1. Base Data Extraction

This query retrieves the primary COVID-19 data: location, date, cases, deaths, and population.

```
SELECT
    location , date , total_cases , new_cases , total_deaths ,
population
FROM
    project..CovidDeaths
ORDER BY 1,2;
```

2. Total Cases vs Total Deaths in Pakistan

This query shows the likelihood of dying from COVID-19 if infected in Pakistan.

```
SELECT
    location , date , total_cases, total_deaths ,
(total_deaths/total_cases)*100 as Death_Percentage
FROM
    project..CovidDeaths
WHERE location = 'Pakistan'
  AND continent IS NOT NULL
ORDER BY 1,2;
```

3. Total Cases vs Population

This query shows the percentage of people infected by COVID-19 relative to population.

```
SELECT
    location, date, total_cases, population,
(total_cases/population)*100 as Contamination_percentage
FROM
    project..CovidDeaths
WHERE continent IS NOT NULL
ORDER BY 1,2;
```

4. Highest Contamination Rate by Country

This query identifies countries with the highest percentage of their population infected.

```
SELECT
    location, MAX(total_cases) as max_cases, population,
MAX((total_cases/population)*100) as max_Contamination_percentage
FROM
    project..CovidDeaths
WHERE continent IS NOT NULL
GROUP BY location, population
ORDER BY max_Contamination_percentage DESC;
```

5. Highest Death Count by Country

This query lists countries with the highest number of deaths.

```
SELECT
    location, MAX(CAST(total_deaths AS INT)) as max_deaths
FROM
    project..CovidDeaths
WHERE continent IS NOT NULL
GROUP BY location
ORDER BY max_deaths DESC;
```

6. Highest Death Count by Continent

This query shows the highest death counts per continent.

```
SELECT
    continent, MAX(CAST(total_deaths AS INT)) as max_deaths
FROM
    project..CovidDeaths
WHERE continent IS NOT NULL
GROUP BY continent
ORDER BY max_deaths DESC;
```

7. Global Daily COVID Stats

This query aggregates new cases and deaths globally per day, with death percentage.

```
SELECT
    date, SUM(new_cases) as total_cases, SUM(CAST(new_deaths AS INT))
as total_deaths,
    (SUM(CAST(new_deaths AS INT))/SUM(new_cases))*100 as
death_percentage
FROM
    project..CovidDeaths
WHERE continent IS NOT NULL
GROUP BY date
ORDER BY 1,2;
```

8. Population vs Vaccination (CTE)

This CTE compares rolling vaccinations to population over time.

```
WITH popvsvac (continent, location, date, population, new_vaccinations,
rolling_people_vaccinated) AS (
    SELECT d.continent, d.location, d.date, d.population,
c.new_vaccinations,
           SUM(CONVERT(INT, c.new_vaccinations)) OVER(PARTITION BY
d.location ORDER BY d.location, d.date)
    FROM project.dbo.CovidDeaths d
    JOIN project.dbo.CovidVaccinations c
        ON d.location = c.location AND d.date = c.date
    WHERE d.continent IS NOT NULL
)
SELECT *, (rolling_people_vaccinated/population)
```

```
FROM popvsvac
ORDER BY location, date;
```

9. Temp Table for Population vs Vaccination

This query stores vaccination vs population data in a temp table for analysis.

```
DROP TABLE IF EXISTS #PERCENTPOPULATIONVACCINATED;

CREATE TABLE #PERCENTPOPULATIONVACCINATED (
    continent NVARCHAR(255),
    location  NVARCHAR(255),
    date DATETIME,
    population NUMERIC,
    new_vaccinations NUMERIC,
    rolling_people_vaccinated NUMERIC
);

INSERT INTO #PERCENTPOPULATIONVACCINATED
SELECT d.continent, d.location, d.date, d.population,
c.new_vaccinations,
       SUM(CONVERT(INT, c.new_vaccinations)) OVER(PARTITION BY
d.location ORDER BY d.location, d.date)
FROM project.dbo.CovidDeaths d
JOIN project.dbo.CovidVaccinations c
    ON d.location = c.location AND d.date = c.date
WHERE d.continent IS NOT NULL;

SELECT *, (rolling_people_vaccinated/population)
FROM #PERCENTPOPULATIONVACCINATED
ORDER BY location, date;
```

10. Create View for Vaccination Percentage

This view stores rolling vaccination percentage by location and date.

```
CREATE VIEW PERCENTPOPULATIONVACCINATED AS
SELECT d.continent, d.location, d.date, d.population,
c.new_vaccinations,
       SUM(CONVERT(INT, c.new_vaccinations)) OVER(PARTITION BY
d.location ORDER BY d.location, d.date) AS rolling_people_vaccinated
FROM project.dbo.CovidDeaths d
JOIN project.dbo.CovidVaccinations c
    ON d.location = c.location AND d.date = c.date
WHERE d.continent IS NOT NULL;
```