```sql
/*
Covid 19 Data Exploration

Skills used: Joins, CTE's, Temp Tables, Windows Functions, Aggregate Functions,
  Creating Views, Converting Data Types

*/

Select *
From [Portfolio project]..CovidDeaths
Where continent is not null
order by 3,4


-- Select Data that we are going to be starting with

Select Location, date, total_cases, new_cases, total_deaths, population
From [Portfolio project]..CovidDeaths
Where continent is not null
order by 1,2


-- Total Cases vs Total Deaths
-- Shows likelihood of dying if you contract covid in your country

Select Location, date, total_cases,total_deaths, (total_deaths/total_cases)*100 as
  DeathPercentage
From [Portfolio project]..CovidDeaths
Where location like '%states%'
and continent is not null
order by 1,2


-- Total Cases vs Population
-- Shows what percentage of population infected with Covid

Select Location, date, Population, total_cases,  (total_cases/population)*100 as
  PercentPopulationInfected
From [Portfolio project]..CovidDeaths
--Where location like '%states%'
order by 1,2


-- Countries with Highest Infection Rate compared to Population

Select Location, Population, MAX(total_cases) as HighestInfectionCount,  Max
  ((total_cases/population))*100 as PercentPopulationInfected
From [Portfolio project]..CovidDeaths
--Where location like '%states%'
```

```
Group by Location, Population
order by PercentPopulationInfected desc


Select Location, Population,Date, MAX(total_cases) as HighestInfectionCount,  Max
  ((total_cases/population))*100 as PercentPopulationInfected
From [Portfolio project]..CovidDeaths
--Where location like '%states%'
Group by Location, Population, date
order by PercentPopulationInfected desc


-- Countries with Highest Death Count per Population

Select Location, MAX(cast(Total_deaths as int)) as TotalDeathCount
From [Portfolio project]..CovidDeaths
--Where location like '%states%'
Where continent is not null
Group by Location
order by TotalDeathCount desc



-- BREAKING THINGS DOWN BY CONTINENT

-- Showing contintents with the highest death count per population

Select continent, MAX(cast(Total_deaths as int)) as TotalDeathCount
From [Portfolio project]..CovidDeaths
--Where location like '%states%'
Where continent is not null
Group by continent
order by TotalDeathCount desc



-- GLOBAL NUMBERS

Select 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 DeathPercentage
From [Portfolio project]..CovidDeaths
--Where location like '%states%'
where continent is not null
--Group By date
order by 1,2



-- Total Population vs Vaccinations
```

```sql
-- Shows Percentage of Population that has recieved at least one Covid Vaccine

Select dea.continent, dea.location, dea.date, dea.population, vac.new_vaccinations
, SUM(CONVERT(int,vac.new_vaccinations)) OVER (Partition by dea.Location Order by
  dea.location, dea.Date) as RollingPeopleVaccinated
--, (RollingPeopleVaccinated/population)*100
From [Portfolio project]..CovidDeaths dea
Join [Portfolio project]..CovidVaccinations vac
    On dea.location = vac.location
    and dea.date = vac.date
where dea.continent is not null
order by 2,3


-- Using CTE to perform Calculation on Partition By in previous query

With PopvsVac (Continent, Location, Date, Population, New_Vaccinations,
  RollingPeopleVaccinated)
as
(
Select dea.continent, dea.location, dea.date, dea.population, vac.new_vaccinations
, SUM(CONVERT(int,vac.new_vaccinations)) OVER (Partition by dea.Location Order by
  dea.location, dea.Date) as RollingPeopleVaccinated
--, (RollingPeopleVaccinated/population)*100
From [Portfolio project]..CovidDeaths dea
Join [Portfolio project]..CovidVaccinations vac
    On dea.location = vac.location
    and dea.date = vac.date
where dea.continent is not null
--order by 2,3
)
Select *, (RollingPeopleVaccinated/Population)*100
From PopvsVac



-- Using Temp Table to perform Calculation on Partition By in previous query

DROP Table if exists #PercentPopulationVaccinated
Create Table #PercentPopulationVaccinated
(
Continent nvarchar(255),
Location nvarchar(255),
Date datetime,
Population numeric,
New_vaccinations numeric,
RollingPeopleVaccinated numeric
)
```

```sql
Insert into #PercentPopulationVaccinated
Select dea.continent, dea.location, dea.date, dea.population, vac.new_vaccinations
, SUM(CONVERT(int,vac.new_vaccinations)) OVER (Partition by dea.Location Order by
  dea.location, dea.Date) as RollingPeopleVaccinated
--, (RollingPeopleVaccinated/population)*100
From [Portfolio project]..CovidDeaths dea
Join [Portfolio project]..CovidVaccinations vac
    On dea.location = vac.location
    and dea.date = vac.date
--where dea.continent is not null
--order by 2,3

Select *, (RollingPeopleVaccinated/Population)*100
From #PercentPopulationVaccinated



-- Creating View to store data for later visualizations

Create View PercentPopulationVaccinated as
Select dea.continent, dea.location, dea.date, dea.population, vac.new_vaccinations
, SUM(CONVERT(int,vac.new_vaccinations)) OVER (Partition by dea.Location Order by
  dea.location, dea.Date) as RollingPeopleVaccinated
--, (RollingPeopleVaccinated/population)*100
From [Portfolio project]..CovidDeaths dea
Join [Portfolio project]..CovidVaccinations vac
    On dea.location = vac.location
    and dea.date = vac.date
where dea.continent is not null
```