di.hall_number
ORDER BY
    di.gym_name,
    di.device_number;
```

פלט השאילתה:

	GYM_NAME	DEVICE_NUMBER	DEVICE_MODEL	HALL_NUMBER
1	Cardio Blast	3	Cable Machine	36
2	Cardio Kings	295	Treadmill	33
3	Cardio Kings	311	Weight Plates	33
4	Cardio Kings	332	Spinning Bike	33
5	Cardio Kings	338	Spinning Bike	33
6	Cardio Kings	350	Dumbbells	33
7	Cardio Kings	356	Dumbbells	33
8	Cardio Kings	370	Dumbbells	33
9	Cardio Kings	379	Treadmill	33
10	Cardio Kings	399	Cable Machine	33
11	Cardio Kings	418	Dumbbells	33
12	Elite Fitness	27	Cable Machine	2
13	Elite Fitness	51	Cable Machine	2
14	Elite Fitness	75	Cable Machine	2
15	Elite Fitness	99	Cable Machine	2
16	Elite Fitness	123	Cable Machine	2
17	Elite Fitness	147	Cable Machine	2
18	Elite Fitness	171	Cable Machine	2
19	Elite Fitness	195	Cable Machine	2
20	Elite Fitness	219	Cable Machine	2

מבט 2

תיאור מילולי:

מחזיר מידע על קורסים כלליים והשיעורים שלהם.

המבט:

--view 2:--

```
CREATE VIEW class_info2 AS
SELECT
    l.lessonid,
    l.classid,
    l.rating,
    l.start_date,
    l.gym_number,
    l.roomnum,
    l.personid AS trainer_personid,
    p.first_name || ' ' || p.last_name trainer_full_name,
    gc.classname,
    gc.capacity,
    gc.maxage,
    gc.minage,
    gc.duration,
    t.speciality AS trainer_specialty,
    t.salary AS trainer_salary,
    t.experience AS trainer_experience,
    t.license AS trainer_license,
    pp.phone AS trainer_phone,
    mc.MEDICAL_CONSTRAINS
FROM
    lesson l
join person p on p.personid = l.personid
JOIN gym_class gc ON l.classid = gc.classid
JOIN trainer t ON l.personid = t.personid
JOIN person_phone pp ON pp.personid = t.personid
JOIN GYM_CLASS_MEDICAL_CONSTRAINS mc ON mc.classid = gc.classid

select * from class_info2
```

שליפת נתונים עם select*:

select * from class_info2

	LESSONID	CLASSID	RATING	START_DATE	GYM_NUMBER	ROOMNUM	TRAINER_PERSONID	TRAINER_FULL_NAM	CLASSNAME	CAPACITY	MAXAGE	MINAGE	DURATION	TRAINER_SPECIALTY	TRAI
1	225	37	7	09/08/2019 15:56:26	89	758	49908274	Bridget Pitney	Dance Aerobics	93	43	49			
2	225	37	7	09/08/2019 15:56:26	89	758	49908274	Bridget Pitney	Dance Aerobics	93	43	49			
3	225	37	7	09/08/2019 15:56:26	89	758	49908274	Bridget Pitney	Dance Aerobics	93	43	49			
4	225	37	7	09/08/2019 15:56:26	89	758	49908274	Bridget Pitney	Dance Aerobics	93	43	49			
5	225	37	7	09/08/2019 15:56:26	89	758	49908274	Bridget Pitney	Dance Aerobics	93	43	49			
6	225	37	7	09/08/2019 15:56:26	89	758	49908274	Bridget Pitney	Dance Aerobics	93	43	49			
7	225	37	7	09/08/2019 15:56:26	89	758	49908274	Bridget Pitney	Dance Aerobics	93	43	49			
8	225	37	7	09/08/2019 15:56:26	89	758	49908274	Bridget Pitney	Dance Aerobics	93	43	49			
9	225	37	7	09/08/2019 15:56:26	89	758	49908274	Bridget Pitney	Dance Aerobics	93	43	49			
10	225	37	7	09/08/2019 15:56:26	89	758	49908274	Bridget Pitney	Dance Aerobics	93	43	49			
11	225	37	7	09/08/2019 15:56:26	89	758	49908274	Bridget Pitney	Dance Aerobics	93	43	49			
12	225	37	7	09/08/2019 15:56:26	89	758	49908274	Bridget Pitney	Dance Aerobics	93	43	49			
13	226	72	7	13/06/2010 16:42:57	89	363	49908274	Bridget Pitney	Water Aerobics	75	14	75			
14	226	72	7	13/06/2010 16:42:57	89	363	49908274	Bridget Pitney	Water Aerobics	75	14	75			
15	226	72	7	13/06/2010 16:42:57	89	363	49908274	Bridget Pitney	Water Aerobics	75	14	75			
16	226	72	7	13/06/2010 16:42:57	89	363	49908274	Bridget Pitney	Water Aerobics	75	14	75			
17	226	72	7	13/06/2010 16:42:57	89	363	49908274	Bridget Pitney	Water Aerobics	75	14	75			

TRAINER_SPECIALTY	TRAINER_SALARY	TRAINER_EXPERIENCE	TRAINER_LICENSE	TRAINER_PHONE	MEDICAL_CONSTRAINS
...	11 4144-3166	056-6196667	"Severe otitis media"
...	11 4144-3166	056-6196667	"Severe hypoglycemia"
...	11 4144-3166	056-6196667	"Ulcerative colitis (flare-ups)"
...	11 4144-3166	056-6196667	"Severe schizophrenia"
...	11 4144-3166	056-6196667	"Severe GERD"
...	11 4144-3166	056-6196667	"Osteoporosis"
...	11 4144-3166	052-7602493	"Severe otitis media"
...	11 4144-3166	052-7602493	"Severe hypoglycemia"
...	11 4144-3166	052-7602493	"Ulcerative colitis (flare-ups)"
...	11 4144-3166	052-7602493	"Severe schizophrenia"
...	11 4144-3166	052-7602493	"Severe GERD"
...	11 4144-3166	052-7602493	"Osteoporosis"
...	11 4144-3166	056-6196667	"Severe sinusitis"
...	11 4144-3166	056-6196667	"Severe chronic fatigue syndrome"
...	11 4144-3166	056-6196667	"Marfan syndrome"
...	11 4144-3166	056-6196667	"Congestive heart failure"
...	11 4144-3166	052-7602493	"Severe sinusitis"
...	11 4144-3166	052-7602493	"Severe chronic fatigue syndrome"
...	11 4144-3166	052-7602493	"Marfan syndrome"

שאיילה 1

תיאור מילולי:

מחזירות מידע על כל קורסים – מס' השיעורים שלו, הפופולריות שלו, המאמן. המידע מתאים בעיקר להנהלה כדי לדעת את מצב הקורסים .

השאילתה:

```
--query 1:--

SELECT
    ci.classname,
    count(DISTINCT ci.lessonid) as number_of_lessons,
    AVG(ci.rating) AS avg_rating,
    trainer_personid,
    ci.trainer_full_name,
    ci.gym_number,
    AVG(ci.duration) AS avg_duration,
    count(DISTINCT ci.MEDICAL_CONSTRAINTS) AS num_medical_constraints,
    min(ci.start_date) AS closest_class_date
FROM
    class_info2 ci
WHERE
    ci.start_date >= TRUNC(SYSDATE)
GROUP BY
    ci.classname, ci.trainer_personid, ci.gym_number, ci.trainer_full_name
ORDER BY
    avg_rating DESC, closest_class_date DESC
```

פלט השאילתה:

	CLASSNAME	NUMBER_OF_LESSONS	AVG_RATING	TRAINER_PERSONID	TRAINER_FULL_NAM	GYM_NUMBER	AVG_DURATION	NUM_MEDICAL_CONSTRAINTS	CLOSEST_CLASS_DATE
1	Muscle Gain Strategies	1	10	49908274	Bridget Pitney	89	73	7	12/12/2024 19:24:31
2	Cardio Blast	1	10	49908274	Bridget Pitney	89	84	2	12/12/2024 01:45:15
3	Meditation and Relaxation	1	10	49908274	Bridget Pitney	89	114	7	26/11/2024 14:35:31
4	Senior Fitness	1	10	49908274	Bridget Pitney	89	45	7	18/09/2024 05:58:50
5	Powerlifting Basics	1	10	49908274	Bridget Pitney	89	80	6	17/08/2024 08:17:25
6	Powerlifting Basics	1	10	49908274	Bridget Pitney	89	80	6	20/07/2024 08:47:19
7	Advanced Yoga	1	10	49908274	Bridget Pitney	89	38	6	04/06/2024 21:20:26
8	CrossFit Intro	1	10	49908274	Bridget Pitney	89	51	6	19/05/2024 07:37:03
9	Pilates for Beginners	1	10	49908274	Bridget Pitney	89	102	4	18/05/2024 20:23:42
10	Tai Chi	1	10	49908274	Bridget Pitney	30	73	7	27/02/2024 09:11:13
11	Water Aerobics	1	10	49908274	Bridget Pitney	89	110	9	14/02/2024 07:41:05
12	Water Aerobics	1	10	49908274	Bridget Pitney	22	75	4	07/02/2024 14:20:49
13	Water Aerobics	1	10	49908274	Bridget Pitney	89	75	4	02/01/2024 20:45:01
14	Aerobics	1	10	49908274	Bridget Pitney	89	30	3	06/11/2023 10:12:43
15	Body Sculpt	1	10	49908274	Bridget Pitney	89	100	4	02/11/2023 15:31:49
16	Kids Yoga	1	10	49908274	Bridget Pitney	89	49	7	11/10/2023 07:37:46
17	Running Club	1	10	49908274	Bridget Pitney	89	55	5	29/09/2023 12:45:38
18	Weight Loss Tips	1	10	49908274	Bridget Pitney	89	120	7	05/08/2023 11:51:56
19	Trail Running	1	10	49908274	Bridget Pitney	89	87	5	08/07/2023 11:07:43

שאילתה 2

תיאור מילולי:

מחזיר מידע על קורסים, מיועד למשתמש – מסווג כל קורס לפי הגיל לקטגוריה מסוימת, ומחזיר מידע רלוונטי על הקורסים הזמינים בלבד למשתמש שרוצה להירשם לקורסים.

השאילתה:

```
--query 2:--

SELECT
    classid,
    gym_number,
    classname,
    CASE
        WHEN minage < 18 THEN 'Youth (under 18)'
        WHEN minage BETWEEN 18 AND 30 THEN 'Young Adult (18-30)'
        WHEN minage BETWEEN 31 AND 50 THEN 'Adult (31-50)'
        ELSE 'Senior (51+)'
    END AS age_category,
    minage,
    maxage,
    min(start_date) AS closest_class_date,
    duration,
    AVG(rating) AS avg_rating
FROM class_info2
WHERE
    start_date >= TRUNC(SYSDATE)
GROUP BY classid, gym_number, classname, minage, maxage, duration
```

פלט השאילתה:

	CLASSID	GYM_NUMBER	CLASSNAME	AGE_CATEGORY	MINAGE	MAXAGE	CLOSEST_CLASS_DATE	DURATION	AVG_RATING
1	29	35	Stretch and Flex	Youth (under 18)	10	12	05/09/2024 13:10:59	68	8
2	18	89	Kickboxing	Adult (31-50)	41	47	19/10/2024 19:04:04	47	6
3	45	89	Meditation and Relaxation	Young Adult (18-30)	19	30	29/07/2024 09:24:54	114	6.66666666666667
4	21	89	Pilates for Beginners	Youth (under 18)	6	8	21/07/2024 03:33:41	102	8
5	74	89	Strength Training	Adult (31-50)	50	98	08/12/2024 11:12:46	66	8
6	38	89	Tai Chi	Youth (under 18)	8	25	13/12/2024 06:58:53	43	9
7	88	89	Flexibility Training	Young Adult (18-30)	22	66	04/11/2024 20:06:17	95	8
8	57	89	Mindfulness Meditation	Senior (51+)	63	66	28/09/2024 04:25:14	104	5
9	81	89	Dance Aerobics	Senior (51+)	55	119	27/10/2024 08:27:36	94	6
10	2	22	Postnatal Yoga	Adult (31-50)	49	56	27/12/2024 18:45:38	61	8
11	70	89	Powerlifting Basics	Adult (31-50)	44	90	17/08/2024 09:17:25	80	10
12	89	89	Cardio Blast	Senior (51+)	58	104	12/12/2024 01:45:15	84	10
13	32	89	Water Aerobics	Youth (under 18)	10	41	02/09/2024 13:31:09	110	6
14	93	89	Postnatal Yoga	Young Adult (18-30)	20	80	07/10/2024 06:18:34	101	8
15	58	89	Trail Running	Adult (31-50)	46	78	28/12/2024 18:14:24	105	8
16	41	89	Kickboxing	Adult (31-50)	37	62	18/11/2024 12:36:43	32	6
17	60	89	Gymnastics Conditioning	Adult (31-50)	41	93	23/09/2024 04:31:00	39	9
18	25	89	Youth Sports Training	Young Adult (18-30)	19	61	17/11/2024 05:26:09	102	6
19	29	89	Stretch and Flex	Youth (under 18)	10	12	12/08/2024 14:07:09	68	7