

3주차 실습

20185109 길홍배

1. 2020 ~ 2021 미세먼지(PM10) 농도

(1) 데이터 설정

```
city <- c("전국", "서울", "부산", "대구", "인천", "광주", "대전", "울산", "세종", "수원")
april <- c(41, 42, 37, 42, 42, 39, 41, 37, 42, 48) #2021-04 미세먼지
march <- c(65, 67, 60, 59, 69, 65, 63, 55, 67, 75) #2021-03 미세먼지
february <- c(43, 48, 37, 41, 46, 40, 42, 35, 47, 52) #2021-02 미세먼지
january <- c(39, 38, 36, 40, 37, 37, 39, 34, 45, 41) #2021-01 미세먼지
december <- c(38, 42, 33, 38, 39, 33, 38, 30, 44, 44) #2020-12 미세먼지
df_pm10 = data.frame("도시"=city, "april"=april, "march"=march,
                      "february"=february, "january"=january, "december"=december)
pm10_mat_01 <- as.matrix(df_pm10[c(2, 3, 4, 5, 6)])
```

(2) 데이터 출력

```
color <- c(rainbow(10))
barplot(pm10_mat_01, beside=T, main="2020-12 ~ 2021-04 미세먼지 (PM10) 농도",
        ylim=c(0, 80), col=color)
legend(15, 50, city, cex=0.5, fill=color)
```



2. 측정소별 대기 현황

(1) 데이터 설정

```
location <- c("중구", "종로구", "용산구", "은평구", "서대문", "마포구", "광진구", "성동구", "종랑구", "동대문")
o3 <- c(0.037, 0.037, 0.027, 0.039, 0.035, 0.031, 0.033, 0.037, 0.033, 0.036) #오존 농도
co2 <- c(0.017, 0.016, 0.018, 0.015, 0.014, 0.020, 0.018, 0.027, 0.018, 0.017) #이산화탄소 농도
co <- c(0.3, 0.4, 0.3, 0.3, 0.4, 0.4, 0.2, 0.4, 0.4, 0.3) #일산화탄소 농도
so2 <- c(0.003, 0.003, 0.003, 0.003, 0.004, 0.003, 0.002, 0.003, 0.002, 0.003) #아황산가스 농도

df_atmosphere = data.frame("지역"=location, "오존"=o3, "이산화탄소"=co2, "일산화탄소"=co, "아황산가스"=so2)
atmosphere_mat <- as.matrix(df_atmosphere[c(2, 3, 4, 5)])
```

(2) 데이터 출력

```
plot(o3, type="b", ylim=c(0, 0.40), axes=FALSE, xlab="",
     ylab="", main="측정소별 대기 현황", pch=25, cex=0.8, col="red")
par(new=T)
lines(co2, type="b", cex=0.8)
lines(so2, type="b", cex=0.8, col="blue", pch=5)
lines(co, type="b", cex=0.8, col="green", pch=17)
axis(1, at=1:10, label=location, cex=0.8)
axis(2, ylim=c(0, 0.40))
legend(1.25, 0.25, c("오존", "이산화탄소", "아황산가스", "일산화탄소"),
      cex=0.8, fill=c("red", "black", "blue", "green"), lty=1)
```

