

Task-3

Query to use SELECT:

- SELECT * FROM city LIMIT 5;
- SELECT * FROM country LIMIT 5;
- SELECT * FROM countrylanguage LIMIT 5;

Query to use WHERE:

- SELECT Name, Population
FROM country
WHERE Continent = 'Asia' AND Population > 100000000;

Query to use ORDER BY:

- SELECT Name, Population
FROM city
WHERE countrycode = 'IND' and population > 1000000
ORDER BY Population DESC;

Query to use GROUP BY:

- SELECT CountryCode, COUNT(*) AS BigCities
FROM city
WHERE Population > 1000000
GROUP BY CountryCode;

Query to use INNER JOIN:

- SELECT c.Name AS Country, ci.Name AS Capital
FROM country c
INNER JOIN city ci ON c.Capital = ci.ID LIMIT 10;

Query to use LEFT JOIN:

- SELECT c.Name AS Country, ci.Name AS City
FROM country c
LEFT JOIN city ci ON c.Code = ci.CountryCode
ORDER BY c.Name LIMIT 10;

Query to use RIGHT JOIN:

- SELECT cl.Language, c.Name AS Country
FROM country c
RIGHT JOIN countrylanguage cl ON c.Code = cl.CountryCode LIMIT 10;

SUBQUERIES:

- SELECT Name, Population
FROM country
WHERE Population > (
 SELECT AVG(Population)
 FROM country
) LIMIT 10;
- SELECT Name,
 (SELECT MAX(Population)
 FROM city
 WHERE city.CountryCode = country.Code) AS MaxCityPopulation
FROM country LIMIT 10;

Query to use SUM():

- SELECT Continent, SUM(Population) AS Total_Population
FROM Country
GROUP BY Continent;

Query to use AVG():

- SELECT AVG(Population) AS Average_Population
FROM City;

Creating VIEWS for Analysis:

- CREATE VIEW high_population_countries AS
SELECT Name, Continent, Population
FROM Country
WHERE Population > 100000000;
➤ SELECT * FROM high_population_countries;
- CREATE VIEW city_country_view AS
SELECT ci.Name AS City, c.Name AS Country, ci.Population
FROM City ci
JOIN Country c ON ci.CountryCode = c.Code;
➤ SELECT * FROM city_country_view;

Optimizing queries with indexes:

- CREATE INDEX idx_city_countrycode ON City(CountryCode);
➤ SHOW indexes FROM City;
- CREATE INDEX idx_country_code ON Country(Code);
- CREATE INDEX idx_city_countrycode ON City(CountryCode);
➤ SHOW indexes FROM Country;