Advanced database project

Made for DR/ Menna Mamdouh

Made by:

Esraa Abdelkarim Awad(G3)512393352

Fatma Ashraf Abdelazeim(G2)512393330

Hisham Mohamed Ahmed(G3)512393255

Abdelrahman Mohamed mostafa(G3)512393683

Shahd Mahmoud Mohamed makser(G2)512393340

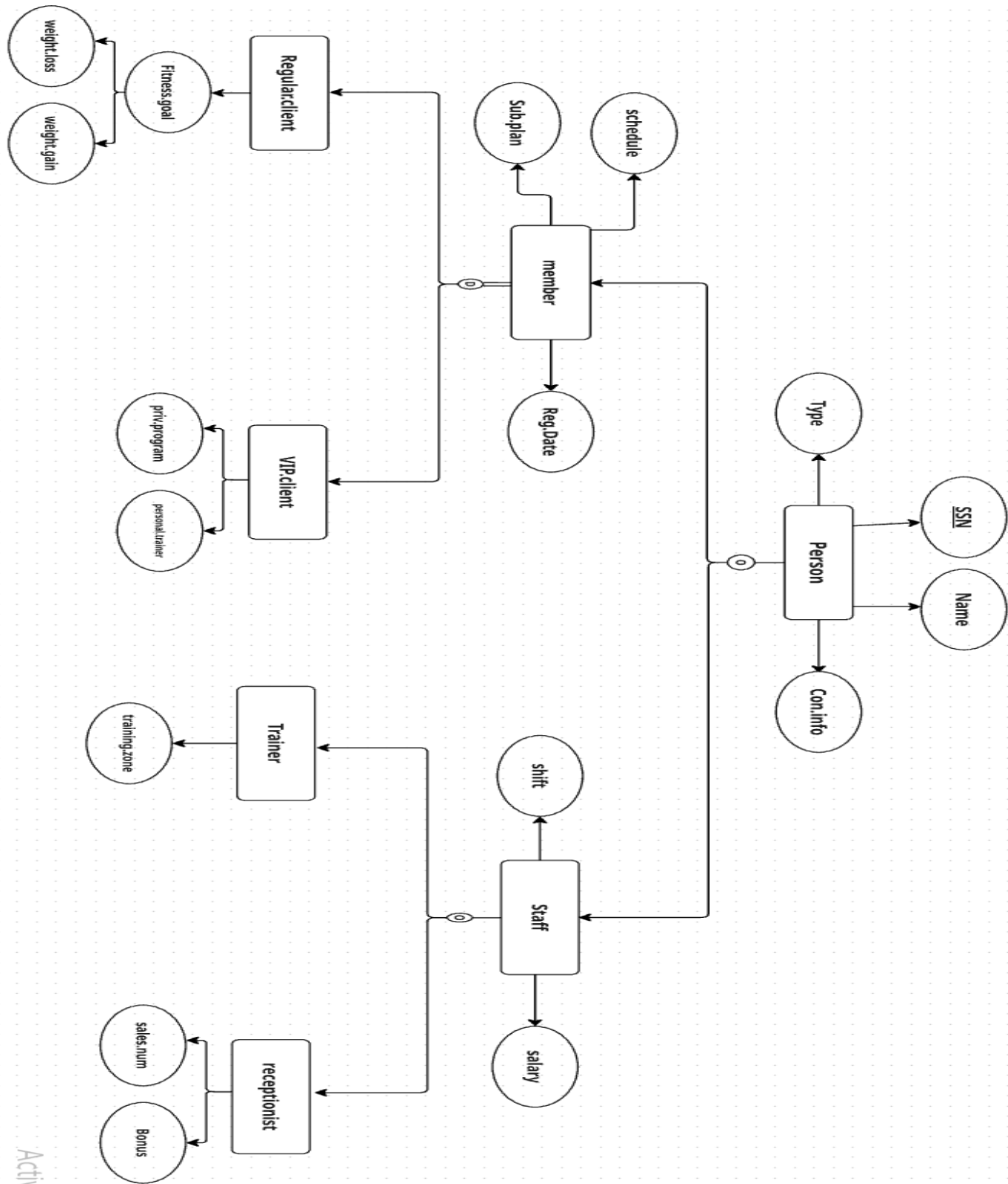**Mariam Ahmed Albadawy Abdelhay(G2)512393331**

Case study (Made by Fatma):

In a modern fitness center, individuals can take on one or more roles. There are members, who may be either regular clients or personal trainees, each with a subscription plan, training schedule and a registration date.
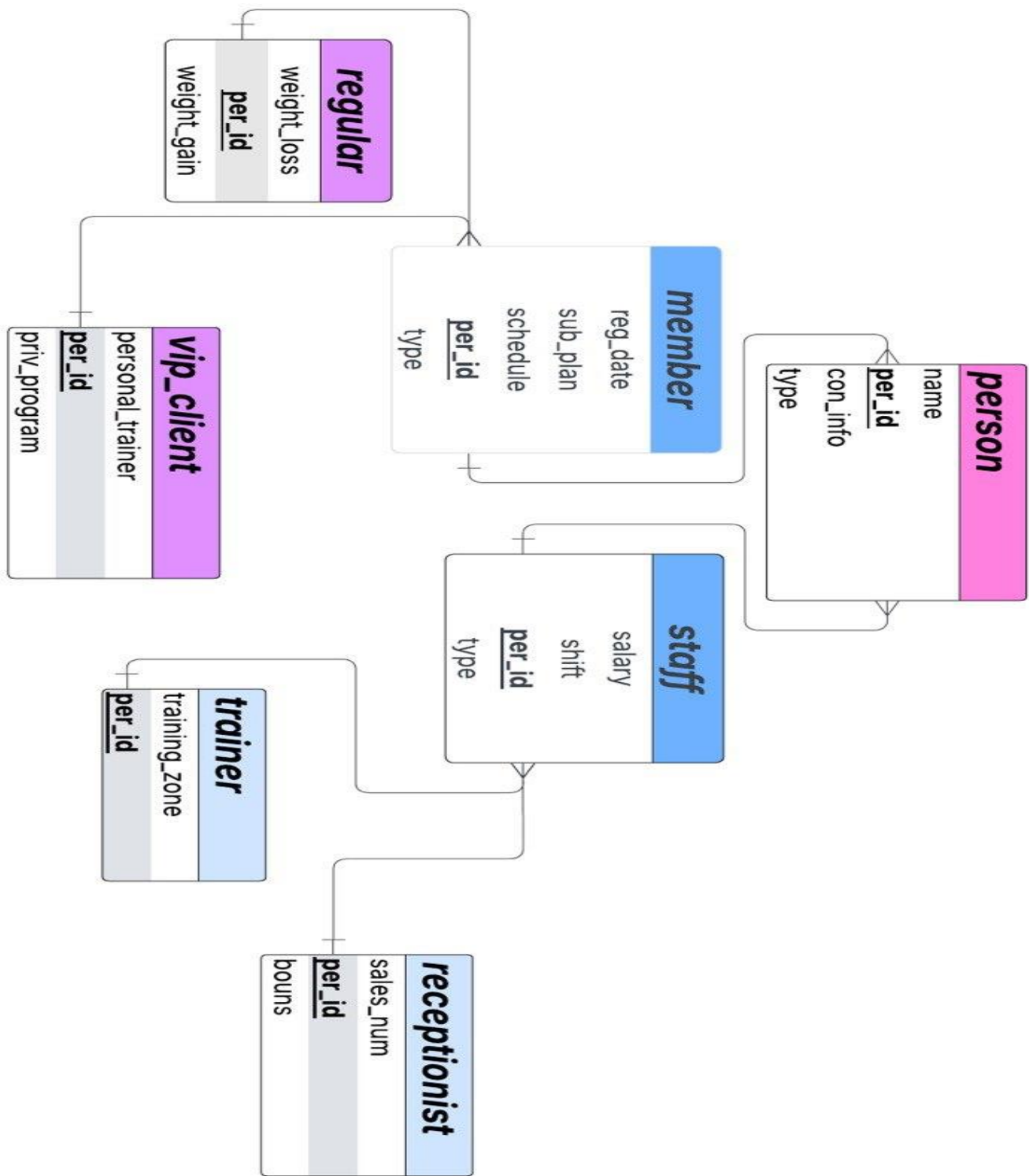
• Regular clients choose a fitness goal (e.g., weight loss, weight gain), while personal trainees are assigned a custom program and a personal trainer.

• The center also employs staff members including trainers and reception and maybe more, all of whom have working shifts and salary.

• Trainers work under a specific training zone,

• while receptionist can have extra bonus on his/her salary when

 he/she sells a specific number of sales

• Every person in the system has a name, contact info, and person ID date.

Sometimes, staff members may also join the gym as regular clients.
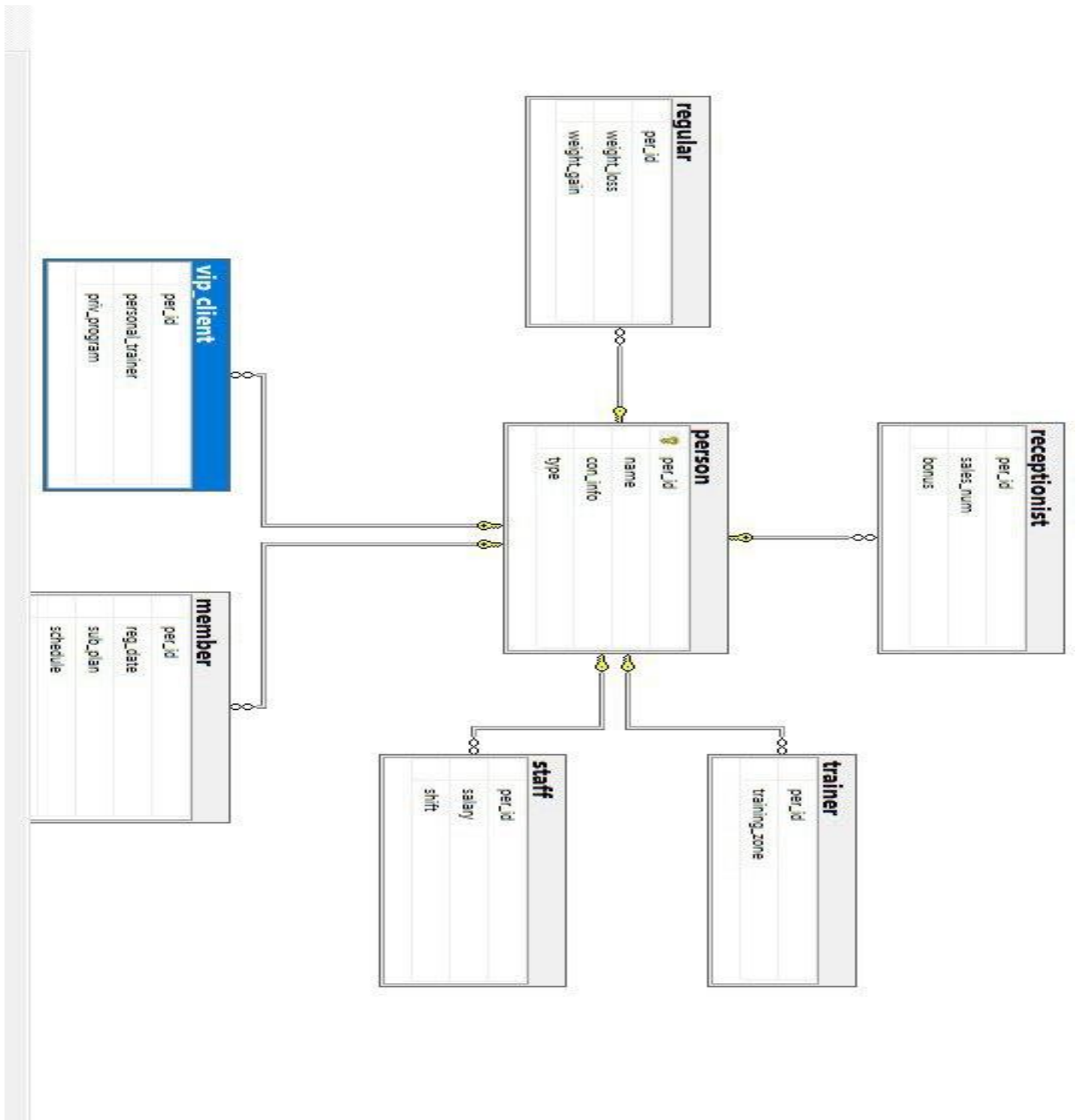
EERD (Made by Esraa):
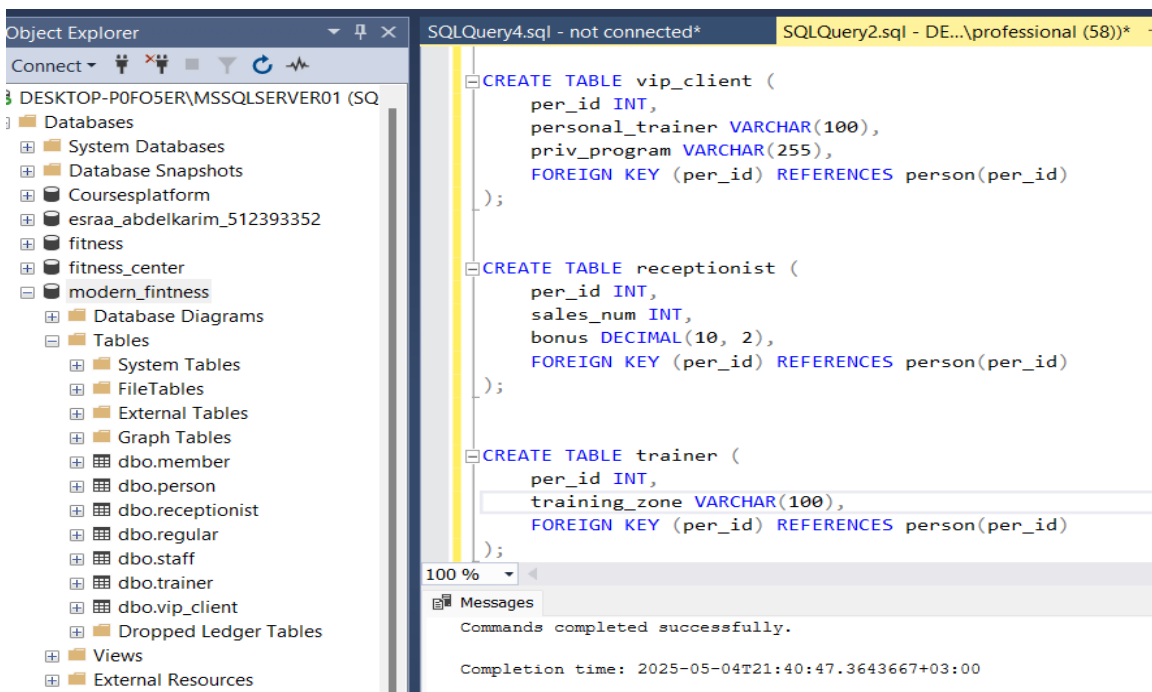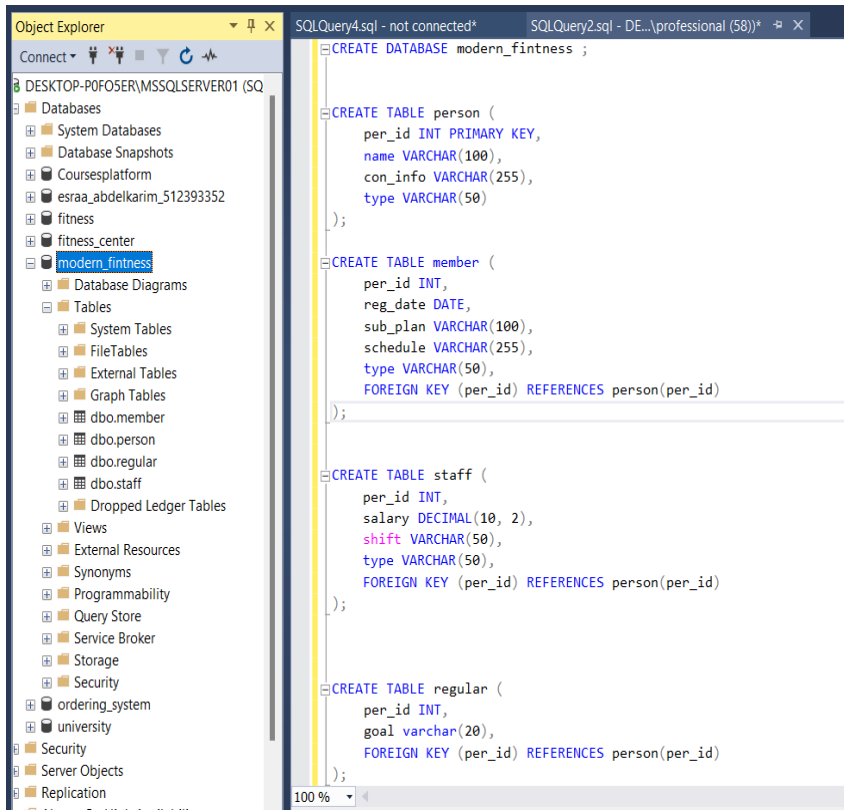
Mapping (Made by Shahd & Mariam):

regular
- **per_id**
- weight_loss
- weight_gain

vip_client
- **per_id**
- personal_trainer
- priv_program

member
- **per_id**
- schedule
- sub_plan
- reg_date
- type

person
- **per_id**
- con_info
- name
- type

staff
- **per_id**
- shift
- salary
- type

trainer
- **per_id**
- training_zone

receptionist
- **per_id**
- sales_num
- bouns

Schema(made by Abdelrahman):

regular
| per_id |
| weight_loss |
| weight_gain |

vip_client
| per_id |
| personal_trainer |
| priv_program |

person
| per_id |
| name |
| con_info |
| type |

receptionist
| per_id |
| sales_num |
| bonus |

member
| per_id |
| reg_date |
| sub_plan |
| schedule |

staff
| per_id |
| salary |
| shift |

trainer
| per_id |
| training_zone |

SQL(Made by hisham&Abdelrahman):

-Creating database and tables:

-insert into tables:


```sql
INSERT INTO person (per_id, name, con_info, type) VALUES
(1, 'Hisham', 'hisham@example.com', 'member'),
(2, 'Menna ', 'menna@example.com', 'VIP member'),
(3, 'Abdelrahman', 'abdelrahman@example.com', 'VIP member'),
(4, 'Mariam', 'mariam@example.com', 'receptionist'),
(5, 'Fatma', 'fatma@example.com', 'trainer'),
(6 ,'Esraa', 'esraa@example.com', 'trainer'),
(7 ,'Shahd', 'shahd@example.com', 'receptionist'),
(8 ,'Mohammed', 'mohammed@example.com', 'member');


INSERT INTO member (per_id, reg_date, sub_plan, schedule, type) VALUES
(1, '2025-01-01', 'Monthly', 'MWF 6-7 PM', 'regular'),
(2, '2025-04-01', 'Annual', 'MWF 6-7 PM', 'VIP'),
(3, '2025-02-08', 'Annual', 'MWF 6-7 PM', 'VIP'),
(8, '2025-04-18','Monthly', 'MWF 6-7 PM', 'regular');


INSERT INTO staff (per_id, salary, shift) VALUES
(4, 3000.00, 'Morning'),
(5, 4000.00, 'Evening'),
(6, 5000.00, 'Evening'),
(7, 3700.00, 'Morning');
```

```
(4 rows affected)

(4 rows affected)

Completion time: 2025-05-04T21:41:48.0273821+03:00
```

```sql
INSERT INTO regular (per_id, goal) VALUES
(1, 'weight loss'),
(8, 'weight gain');


INSERT INTO vip_client (per_id, personal_trainer, priv_program) VALUES
(2, 'Esraa', 'VIP PPL'),
(3, 'Fatma', 'VIP UL');


INSERT INTO receptionist (per_id, sales_num, bonus) VALUES
(4, 50, 500.00),
(7, 24, 360.00);


INSERT INTO trainer (per_id, training_zone) VALUES
(5, 'Cardio'),
(6, 'Legs');


SELECT
    m.per_id,
    p.name,
    m.sub_plan,
```

```
(2 rows affected)

(2 rows affected)

(2 rows affected)

(2 rows affected)

Completion time: 2025-05-04T21:42:20.5490697+03:00
```

-2 examples of join:

```sql
SELECT
    m.per_id,
    p.name,
    m.sub_plan,
    v.personal_trainer,
    t.training_zone,
    r.goal
FROM member m
LEFT JOIN person p ON m.per_id = p.per_id
LEFT JOIN vip_client v ON v.per_id = m.per_id
LEFT JOIN trainer t ON v.personal_trainer = p.name  -- assuming name is used here (ideally should be ID)
LEFT JOIN regular r ON r.per_id = m.per_id;
```

100 %

Results | Messages

	per_id	name	sub_plan	personal_trainer	training_zone	goal
1	1	Hisham	Monthly	NULL	NULL	weight loss
2	2	Menna	Annual	Esraa	NULL	NULL
3	3	Abdelrahman	Annual	Fatma	NULL	NULL
4	8	Mohammed	Monthly	NULL	NULL	weight gain

```sql
SELECT
    s.per_id,
    p.name,
    s.salary,
    s.shift,
    rcp.sales_num,
    rcp.bonus
FROM staff s
JOIN person p ON s.per_id = p.per_id
JOIN receptionist rcp ON rcp.per_id = s.per_id;
```
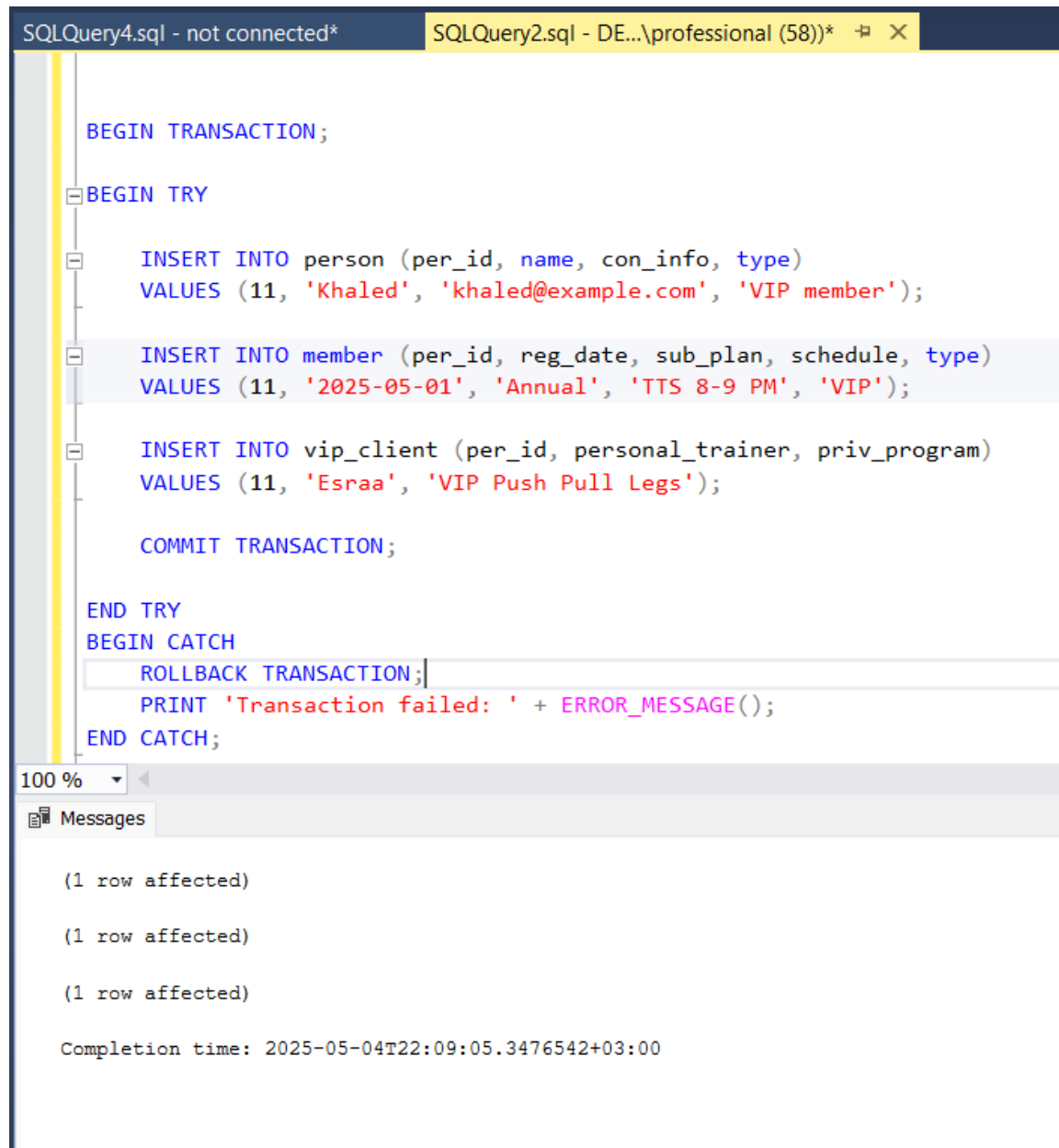
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Results | Messages

	per_id	name	salary	shift	sales_num	bonus
1	4	Mariam	3000.00	Morning	50	500.00
2	7	Shahd	3700.00	Morning	24	360.00

- one real example for transaction:

```sql
BEGIN TRANSACTION;

BEGIN TRY

    INSERT INTO person (per_id, name, con_info, type)
    VALUES (11, 'Khaled', 'khaled@example.com', 'VIP member');

    INSERT INTO member (per_id, reg_date, sub_plan, schedule, type)
    VALUES (11, '2025-05-01', 'Annual', 'TTS 8-9 PM', 'VIP');

    INSERT INTO vip_client (per_id, personal_trainer, priv_program)
    VALUES (11, 'Esraa', 'VIP Push Pull Legs');

    COMMIT TRANSACTION;

END TRY
BEGIN CATCH
    ROLLBACK TRANSACTION;
    PRINT 'Transaction failed: ' + ERROR_MESSAGE();
END CATCH;
```

100 %

Messages

(1 row affected)

(1 row affected)

(1 row affected)

Completion time: 2025-05-04T22:09:05.3476542+03:00

-one view:

```sql
create view highpaid as
select s.per_id, p.name, s.salary
from staff as s
join person as p on p.per_id = s.per_id
where salary >3750;
```

100 %

Results | Messages

	per_id	name	salary
1	5	Fatma	4000.00
2	6	Esraa	5000.00