Carbon Emissions Graph

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```
rm(list = ls())
library("dplyr")
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library("tidyr")
```

```
carbon <- read.csv("carbon-monitor-US.csv")
```

```
#remove rows with NA
carbon <- na.omit(carbon)

#remove country column
carbon$country...group.of.countries = NULL

head(carbon)
```

```
##         date sector MtCO2.per.day
## 1 01/01/2019  Power      3.962845
## 2 02/01/2019  Power      4.617279
## 3 03/01/2019  Power      4.444041
## 4 04/01/2019  Power      4.352839
## 5 05/01/2019  Power      4.027248
## 6 06/01/2019  Power      3.444597
```

```
#modify dates
carbon <- carbon %>%
  mutate(date = as.Date(date, format = "%d/%m/%Y"))

carbon_date <- carbon
```

```r
#remove sector column
carbon_date$sector = NULL
```

```r
#combine dates into one row per day
carbon_date = aggregate(.~date, data = carbon_date, FUN = sum)
head(carbon_date)
```

```
##         date MtCO2.per.day
## 1 2019-01-01      13.15755
## 2 2019-01-02      15.67320
## 3 2019-01-03      15.41266
## 4 2019-01-04      15.28831
## 5 2019-01-05      14.40894
## 6 2019-01-06      12.92496
```

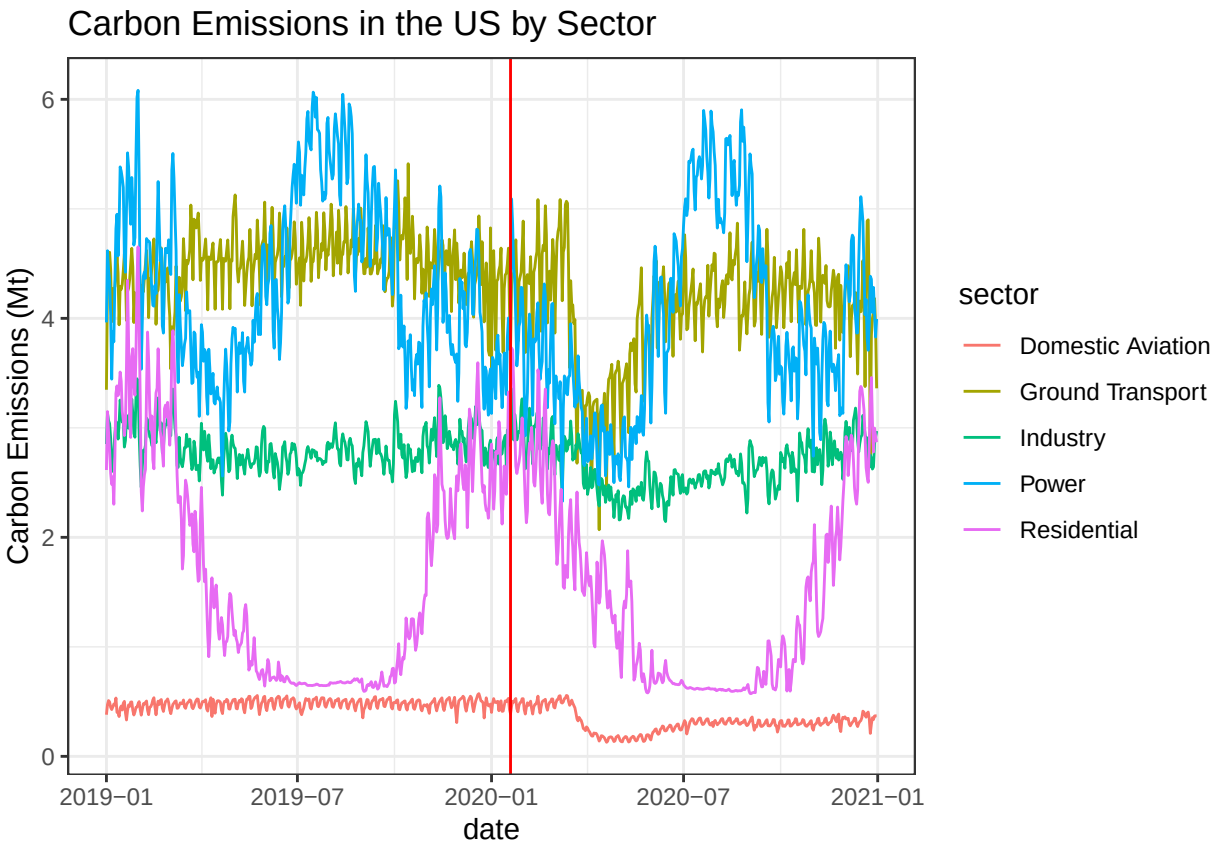
```r
#Widen table by sector
carbon_sector <- carbon %>%
  pivot_wider(names_from = sector, values_from = MtCO2.per.day)
head(carbon_sector)
```

```
## # A tibble: 6 x 6
##   date       Power `Ground Transport` Industry Residential `Domestic Aviation`
##   <date>     <dbl>              <dbl>    <dbl>       <dbl>               <dbl>
## 1 2019-01-01  3.96               3.35     2.85        2.61               0.380
## 2 2019-01-02  4.62               4.30     3.13        3.15               0.473
## 3 2019-01-03  4.44               4.43     3.07        2.96               0.509
## 4 2019-01-04  4.35               4.60     3.04        2.80               0.496
## 5 2019-01-05  4.03               4.45     2.90        2.59               0.447
## 6 2019-01-06  3.44               3.97     2.60        2.48               0.427
```

creating graphs

```r
library("ggplot2")
library("dplyr")
library("dslabs")
library("readr")
theme_set(theme_bw())
```

```r
ggplot(carbon, aes(x = date, y = MtCO2.per.day, col = sector)) +
  geom_line()+
  ggtitle("Carbon Emissions in the US by Sector")+
  labs(y = "Carbon Emissions (Mt)")+
  geom_vline(xintercept =as.Date("19/01/2020","%d/%m/%Y"), color = "red", linetype = "solid")
```


Carbon Emissions in the US by Sector
Carbon Emissions (Mt)
6
4
2
0
2019−01
2019−07
2020−01
2020−07
2021−01
date
sector
Domestic Aviation
Ground Transport
Industry
Power
Residential