Covid-19 Analysis Report

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12/12/2021

Analyzing the covid 19 in pakistan using R

Loading libraries

```
library(ggplot2)
library(dplyr)
library(lubridate)
```

Loading dataset

```
data = read.csv("https://raw.githubusercontent.com/theshahzaibc/Covid-19-Vaccines-Analysis-with-R/main/
data$Date <- as.Date(data$Date, format="%m/%d/%Y", tz="UTC")
head(data)
```

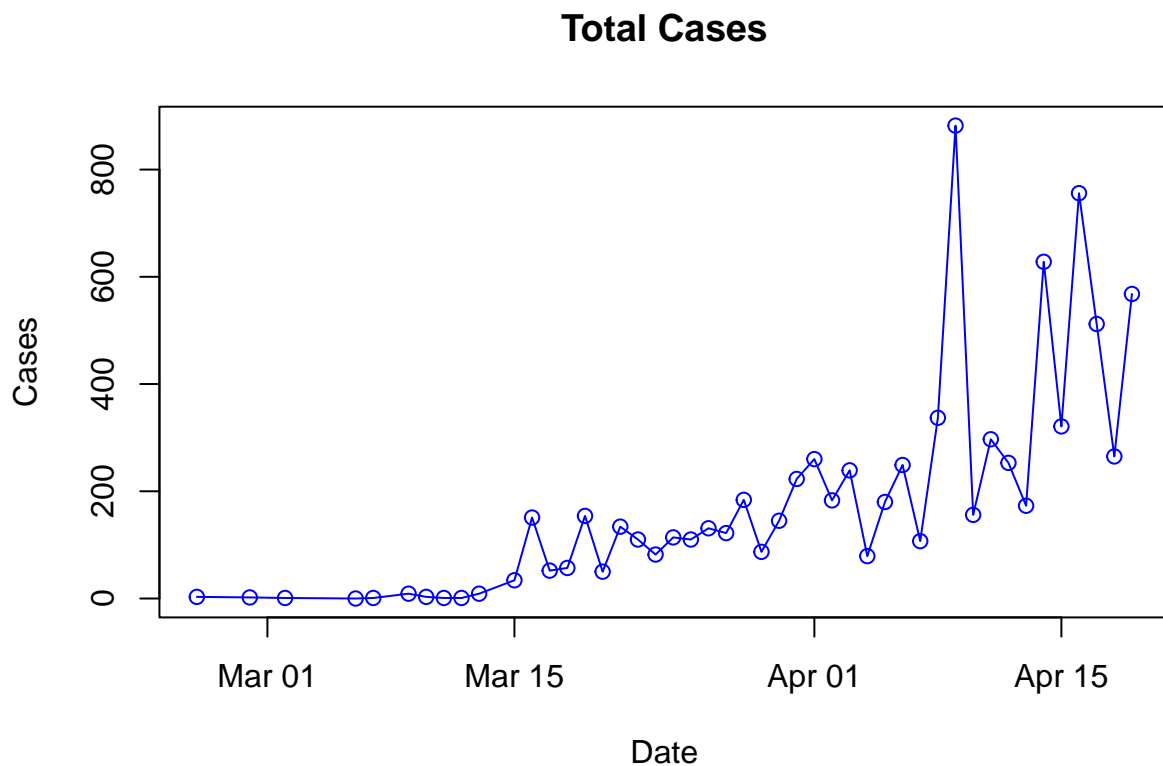```
Date Cases Deaths Recovered Travel_history   Province
1 2020-02-26   1   0   0   China Islamabad Capital Territory
2 2020-02-26   2   0   0   Iran/Taftan   Sindh
3 2020-02-29   1   0   0   China Islamabad Capital Territory
4 2020-02-29   1   0   0   Iran/Taftan   Sindh
5 2020-03-02   1   0   0   Iran/Taftan   Gilgit-Baltistan
6 2020-03-06   0   0   1   Unknown   Sindh
City
1 Islamabad
2   Karachi
3 Islamabad
4   Karachi
5   Gilgit
6   Karachi
```

### Ploting Monthly Total cases in Pakistan

```
str(data)
```

```
## 'data.frame':    850 obs. of  7 variables:
##  $ Date           : Date, format: "2020-02-26" "2020-02-26" ...
##  $ Cases          : int  1 2 1 1 1 0 1 6 3 1 ...
##  $ Deaths         : int  0 0 0 0 0 0 0 0 0 0 ...
##  $ Recovered      : int  0 0 0 0 0 1 0 0 0 0 ...
##  $ Travel_history : chr  "China" "Iran/Taftan" "China" "Iran/Taftan" ...
##  $ Province       : chr  "Islamabad Capital Territory" "Sindh" "Islamabad Capital Territory" "Sindh"
##  $ City           : chr  "Islamabad" "Karachi" "Islamabad" "Karachi" ...
```
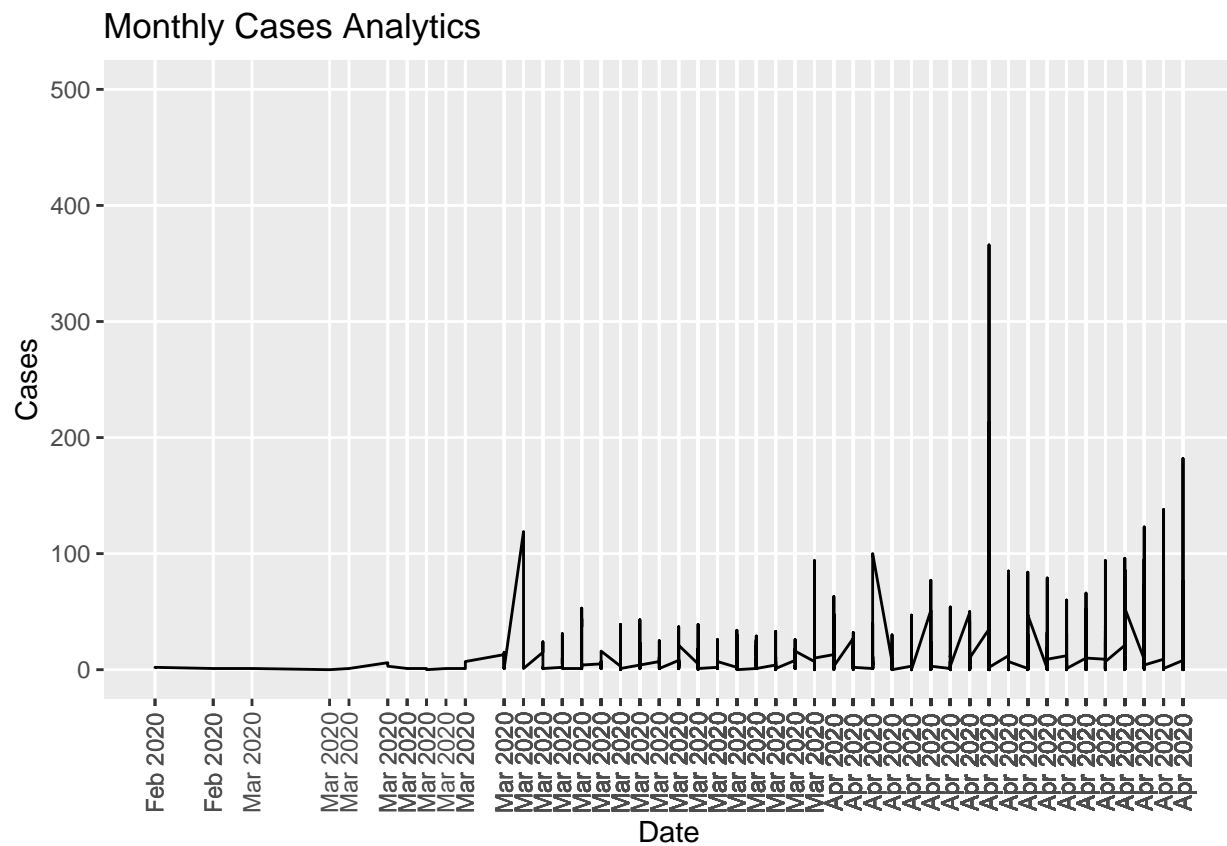
```
total <- aggregate((Cases ~ Date),data,sum)
plot(total$Date, total$Cases, type = "o", col = "BLUE", main = "Total Cases", xlab = "Date", ylab = "Ca
```


Monthly Cases Analytics of Pakistan

```
lbls <- paste0(month.abb[month(data$Date)], " ", lubridate::year(data$Date))
brks <- data$Date
ggplot(data, aes(x=Date)) +
  geom_line(aes(y=Cases)) +
  labs(title="Monthly Cases Analytics",
       y="Cases") +
  ylim(0, 500) +
  scale_x_date(labels = lbls,
               breaks = brks) +
```

```
theme(axis.text.x = element_text(angle = 90, vjust=0.5),
      panel.grid.minor = element_blank())
```

Monthly Cases Analytics

Function to change Type and Sorting of Dataset

```
plot_covid <- function(sort_, type_){
  if (type_ == "Cases"){
    ggplot(data, aes(x=Date, y=Cases, group = sort_, colour = sort_)) +
      geom_line() +
      labs(y= "Cases", x = "Date") +
      ggtitle("Daily COVID19 Cases in Pakistan") +
      geom_point()
  }
  else if (type_ == "Deaths"){
    ggplot(data, aes(x=Date, y=Deaths, group = sort_, colour = sort_)) +
      geom_line() +
      labs(y= "Deaths", x = "Date") +
      ggtitle("Daily COVID19 Deaths in Pakistan") +
      geom_point()
  }
  else if (type_ == "Recovered"){
    ggplot(data, aes(x=Date, y=Recovered, group = sort_, colour = sort_)) +
```
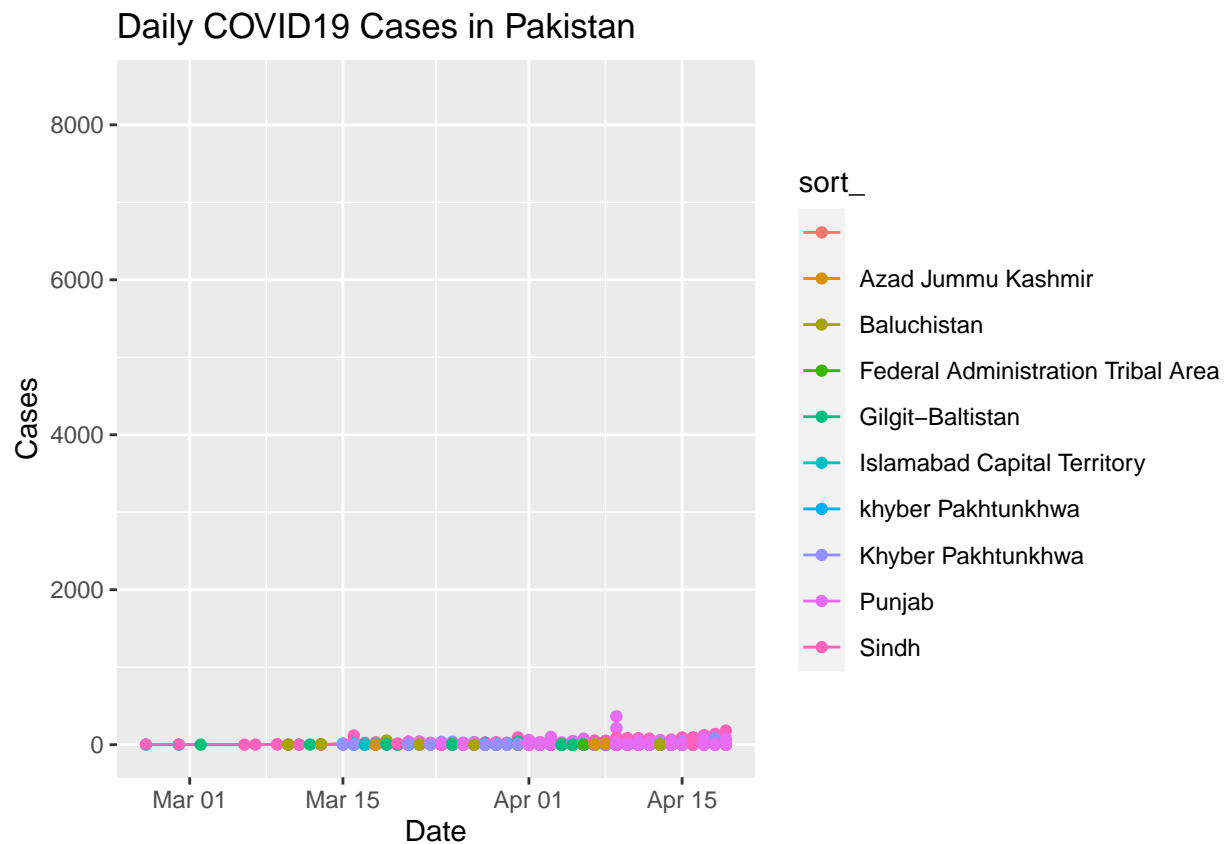
```
    geom_line() +
    labs(y= "Recovered", x = "Date") +
    ggtitle("Daily COVID19 Recovered in Pakistan") +
    geom_point()
  }
}
```
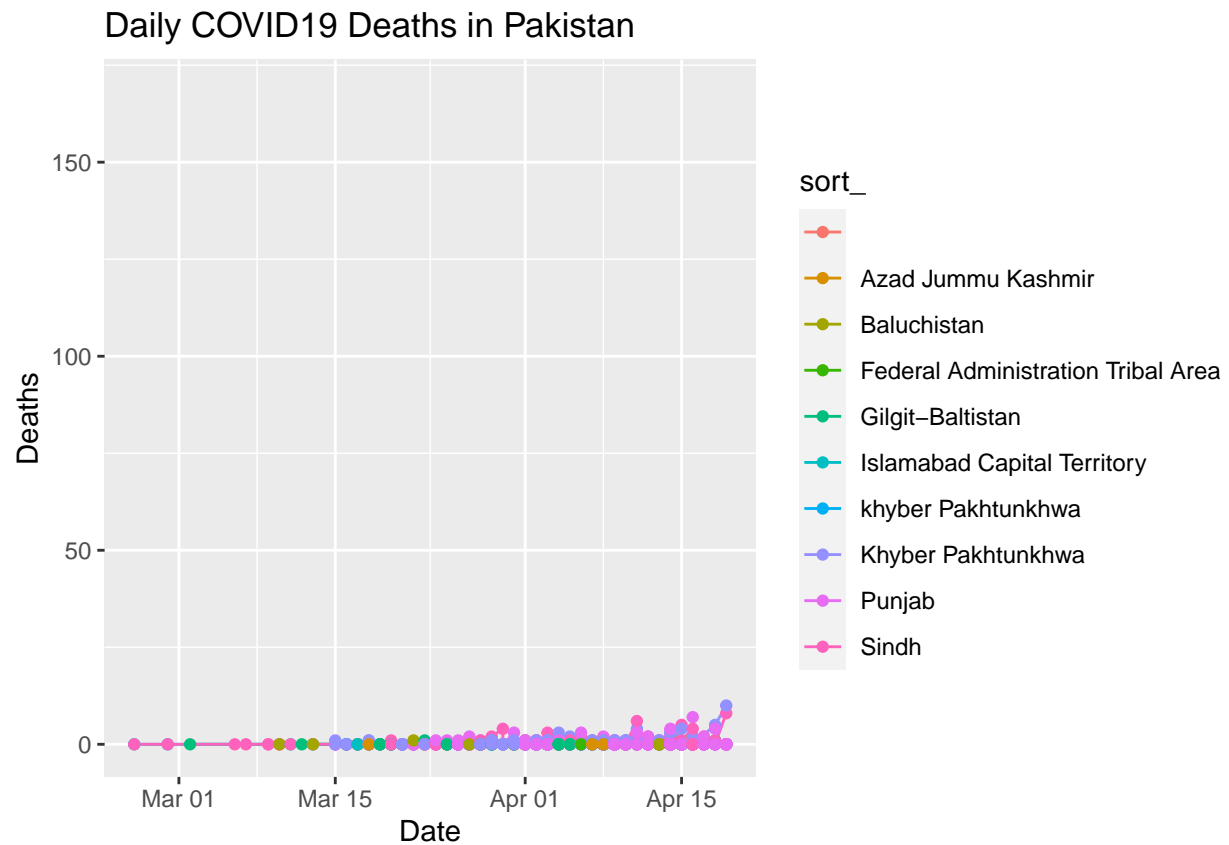
Monthly Cases plot sorted with respect to Provinces of Pakistan

```
plot_covid(sort_ = data$Province, type_ = "Cases")
```
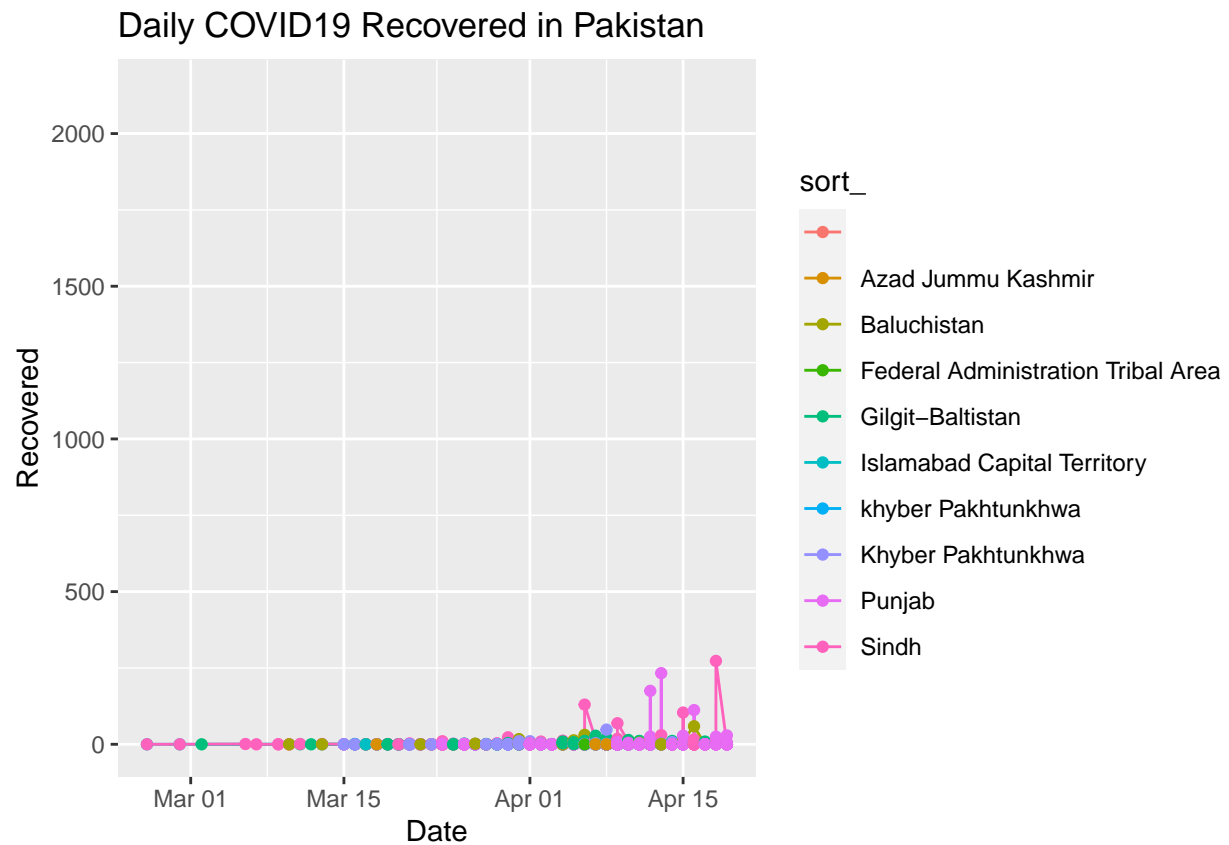

Monthly Deaths plot sorted with respect to Provinces of Pakistan

```
plot_covid(sort_ = data$Province, type_ = "Deaths")
```

Daily COVID19 Deaths in Pakistan

Legend (sort_):
- Azad Jummu Kashmir
- Baluchistan
- Federal Administration Tribal Area
- Gilgit–Baltistan
- Islamabad Capital Territory
- khyber Pakhtunkhwa
- Khyber Pakhtunkhwa
- Punjab
- Sindh

Monthly Recovered Cases plot sorted with respect to Provinces of Pakistan

```
plot_covid(sort_ = data$Province, type_ = "Recovered")
```

Daily COVID19 Recovered in Pakistan

You can also perform sorting for cities as well

Monthly Cases Cases in cities of Pakistan

```
plot_covid(sort_ = data$City, type_ = "Cases")
```

COVID19 Cases in Pakistan

	Diamer	Jehlum	Mandi Bahauddin	Orakzai	
Abbottabad	Dir Lower	Jhang	Mansehra	Pakpatan	
Astore	Dir Upper	Karachi	Mardan	Peshawar	
Attock	Faisalabad	Karak	Mardan	Quetta	
Badin	Ghanche	Kasur	Mianwali	Rahim yar khan	
Bahawal Nagar	Ghotki	Khairpur	Mirpur	Rahim Yar Khan	
Bahawalpur	Gilgit	Khanewal	Mohmand	Raiwind	
Bajaur	Gujranwala	Kharmang	Multan	Rajanpur	
Bannu	Gujrat	Khushab	Muzaffarabad	Rawalpindi	
Bhakhar	Gujrat	Khyber	Muzaffargar	Sahewal	
Bhambore	Hafizabad	Kohat	Nagar	Sanghar	
Buner	Hangu	Kurrum	Nankana	Sargodha	
Chakwal	Hangu	Lahore	Narowal	Shaheed Benazirabad	
Charsadda	Haripur	Laiya	Naushero Feroz	Shangla	
Chiniot	Hyderabad	Lakki Marwat	North Waziristan	Sheikhupura	
Dadu	Islamabad	Larkana	Nowshera	Shigar	
Dera Ghazi Khan	Jacobabad	Lodhran	NSB	Shikarpur	
Dera Ismail Khan	Jamshoro	Malakand	Okara	Shujawal	