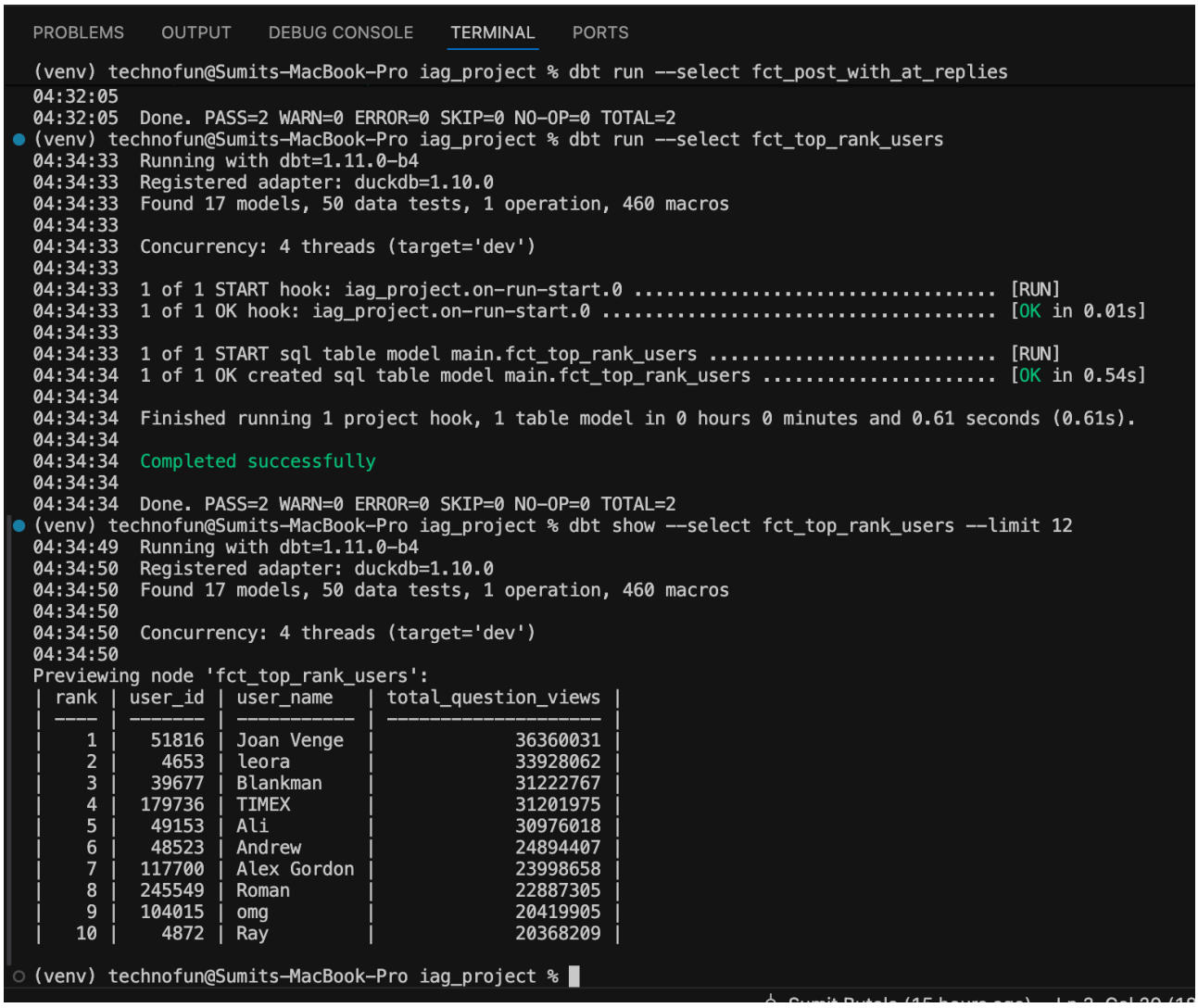
Outputs:

Question 1
Which are the top 10 user based on having the most views on questions they post?

Final Model Query:

```
{{ config(materialized='table') }}

-- Model: fct_top_rank_users
-- Purpose: Identify the top 10 user based on the most views on 
questions they post

with user_question_views as (
    select
        s_post.post_owner_user_id,
        sum(s_post.post_view_count) as total_question_views
    from {{ ref('stg_posts') }} s_post
    where s_post.post_type_id = 1
    and s_post.post_view_count is not null
    group by s_post.post_owner_user_id
),

ranked_users as (
    select
        s_user.user_id,
        s_user.user_display_name as user_name,
        uqv.total_question_views,
        row_number() over (
            order by uqv.total_question_views desc
        ) as rank
    from user_question_views uqv
    inner join {{ ref('stg_users') }} s_user
        on uqv.post_owner_user_id = s_user.user_id
)

-- Return only the top 10 ranked users
select
    rank,
    user_id,
    user_name,
    total_question_views
from ranked_users
where rank <= 10
order by rank
```



Question 2

Please show a time series of question counts with a banding of:

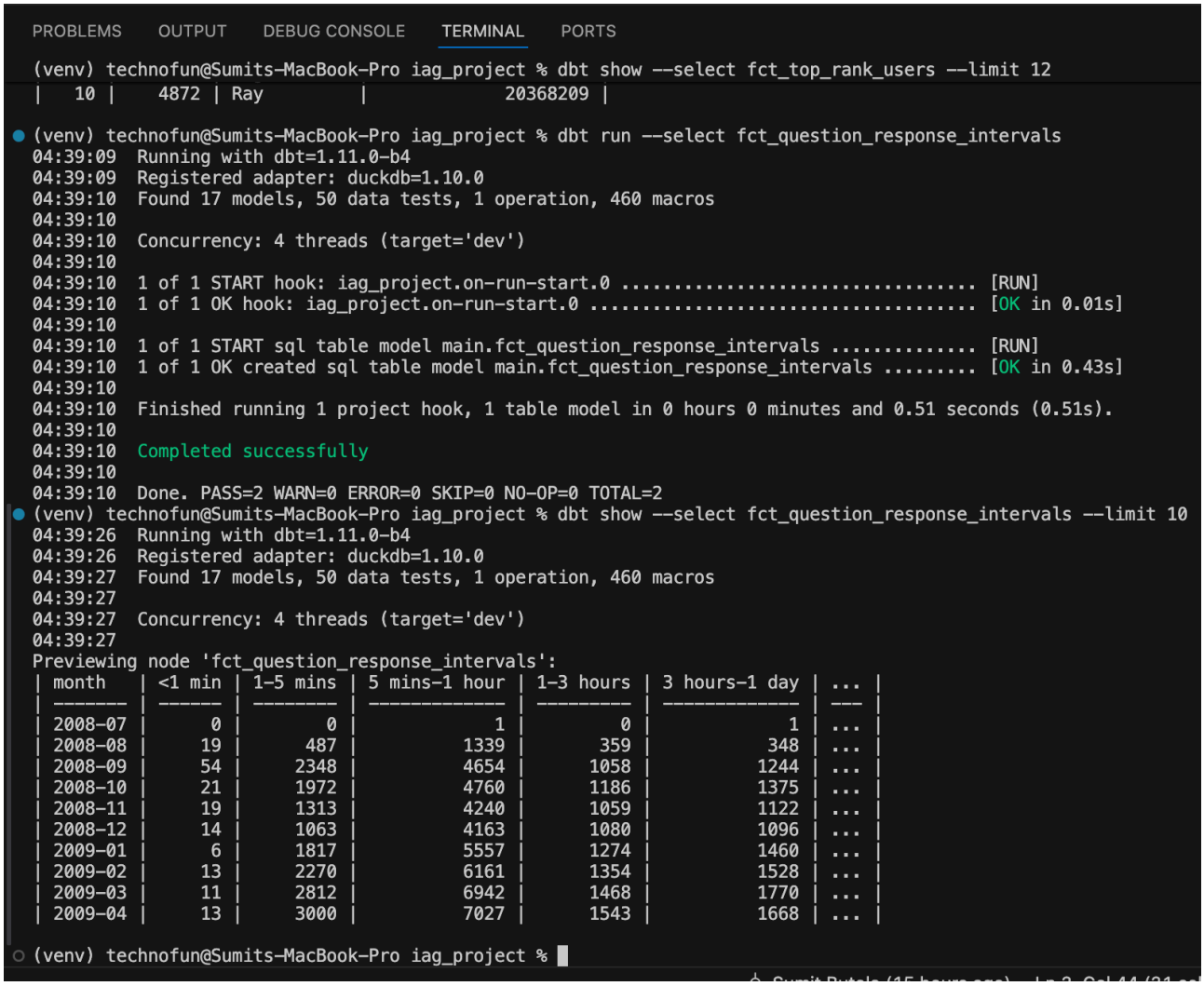
• the time between the posting of the question and the posting of the answer that is marked as accepted

• this should look something like this, with some judgement applied to the bandings:

Month	<1 min	1-5 mins	5 mins-1 hour	1-3 hours	3 hours-1 day	etc..
2018-01						152
2018-02						574
2018-03			895 567 114 287			

Final Model:

```
{{ config(materialized='table') }}

-- Model:   fct_question_response_intervals
-- Purpose: This model counts questions grouped by monthly time
intervals
-- based on how quickly their accepted answers were provided.

with time_intervals as (
    select
        strftime(date_trunc('month', question_created_date), '%Y-
%m') as month,
        case
            when diff_in_minutes < 1 then '<1 min'
            when diff_in_minutes between 1 and 5 then '1-5 mins'
            when diff_in_minutes between 6 and 60 then '5 mins-1
hour'
            when diff_in_minutes between 61 and 180 then '1-3
hours'
            when diff_in_minutes between 181 and 1440 then '3
hours-1 day'
            else '>1 day'
        end as interval
    from {{ ref('stg_qna_joined') }}
)
---- Pivot counts: one row per month with time intervals to show
question counts by response-time
select
    month,
    sum(case when interval = '<1 min' then 1 else 0 end) as "<1
min",
    sum(case when interval = '1-5 mins' then 1 else 0 end) as "1-5
mins",
    sum(case when interval = '5 mins-1 hour' then 1 else 0 end) as
"5 mins-1 hour",
    sum(case when interval = '1-3 hours' then 1 else 0 end) as
"1-3 hours",
    sum(case when interval = '3 hours-1 day' then 1 else 0 end) as
"3 hours-1 day",
    sum(case when interval = '>1 day' then 1 else 0 end) as ">1
day"
from time_intervals
group by month
order by month
```



Question 3

How many questions have @replies to other users from the *user who asked the original question, either on that post or any of its answers*?

Final Model:

```
{{ config(materialized='table') }}

-- Model: fct_post_with_at_replies
-- Purpose: Count questions where the question owner is replying with @
-- in post comments or owner used @ in his question post.
-- post_type_id = 1 means "Question" and 2 means "Answer" as per StackOverflow dataset

with cte_comments as (
    select
        s_comments.comment_id,
        s_comments.post_id,
        s_comments.comment_user_id,
```

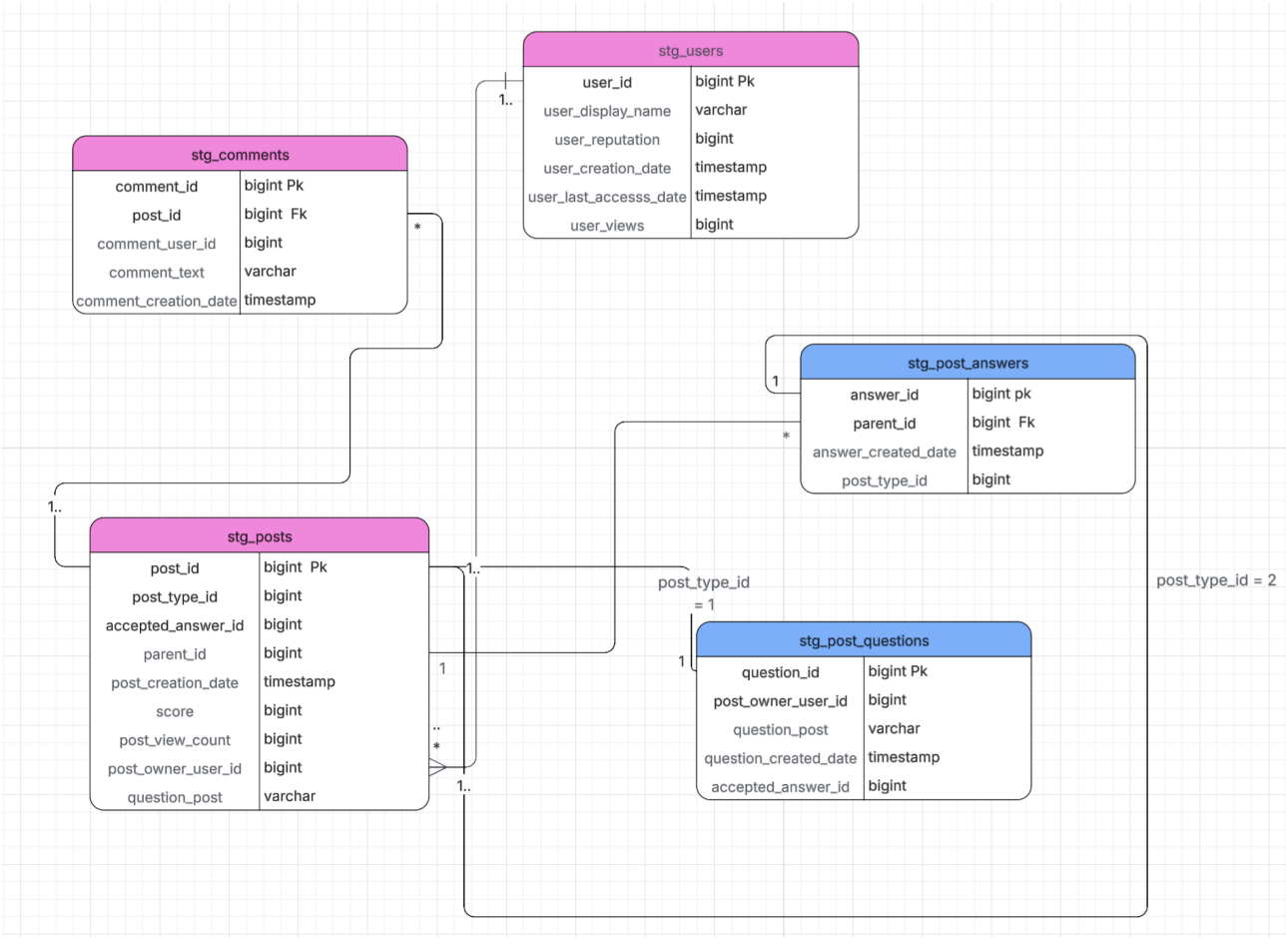
```
        s_comments.comment_text
    from {{ ref('stg_comments') }} s_comments
),

-- Step 1: Mapping each comments to its question_id
cte_comment_post as (
    select
        cte_c.comment_id,
        cte_c.comment_user_id,
        cte_c.comment_text,
        case
            when cte_q.question_id is not null then
cte_q.question_id
            else cte_a.parent_id
        end as question_id
    from cte_comments cte_c
    left join {{ ref('stg_posts_questions') }} cte_q
      on cte_c.post_id = cte_q.question_id
    left join {{ ref('stg_posts_answers') }} cte_a
      on cte_q.question_id = cte_a.parent_id
),

-- Step 2: Keeping only comments for user who asked the original
question and his replies start with '@'
    -- this also includes if @ is in question post.
cte_owner_at_replies as (
    select distinct
        ct.comment_user_id,
        ct.question_id as post_id,
        q.post_owner_user_id,
        ct.comment_text
    from cte_comment_post ct
    inner join {{ ref('stg_posts_questions') }} q
      on ct.question_id = q.question_id
      and ct.comment_user_id = q.post_owner_user_id
    where (ct.comment_text like '%@%' or q.question_post like
'%@%' )
)
select count(*)
as 'questions_with_at_replies'
from cte_owner_at_replies
```

```
(venv) technofun@Sumits-MacBook-Pro iag_project % dbt run --select fct_post_with_at_replies
04:41:30  Running with dbt=1.11.0-b4
04:41:30  Registered adapter: duckdb=1.10.0
04:41:31  Found 17 models, 50 data tests, 1 operation, 460 macros
04:41:31
04:41:31  Concurrency: 4 threads (target='dev')
04:41:31
04:41:31  1 of 1 START hook: iag_project.on-run-start.0 ..................................... [RUN]
04:41:31  1 of 1 OK hook: iag_project.on-run-start.0 ........................................ [OK in 0.01s]
04:41:31
04:41:31  1 of 1 START sql table model main.fct_post_with_at_replies ....................... [RUN]
04:41:34  1 of 1 OK created sql table model main.fct_post_with_at_replies .................. [OK in 3.76s]
04:41:34
04:41:34  Finished running 1 project hook, 1 table model in 0 hours 0 minutes and 3.84 seconds (3.84s).
04:41:34
04:41:34  Completed successfully
04:41:34
04:41:34  Done. PASS=2 WARN=0 ERROR=0 SKIP=0 NO-OP=0 TOTAL=2
db%
(venv) technofun@Sumits-MacBook-Pro iag_project % dbt show --select fct_post_with_at_replies
04:41:48  Running with dbt=1.11.0-b4
04:41:48  Registered adapter: duckdb=1.10.0
04:41:49  Found 17 models, 50 data tests, 1 operation, 460 macros
04:41:49
04:41:49  Concurrency: 4 threads (target='dev')
04:41:49
Previewing node 'fct_post_with_at_replies':
| questions_with_at... |
| -------------------- |
|              4483334 |

(venv) technofun@Sumits-MacBook-Pro iag_project %
```

Test Run:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

(venv) technofun@Sumits-MacBook-Pro iag_project % dbt test
04:44:18  27 of 50 START test not_null_stg_qna_joined_answer_id ............................ [RUN]
04:44:18  27 of 50 PASS not_null_stg_qna_joined_answer_id ................................... [PASS in 0.05s]
04:44:18  28 of 50 START test not_null_stg_qna_joined_diff_in_minutes ....................... [RUN]
04:44:18  26 of 50 PASS not_null_stg_qna_joined_answer_created_date ......................... [PASS in 0.07s]
04:44:18  29 of 50 START test not_null_stg_qna_joined_question_created_date ................. [RUN]
04:44:18  19 of 50 PASS not_null_stg_posts_answers_parent_id ................................ [PASS in 0.20s]
04:44:18  30 of 50 START test not_null_stg_qna_joined_question_id ........................... [RUN]
04:44:18  25 of 50 PASS not_null_stg_posts_questions_question_post .......................... [PASS in 0.56s]
04:44:18  31 of 50 START test not_null_stg_users_user_creation_date ......................... [RUN]
04:44:18  31 of 50 PASS not_null_stg_users_user_creation_date ............................... [PASS in 0.04s]
04:44:18  32 of 50 START test not_null_stg_users_user_display_name ......................... [RUN]
04:44:18  32 of 50 PASS not_null_stg_users_user_display_name ................................ [PASS in 0.04s]
04:44:18  33 of 50 START test not_null_stg_users_user_id .................................... [RUN]
04:44:18  33 of 50 PASS not_null_stg_users_user_id ......................................... [PASS in 0.02s]
04:44:18  34 of 50 START test not_null_stg_users_user_last_access_date ..................... [RUN]
04:44:19  34 of 50 PASS not_null_stg_users_user_last_access_date ........................... [PASS in 0.02s]
04:44:19  35 of 50 START test not_null_stg_users_user_reputation ........................... [RUN]
04:44:19  35 of 50 PASS not_null_stg_users_user_reputation ................................. [PASS in 0.03s]
04:44:19  36 of 50 START test not_null_stg_users_user_views ................................ [RUN]
04:44:19  29 of 50 PASS not_null_stg_qna_joined_question_created_date ....................... [PASS in 0.64s]
04:44:19  37 of 50 START test positive_values_fct_post_with_at_replies_questions_with_at_replies  [RUN]
04:44:19  30 of 50 PASS not_null_stg_qna_joined_question_id ................................. [PASS in 0.64s]
04:44:19  38 of 50 START test positive_values_fct_question_response_intervals_month ....... [RUN]
04:44:19  36 of 50 PASS not_null_stg_users_user_views ...................................... [PASS in 0.07s]
04:44:19  39 of 50 START test positive_values_fct_top_rank_users_rank ...................... [RUN]
04:44:19  37 of 50 PASS positive_values_fct_post_with_at_replies_questions_with_at_replies  [PASS in 0.03s]
04:44:19  40 of 50 START test positive_values_fct_top_rank_users_total_question_views ..... [RUN]
04:44:19  28 of 50 PASS not_null_stg_qna_joined_diff_in_minutes ............................ [PASS in 0.72s]
04:44:19  41 of 50 START test positive_values_stg_qna_joined_diff_in_minutes ............... [RUN]
04:44:19  38 of 50 PASS positive_values_fct_question_response_intervals_month .............. [PASS in 0.04s]
04:44:19  42 of 50 START test positive_values_stg_users_user_views ......................... [RUN]
04:44:19  39 of 50 PASS positive_values_fct_top_rank_users_rank ............................ [PASS in 0.04s]
04:44:19  43 of 50 START test top_rank_users_max_10 ......................................... [RUN]
04:44:19  40 of 50 PASS positive_values_fct_top_rank_users_total_question_views ............. [PASS in 0.06s]
04:44:19  44 of 50 START test unique_fct_question_response_intervals_month ................. [RUN]
04:44:19  42 of 50 PASS positive_values_stg_users_user_views ............................... [PASS in 0.08s]
04:44:19  45 of 50 START test unique_fct_top_rank_users_user_id ............................ [RUN]
04:44:19  43 of 50 PASS top_rank_users_max_10 ............................................... [PASS in 0.07s]
04:44:19  46 of 50 START test unique_stg_comments_comment_id ............................... [RUN]
04:44:19  44 of 50 PASS unique_fct_question_response_intervals_month ....................... [PASS in 0.07s]
04:44:19  47 of 50 START test unique_stg_posts_answers_answer_id ........................... [RUN]
04:44:19  45 of 50 PASS unique_fct_top_rank_users_user_id ................................... [PASS in 0.08s]
04:44:19  48 of 50 START test unique_stg_posts_post_id ..................................... [RUN]
04:44:19  41 of 50 PASS positive_values_stg_qna_joined_diff_in_minutes ..................... [PASS in 0.56s]
04:44:19  49 of 50 START test unique_stg_posts_questions_question_id ....................... [RUN]
04:44:19  47 of 50 PASS unique_stg_posts_answers_answer_id ................................. [PASS in 0.60s]
04:44:19  50 of 50 START test unique_stg_users_user_id ..................................... [RUN]
04:44:19  46 of 50 PASS unique_stg_comments_comment_id ..................................... [PASS in 0.73s]
04:44:20  49 of 50 PASS unique_stg_posts_questions_question_id ............................. [PASS in 0.41s]
04:44:20  48 of 50 PASS unique_stg_posts_post_id ........................................... [PASS in 0.82s]
04:44:20  50 of 50 PASS unique_stg_users_user_id ........................................... [PASS in 0.28s]
04:44:20
04:44:20  Finished running 1 project hook, 50 data tests in 0 hours 0 minutes and 2.16 seconds (2.16s).
04:44:20
04:44:20  Completed successfully
04:44:20
```

Document generate:




```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS

(venv) technofun@Sumits-MacBook-Pro iag_project % dbt test
04:44:20
04:44:20  Done. PASS=51 WARN=0 ERROR=0 SKIP=0 NO-OP=0 TOTAL=51
(venv) technofun@Sumits-MacBook-Pro iag_project % dbt docs generate
04:46:18  Running with dbt=1.11.0-b4
04:46:19  Registered adapter: duckdb=1.10.0
04:46:19  Found 17 models, 50 data tests, 1 operation, 460 macros
04:46:19
04:46:19  Concurrency: 4 threads (target='dev')
04:46:19
04:46:19  Building catalog
04:46:19  Catalog written to /Users/technofun/Desktop/course/iag_project/target/catalog.json
(venv) technofun@Sumits-MacBook-Pro iag_project % dbt docs serve
04:46:31  Running with dbt=1.11.0-b4
Serving docs at 8080
To access from your browser, navigate to: http://localhost:8080



Press Ctrl+C to exit.
127.0.0.1 - - [20/Nov/2025 17:46:32] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [20/Nov/2025 17:46:32] "GET /manifest.json?cb=1763613992662 HTTP/1.1" 200 -
127.0.0.1 - - [20/Nov/2025 17:46:32] "GET /catalog.json?cb=1763613992662 HTTP/1.1" 200 -
127.0.0.1 - - [20/Nov/2025 17:46:32] "GET /manifest.json?cb=1763613992663 HTTP/1.1" 200 -
127.0.0.1 - - [20/Nov/2025 17:46:32] "GET /catalog.json?cb=1763613992663 HTTP/1.1" 200 -
127.0.0.1 - - [20/Nov/2025 17:46:32] code 404, message File not found
127.0.0.1 - - [20/Nov/2025 17:46:32] "GET /%7B%7B%20getIcon(item.type,%20'off')%20%7D%7D HTTP/1.1" 404 -
127.0.0.1 - - [20/Nov/2025 17:46:32] code 404, message File not found
127.0.0.1 - - [20/Nov/2025 17:46:32] "GET /%7B%7B%20getIcon(item.type,%20'on')%20%7D%7D HTTP/1.1" 404 -
127.0.0.1 - - [20/Nov/2025 17:46:32] "GET /assets/ERD.png HTTP/1.1" 304 -
127.0.0.1 - - [20/Nov/2025 17:46:34] code 404, message File not found
127.0.0.1 - - [20/Nov/2025 17:46:34] "GET /$%7Brequire('./assets/favicons/favicon.ico')%7D HTTP/1.1" 404 -
```

Open file in editor (cmd + click)