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 %r
 library(readr)
 library(dplyr)
 setwd("/Users/neha/Documents/Capstone/pollution")
 temp = list.files(pattern="*.csv")
tbl = lapply(temp, read_csv) %>% bind_rows()
Took 18 sec. Last updated by anonymous at April 16 2017, 7:37:47 PM.
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 %r
 library(sqldf)
 x = sqldf("select avg(ozone) as avg_ozone, avg(particullate_matter) as particulate, avg(carbone)
 (nitrogen_dioxide) as nitrogen from tbl group by longitude,latitude")
Took 26 sec. Last updated by anonymous at April 16 2017, 7:38:25 PM.
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 %r
 result3<-kmeans(x,3)
 result3$centers
avg_ozone particulate monoxide
                                  sulfur nitrogen
1 105.9481
                112.2404 103.4790 116.5330 117.0677
  108.5616
                109.3462 122.1382 114.3974 109.9401
3 123.2459
                113.8178 110.6574 104.6408 107.3411
Took 0 sec. Last updated by anonymous at April 16 2017, 7:56:28 PM.
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 result10<-kmeans(x,10)
result10$centers
ava_ozone particulate monoxide
                                    sulfur nitrogen
    91.52245
                123.67904 121.5981 106.71682 97.93761
1
2
  129.66757
                121.20415 111.7663 108.82019 106.19614
3
    99.50636
                 98.87291 116.0527 107.33638 106.76163
   117.02430
                 99.72097 103.7949 124.17270 107.42184
    98.66266
                119.18758 106.5831 119.96829 123.12924
                107.04961 129.4175 115.28823 120.95571
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   113.59217
                110.25397 102.0130 111.30572 119.17068
```

115.40226 119.2048 105.88419 115.80225

112.07657

9

10 110.39806 110.24820 119.8376 121.62451 110.56594 **Zeppelin**ous at April 16 2017, 7:57:00 PM.

graph7 FINISIED ♦ ♣ ( ligfawt ▼ **②** plot(x[c("avg\_ozone","particulate","monoxide","sulfur","nitrogen")], col = result10\$cluster ) avg\_ozone particulate monoxide sulfur nitrogen 120 140 100 120 140 120 Took 0 sec. Last updated by anonymous at April 16 2017, 7:57:48 PM.

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## Zeppelin

graph7











