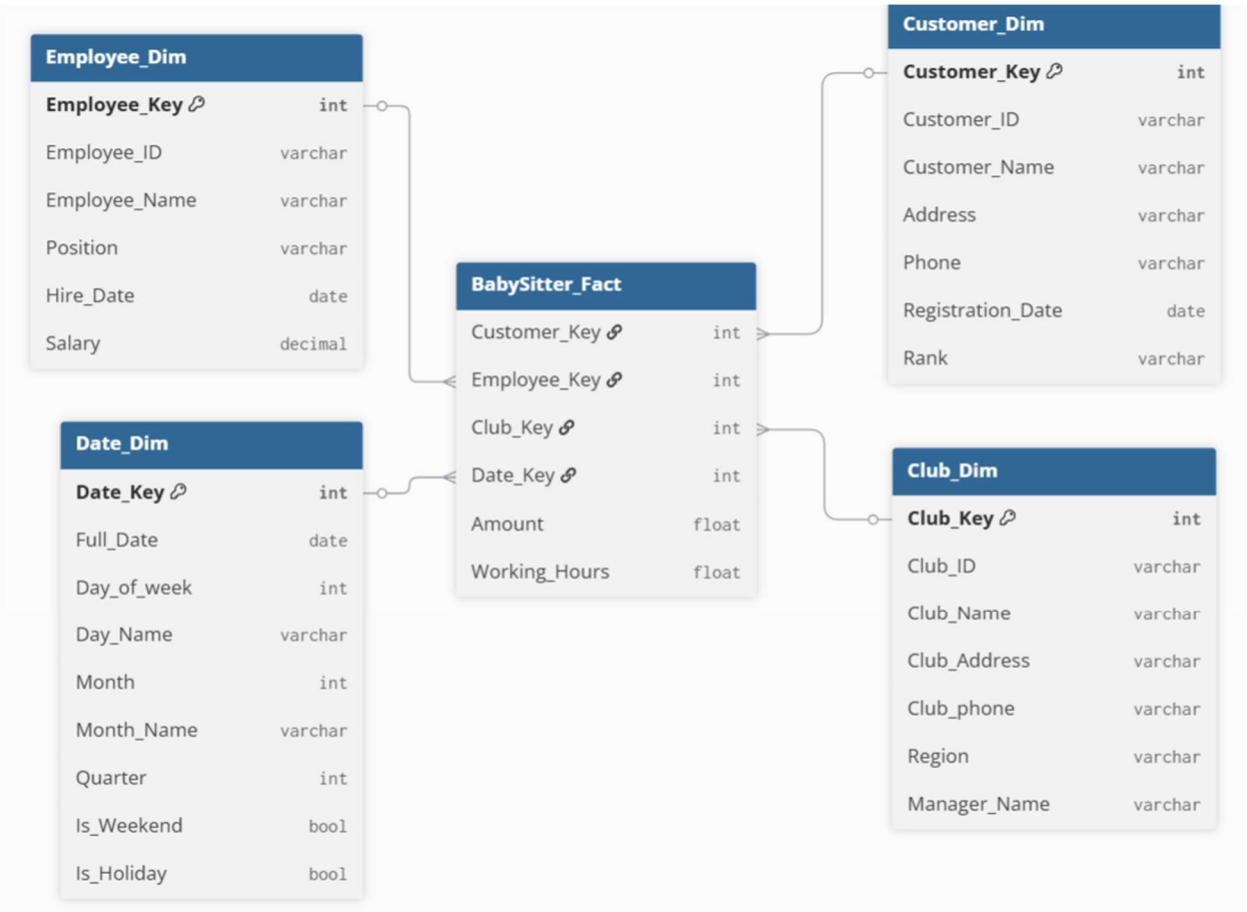
1. 4 Step Design

Process	Solution
Business Process	บริการพี่เลี่ยงเด็ก
Granularity	แต่ละงานที่เกิดขึ้น
Dimensions	Customer, Employees, Club, Date
Measures	Work hours, Amount

2. Star Schema



3. ETL Process 5 Example for each dimension and fact_table

1. Customer_dim

	Customer_Key	Customer_ID	Customer_Name	Address	Phone	Registration_Date	Rank
1	1	CU001	Anan Wong	Bangkok	0901234561	2024-01-15	Gold
2	2	CU002	Nina Singh	Chiang Mai	0901234562	2024-03-10	Silver
3	3	CU003	Patchara Nim	Phuket	0901234563	2024-05-01	Gold
4	4	CU004	Meena Jai	Bangkok	0901234564	2024-04-20	Bronze
5	5	CU005	Akarin Top	Khon Kaen	0901234565	2024-06-15	Gold

2. Club_dim

	Club_Key	Club_ID	Club_Name	Club_Address	Club_Phone	Region	Manager_Name
1	1	C001	Happy Kids Club	123 Main St	0811111111	Bangkok	Somchai Rit
2	2	C002	Smile Babysitters	45 North Ave	0822222222	Chiang Mai	Nattaya Jang
3	3	C003	Little Stars Club	77 South Rd	0833333333	Phuket	Arthit Meesuk
4	4	C004	Safe Hands Club	101 West St	0844444444	Khon Kaen	Pimnara Thai
5	5	C005	Bright Future Club	10 Beachside	0855555555	Pattaya	Jirawat Sang

3. Employee_dim

	Employee_Key	Employee_ID	Employee_Name	Position	Hire_Date	Salary
1	1	E001	Siriya Mook	Senior Sitter	2023-01-01	25000.00
2	2	E002	Kamon Wat	Junior Sitter	2023-06-01	18000.00
3	3	E003	Nok Air	Senior Sitter	2022-09-12	27000.00
4	4	E004	Tida Pong	Part-Time	2024-01-20	15000.00
5	5	E005	Mek Fai	Senior Sitter	2023-11-01	26000.00

4. Date_dim

	Date_Key	Full_Date	Day_of_week	Day_Name	Month	Month_Name	Quarter	Is_Weekend	Is_Holiday
1	1	2025-07-01	2	Tuesday	7	July	3	0	0
2	2	2025-07-02	3	Wednesday	7	July	3	0	0
3	3	2025-07-03	4	Thursday	7	July	3	0	0
4	4	2025-07-04	5	Friday	7	July	3	0	1
5	5	2025-07-05	6	Saturday	7	July	3	1	0

5. Babysitter_fact

	Customer_Key	Employee_Key	Club_Key	Date_Key	Amount	Working_Hours
1	1	1	1	1	1000	4
2	2	2	2	2	800	3.5
3	3	3	3	3	1200	5
4	4	4	1	4	900	4
5	5	5	2	5	950	3

4. รายงานตามความต้องการ

1. สองรายงานพื้นฐาน

a) รายได้รายเดือนของแต่ละ Club

```
--Q1 Total revenue by each club
select cd.club_id as ID, cd.club_name as ClubName, SUM(bf.Amount) as Total_revenue
from BabySitter_Fact bf
JOIN Club_Dim cd on bf.club_key = cd.club_key
GROUP BY cd.club_id, cd.club_name
ORDER by cd.club_id
```

	ID	ClubName	Total_revenue
1	C001	Happy Kids Club	3200
2	C002	Smile Babysitters	3450
3	C003	Little Stars Club	3450
4	C004	Safe Hands Club	2625
5	C005	Bright Future Club	3225
6	C006	Tender Care	1950
7	C007	Play & Learn Club	2150

b) Top 5 พนักงานที่สร้างรายได้สูงสุด

```
--Q2 Top 5 employees who made most revenue
select em.employee_id as ID, em.employee_name as Name, SUM(bf.Amount) as Total_revenue
from BabySitter_Fact bf
JOIN Employee_Dim em on bf.employee_key = em.employee_key
GROUP BY em.employee_id, em.employee_name
ORDER BY Total_revenue DESC;
```

	ID	Name	Total_revenue
1	E007	Pim Naw	2550
2	E003	Nok Air	2500
3	E010	Tom Lek	2150
4	E001	Siriya Mook	2050
5	E008	Tan Chat	1900
6	E009	Jane Joy	1900
7	E006	Onn In	1850
8	E004	Tida Pong	1825
9	E002	Kamon Wat	1675
10	E005	Mek Fai	1650

2. สามรายงานเพิ่มเติมที่น่าสนใจ

a) รายได้เฉลี่ยจากแต่ละ Customer Rank

```sql
--Q3 Average income by each customer rank (high -> low)
select cd.rank as rank,  CAST(AVG(bf.Amount) AS DECIMAL(10, 2)) AS AverageIncome
from BabySitter_Fact bf
JOIN customer_dim cd on bf.customer_key = cd.customer_key
GROUP BY cd.rank
ORDER BY AverageIncome DESC;
```

	rank	AverageIncome
1	Gold	1127.78
2	Silver	920.83
3	Bronze	875.00

b) รายได้เฉลี่ยในวันหยุด และ วันสุดสัปดาห์

```sql
--Q4 Compare Average revenue weekend and holiday

SELECT Day_Type, AVG(Amount) AS Avg_Revenue
FROM ( SELECT f.Amount,
        CASE
            WHEN d.Is_Weekend = 1 THEN 'Weekend'
            WHEN d.Is_Holiday = 1 THEN 'Holiday'
            ELSE 'Weekday'
        END AS Day_Type
        FROM BabySitter_Fact f
        JOIN Date_Dim d ON f.Date_Key = d.Date_Key
        WHERE d.Is_Weekend = 1 OR d.Is_Holiday = 1
) AS sub
GROUP BY Day_Type;
```

	Day_Type	Avg_Revenue
1	Holiday	912.5
2	Weekend	875

c) ลูกจ้างที่ทำงานจำนวนชั่วโมงที่สุด 5 คน

```
--Q5 5 employees with most working hours

SELECT TOP 5 ed.employee_id as ID, ed.employee_name as Name, SUM(bf.Working_Hours) as Working_Hours
FROM BabySitter_Fact bf
JOIN Employee_Dim ed on bf.employee_key = ed.employee_key
GROUP BY ed.employee_id, ed.employee_name
ORDER BY Working_Hours DESC;
```

	ID	Name	Working_Hours
1	E003	Nok Air	10.5
2	E007	Pim Naw	10
3	E001	Siriya Mook	8
4	E008	Tan Chat	8
5	E004	Tida Pong	8