prime video

Analysis By
Rizwan Shah

www.linkedin.com/in/shahrizwan819

rizwansh5211@gmail.com

https://github.com/ShahRizwan007/Supermarket_sales_python_project

amazon_prime_data

September 23, 2024

[1]:
```
import opendatasets as od
```

[17]:
```
link=r'https://www.kaggle.com/datasets/shivamb/amazon-prime-movies-and-tv-shows/
  ↪amazon_prime_titles.csv'
od.download(link)
```

```
Please provide your Kaggle credentials to download this dataset. Learn more:
http://bit.ly/kaggle-creds
Your Kaggle username:

  shahrizwan52

Your Kaggle Key:

  ········

Dataset URL: https://www.kaggle.com/datasets/shivamb/amazon-prime-movies-and-tv-
shows
Downloading amazon-prime-movies-and-tv-shows.zip to .\amazon-prime-movies-and-
tv-shows

100%|
 | 1.61M/1.61M [00:01<00:00, 1.01MB/s]
```

[1]:
```
import pandas as pd
path=r'C:\Users\Rizwan\Downloads\Shah Rizwan\Python data analyst␣
  ↪project\Streaming_app\amazon-prime-movies-and-tv-shows\amazon_prime_titles.
  ↪csv'
df=pd.read_csv(path)
#df = pd.DataFrame()  # This will reset the DataFrame to an empty one
```

[2]:
```
df.head()
```

[2]:
```
  show_id   type                 title          director  \
0      s1  Movie   The Grand Seduction      Don McKellar
1      s2  Movie  Take Care Good Night      Girish Joshi
2      s3  Movie  Secrets of Deception       Josh Webber
3      s4  Movie    Pink: Staying True    Sonia Anderson
```

```
4      s5  Movie         Monster Maker    Giles Foster

                                                cast         country  \
0     Brendan Gleeson, Taylor Kitsch, Gordon Pinsent          Canada
1   Mahesh Manjrekar, Abhay Mahajan, Sachin Khedekar           India
2  Tom Sizemore, Lorenzo Lamas, Robert LaSardo, R…   United States
3  Interviews with: Pink, Adele, Beyoncé, Britney…   United States
4  Harry Dean Stanton, Kieran O'Brien, George Cos…  United Kingdom

       date_added  release_year rating duration                listed_in  \
0  March 30, 2021          2014    NaN  113 min            Comedy, Drama
1  March 30, 2021          2018    13+  110 min     Drama, International
2  March 30, 2021          2017    NaN   74 min  Action, Drama, Suspense
3  March 30, 2021          2014    NaN   69 min              Documentary
4  March 30, 2021          1989    NaN   45 min           Drama, Fantasy

                                         description
0  A small fishing village must procure a local d…
1  A Metro Family decides to fight a Cyber Crimin…
2  After a man discovers his wife is cheating on …
3  Pink breaks the mold once again, bringing her …
4  Teenage Matt Banting wants to work with a famo…
```

[3]:
```
df.dtypes
```

[3]:
```
show_id          object
type             object
title            object
director         object
cast             object
country          object
date_added       object
release_year      int64
rating           object
duration         object
listed_in        object
description      object
dtype: object
```

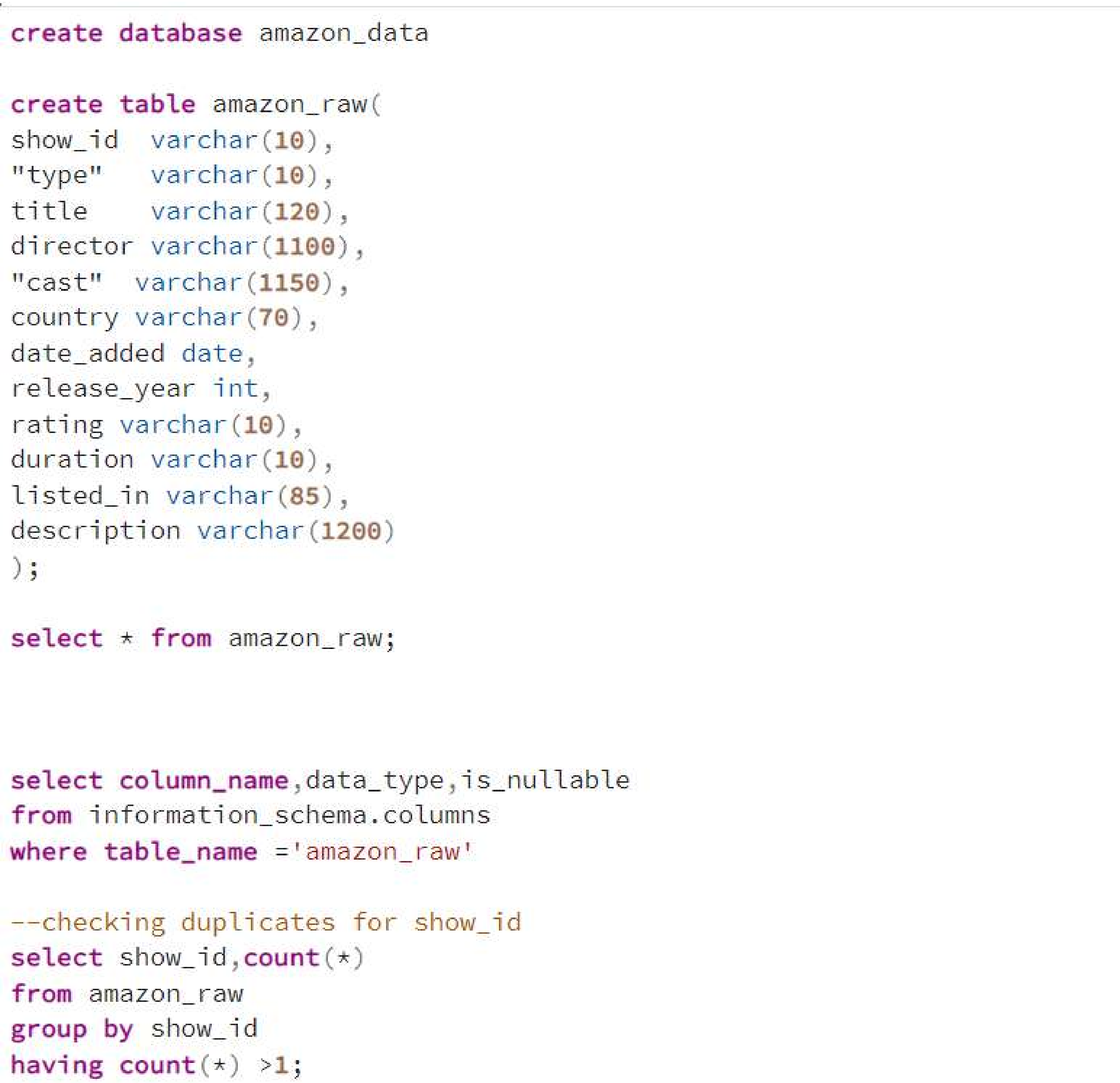
[5]:
```
max(df['description'].dropna().str.len())
```

[5]:
```
1099
```

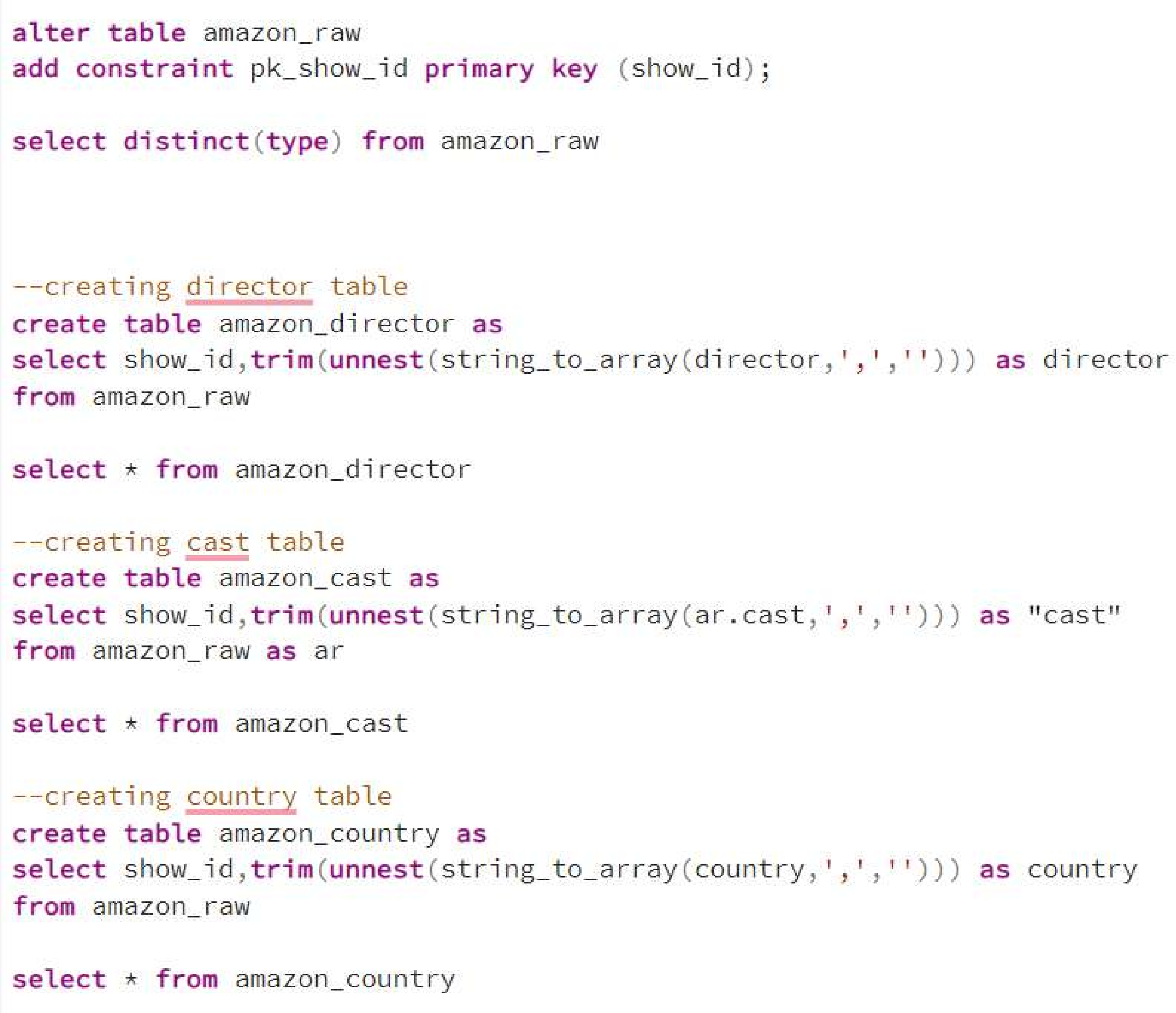
[5]:
```
from sqlalchemy import create_engine

engine=create_engine('postgresql+psycopg2://postgres:Rizwanpostsql@localhost:
 ↪5432/amazon_data')
```

```
conn=engine.connect()

df.to_sql('amazon_raw',con=conn,index=False,if_exists='append')
conn.close()
```

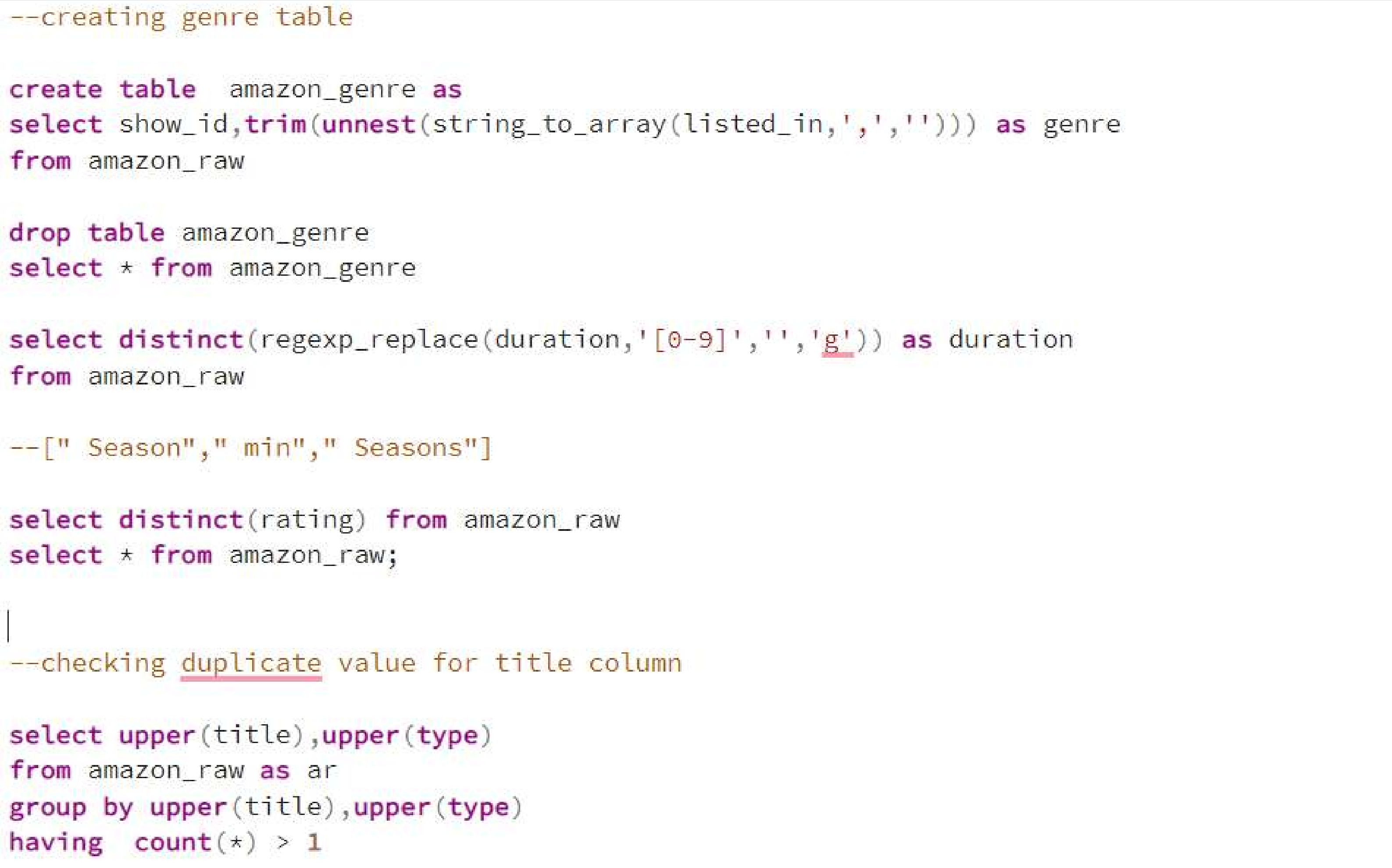
[ ]:



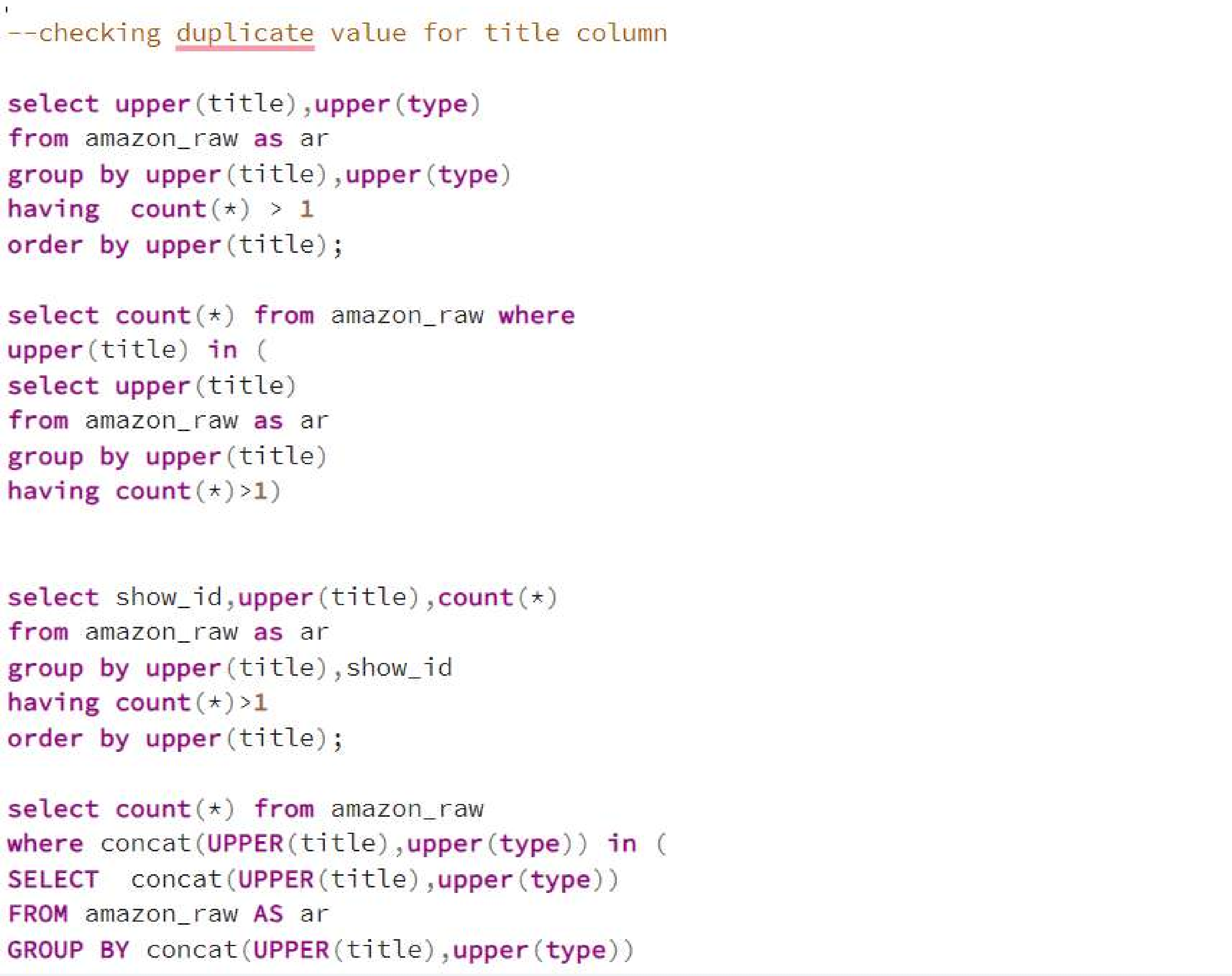
```
create database amazon_data

create table amazon_raw(
show_id  varchar(10),
"type"   varchar(10),
title    varchar(120),
director varchar(1100),
"cast"  varchar(1150),
country varchar(70),
date_added date,
release_year int,
rating varchar(10),
duration varchar(10),
listed_in varchar(85),
description varchar(1200)
);

select * from amazon_raw;



select column_name,data_type,is_nullable
from information_schema.columns
where table_name ='amazon_raw'

--checking duplicates for show_id
select show_id,count(*)
from amazon_raw
group by show_id
having count(*) >1;
```



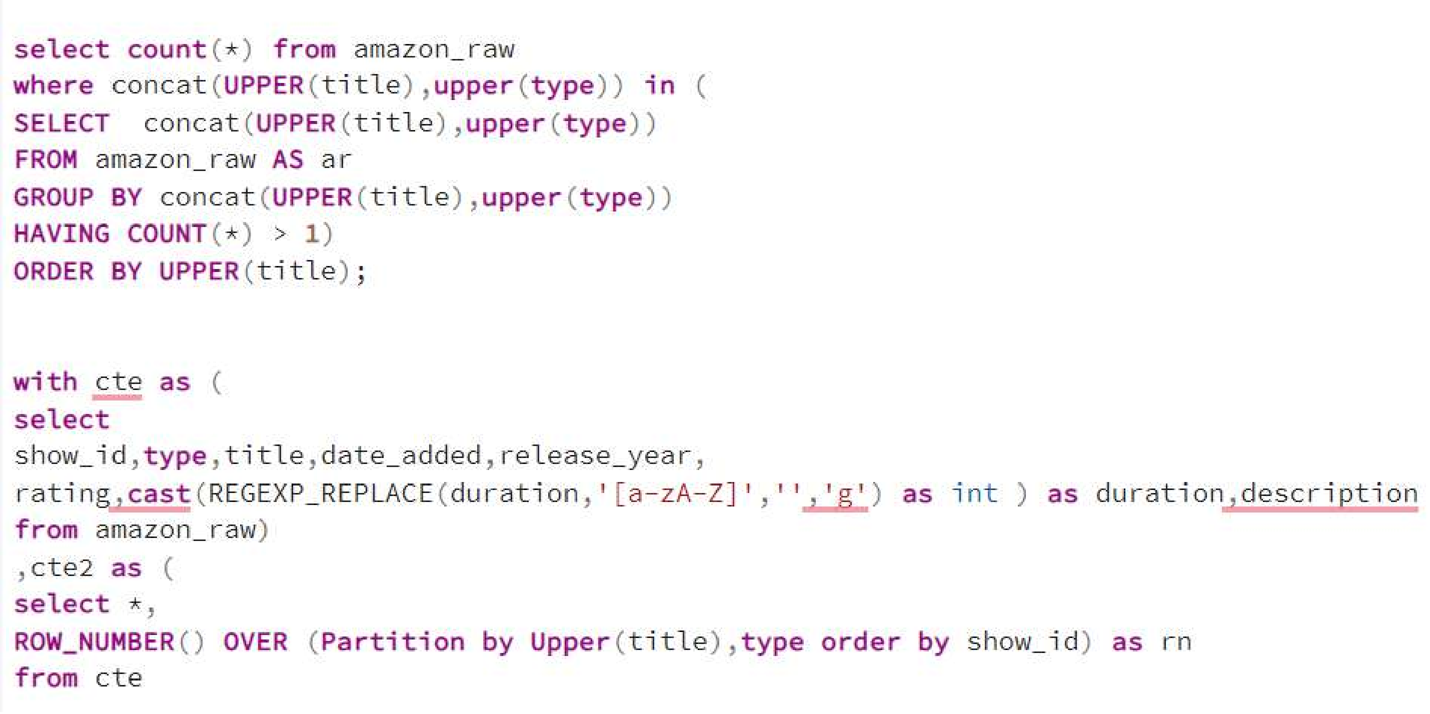
```
alter table amazon_raw
add constraint pk_show_id primary key (show_id);

select distinct(type) from amazon_raw



--creating director table
create table amazon_director as
select show_id,trim(unnest(string_to_array(director,',',''))) as director
from amazon_raw

select * from amazon_director

--creating cast table
create table amazon_cast as
select show_id,trim(unnest(string_to_array(ar.cast,',',''))) as "cast"
from amazon_raw as ar

select * from amazon_cast

--creating country table
create table amazon_country as
select show_id,trim(unnest(string_to_array(country,',',''))) as country
from amazon_raw

select * from amazon_country
```



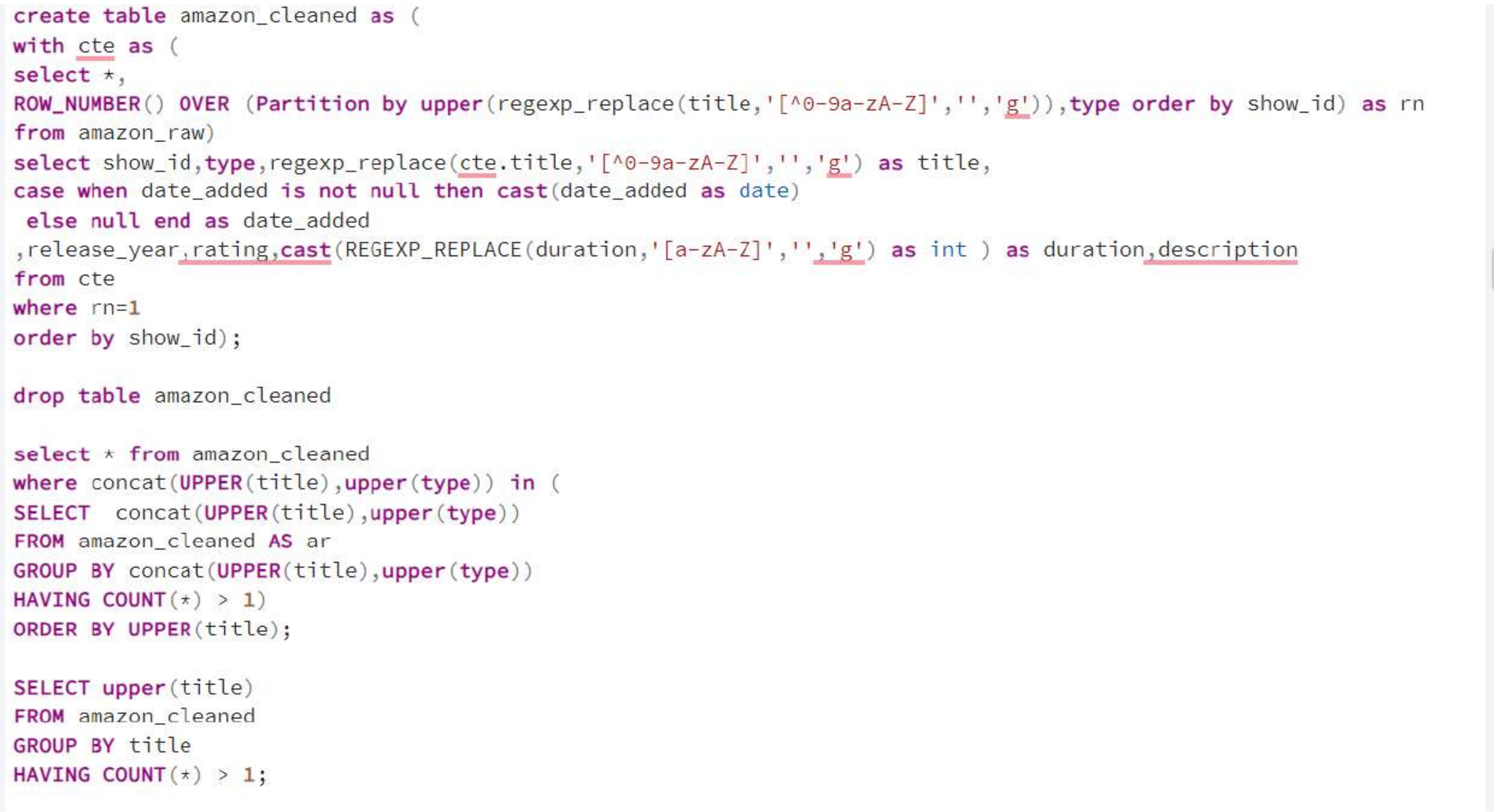
```
--creating genre table

create table  amazon_genre as
select show_id,trim(unnest(string_to_array(listed_in,',',''))) as genre
from amazon_raw

drop table amazon_genre
select * from amazon_genre

select distinct(regexp_replace(duration,'[0-9]','','g')) as duration
from amazon_raw

--[" Season"," min"," Seasons"]

select distinct(rating) from amazon_raw
select * from amazon_raw;


--checking duplicate value for title column

select upper(title),upper(type)
from amazon_raw as ar
group by upper(title),upper(type)
having  count(*) > 1
```



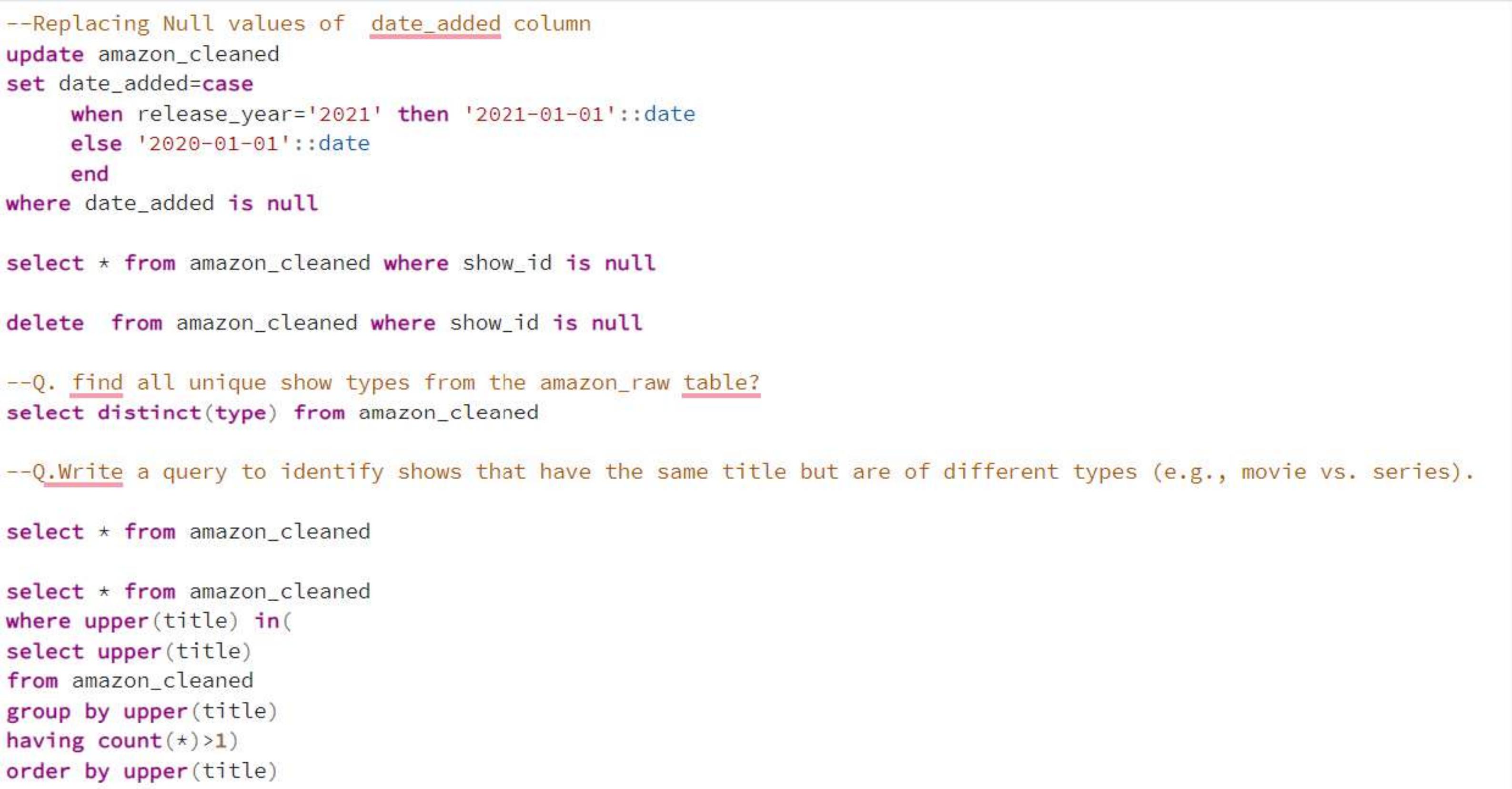
```
--checking duplicate value for title column

select upper(title),upper(type)
from amazon_raw as ar
group by upper(title),upper(type)
having  count(*) > 1
order by upper(title);

select count(*) from amazon_raw where
upper(title) in (
select upper(title)
from amazon_raw as ar
group by upper(title)
having count(*)>1)


select show_id,upper(title),count(*)
from amazon_raw as ar
group by upper(title),show_id
having count(*)>1
order by upper(title);

select count(*) from amazon_raw
where concat(UPPER(title),upper(type)) in (
SELECT  concat(UPPER(title),upper(type))
FROM amazon_raw AS ar
GROUP BY concat(UPPER(title),upper(type))
```



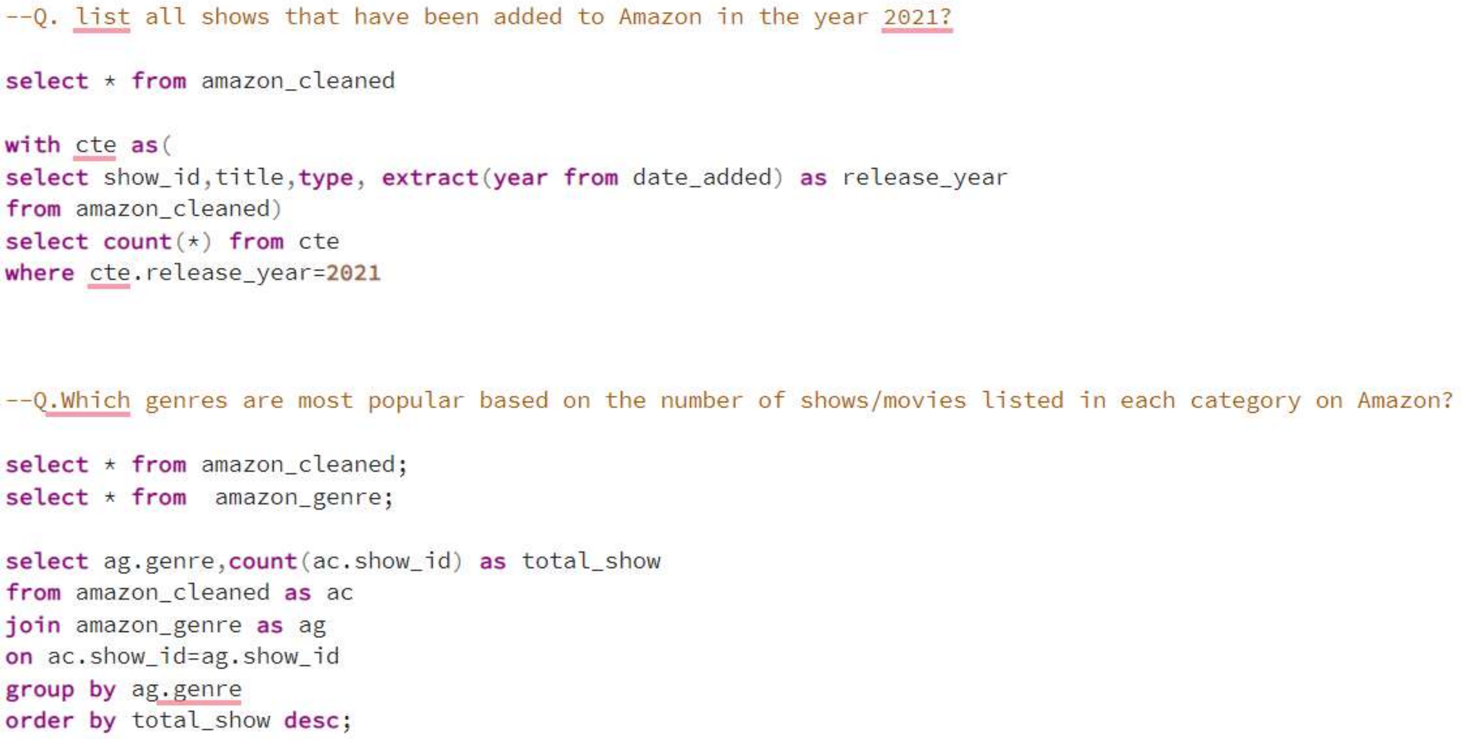
```
select count(*) from amazon_raw
where concat(UPPER(title),upper(type)) in (
SELECT  concat(UPPER(title),upper(type))
FROM amazon_raw AS ar
GROUP BY concat(UPPER(title),upper(type))
HAVING COUNT(*) > 1)
ORDER BY UPPER(title);


with cte as (
select
show_id,type,title,date_added,release_year,
rating,cast(REGEXP_REPLACE(duration,'[a-zA-Z]','','g') as int ) as duration,description
from amazon_raw)
,cte2 as (
select *,
ROW_NUMBER() OVER (Partition by Upper(title),type order by show_id) as rn
from cte
```



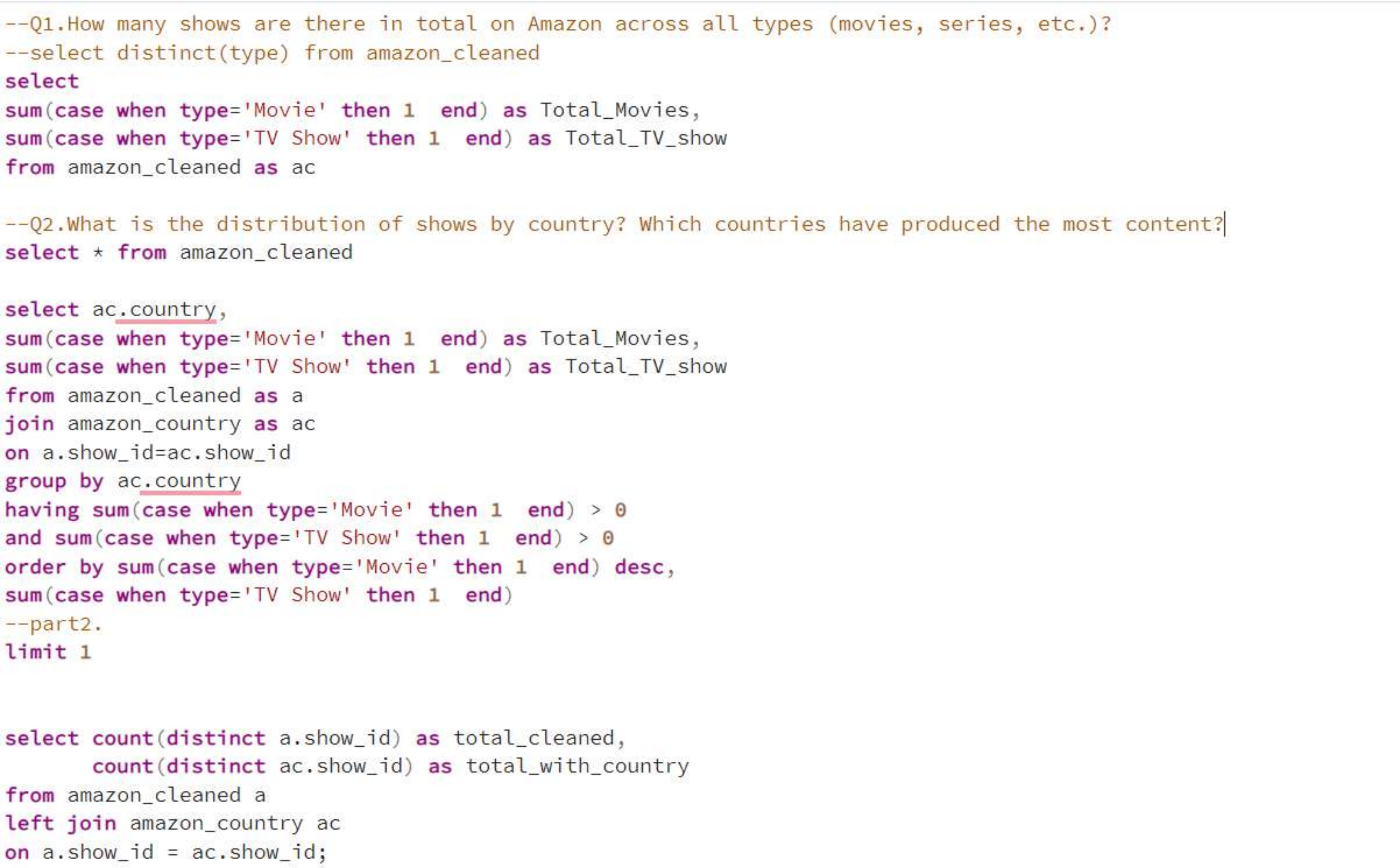
```
create table amazon_cleaned as (
with cte as (
select *,
ROW_NUMBER() OVER (Partition by upper(regexp_replace(title,'[^0-9a-zA-Z]','','g')),type order by show_id) as rn
from amazon_raw)
select show_id,type,regexp_replace(cte.title,'[^0-9a-zA-Z]','','g') as title,
case when date_added is not null then cast(date_added as date)
 else null end as date_added
,release_year,rating,cast(REGEXP_REPLACE(duration,'[a-zA-Z]','','g') as int ) as duration,description
from cte
where rn=1
order by show_id);

drop table amazon_cleaned

select * from amazon_cleaned
where concat(UPPER(title),upper(type)) in (
SELECT  concat(UPPER(title),upper(type))
FROM amazon_cleaned AS ar
GROUP BY concat(UPPER(title),upper(type))
HAVING COUNT(*) > 1)
ORDER BY UPPER(title);

SELECT upper(title)
FROM amazon_cleaned
GROUP BY title
HAVING COUNT(*) > 1;
```



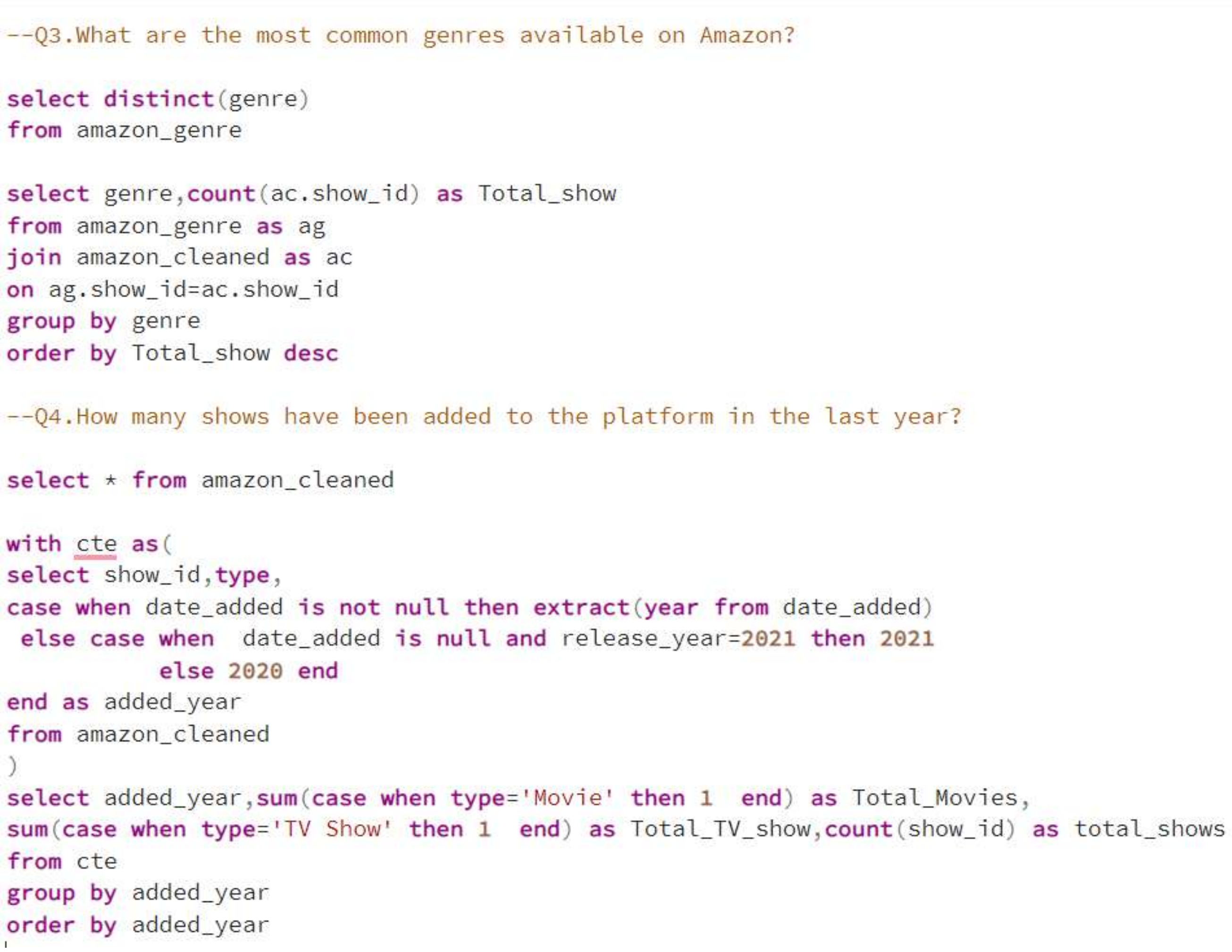
```
--Replacing Null values of  date_added column
update amazon_cleaned
set date_added=case
     when release_year='2021' then '2021-01-01'::date
     else '2020-01-01'::date
     end
where date_added is null

select * from amazon_cleaned where show_id is null

delete  from amazon_cleaned where show_id is null

--Q. find all unique show types from the amazon_raw table?
select distinct(type) from amazon_cleaned

--Q.Write a query to identify shows that have the same title but are of different types (e.g., movie vs. series).

select * from amazon_cleaned

select * from amazon_cleaned
where upper(title) in(
select upper(title)
from amazon_cleaned
group by upper(title)
having count(*)>1)
order by upper(title)
```



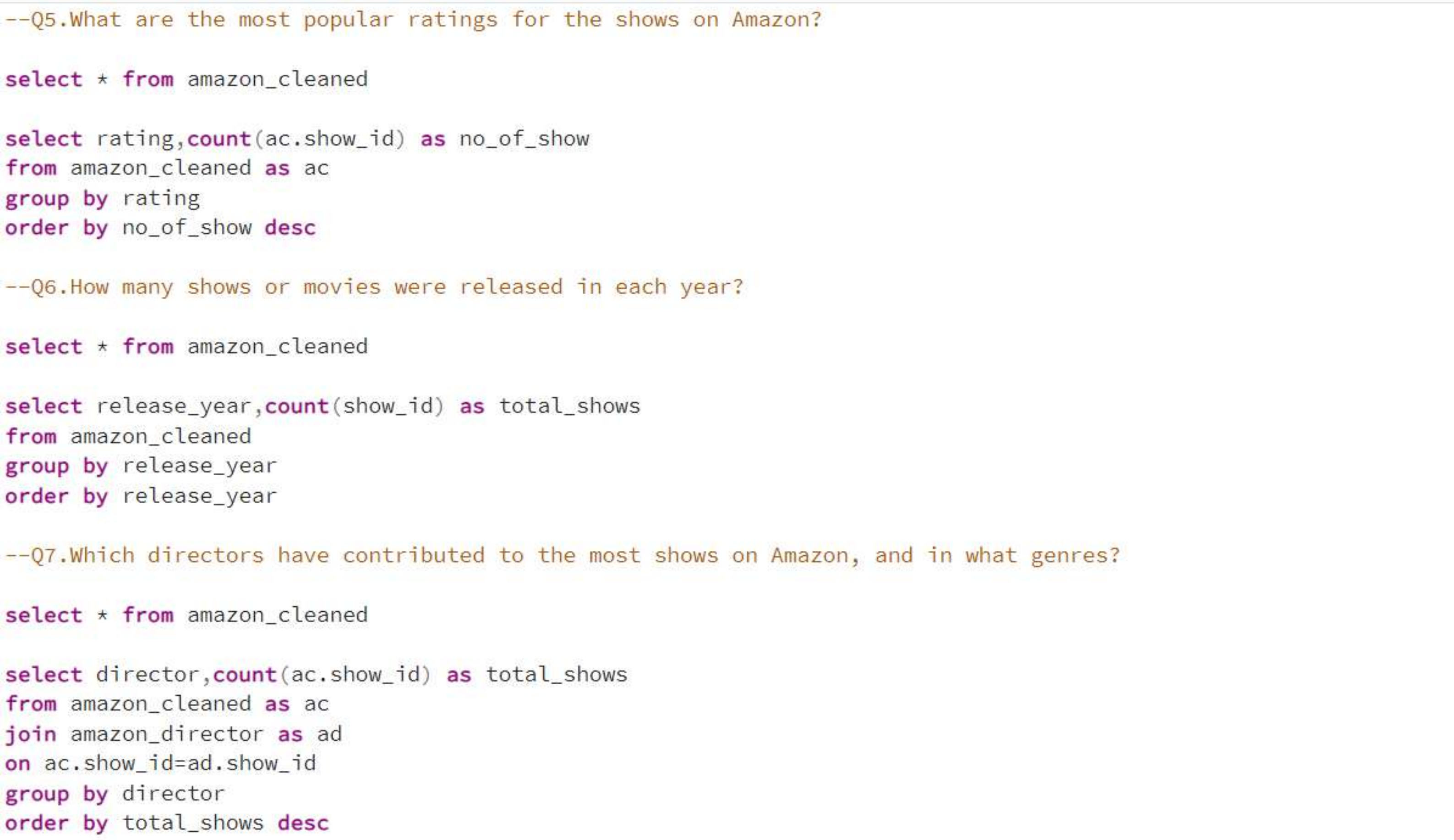
```
--Q. list all shows that have been added to Amazon in the year 2021?

select * from amazon_cleaned

with cte as(
select show_id,title,type, extract(year from date_added) as release_year
from amazon_cleaned)
select count(*) from cte
where cte.release_year=2021



--Q.Which genres are most popular based on the number of shows/movies listed in each category on Amazon?

select * from amazon_cleaned;
select * from  amazon_genre;

select ag.genre,count(ac.show_id) as total_show
from amazon_cleaned as ac
join amazon_genre as ag
on ac.show_id=ag.show_id
group by ag.genre
order by total_show desc;
```



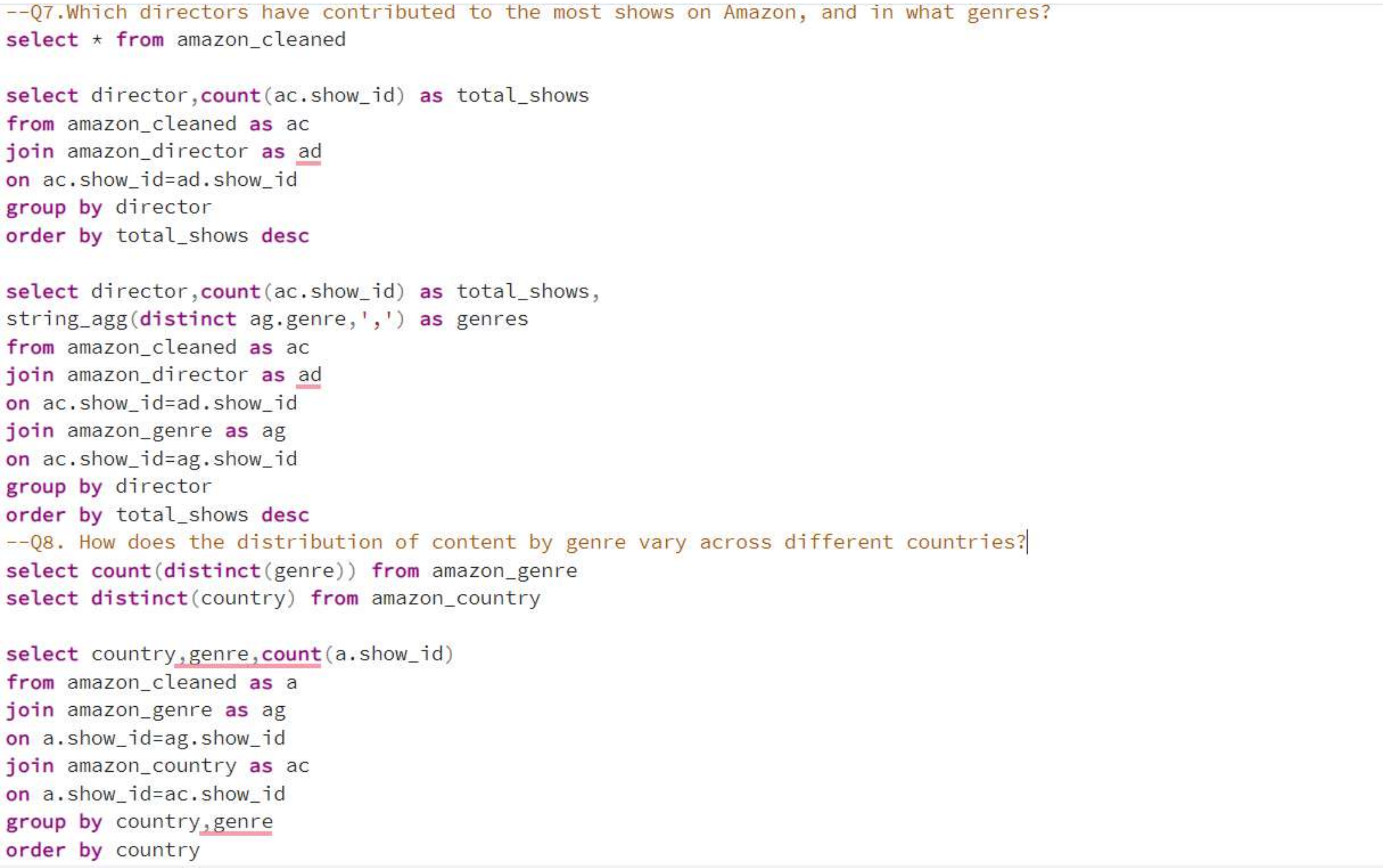
```
--Q1.How many shows are there in total on Amazon across all types (movies, series, etc.)?
--select distinct(type) from amazon_cleaned
select
sum(case when type='Movie' then 1  end) as Total_Movies,
sum(case when type='TV Show' then 1  end) as Total_TV_show
from amazon_cleaned as ac

--Q2.What is the distribution of shows by country? Which countries have produced the most content?
select * from amazon_cleaned

select ac.country,
sum(case when type='Movie' then 1  end) as Total_Movies,
sum(case when type='TV Show' then 1  end) as Total_TV_show
from amazon_cleaned as a
join amazon_country as ac
on a.show_id=ac.show_id
group by ac.country
having sum(case when type='Movie' then 1  end) > 0
and sum(case when type='TV Show' then 1  end) > 0
order by sum(case when type='Movie' then 1  end) desc,
sum(case when type='TV Show' then 1  end)
--part2.
limit 1


select count(distinct a.show_id) as total_cleaned,
       count(distinct ac.show_id) as total_with_country
from amazon_cleaned a
left join amazon_country ac
on a.show_id = ac.show_id;
```



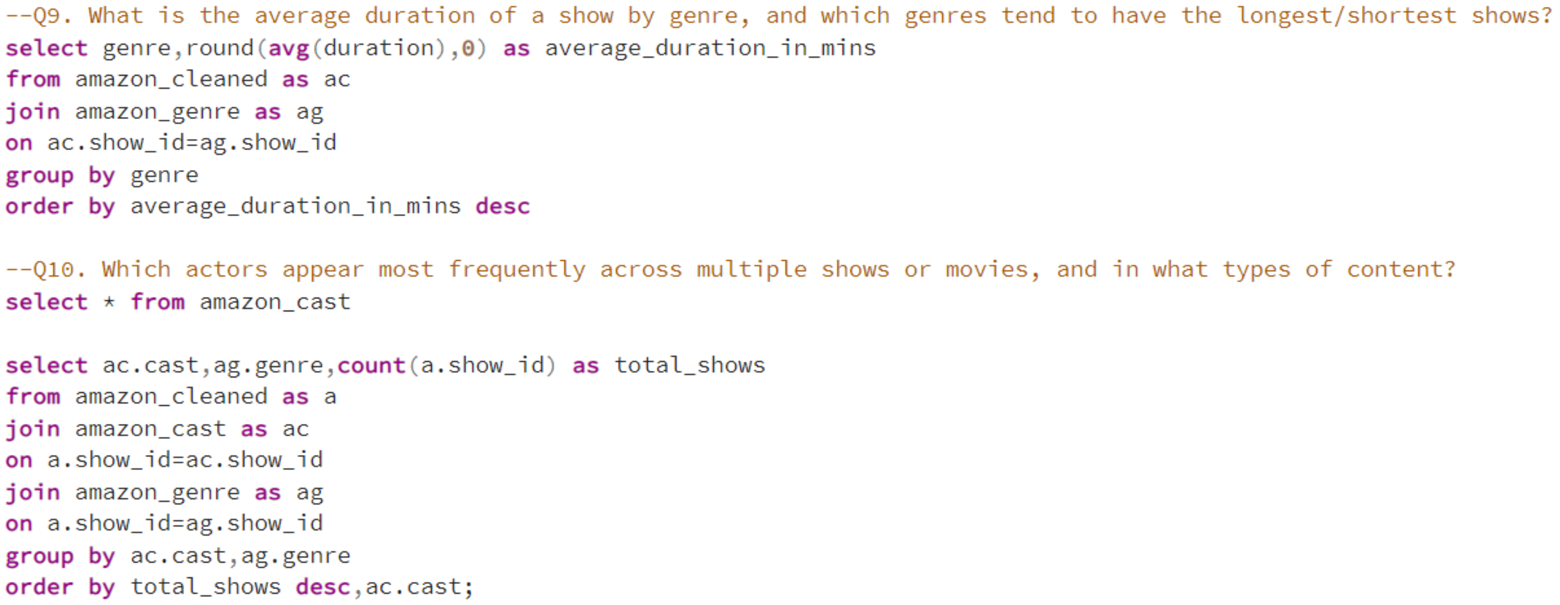
```
--Q3.What are the most common genres available on Amazon?

select distinct(genre)
from amazon_genre

select genre,count(ac.show_id) as Total_show
from amazon_genre as ag
join amazon_cleaned as ac
on ag.show_id=ac.show_id
group by genre
order by Total_show desc

--Q4.How many shows have been added to the platform in the last year?

select * from amazon_cleaned

with cte as(
select show_id,type,
case when date_added is not null then extract(year from date_added)
 else case when  date_added is null and release_year=2021 then 2021
           else 2020 end
end as added_year
from amazon_cleaned
)
select added_year,sum(case when type='Movie' then 1  end) as Total_Movies,
sum(case when type='TV Show' then 1  end) as Total_TV_show,count(show_id) as total_shows
from cte
group by added_year
order by added_year
```



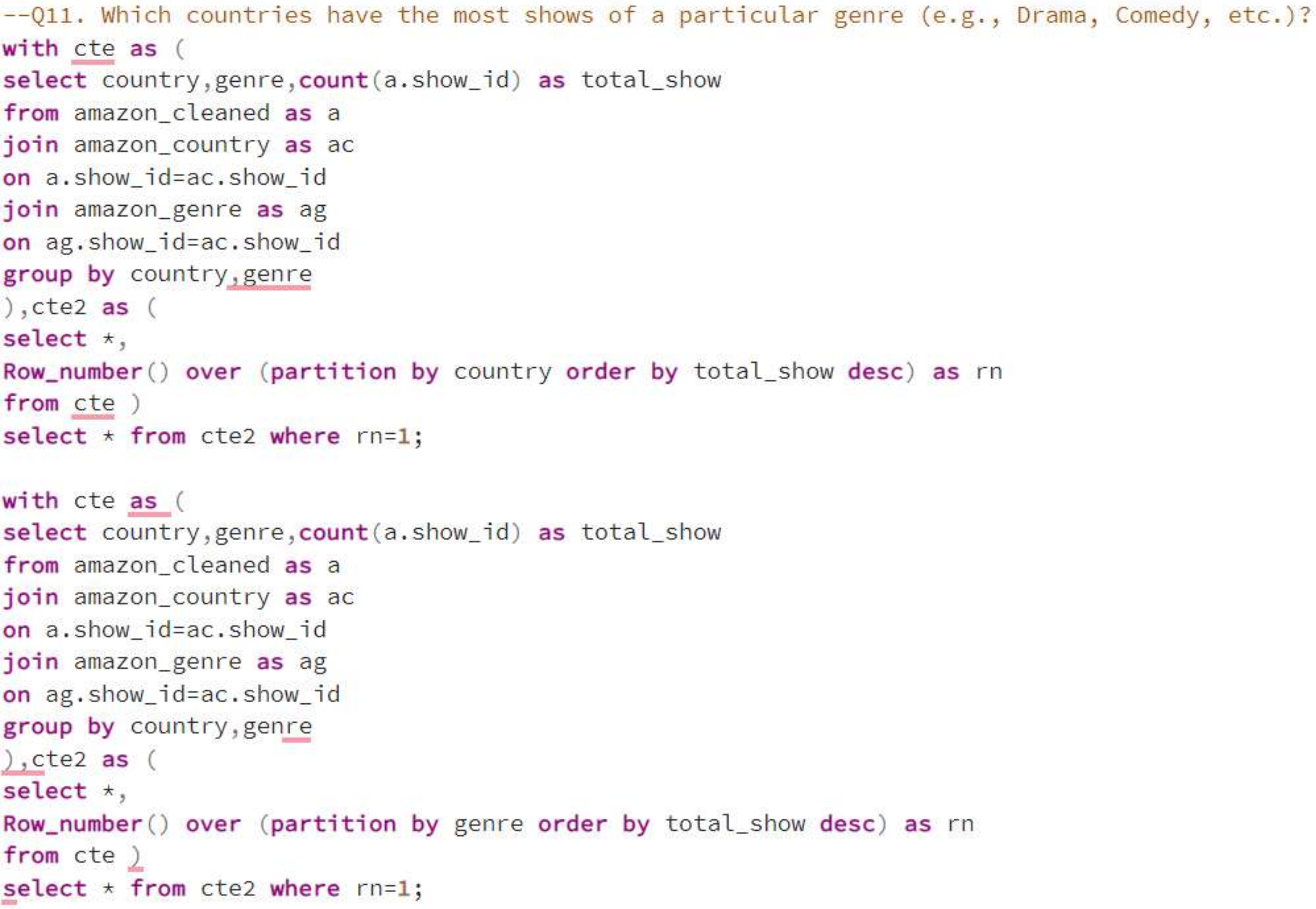
```
--Q5.What are the most popular ratings for the shows on Amazon?

select * from amazon_cleaned

select rating,count(ac.show_id) as no_of_show
from amazon_cleaned as ac
group by rating
order by no_of_show desc

--Q6.How many shows or movies were released in each year?

select * from amazon_cleaned

select release_year,count(show_id) as total_shows
from amazon_cleaned
group by release_year
order by release_year

--Q7.Which directors have contributed to the most shows on Amazon, and in what genres?

select * from amazon_cleaned

select director,count(ac.show_id) as total_shows
from amazon_cleaned as ac
join amazon_director as ad
on ac.show_id=ad.show_id
group by director
order by total_shows desc
```



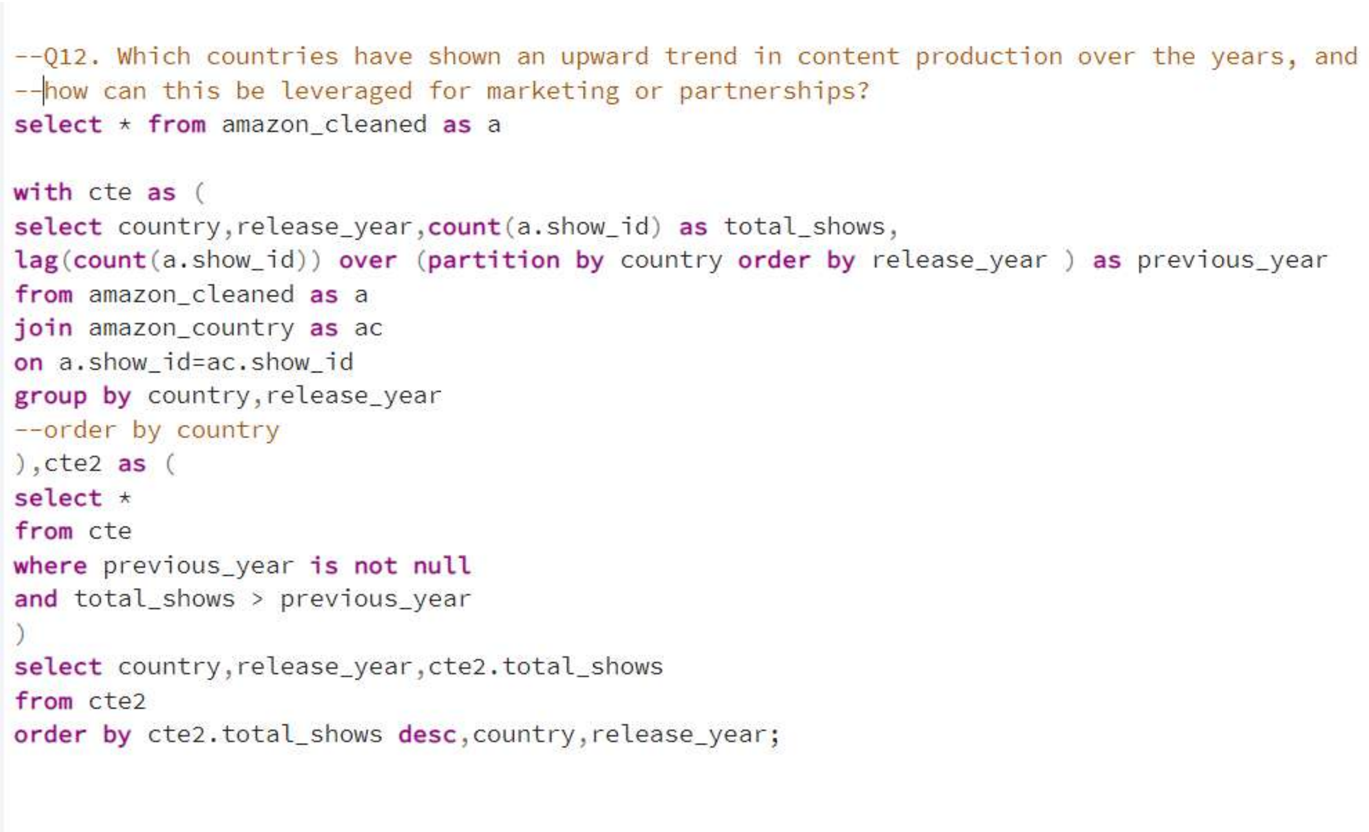
```
--Q7.Which directors have contributed to the most shows on Amazon, and in what genres?
select * from amazon_cleaned

select director,count(ac.show_id) as total_shows
from amazon_cleaned as ac
join amazon_director as ad
on ac.show_id=ad.show_id
group by director
order by total_shows desc

select director,count(ac.show_id) as total_shows,
string_agg(distinct ag.genre,',') as genres
from amazon_cleaned as ac
join amazon_director as ad
on ac.show_id=ad.show_id
join amazon_genre as ag
on ac.show_id=ag.show_id
group by director
order by total_shows desc
--Q8. How does the distribution of content by genre vary across different countries?
select count(distinct(genre)) from amazon_genre
select distinct(country) from amazon_country

select country,genre,count(a.show_id)
from amazon_cleaned as a
join amazon_genre as ag
on a.show_id=ag.show_id
join amazon_country as ac
on a.show_id=ac.show_id
group by country,genre
order by country
```



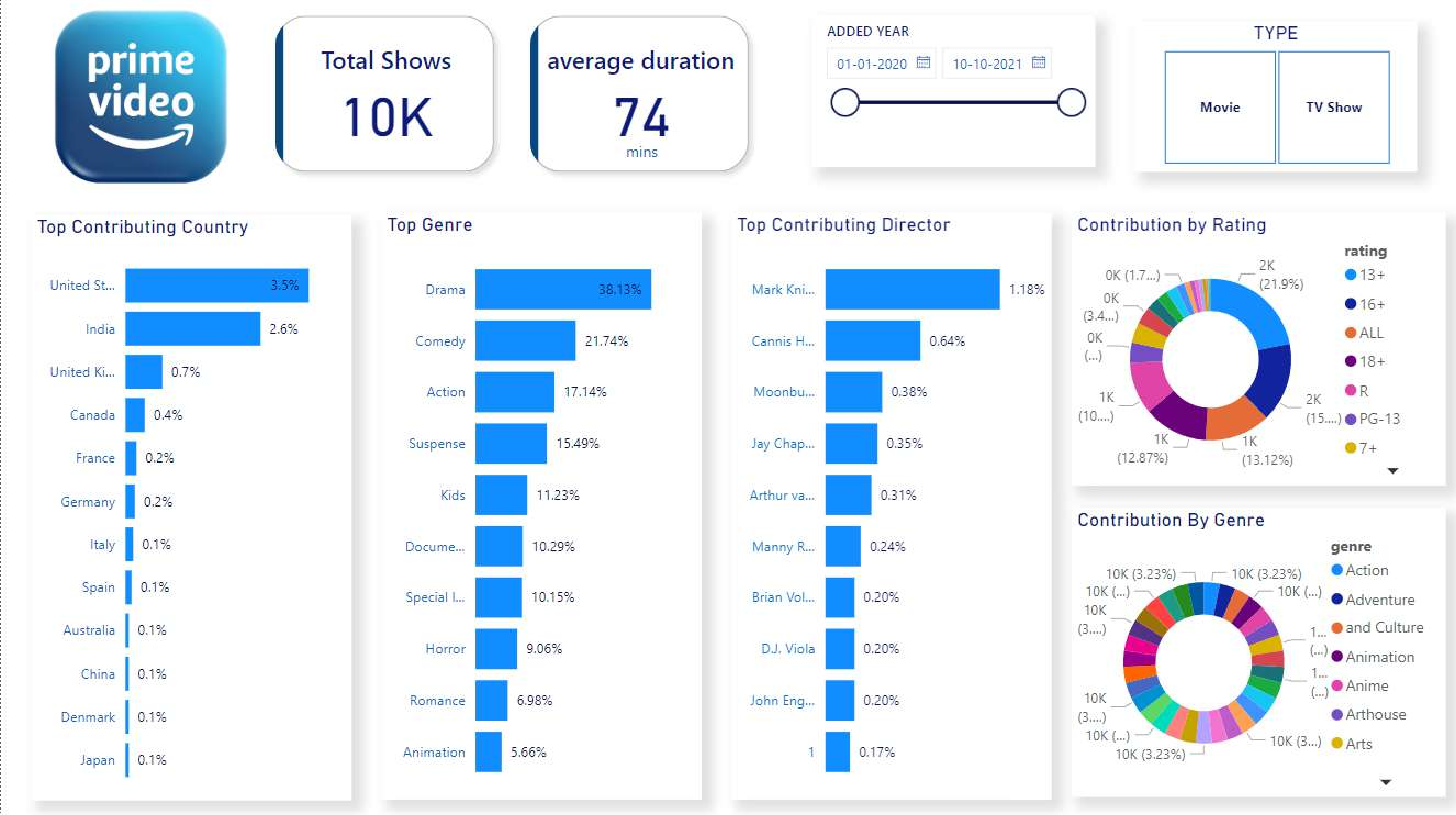
```
--Q9. What is the average duration of a show by genre, and which genres tend to have the longest/shortest shows?
select genre,round(avg(duration),0) as average_duration_in_mins
from amazon_cleaned as ac
join amazon_genre as ag
on ac.show_id=ag.show_id
group by genre
order by average_duration_in_mins desc

--Q10. Which actors appear most frequently across multiple shows or movies, and in what types of content?
select * from amazon_cast

select ac.cast,ag.genre,count(a.show_id) as total_shows
from amazon_cleaned as a
join amazon_cast as ac
on a.show_id=ac.show_id
join amazon_genre as ag
on a.show_id=ag.show_id
group by ac.cast,ag.genre
order by total_shows desc,ac.cast;
```



```
--Q11. Which countries have the most shows of a particular genre (e.g., Drama, Comedy, etc.)?
with cte as (
select country,genre,count(a.show_id) as total_show
from amazon_cleaned as a
join amazon_country as ac
on a.show_id=ac.show_id
join amazon_genre as ag
on ag.show_id=ac.show_id
group by country,genre
),cte2 as (
select *,
Row_number() over (partition by country order by total_show desc) as rn
from cte )
select * from cte2 where rn=1;

with cte as (
select country,genre,count(a.show_id) as total_show
from amazon_cleaned as a
join amazon_country as ac
on a.show_id=ac.show_id
join amazon_genre as ag
on ag.show_id=ac.show_id
group by country,genre
),cte2 as (
select *,
Row_number() over (partition by genre order by total_show desc) as rn
from cte )
select * from cte2 where rn=1;
```



```
--Q12. Which countries have shown an upward trend in content production over the years, and
--how can this be leveraged for marketing or partnerships?
select * from amazon_cleaned as a

with cte as (
select country,release_year,count(a.show_id) as total_shows,
lag(count(a.show_id)) over (partition by country order by release_year ) as previous_year
from amazon_cleaned as a
join amazon_country as ac
on a.show_id=ac.show_id
group by country,release_year
--order by country
),cte2 as (
select *
from cte
where previous_year is not null
and total_shows > previous_year
)
select country,release_year,cte2.total_shows
from cte2
order by cte2.total_shows desc,country,release_year;
```



prime video

Total Shows

10K

average duration

74

mins

ADDED YEAR

01-01-2020

10-10-2021

TYPE

Movie

TV Show

Top Contributing Country

Top Genre

Top Contributing Director

Contribution by Rating

Contribution By Genre