Case Study

Olympic Game

1. How many olympics games have been held?

SELECT COUNT(DISTINCT games) total\_games

FROM athlete\_events

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2. List down all Olympics games held so far.

SELECT DISTINCT year, season, city

FROM athlete\_events

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3. Mention the total no of nations who participated in each olympics game?

SELECT games, COUNT(DISTINCT region) Country\_num

FROM athlete\_events ae

JOIN noc\_regions nr

ON nr.NOC = ae.noc

GROUP BY games

ORDER BY Country\_num

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4. Which year saw the highest and lowest no of countries participating in olympics?

WITH temp AS(

SELECT games, COUNT(DISTINCT region) Country\_num,

RANK() OVER(ORDER BY COUNT(DISTINCT region) DESC) rnk

FROM athlete\_events ae

JOIN noc\_regions nr

ON nr.NOC = ae.noc

GROUP BY games)

SELECT \* FROM temp

WHERE temp.rnk = 1 OR temp.rnk = (SELECT MAX(rnk) FROM temp)

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Another format:

WITH cte AS (

SELECT games, COUNT(DISTINCT region) country\_num,

CONCAT(FIRST\_value(games) OVER(ORDER BY COUNT(DISTINCT region) DESC), '-',

FIRST\_value(COUNT(DISTINCT region)) OVER(ORDER BY COUNT(DISTINCT region) DESC)) height\_game,

CONCAT(FIRST\_value(games) OVER(ORDER BY COUNT(DISTINCT region)), '-',

FIRST\_VALUE(COUNT(DISTINCT region)) OVER(ORDER BY COUNT(DISTINCT region))) lowest\_game

FROM athlete\_events ae

JOIN noc\_regions nr

ON nr.noc = ae.noc

group by games)

SELECT height\_game, lowest\_game

FROM cte

LIMIT 1

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5. Which nation has participated in all of the olympic games?

WITH cte AS (

SELECT region, COUNT(DISTINCT games) total\_participated,

RANK() OVER(ORDER BY COUNT(DISTINCT games) DESC) rnk

FROM athlete\_events ae

JOIN noc\_regions nr

ON nr.noc = ae.noc

GROUP BY region

HAVING COUNT(DISTINCT games) = COUNT(DISTINCT games))

SELECT region, total\_participated FROM cte

WHERE rnk = 1

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6. Identify the sport which was played in all summer olympics.

SELECT sport, COUNT(\*)

FROM (

SELECT games, sport,

ROW\_NUMBER() OVER(PARTITION BY games)

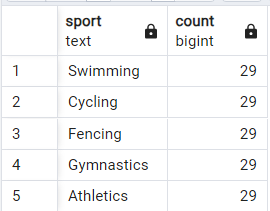
FROM athlete\_events

WHERE games LIKE '%Summer%'

GROUP BY games, sport)

GROUP BY sport

HAVING COUNT(\*) = (SELECT COUNT(DISTINCT games) FROM athlete\_events WHERE games LIKE '%Summer%')



7. Which Sports were just played only once in the olympics?

SELECT sport, COUNT(\*)

FROM (

SELECT games, sport,

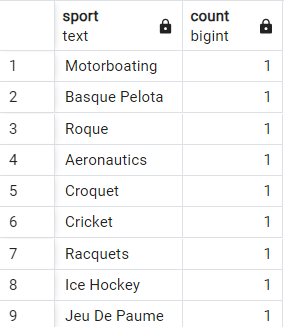
ROW\_NUMBER() OVER(PARTITION BY games)

FROM athlete\_events

GROUP BY games, sport)

GROUP BY sport

HAVING COUNT(\*) = 1



8. Fetch the total no of sports played in each olympic games.

SELECT games, COUNT(DISTINCT sport) total\_sports

FROM athlete\_events

GROUP BY games

ORDER BY total\_sports DESC

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9. Fetch details of the oldest athletes to win a gold medal.

SELECT \*

FROM(

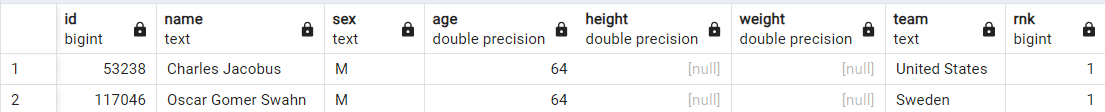
SELECT id, name, sex, age, height, weight, team,

RANK() OVER(ORDER BY age DESC) as rnk

FROM athlete\_events

WHERE medal = 'Gold' AND (age <= (SELECT MAX(age) FROM athlete\_events)) ) temp

WHERE temp.rnk = 1



10. Find the Ratio of male and female athletes participated in all olympic games.

WITH main as (

SELECT sex, COUNT(\*) total\_num\_gender

FROM athlete\_events

GROUP BY sex),

female as(

SELECT total\_num\_gender,

ROW\_NUMBER() OVER() rn

FROM main

WHERE sex = 'F'),

male as (

SELECT total\_num\_gender,

ROW\_NUMBER() OVER() rn

FROM main

WHERE sex = 'M'

)

SELECT CONCAT('1:', ROUND((male.total\_num\_gender::NUMERIC / female.total\_num\_gender::NUMERIC) ,2)) ratio

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JOIN male

ON male.rn = female.rn

11. Fetch the top 5 athletes who have won the most gold medals.

SELECT id, name, COUNT(\*) num\_gold,

RANK() OVER(ORDER BY COUNT(\*) DESC) rnk

FROM athlete\_events

WHERE medal = 'Gold'

GROUP BY id, name



12. Fetch the top 5 athletes who have won the most medals (gold/silver/bronze).

WITH cte AS (

SELECT id, name, COUNT(\*) num\_medal,

RANK() OVER(ORDER BY COUNT(\*) DESC) rnk

FROM athlete\_events

WHERE medal in ('Gold', 'Silver', 'Bronze')

GROUP BY id, name)

SELECT id, name, num\_medal

FROM cte

WHERE rnk < 6



13. Fetch the top 5 most successful countries in olympics. Success is defined by no of medals won.

WITH cte AS(

SELECT region, COUNT(\*) num\_medals,

RANK() OVER(ORDER BY COUNT(\*) DESC) rnk

FROM athlete\_events ae

JOIN noc\_regions nr

ON nr.noc = ae.noc

WHERE medal in ('Gold', 'Silver', 'Bronze')

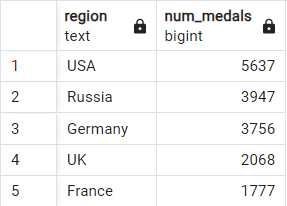
GROUP BY region

ORDER BY num\_medals DESC)

SELECT region, num\_medals

FROM cte

WHERE rnk < 6



14. List down total gold, silver and broze medals won by each country.

SELECT region, SUM(CASE

WHEN medal = 'Gold' THEN 1

ELSE 0

END) total\_medal\_Gold,

SUM(CASE

WHEN medal = 'Silver' THEN 1

ELSE 0

END) total\_medal\_Silver,

SUM(CASE

WHEN medal = 'Bronze' THEN 1

ELSE 0

END) total\_medal\_Bronze

FROM athlete\_events ae

JOIN noc\_regions nr

ON nr.noc = ae.noc

WHERE medal in ('Gold','Silver','Bronze')

GROUP BY region

ORDER BY total\_medal\_gold DESC, total\_medal\_silver DESC, total\_medal\_bronze DESC

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15. List down total gold, silver and broze medals won by each country corresponding to each olympic games.

SELECT games, region, SUM(CASE

WHEN medal = 'Gold' THEN 1

ELSE 0

END) total\_medal\_Gold,

SUM(CASE

WHEN medal = 'Silver' THEN 1

ELSE 0

END) total\_medal\_Silver,

SUM(CASE

WHEN medal = 'Bronze' THEN 1

ELSE 0

END) total\_medal\_Bronze

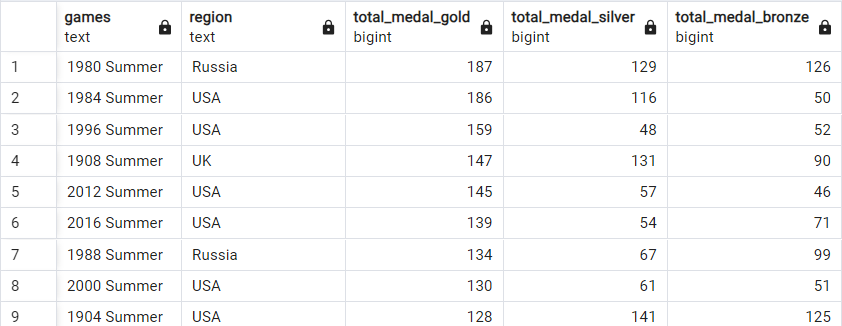
FROM athlete\_events ae

JOIN noc\_regions nr

ON nr.noc = ae.noc

GROUP BY games, region

ORDER BY total\_medal\_gold DESC, total\_medal\_silver DESC, total\_medal\_bronze DESC



Anthor solution Using crosstab mean pivot table

SELECT country,

coalesce(gold, 0) AS gold,

coalesce(silver, 0) AS silver,

coalesce(bronze, 0) AS bronze

FROM crosstab('SELECT region AS country, medal, COUNT(\*) total\_medals

FROM athlete\_events ae

JOIN noc\_regions nr

ON ae.noc = nr.noc

WHERE medal <> ''NA''

GROUP BY country, medal

ORDER BY country, medal',

'VALUES (''Bronze''), (''Gold''), (''Silver'')')

AS RESULT(country TEXT, bronze BIGINT, gold BIGINT, silver BIGINT)

ORDER BY gold DESC, silver DESC, bronze DESC

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16. Identify which country won the most gold, most silver and most bronze medals in each olympic games.

WITH cte AS

(SELECT SUBSTRING(game\_country, 1, POSITION('-' in game\_country) -1) AS game,

SUBSTRING(game\_country, POSITION('-' in game\_country) + 2) AS country,

coalesce(gold, 0) AS gold,

coalesce(silver, 0) AS silver,

coalesce(bronze, 0) AS bronze

FROM crosstab('SELECT CONCAT( games, '' - '', region ) AS game\_country, medal, COUNT(\*) total\_medals

FROM athlete\_events ae

JOIN noc\_regions nr

ON ae.noc = nr.noc

WHERE medal <> ''NA''

GROUP BY games, region, medal

ORDER BY games, region, medal',

'VALUES (''Bronze''), (''Gold''), (''Silver'')')

AS RESULT(game\_country TEXT, bronze BIGINT, gold BIGINT, silver BIGINT)

ORDER BY gold DESC, silver DESC, bronze DESC)

SELECT DISTINCT game,

CONCAT(first\_value(country) OVER(PARTITION BY game ORDER BY gold DESC), ' - ', first\_value(gold) OVER(PARTITION BY game ORDER BY gold DESC)) AS gold,

CONCAT(first\_value(country) OVER(PARTITION BY game ORDER BY silver DESC), ' - ', first\_value(silver) OVER(PARTITION BY game ORDER BY silver DESC)) AS silver,

CONCAT(first\_value(country) OVER(PARTITION BY game ORDER BY bronze DESC), ' - ', first\_value(bronze) OVER(PARTITION BY game ORDER BY bronze DESC)) AS bronze

FROM cte

ORDER BY game, gold DESC, silver DESC, bronze DESC

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17. Identify which country won the most gold, most silver, most bronze medals and the most medals in each olympic games.

with temp as

(SELECT substring(games, 1, position(' - ' in games) - 1) as games

, substring(games, position(' - ' in games) + 3) as country

, coalesce(gold, 0) as gold

, coalesce(silver, 0) as silver

, coalesce(bronze, 0) as bronze

FROM CROSSTAB('SELECT concat(games, '' - '', nr.region) as games

, medal

, count(1) as total\_medals

FROM athlete\_events oh

JOIN noc\_regions nr ON nr.noc = oh.noc

where medal <> ''NA''

GROUP BY games,nr.region,medal

order BY games,medal',

'values (''Bronze''), (''Gold''), (''Silver'')')

AS FINAL\_RESULT(games text, bronze bigint, gold bigint, silver bigint)),

tot\_medals as

(SELECT games, nr.region as country, count(1) as total\_medals

FROM athlete\_events oh

JOIN noc\_regions nr ON nr.noc = oh.noc

where medal <> 'NA'

GROUP BY games,nr.region order BY 1, 2)

select distinct t.games

, concat(first\_value(t.country) over(partition by t.games order by gold desc)

, ' - '

, first\_value(t.gold) over(partition by t.games order by gold desc)) as Max\_Gold

, concat(first\_value(t.country) over(partition by t.games order by silver desc)

, ' - '

, first\_value(t.silver) over(partition by t.games order by silver desc)) as Max\_Silver

, concat(first\_value(t.country) over(partition by t.games order by bronze desc)

, ' - '

, first\_value(t.bronze) over(partition by t.games order by bronze desc)) as Max\_Bronze

, concat(first\_value(tm.country) over (partition by tm.games order by total\_medals desc nulls last)

, ' - '

, first\_value(tm.total\_medals) over(partition by tm.games order by total\_medals desc nulls last)) as Max\_Medals

from temp t

join tot\_medals tm on tm.games = t.games and tm.country = t.country

order by games;

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18. Which countries have never won gold medal but have won silver/bronze medals?

WITH cte AS (

SELECT country,

coalesce(gold, 0) AS gold,

coalesce(silver, 0) AS silver,

coalesce(bronze, 0) AS bronze

FROM crosstab('SELECT region AS country, medal, COUNT(\*) total\_medals

FROM athlete\_events ae

JOIN noc\_regions nr

ON ae.noc = nr.noc

WHERE medal <> ''NA''

GROUP BY country, medal

ORDER BY country, medal',

'VALUES (''Bronze''), (''Gold''), (''Silver'')')

AS RESULT(country TEXT, bronze BIGINT, gold BIGINT, silver BIGINT)

ORDER BY gold DESC, silver DESC, bronze DESC)

SELECT \*

FROM cte

WHERE gold = 0 and (silver > 0 or bronze > 0)

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19. In which Sport/event, India has won highest medals.

SELECT sport, COUNT(\*) height\_medals

FROM athlete\_events ae

JOIN noc\_regions nr

ON ae.noc = nr.noc

WHERE medal <> 'NA' AND region = 'India'

GROUP BY sport

ORDER BY height\_medals DESC

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20. Break down all olympic games where india won medal for Hockey and how many medals in each olympic games.

SELECT games, sport, COUNT(\*) height\_medals

FROM athlete\_events ae

JOIN noc\_regions nr

ON ae.noc = nr.noc

WHERE medal <> 'NA' AND region = 'India' AND sport = 'Hockey'

GROUP BY games, sport

ORDER BY height\_medals DESC

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