

LAB.-2-14-08-25.R

angel

2025-11-26

```
#####
# LAB.2
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# 14/08/25
#####

# Importar nuestra base de datos desde Excel
temperatura <- read.csv("temperatura.csv")
View(temperatura)

# Algunas funciones
head(temperatura) #Primeras 6 filas

##      Año 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) # Número de filas y columnas

## [1] 21 13

names(temperatura) # Nombres de las temperaturas

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

str(temperatura) # Estructura del objeto

## 'data.frame': 21 obs. of 13 variables:
## $ Año: 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 ...
```

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## $ 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 ...

```

```

# Resumen estadístico
summary(temperatura)

```

	Año	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		

```

#Modificar nombre de columnas (evitar ñ o nombres complicados)
names(temperatura) <- c("year", "Ene", "Feb", "Mar", "Abr", "May", "Jun", "Jul", "Ago",
                         "Sep", "Oct", "Nov", "Dic")
names (temperatura)

```

```

## [1] "year"  "Ene"    "Feb"    "Mar"    "Abr"    "May"    "Jun"    "Jul"    "Ago"    "Sep"
## [11] "Oct"   "Nov"   "Dic"

```

```

temperatura$Ene

```

```

## [1] 22.5 19.3 23.2 27.6 18.8 18.8 27.9 23.8 17.7 22.7 17.7 17.7 21.2 10.4 11.4
## [16] 17.2 14.9 21.6 15.5 12.9 27.3

```

```

# Para crear columnas que no tenemos también se usa el símbolo de $
# La función de rowMeans nos permite sacar la media de una fila/filas
# Utiliza el [], y se separa por una coma, antes de la coma se indican las filas
# después de la coma se indican las columnas, en este caso como se quería abarcar

```

```
# de la columna 2 a la 13 se utilizan los :
```

```
temperatura$Media_anual <- rowMeans(temperatura[,2:13])
head(temperatura)
```

```
##   year 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 18.03333
## 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 20.73333
## 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 20.36667
## 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 21.13333
## 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 19.00000
## 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 18.85833
```

```
#Crear objeto con medias mensuales de temperatura
```

```
medias_mensuales <- colMeans(temperatura[,2:13])
medias_mensuales
```

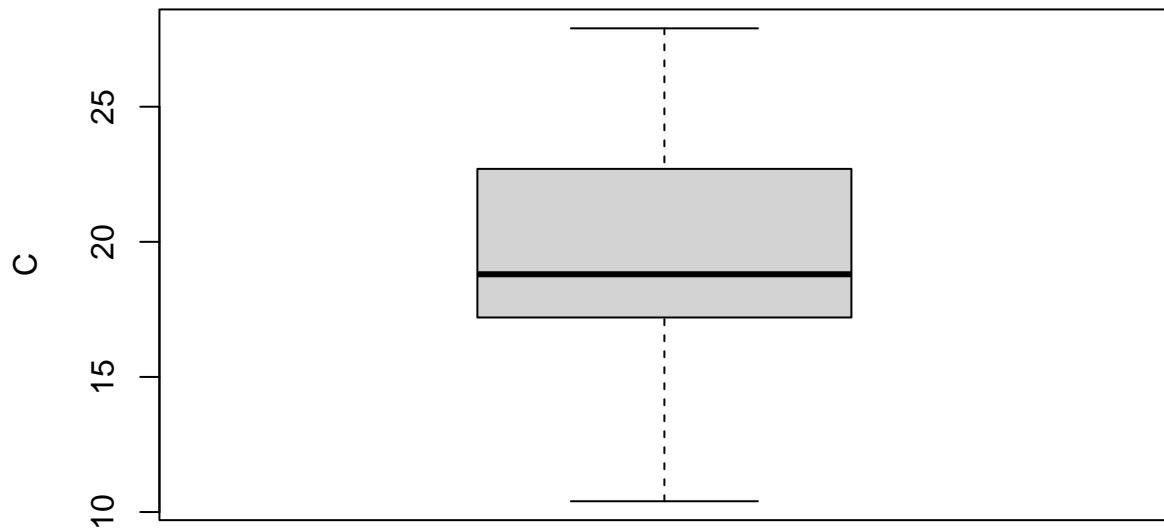
```
##      Ene       Feb       Mar       Abr       May       Jun       Jul       Ago
## 19.52857 18.60476 19.24762 20.53333 18.88095 21.59524 18.80000 21.25714
##      Sep       Oct       Nov       Dic
## 20.43333 20.66667 20.16190 20.07619
```

```
# Crear boxplot, en donde main se refiere al título de nuestro gráfico,
```

```
# ylab es nuestro eje y y col el color del gráfico
```

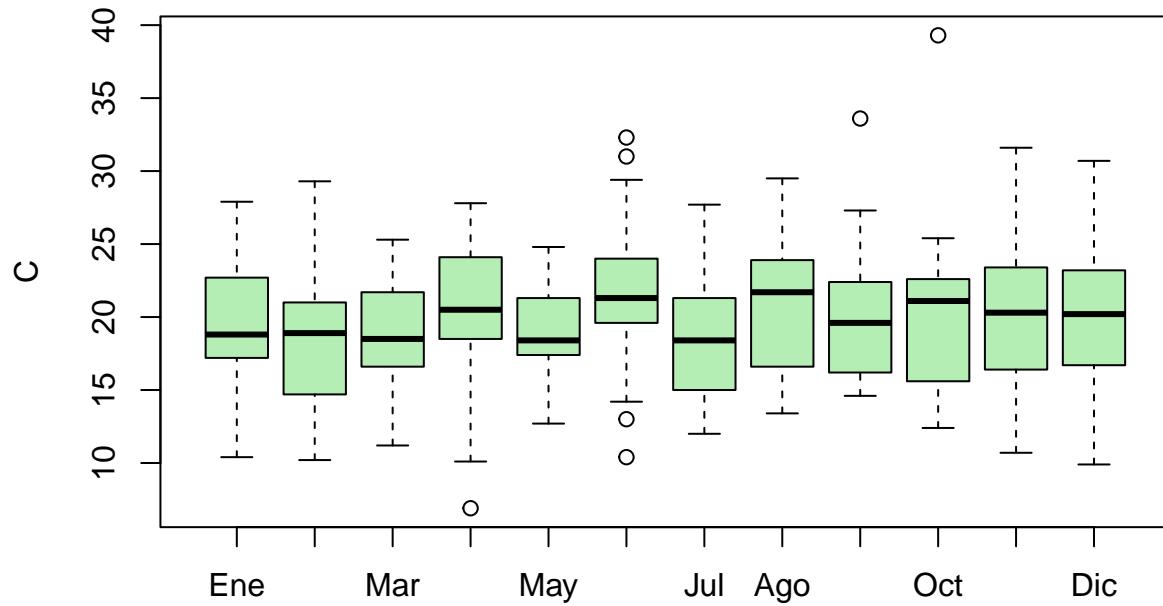
```
boxplot(temperatura$Ene,
        main="Temperatura de enero",
        ylab="C",
        fill="#528B8B")
```

Temperatura de enero



```
datos_meses <- temperatura [,2:13]
boxplot(datos_meses,
         main= "Temperatura",
         ylab= "C",
         col="#B4EEB4",
         names= c("Ene", "Feb", "Mar", "Abr", "May", "Jun", "Jul", "Ago", "Sep", "Oct", "Nov", "Dic"))
```

Temperatura



```
#https://r-charts.com/es/colores/
colors()
```

```
## [1] "white"           "aliceblue"        "antiquewhite"
## [4] "antiquewhite1"   "antiquewhite2"   "antiquewhite3"
## [7] "antiquewhite4"   "aquamarine"      "aquamarine1"
## [10] "aquamarine2"     "aquamarine3"     "aquamarine4"
## [13] "azure"           "azure1"          "azure2"
## [16] "azure3"          "azure4"          "beige"
## [19] "bisque"          "bisque1"         "bisque2"
## [22] "bisque3"         "bisque4"         "black"
## [25] "blanchedalmond" "blue"            "blue1"
## [28] "blue2"           "blue3"           "blue4"
## [31] "blueviolet"       "brown"           "brown1"
## [34] "brown2"          "brown3"          "brown4"
## [37] "burlywood"       "burlywood1"     "burlywood2"
## [40] "burlywood3"       "burlywood4"     "cadetblue"
## [43] "cadetblue1"       "cadetblue2"     "cadetblue3"
## [46] "cadetblue4"       "chartreuse"      "chartreuse1"
## [49] "chartreuse2"      "chartreuse3"     "chartreuse4"
## [52] "chocolate"       "chocolate1"     "chocolate2"
## [55] "chocolate3"       "chocolate4"     "coral"
## [58] "coral1"          "coral2"          "coral3"
## [61] "coral4"          "cornflowerblue" "cornsilk"
## [64] "cornsilk1"        "cornsilk2"       "cornsilk3"
## [67] "cornsilk4"        "cyan"           "cyan1"
```

```

## [70] "cyan2"                      "cyan3"                      "cyan4"
## [73] "darkblue"                     "darkcyan"                    "darkgoldenrod"
## [76] "darkgoldenrod1"                "darkgoldenrod2"                "darkgoldenrod3"
## [79] "darkgoldenrod4"                "darkgray"                     "darkgreen"
## [82] "darkgrey"                      "darkkhaki"                   "darkmagenta"
## [85] "darkolivegreen"                 "darkolivegreen1"               "darkolivegreen2"
## [88] "darkolivegreen3"                 "darkolivegreen4"               "darkorange"
## [91] "darkorange1"                    "darkorange2"                   "darkorange3"
## [94] "darkorange4"                    "darkorchid"                   "darkorchid1"
## [97] "darkorchid2"                   "darkorchid3"                   "darkorchid4"
## [100] "darkred"                      "darksalmon"                  "darkseagreen"
## [103] "darkseagreen1"                 "darkseagreen2"                 "darkseagreen3"
## [106] "darkseagreen4"                 "darkslateblue"                "darkslategray"
## [109] "darkslategray1"                "darkslategray2"                "darkslategray3"
## [112] "darkslategray4"                "darkslategrey"                "darkturquoise"
## [115] "darkviolet"                   "deeppink"                     "deeppink1"
## [118] "deeppink2"                     "deeppink3"                     "deeppink4"
## [121] "deepskyblue"                  "deepskyblue1"                  "deepskyblue2"
## [124] "deepskyblue3"                  "deepskyblue4"                  "dimgray"
## [127] "dimgrey"                      "dodgerblue"                   "dodgerblue1"
## [130] "dodgerblue2"                   "dodgerblue3"                   "dodgerblue4"
## [133] "firebrick"                     "firebrick1"                   "firebrick2"
## [136] "firebrick3"                     "firebrick4"                   "floralwhite"
## [139] "forestgreen"                   "gainsboro"                   "ghostwhite"
## [142] "gold"                         "gold1"                        "gold2"
## [145] "gold3"                         "gold4"                        "goldenrod"
## [148] "goldenrod1"                     "goldenrod2"                   "goldenrod3"
## [151] "goldenrod4"                     "gray"                          "gray0"
## [154] "gray1"                         "gray2"                        "gray3"
## [157] "gray4"                         "gray5"                        "gray6"
## [160] "gray7"                         "gray8"                        "gray9"
## [163] "gray10"                        "gray11"                       "gray12"
## [166] "gray13"                        "gray14"                       "gray15"
## [169] "gray16"                        "gray17"                       "gray18"
## [172] "gray19"                        "gray20"                       "gray21"
## [175] "gray22"                        "gray23"                       "gray24"
## [178] "gray25"                        "gray26"                       "gray27"
## [181] "gray28"                        "gray29"                       "gray30"
## [184] "gray31"                        "gray32"                       "gray33"
## [187] "gray34"                        "gray35"                       "gray36"
## [190] "gray37"                        "gray38"                       "gray39"
## [193] "gray40"                        "gray41"                       "gray42"
## [196] "gray43"                        "gray44"                       "gray45"
## [199] "gray46"                        "gray47"                       "gray48"
## [202] "gray49"                        "gray50"                       "gray51"
## [205] "gray52"                        "gray53"                       "gray54"
## [208] "gray55"                        "gray56"                       "gray57"
## [211] "gray58"                        "gray59"                       "gray60"
## [214] "gray61"                        "gray62"                       "gray63"
## [217] "gray64"                        "gray65"                       "gray66"
## [220] "gray67"                        "gray68"                       "gray69"
## [223] "gray70"                        "gray71"                       "gray72"
## [226] "gray73"                        "gray74"                       "gray75"
## [229] "gray76"                        "gray77"                       "gray78"

```

```

## [232] "gray79"
## [235] "gray82"
## [238] "gray85"
## [241] "gray88"
## [244] "gray91"
## [247] "gray94"
## [250] "gray97"
## [253] "gray100"
## [256] "green2"
## [259] "greenyellow"
## [262] "grey1"
## [265] "grey4"
## [268] "grey7"
## [271] "grey10"
## [274] "grey13"
## [277] "grey16"
## [280] "grey19"
## [283] "grey22"
## [286] "grey25"
## [289] "grey28"
## [292] "grey31"
## [295] "grey34"
## [298] "grey37"
## [301] "grey40"
## [304] "grey43"
## [307] "grey46"
## [310] "grey49"
## [313] "grey52"
## [316] "grey55"
## [319] "grey58"
## [322] "grey61"
## [325] "grey64"
## [328] "grey67"
## [331] "grey70"
## [334] "grey73"
## [337] "grey76"
## [340] "grey79"
## [343] "grey82"
## [346] "grey85"
## [349] "grey88"
## [352] "grey91"
## [355] "grey94"
## [358] "grey97"
## [361] "grey100"
## [364] "honeydew2"
## [367] "hotpink"
## [370] "hotpink3"
## [373] "indianred1"
## [376] "indianred4"
## [379] "ivory2"
## [382] "khaki"
## [385] "khaki3"
## [388] "lavenderblush"
## [391] "lavenderblush3"
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"gray83"
"gray86"
"gray89"
"gray92"
"gray95"
"gray98"
"green"
"green3"
"grey"
"grey2"
"grey5"
"grey8"
"grey11"
"grey14"
"grey17"
"grey20"
"grey23"
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"grey74"
"grey77"
"grey80"
"grey83"
"grey86"
"grey89"
"grey92"
"grey95"
"grey98"
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"hotpink4"
"indianred2"
"ivory"
"ivory3"
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"khaki4"
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"lavenderblush4"
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"gray84"
"gray87"
"gray90"
"gray93"
"gray96"
"gray99"
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"grey84"
"grey87"
"grey90"
"grey93"
"grey96"
"grey99"
"honeydew1"
"honeydew4"
"hotpink2"
"indianred"
"indianred3"
"ivory1"
"ivory4"
"khaki2"
"lavender"
"lavenderblush2"
"lawngreen"

```

```

## [394] "lemonchiffon"
## [397] "lemonchiffon3"
## [400] "lightblue1"
## [403] "lightblue4"
## [406] "lightcyan1"
## [409] "lightcyan4"
## [412] "lightgoldenrod2"
## [415] "lightgoldenrodyellow"
## [418] "lightgrey"
## [421] "lightpink2"
## [424] "lightsalmon"
## [427] "lightsalmon3"
## [430] "lightskyblue"
## [433] "lightskyblue3"
## [436] "lightslategray"
## [439] "lightsteelblue1"
## [442] "lightsteelblue4"
## [445] "lightyellow2"
## [448] "limegreen"
## [451] "magenta1"
## [454] "magenta4"
## [457] "maroon2"
## [460] "mediumaquamarine"
## [463] "mediumorchid1"
## [466] "mediumorchid4"
## [469] "mediumpurple2"
## [472] "mediumseagreen"
## [475] "mediumturquoise"
## [478] "mintcream"
## [481] "mistyrose2"
## [484] "moccasin"
## [487] "navajowhite2"
## [490] "navy"
## [493] "olivedrab"
## [496] "olivedrab3"
## [499] "orange1"
## [502] "orange4"
## [505] "orangered2"
## [508] "orchid"
## [511] "orchid3"
## [514] "palegreen"
## [517] "palegreen3"
## [520] "paleturquoise1"
## [523] "paleturquoise4"
## [526] "palevioletred2"
## [529] "papayawhip"
## [532] "peachpuff2"
## [535] "peru"
## [538] "pink2"
## [541] "plum"
## [544] "plum3"
## [547] "purple"
## [550] "purple3"
## [553] "red1"
"lemonchiffon1"
"lemonchiffon4"
"lightblue2"
"lightcoral"
"lightcyan2"
"lightcyan3"
"lightgoldenrod"
"lightgoldenrod3"
"lightgoldenrodyellow"
"lightgray"
"lightpink"
"lightpink3"
"lightsalmon1"
"lightsalmon4"
"lightskyblue1"
"lightskyblue4"
"lightslategrey"
"lightsteelblue2"
"lightsteelblue4"
"lightyellow"
"lightyellow3"
"linen"
"magenta2"
"magenta4"
"maroon"
"maroon3"
"mediumblue"
"mediumorchid2"
"mediumpurple"
"mediumpurple3"
"mediumslateblue"
"mediumvioletred"
"mistyrose"
"mistyrose3"
"navajowhite"
"navajowhite3"
"navyblue"
"olivedrab1"
"olivedrab4"
"orange2"
"orangered"
"orangered3"
"orchid1"
"orchid4"
"palegreen1"
"palegreen4"
"paleturquoise1"
"paleturquoise2"
"palevioletred"
"palevioletred3"
"peachpuff"
"peachpuff3"
"pink"
"pink3"
"plum1"
"plum4"
"purple1"
"purple4"
"red2"
"lemonchiffon2"
"lightblue"
"lightblue3"
"lightcyan"
"lightcyan3"
"lightgoldenrod1"
"lightgoldenrod4"
"lightgreen"
"lightpink1"
"lightpink4"
"lightsalmon2"
"lightseagreen"
"lightskyblue2"
"lightslateblue"
"lightsteelblue"
"lightsteelblue3"
"lightyellow1"
"lightyellow4"
"magenta"
"magenta3"
"maroon1"
"maroon4"
"mediumorchid"
"mediumorchid3"
"mediumpurple1"
"mediumpurple4"
"mediumspringgreen"
"midnightblue"
"mistyrose1"
"mistyrose4"
"navajowhite1"
"navajowhite4"
"oldlace"
"olivedrab2"
"orange"
"orange3"
"orangered1"
"orangered4"
"orchid2"
"palegoldenrod"
"palegreen2"
"paleturquoise"
"paleturquoise3"
"palevioletred1"
"palevioletred4"
"peachpuff1"
"peachpuff4"
"pink1"
"pink4"
"plum2"
"powderblue"
"purple2"
"red"
"red3"

```

```

## [556] "red4"
## [559] "rosybrown2"
## [562] "royalblue"
## [565] "royalblue3"
## [568] "salmon"
## [571] "salmon3"
## [574] "seagreen"
## [577] "seagreen3"
## [580] "seashell1"
## [583] "seashell4"
## [586] "sienna2"
## [589] "skyblue"
## [592] "skyblue3"
## [595] "slateblue1"
## [598] "slateblue4"
## [601] "slategray2"
## [604] "slategrey"
## [607] "snow2"
## [610] "springgreen"
## [613] "springgreen3"
## [616] "steelblue1"
## [619] "steelblue4"
## [622] "tan2"
## [625] "thistle"
## [628] "thistle3"
## [631] "tomato1"
## [634] "tomato4"
## [637] "turquoise2"
## [640] "violet"
## [643] "violetred2"
## [646] "wheat"
## [649] "wheat3"
## [652] "yellow"
## [655] "yellow3"

"rosybrown"
"rosybrown3"
"royalblue1"
"royalblue4"
"salmon1"
"salmon4"
"seagreen1"
"seagreen4"
"seashell2"
"sienna"
"sienna3"
"skyblue1"
"skyblue4"
"slateblue2"
"slategray"
"slategray3"
"snow"
"snow3"
"springgreen1"
"springgreen4"
"steelblue2"
"tan"
"tan3"
"thistle1"
"thistle4"
"tomato2"
"turquoise"
"turquoise3"
"violetred"
"violetred3"
"wheat1"
"wheat4"
"yellow1"
"yellow4"

"rosybrown1"
"rosybrown4"
"royalblue2"
"saddlebrown"
"salmon2"
"sandybrown"
"seagreen2"
"seashell"
"seashell3"
"sienna1"
"sienna4"
"skyblue2"
"slateblue"
"slateblue3"
"slategray1"
"slategray4"
"snow1"
"snow4"
"springgreen2"
"steelblue"
"steelblue3"
"tan1"
"tan4"
"thistle2"
"tomato"
"tomato3"
"turquoise1"
"turquoise4"
"violetred1"
"violetred4"
"wheat2"
"whitesmoke"
"yellow2"
"yellowgreen"

```