cube_operator

```sql
SELECT
  gender,  -- Column to show gender
  country, -- Column to show country
  COUNT(*) AS customer_count -- Counts the number of customers
FROM
  customers
GROUP BY
  CUBE (gender, country) -- Groups the data by all combinations of gender and country, including subtotals and grand totals.
ORDER BY
  country; -- Orders the result set by country.
```

Explanation:

- This SQL query generates a pivot table showing the number of customers for each combination of gender and country. The CUBE function in the GROUP BY clause creates subtotals for each gender and country, as well as a grand total for all customers. The results are then ordered by country.

```sql
SELECT genre,
    year_of_release,
    COUNT(*)
FROM movies
GROUP BY CUBE (genre, year_of_release)
ORDER BY year_of_release;
```

Explanation:

- This SQL query uses the CUBE function to generate aggregate counts of movies for all combinations of genre and year of release. It will show the count for each genre, each year, and the overall total count, regardless of genre and year. The results are then ordered by the year of release.

```sql
-- Calculate the average rating for each country
SELECT
  c.country,
  AVG(r.rating)
FROM renting AS r
LEFT JOIN movies AS m
ON m.movie_id = r.movie_id
LEFT JOIN customers AS c
ON r.customer_id = c.customer_id
GROUP BY c.country;
```

Explanation:

- This SQL query calculates the average movie rating for each country. It joins three tables (renting, movies, and customers) to link ratings with customer countries, then groups the results by country and uses the AVG aggregate function to compute the average rating per country. The LEFT JOIN ensures that all countries are included in the result, even if they have no ratings.

```
SELECT
  c.country,
  m.genre,
  AVG(r.rating) AS avg_rating -- Calculate the average rating
FROM renting AS r
LEFT JOIN movies AS m
ON m.movie_id = r.movie_id
LEFT JOIN customers AS c
ON r.customer_id = c.customer_id
GROUP BY CUBE (c.country, m.genre); -- For all aggregation levels of country and genre
```

Explanation:

- This SQL query calculates the average movie rating for different combinations of countries and genres. It uses LEFT JOIN to combine data from three tables (renting, movies, customers), then GROUP BY CUBE to generate aggregate results at all levels of granularity (overall average, average per country, average per genre, and average per country-genre combination). The AVG(r.rating) function computes the average rating for each group.