

WindProject

11/18/2019

Connect to Database

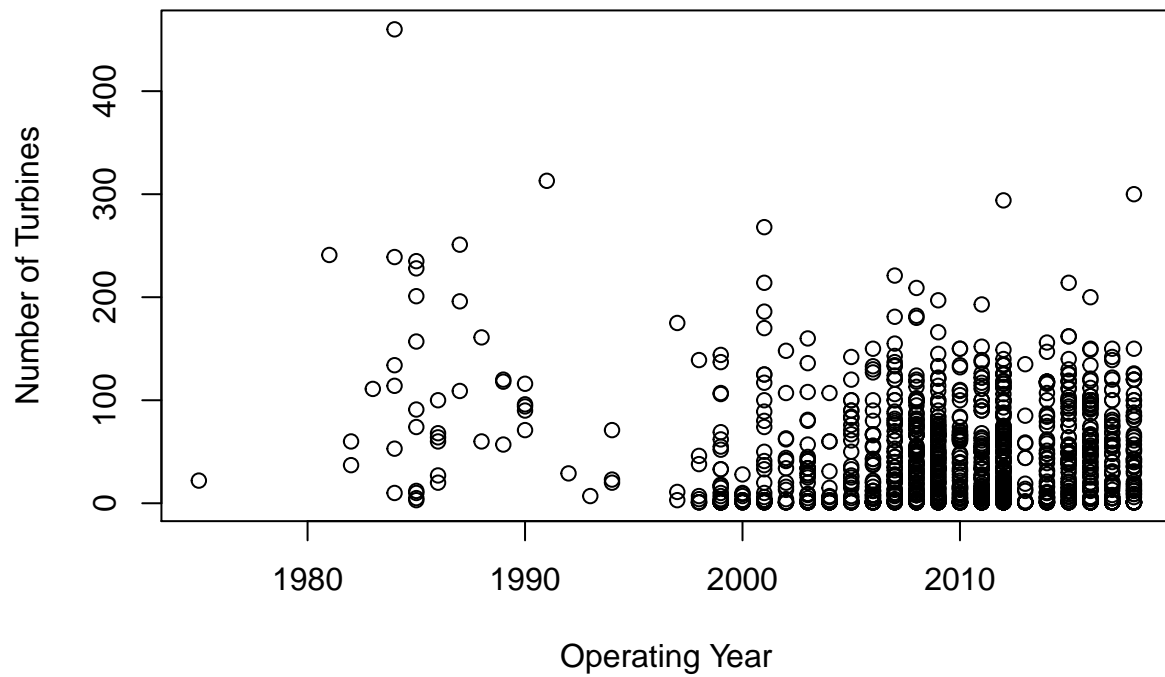
```
con <- DBI::dbConnect(odbc::odbc(), Driver = "SQL Server",  
                      Server = "MSI\\SQLEXPRESS", Database = "testProjectWind",  
                      Trusted_Connection = "True")
```

Number of Turbines per Operating Year for each Wind Farm

```
turbinesPerYear <- dbGetQuery(con,  
                              'SELECT "Operating Year", "Number of Turbines"  
                              FROM dbo.WindCap2017')  
summary(turbinesPerYear)
```

```
## Operating Year Number of Turbines  
## Min. :1975 Min. : 1.00  
## 1st Qu.:2007 1st Qu.: 3.00  
## Median :2010 Median : 29.00  
## Mean :2009 Mean : 43.62  
## 3rd Qu.:2014 3rd Qu.: 67.00  
## Max. :2018 Max. :460.00
```

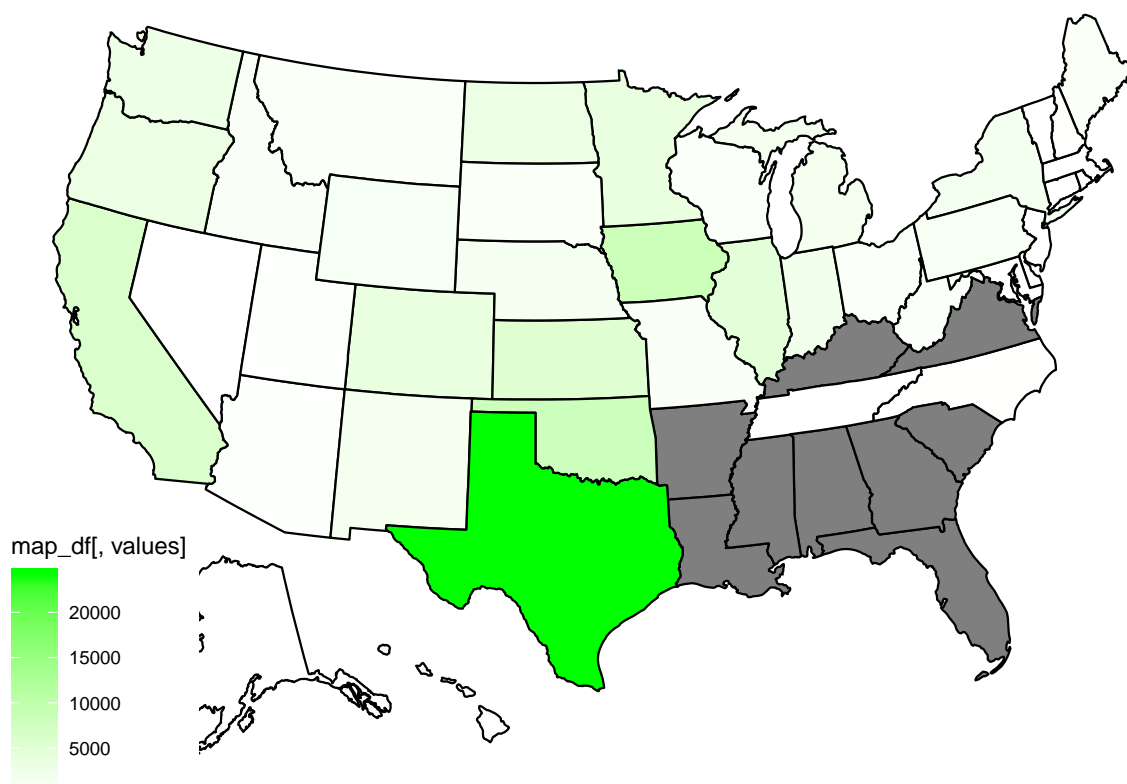
```
plot(turbinesPerYear)
```



Total Wind Capacity by State

```
StateTotals <- dbGetQuery(con,
  'SELECT State as state, Sum("Nameplate Capacity (MW)") AS NC
  FROM dbo.WindCap2017
  GROUP BY State ORDER BY NC DESC')

plot_usmap(data = StateTotals, values = "NC") +
  scale_fill_continuous(low = "white", high = "green")
```



```
ggplot(data = StateTotals, mapping = aes(x = state, y = NC, fill = state), position = position_dodge2(w
  geom_col() + theme(legend.position = "bottom")
```

