Did you know that the average return from investing in stocks is 10% per year (not accounting for inflation)? But who wants to be average?!

You have been asked to support an investment firm by analyzing trends in high-growth companies. They are interested in understanding which industries are producing the highest valuations and the rate at which new high-value companies are emerging. Providing them with this information gives them a competitive insight as to industry trends and how they should structure their portfolio looking forward.

You have been given access to their `unicorns` database, which contains the following tables:

dates

Column	Description
`company_id`	A unique ID for the company.
`date_joined`	The date that the company became a unicorn.
`year_founded`	The year that the company was founded.

funding

Column	Description
`company_id`	A unique ID for the company.
`valuation`	Company value in US dollars.
`funding`	The amount of funding raised in US dollars.
`select_investors`	A list of key investors in the company.

industries

Column	Description
`company_id`	A unique ID for the company.
`industry`	The industry that the company operates in.

companies

Column	Description
`company_id`	A unique ID for the company.
`company`	The name of the company.
`city`	The city where the company is headquartered.
`country`	The country where the company is headquartered.
`continent`	The continent where the company is headquartered.

Projects Data DataFrame as `df`

```sql
-- 1. Finding the top industries
WITH top_industries AS (
  SELECT
    i.industry,
    COUNT(*) AS total_unicorns
  FROM dates d
  JOIN industries i ON d.company_id = i.company_id
  WHERE EXTRACT(YEAR FROM d.date_joined) BETWEEN 2019 AND 2021
  GROUP BY i.industry
  ORDER BY total_unicorns DESC
  LIMIT 3
),

-- 2. Gathering yearly rankings data
industry_year_stats AS (
  SELECT
    i.industry,
    EXTRACT(YEAR FROM d.date_joined) AS year,
    COUNT(*) AS num_unicorns,
    ROUND(AVG(f.valuation::numeric) / 1000000000.0, 2) AS average_valuation_billions
  FROM dates d
  JOIN industries i ON d.company_id = i.company_id
  JOIN funding f ON d.company_id = f.company_id
  WHERE EXTRACT(YEAR FROM d.date_joined) BETWEEN 2019 AND 2021
    AND i.industry IN (SELECT industry FROM top_industries)
    AND f.valuation IS NOT NULL
  GROUP BY i.industry, EXTRACT(YEAR FROM d.date_joined)
),

-- 3. Returning the final results
expanded_years AS (
  SELECT industry, year
  FROM top_industries, (SELECT 2019 AS year UNION ALL SELECT 2020 UNION ALL SELECT 2021) y
),
final_stats AS (
  SELECT
    e.industry,
    e.year,
    COALESCE(iys.num_unicorns, 0) AS num_unicorns,
    COALESCE(iys.average_valuation_billions, 0.00) AS average_valuation_billions
  FROM expanded_years e
  LEFT JOIN industry_year_stats iys
    ON e.industry = iys.industry AND e.year = iys.year
)
SELECT
  industry,
  year,
  num_unicorns,
  average_valuation_billions
FROM final_stats
ORDER BY industry, year DESC;
```

	industry		num…	average_valuation_billions
0	E-commerce & direct-to-consumer	2021	47	2.47
1	E-commerce & direct-to-consumer	2020	16	4
2	E-commerce & direct-to-consumer	2019	12	2.58
3	Fintech	2021	138	2.75
4	Fintech	2020	15	4.33
5	Fintech	2019	20	6.8
6	Internet software & services	2021	119	2.15
7	Internet software & services	2020	20	4.35
8	Internet software & services	2019	13	4.23

Rows: 9

Expand