

Importar-datos-csv.R

ji_ti

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```
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# Importar datos locales -----

temperatura <- read.csv("temperatura.csv")
View(temperatura) # Abre el objeto en una pestaña
head(temperatura) # Muestra las primeras 6 filas de la base de datos en la consola.
```

```
##      Ano  Ene  Feb  Mar  Abr  May  Jun  Jul  Ago  Sep  Oct  Nov  Dic
## 1 2000 22.5 18.9 19.4 14.0 16.0 22.0 15.0 13.4 18.8 12.4 22.9 21.1
## 2 2001 19.3 20.3 18.5 24.1 17.5 29.4 17.2 22.6 16.2 17.8 25.7 20.2
## 3 2002 23.2 12.9 12.6 26.8 24.6 20.9 20.5 21.5 15.6 24.3 24.8 16.7
## 4 2003 27.6 17.3 16.4 19.6 21.6 21.3 17.5 21.3 15.9 21.1 23.3 30.7
## 5 2004 18.8 20.6 17.7 25.0 17.4 19.6 12.2 21.7 19.6 13.8 18.4 23.2
## 6 2005 18.8 14.2 25.3 21.8 22.6 10.4 20.3 16.6 21.7 20.9 23.8  9.9
```

```
dim(temperatura) # Muestra cuantas filas y columnas tiene la base de datos.
```

```
## [1] 21 13
```

```
names(temperatura) # Muestra cuales son los nombres de los encabezados.
```

```
## [1] "Ano" "Ene" "Feb" "Mar" "Abr" "May" "Jun" "Jul" "Ago" "Sep" "Oct" "Nov"
## [13] "Dic"
```

```
str(temperatura) # Muestra la estructura del data frame.
```

```
## 'data.frame':    21 obs. of  13 variables:
## $ Ano: int  2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 ...
## $ Ene: num  22.5 19.3 23.2 27.6 18.8 18.8 27.9 23.8 17.7 22.7 ...
## $ Feb: num  18.9 20.3 12.9 17.3 20.6 14.2 21.9 17 18.5 17 ...
## $ Mar: num  19.4 18.5 12.6 16.4 17.7 25.3 21.7 11.2 21.6 18.1 ...
## $ Abr: num  14 24.1 26.8 19.6 25 21.8 16.8 21.8 27.7 19.8 ...
## $ May: num  16 17.5 24.6 21.6 17.4 22.6 20.5 24.8 16.5 18.4 ...
## $ Jun: num  22 29.4 20.9 21.3 19.6 10.4 19.9 20.3 32.3 19 ...
## $ Jul: num  15 17.2 20.5 17.5 12.2 20.3 14.7 22.4 15.4 27.7 ...
## $ Ago: num  13.4 22.6 21.5 21.3 21.7 16.6 21.2 21.5 16.4 29.3 ...
```

```
## $ Sep: num 18.8 16.2 15.6 15.9 19.6 21.7 21.4 24.1 20.1 27.3 ...
## $ Oct: num 12.4 17.8 24.3 21.1 13.8 20.9 21.9 15.6 20.8 20.3 ...
## $ Nov: num 22.9 25.7 24.8 23.3 18.4 23.8 16.1 18.8 17.6 20.4 ...
## $ Dic: num 21.1 20.2 16.7 30.7 23.2 9.9 20.9 16.7 24.3 16 ...
```

```
summary(temperatura) # Resumen estadístico sencillo de la base de datos
```

```
##      Ano      Ene      Feb      Mar      Abr
## Min.   :2000   Min.   :10.40   Min.   :10.2   Min.   :11.20   Min.   : 6.90
## 1st Qu.:2005   1st Qu.:17.20   1st Qu.:14.7   1st Qu.:16.60   1st Qu.:18.50
## Median :2010   Median :18.80   Median :18.9   Median :18.50   Median :20.50
## Mean   :2010   Mean   :19.53   Mean   :18.6   Mean   :19.25   Mean   :20.53
## 3rd Qu.:2015   3rd Qu.:22.70   3rd Qu.:21.0   3rd Qu.:21.70   3rd Qu.:24.10
## Max.   :2020   Max.   :27.90   Max.   :29.3   Max.   :25.30   Max.   :27.80
##      May      Jun      Jul      Ago      Sep
## Min.   :12.70   Min.   :10.4   Min.   :12.0   Min.   :13.40   Min.   :14.60
## 1st Qu.:17.40   1st Qu.:19.6   1st Qu.:15.0   1st Qu.:16.60   1st Qu.:16.20
## Median :18.40   Median :21.3   Median :18.4   Median :21.70   Median :19.60
## Mean   :18.88   Mean   :21.6   Mean   :18.8   Mean   :21.26   Mean   :20.43
## 3rd Qu.:21.30   3rd Qu.:24.0   3rd Qu.:21.3   3rd Qu.:23.90   3rd Qu.:22.40
## Max.   :24.80   Max.   :32.3   Max.   :27.7   Max.   :29.50   Max.   :33.60
##      Oct      Nov      Dic
## Min.   :12.40   Min.   :10.70   Min.   : 9.90
## 1st Qu.:15.60   1st Qu.:16.40   1st Qu.:16.70
## Median :21.10   Median :20.30   Median :20.20
## Mean   :20.67   Mean   :20.16   Mean   :20.08
## 3rd Qu.:22.60   3rd Qu.:23.40   3rd Qu.:23.20
## Max.   :39.30   Max.   :31.60   Max.   :30.70
```

```
names(temperatura) <- c("Anual", "Ene", "Feb", "Mar", "Abr", "May", "Jun", "Jul", "Ago",
                        "Sep", "Oct", "Nov", "Dic")
```

```
temperatura$media_anual <- round(rowMeans(temperatura[,2:13]),1)
head(temperatura)
```

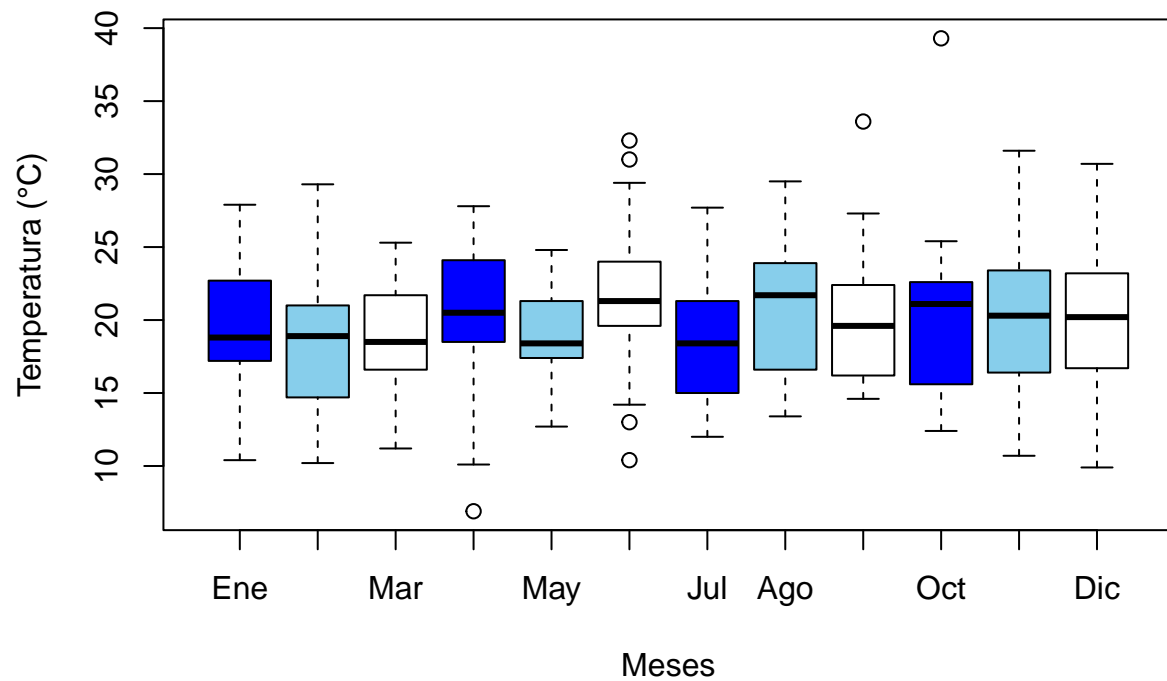
```
##   Annual Ene Feb Mar Abr May Jun Jul Ago Sep Oct Nov Dic media_anual
## 1  2000 22.5 18.9 19.4 14.0 16.0 22.0 15.0 13.4 18.8 12.4 22.9 21.1      18.0
## 2  2001 19.3 20.3 18.5 24.1 17.5 29.4 17.2 22.6 16.2 17.8 25.7 20.2      20.7
## 3  2002 23.2 12.9 12.6 26.8 24.6 20.9 20.5 21.5 15.6 24.3 24.8 16.7      20.4
## 4  2003 27.6 17.3 16.4 19.6 21.6 21.3 17.5 21.3 15.9 21.1 23.3 30.7      21.1
## 5  2004 18.8 20.6 17.7 25.0 17.4 19.6 12.2 21.7 19.6 13.8 18.4 23.2      19.0
## 6  2005 18.8 14.2 25.3 21.8 22.6 10.4 20.3 16.6 21.7 20.9 23.8 9.9       18.9
```

```
colores <- c("blue", "skyblue", "white")
```

```
temp <- temperatura[,2:13]
temp10 <- temperatura[11:21, 2:13]
```

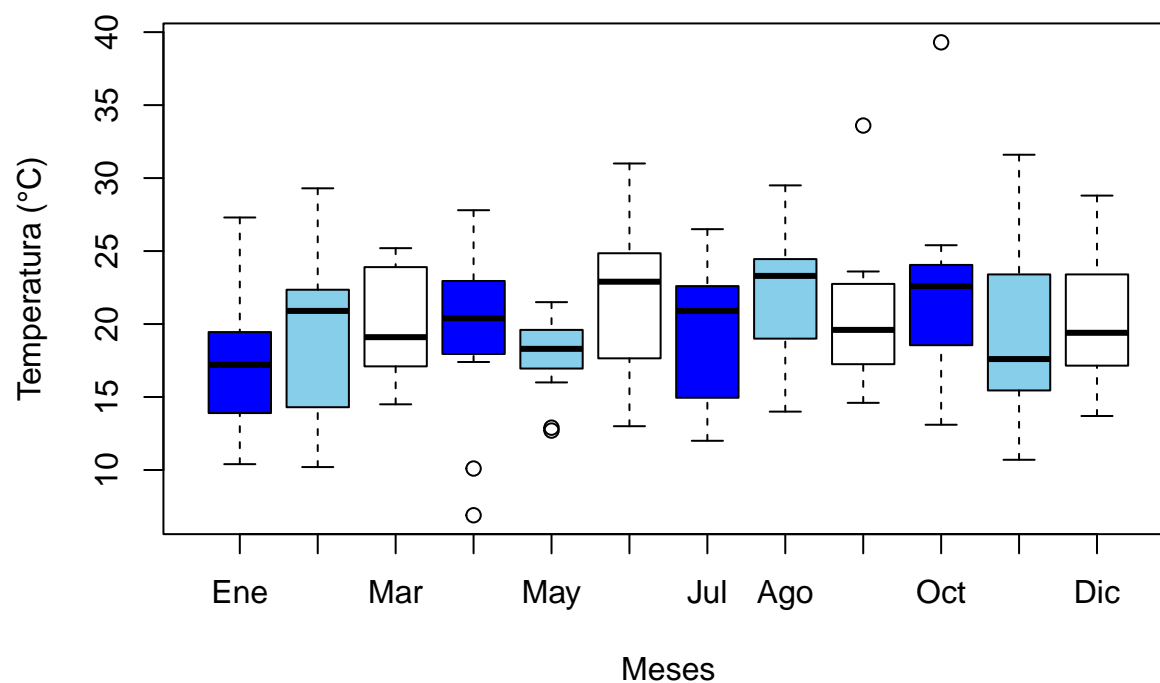
```
# Crear un boxplot de las medias de temperatura del 2000 al 2020
boxplot(temp, col = colores,
        main = "Medias de temperatura del 2000 al 2020",
        xlab = "Meses", ylab = "Temperatura (°C)")
```

Medias de temperatura del 2000 al 2020



```
# Crear un boxplot de las medias de temperatura del 2010 al 2020
boxplot(temp10, col = colores,
        main = "Medias de temperatura del 2010 al 2020",
        xlab = "Meses", ylab = "Temperatura (°C)")
```

Medias de temperatura del 2010 al 2020



```
# Importar datos web -----  
  
url <- "https://repodatos.atdt.gob.mx/api_update/senasica/actividades_inspeccion_movilizacion/29_activi  
  
senasica <- read.csv(url, header = T)  
View(senasica)
```