Data Analyst Coding Challenge – Solution

# 1. Data Cleaning & Transformation (DBT)

The following DBT models were created to transform the raw ServiceNow ticket data as per the given instructions.

## Model: stg\_cleaned\_tickets.sql

WITH raw AS (  
 SELECT DISTINCT \* FROM {{ ref('raw\_tickets') }}  
),  
cleaned AS (  
 SELECT  
 inc\_number AS ticket\_id,  
 inc\_category AS category,  
 SPLIT\_PART(inc\_priority, '-', 1)::INT AS priority,  
 inc\_sys\_created\_on AS created\_date,  
 inc\_resolved\_at AS resolved\_date,  
 inc\_assignment\_group AS assigned\_group,  
 inc\_assigned\_to AS technician,  
 inc\_state AS status,  
 inc\_close\_code,  
 inc\_close\_notes,  
 CASE   
 WHEN inc\_resolved\_at IS NOT NULL AND inc\_sys\_created\_on IS NOT NULL  
 THEN EXTRACT(EPOCH FROM (inc\_resolved\_at - inc\_sys\_created\_on))/3600  
 ELSE NULL  
 END AS resolution\_time\_hrs  
 FROM raw  
 WHERE inc\_number IS NOT NULL  
)  
SELECT \* FROM cleaned

## Model: dim\_date\_parts.sql

SELECT  
 ticket\_id,  
 created\_date,  
 EXTRACT(YEAR FROM created\_date) AS year,  
 EXTRACT(MONTH FROM created\_date) AS month,  
 EXTRACT(DAY FROM created\_date) AS day  
FROM {{ ref('stg\_cleaned\_tickets') }}

## Model: fct\_avg\_resolution.sql

SELECT  
 category,  
 priority,  
 AVG(resolution\_time\_hrs) AS avg\_resolution\_hours  
FROM {{ ref('stg\_cleaned\_tickets') }}  
GROUP BY category, priority

## Model: fct\_closure\_rate.sql

SELECT  
 assigned\_group,  
 COUNT(\*) FILTER (WHERE status = 'Closed') \* 1.0 / COUNT(\*) AS closure\_rate  
FROM {{ ref('stg\_cleaned\_tickets') }}  
GROUP BY assigned\_group

## Model: fct\_monthly\_summary.sql

SELECT  
 DATE\_TRUNC('month', created\_date) AS month,  
 COUNT(\*) AS total\_tickets,  
 AVG(resolution\_time\_hrs) AS avg\_resolution\_hours,  
 COUNT(\*) FILTER (WHERE status = 'Closed') \* 1.0 / COUNT(\*) AS closure\_rate  
FROM {{ ref('stg\_cleaned\_tickets') }}  
GROUP BY 1  
ORDER BY 1