**Project Case Study-Covid-19 Data Analysis**

The emergence of Covid-19 changed everyone’s life and its widespread disturbed everything. Gradually it got out of our hands. Worldwide lockdown was enforced to control the spread of Covid-19. The number of cases went on increasing and decreasing depending upon the enforcement of Covid-19 guidelines and their enforcement. Gradually Covid-19 vaccines and Lockdown guidelines helped in controlling the further spread of the disease. Here is the data link of the dataset that showcase how various countries vaccinated the large part of their population.

Download Link: <https://www.kaggle.com/datasets/imdevskp/corona-virus-report?select=covid_19_clean_complete.csv>

**Task:**

### Task 1: Explore and visualize the 3 countries most affected in terms of Confirmed Cases and Deaths.

**Steps**:

* Extract the data for confirmed cases and deaths globally.
* Identify the top 3 countries with the highest number of confirmed cases and deaths.
* Visualize this information using a bar chart or a similar visualization tool.

### Task 2: Explore which top 10 countries have the most recovered cases.

**Steps**:

* Filter and extract the data for recovery counts across countries.
* Sort the countries by the highest number of recovered cases.
* Display the top 10 countries with the most recoveries.

### Task 3: Summary of recovery rates for each country.

**Steps**:

* Calculate the recovery rate for each country using the formula: Recovery Rate=(Recovered Cases/Confirmed Cases)×100

### Task 4: Visualize the top 5 countries with the highest recovery rates.

**Steps**:

* Identify the top 5 countries with the highest recovery rate.
* Create a bar chart or other relevant visualization to show these countries.

### Task 5: Check the trend over the months of the virus (Total Confirmed Cases, Deaths, and Recoveries).

**Steps**:

* Collect monthly data on confirmed cases, deaths, and recoveries.
* Plot trends over time using line graphs for each category (confirmed cases, deaths, and recoveries).

### Task 6: Make a chart to show overall (year-wise) COVID-19 data: death, confirmed, and recovery.

**Steps**:

* Aggregate the data by year for confirmed cases, deaths, and recoveries.
* Create a line chart or bar chart to show these trends over the years.

### Task 7: Define a function for a country to show below details.

**Steps**:

* Define a Python function (or similar) to provide the following details for any given country:
  + Confirmed cases
  + Deaths
  + Recoveries
  + Recovery rate
  + Case fatality rate (CFR), which is the percentage of confirmed cases that resulted in death: CFR=(Deaths/Confirmed Cases)\*100

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| --- | --- | --- | --- |
| **Total Confirm Case** | **Total Death** | **Recovery** |  |
|  |  |  |  |

8- Define a function for monthly details for given month

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| --- | --- | --- | --- | --- |
| **Country 10** | **Total Confirm Case** | **Total Death** | **Recovery** |  |
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