DEVELOPMENT PART

To develop a COVID- 19 case analysis, you'll need to consider various aspects. Here's a high – level over view of the development process .

Step 1: Data Preparation

- Import your COVID-19 dataset into IBM Cognos. You can connect to various data sources like Excel, CSV, or databases.
- Ensure your data includes relevant fields like date, confirmed cases, deaths, and recoveries.

Step 2: Creating a Data Module

- In Cognos, create a data module to organize and shape your data. Define relationships between tables if necessary.

Step 3: Data Exploration

- Build a report to explore your data. You can use drag-and-drop tools to create visuals and tables.
- Create a table or chart to display key COVID-19 statistics, like total cases, deaths, and recoveries.

Step 4: Time Series Analysis

- To analyze trends over time, you can create a line chart.
- Drag the date field to the X-axis and the relevant COVID-19 metrics (confirmed cases, deaths, recoveries) to the Y-axis.
- Apply filters or prompts to allow users to select specific time periods.

Step 5: Geospatial Analysis

- If you have geographical data, you can create a map chart.
- Map the data based on regions or countries.
- Use color-coding or symbols to represent COVID-19 statistics.

Step 6: Predictive Modeling (Optional)

- For predictive modeling, you might need to use external tools or languages like Python or R. Cognos has integration options for this.

Step 7: Creating a Dashboard

- Combine your charts and tables into a dashboard.
- Add filters, prompts, or parameters to make it interactive.
- Design the dashboard to be user-friendly.

Step 8: Sharing and Distribution

- Publish your dashboard to the Cognos server.
- Share it with relevant stakeholders or decision-makers. They can access it through a web interface.

Step 9: Documentation

- It's crucial to document your analysis, data sources, and assumptions for transparency and reproducibility.
- Remember that the exact steps and features may vary depending on your version of IBM Cognos. Make sure to refer to the official documentation and guides for detailed instructions on each of these steps.

Data Collection:

Obtain COVID-19 data from reliable sources, such as the World Health Organization (WHO) or government health agencies. You can also use APIs to fetch real-time data.

```
# Sample COVID-19 data (replace with actual data source)

data = {

    "Date": ["2023-01-01", "2023-01-02", "2023-01-03", "2023-01-04"],

    “Confirmed Cases ": [100, 150, 200, 250],

    "Recovered Cases": [20, 30, 40, 50],

    "Deaths": [5, 7, 10, 12],

}
```

```
# Create a Data Frame from the sample data

df = pd. Data Frame(data)

# Basic data analysis

total_cases = df["Confirmed Cases"].sum()

total_recoveries = df["Recovered Cases"].sum()

total_deaths = df["Deaths"].sum()

print("Total COVID-19 Cases:", total_cases)

print("Total Recovered Cases:", total_recoveries)

print("Total Deaths:", total_deaths)

# Data visualization (line chart)

plt.figure(figsize=(10, 6))

plt.plot(df["Date"], df["Confirmed Cases"], label="Confirmed Cases", marker='o')

plt.plot(df["Date"], df ["Recovered Cases"], label="Recovered Cases", marker='o')

plt.plot(df["Date"], df ["Deaths"], label="Deaths", marker='o')

plt.xlabel("Date")

plt.ylabel("Count")

plt.title("COVID-19 Cases Over Time")

plt.xticks(rotation=45)

plt.legend()

plt.grid(True)

plt.show()
```

Key steps in the program include:

1. Importing necessary libraries, such as pandas for data handling and matplotlib for data visualization.

2. Creating a Data Frame to store and manipulate the data.

3. Calculating the total number of confirmed cases, recoveries, and deaths .
4. Visualizing the data using a line chart to show the trend over time.

Visualization:

Certainly! Visualizing COVID-19 case data can be done using various programming languages and libraries. Here's an example using Python and the popular libraries Matplotlib and Pandas. Make sure you have them installed. You'll also need a dataset with COVID-19 case information.

```
import pandas as pd

import matplotlib.pyplot as plt

# Load the COVID-19 data

data = pd.read_csv('covid_data.csv') # Replace 'covid_data.csv' with your dataset

# Extract relevant columns (date and cases)

dates = data['date']

cases = data['cases']

# Convert date column to datetime format

dates = pd.to_datetime(dates)

# Create a line plot for COVID-19 cases

plt.figure(figsize=(12, 6))

plt.plot(dates, cases, marker='o', linestyle='-')

plt.title('COVID-19 Cases Over Time')

plt.xlabel('Date')

plt.ylabel('Cases')

plt.grid(True)

plt.xticks(rotation=45)

plt.show()
```