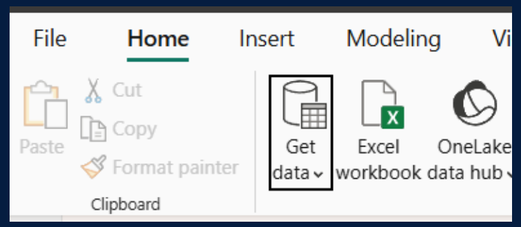
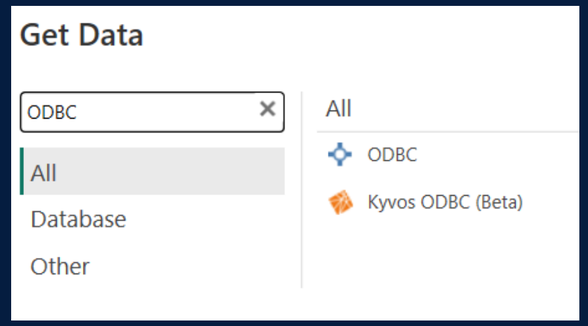
Power BI Data loading and data manipulation: Steps and Formulas Explained

Steps for loading data from sql to power bi

1. in home tab click on get data option

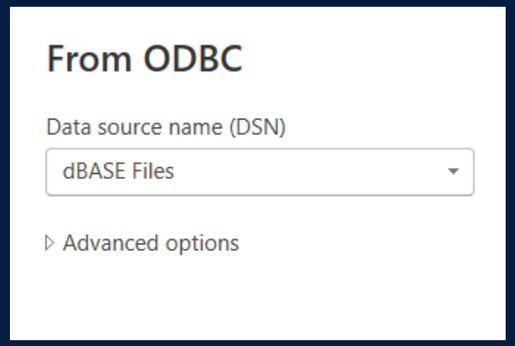


2. select ODBC and click on connect

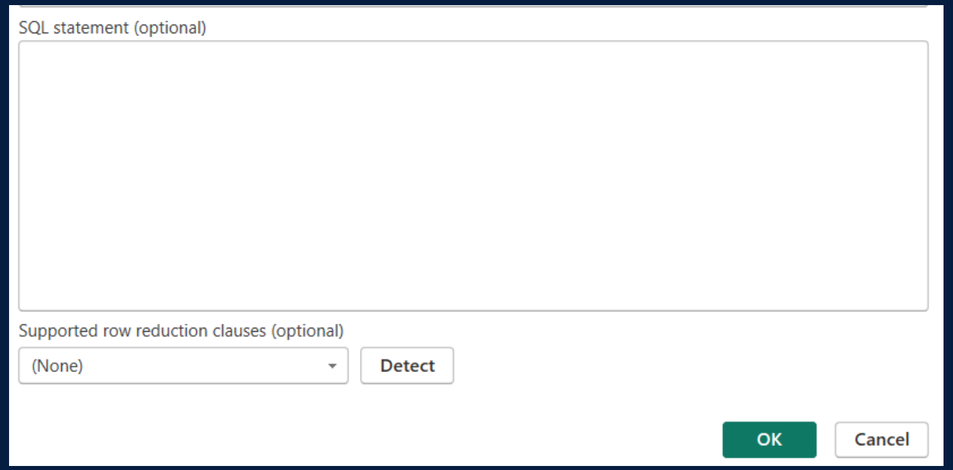


3.Select Database

4. click on Advanced option



5. Enter query in text box and click on OK



Sql query used for Data loading in Power BI

TIme Series Data

```
SELECT
    f.aircraft_code,
    b.book_date,
    f.scheduled_departure,
     avg(t.amount) as ticket_price,
    SUM(t.amount) AS total_revenue,
    t.fare_conditions,
    ts.passenger_id,
    COUNT(*) AS total_tickets
FROM ticket_flights t
JOIN flights f ON t.flight_id = f.flight_id
JOIN tickets ts ON t.ticket_no = ts.ticket_no
JOIN bookings b ON ts.book_ref = b.book_ref
GROUP BY f.aircraft_code, b.book_date, f.scheduled_departure, ts.passenger_id, t.fare_conditions;
```

Sql query used for Data loading in Power BI

Customer Segmentation data

```
select
        t.passenger_id ,
        SUM(tf.amount) AS total_investment,
        COUNT(tf.flight_id) AS total_travels ,
        julianday('2017-12-31') - MAX(julianday(substr(b.book_date, 1, 10))) AS recency
    from tickets t inner join ticket_flights tf on t.ticket_no=tf.ticket_no
    inner join bookings b on t.book_ref=b.book_ref
    group by passenger_id
```

Sql query used for Data loading in Power BI

Flight Occupancy Data

```
with cte as (
                    select
                        f.aircraft_code , f.flight_id , count(*) as total_booking
                        from flights f inner join boarding_passes b on f.flight_id =b.flight_id
                         group by f.aircraft_code , f.flight_id),
                         total_seats as (
                                    select aircraft_code , count(seat_no) as total_seats
                                            from seats
                                             group by  aircraft_code
                                             )
                                select
                                    c.aircraft_code , round(avg(c.total_booking) ,2) as total_book , t.total_seats ,
                                    round((avg(c.total_booking)/t.total_seats),3) as occupancy_rate
                                    from cte c inner join total_seats t on c.aircraft_code= t.aircraft_code
                                    group by c.aircraft_code
```

Dax function

1 .Creating Category Column

```
category column =
var P75 =CALCULATE(PERCENTILEX.INC(All(Query2),Query2[CLV],0.75))
var P25 =CALCULATE(PERCENTILEX.INC(All(Query2),Query2[CLV],0.25))
RETURN
SWITCH(
    True() ,Query2[CLV] < P25 , "low value",
            Query2[CLV]<=P75 &&Query2[CLV] > P25 ,"Medium Value",
            "high value")

```

2 .Creating final segmentation column

```
Final_Segmentation =
VAR Category = Query2[category column]  // Adjusted to match Python logic
VAR Investment = Query2[total_investment]
VAR Travels = Query2[total_travels]


RETURN
SWITCH(
    TRUE(),
    Category = "high value" && Travels < 4, "Premium Customer",
    Category = "high value" && Travels >= 4, "Vip Premium Customer",
    Category = "medium value", "Medium Value Customer",
    Category = "low value", "Low Value Customer",
    "Standard Customer"
)
```