

discretas-sitio-web.R

r3172621

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```
# 1. Configurar directorio y cargar datos
setwd("/cloud/project/proyecto")

datos <- read.csv("archivo depurado nuevo 12.csv",
                  header = TRUE, sep = ";", dec = ".")

fechas <- as.Date(datos$INICIO)
fechas <- na.omit(fechas)
num_fechas <- length(unique(fechas))

if (num_fechas > 20) {
  agrupacion <- format(fechas, "%Y")
} else {
  agrupacion <- format(fechas, "%Y-%m")
}

tabla_fechas <- as.data.frame(table(agrupacion))
colnames(tabla_fechas) <- c("Periodo", "ni")
tabla_fechas$hi <- tabla_fechas$ni / sum(tabla_fechas$ni)
tabla_fechas$hi_porc <- round(tabla_fechas$hi * 100, 2)
tabla_fechas$Hiasc <- cumsum(tabla_fechas$hi)
tabla_fechas$Niasc <- cumsum(tabla_fechas$ni)

print(tabla_fechas)
```

##	Periodo	ni	hi	hi_porc	Hiasc	Niasc
## 1	1	940	0.03178360	3.18	0.03178360	940
## 2	10	1014	0.03428571	3.43	0.06606932	1954
## 3	11	954	0.03225697	3.23	0.09832629	2908
## 4	12	967	0.03269653	3.27	0.13102282	3875
## 5	13	933	0.03154691	3.15	0.16256974	4808
## 6	14	982	0.03320372	3.32	0.19577346	5790
## 7	15	956	0.03232460	3.23	0.22809806	6746
## 8	16	974	0.03293322	3.29	0.26103128	7720
## 9	17	953	0.03222316	3.22	0.29325444	8673
## 10	18	1024	0.03462384	3.46	0.32787828	9697
## 11	19	935	0.03161454	3.16	0.35949281	10632
## 12	2	920	0.03110735	3.11	0.39060017	11552
## 13	20	961	0.03249366	3.25	0.42309383	12513
## 14	21	1004	0.03394759	3.39	0.45704142	13517
## 15	22	1013	0.03425190	3.43	0.49129332	14530
## 16	23	951	0.03215554	3.22	0.52344886	15481
## 17	24	1003	0.03391378	3.39	0.55736264	16484

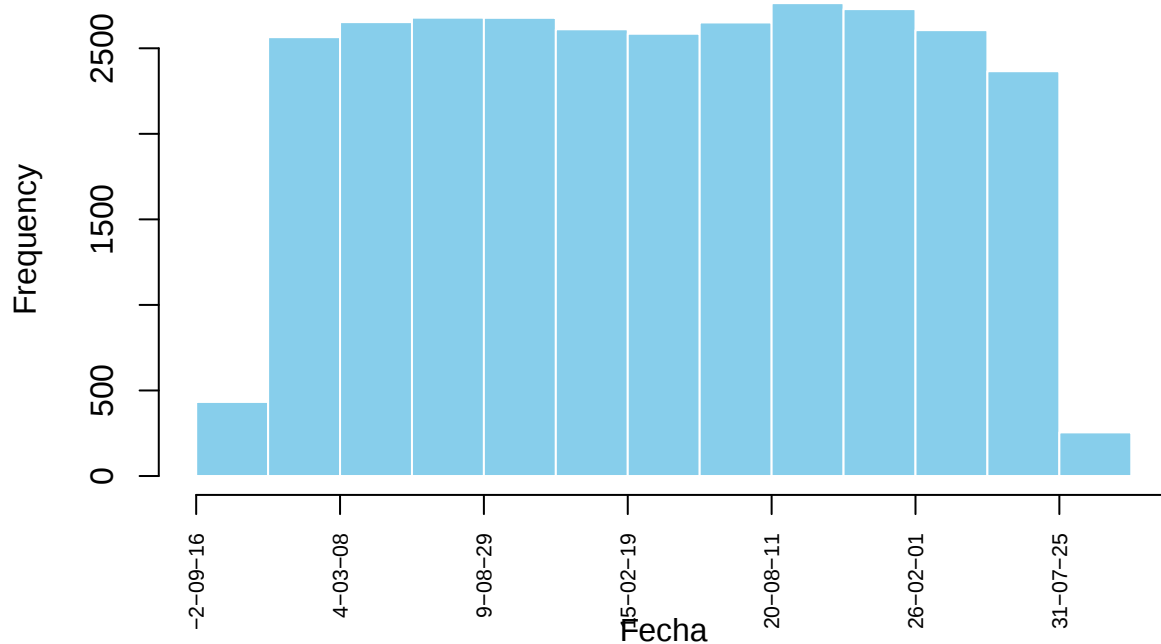
```
## 18      25 1012 0.03421809      3.42 0.59158073 17496
## 19      26  942 0.03185123      3.19 0.62343195 18438
## 20      27  931 0.03147929      3.15 0.65491124 19369
## 21      28  972 0.03286560      3.29 0.68777684 20341
## 22      29  957 0.03235841      3.24 0.72013525 21298
## 23       3  952 0.03218935      3.22 0.75232460 22250
## 24      30  905 0.03060017      3.06 0.78292477 23155
## 25      31  599 0.02025359      2.03 0.80317836 23754
## 26       4  987 0.03337278      3.34 0.83655114 24741
## 27       5  945 0.03195266      3.20 0.86850380 25686
## 28       6  986 0.03333897      3.33 0.90184277 26672
## 29       7  990 0.03347422      3.35 0.93531699 27662
## 30       8  993 0.03357566      3.36 0.96889265 28655
## 31       9  920 0.03110735      3.11 1.00000000 29575
```

```
fechas_num <- as.numeric(fechas)
```

```
hist(fechas_num,
     breaks = 12,
     main = "Histograma de INICIO",
     xlab = "Fecha",
     col = "skyblue",
     border = "white",
     xaxt = "n")
```

```
axis(1, at = pretty(fechas_num), labels = format(as.Date(pretty(fechas_num), origin = "1970-01-01"), "%
```

Histograma de INICIO



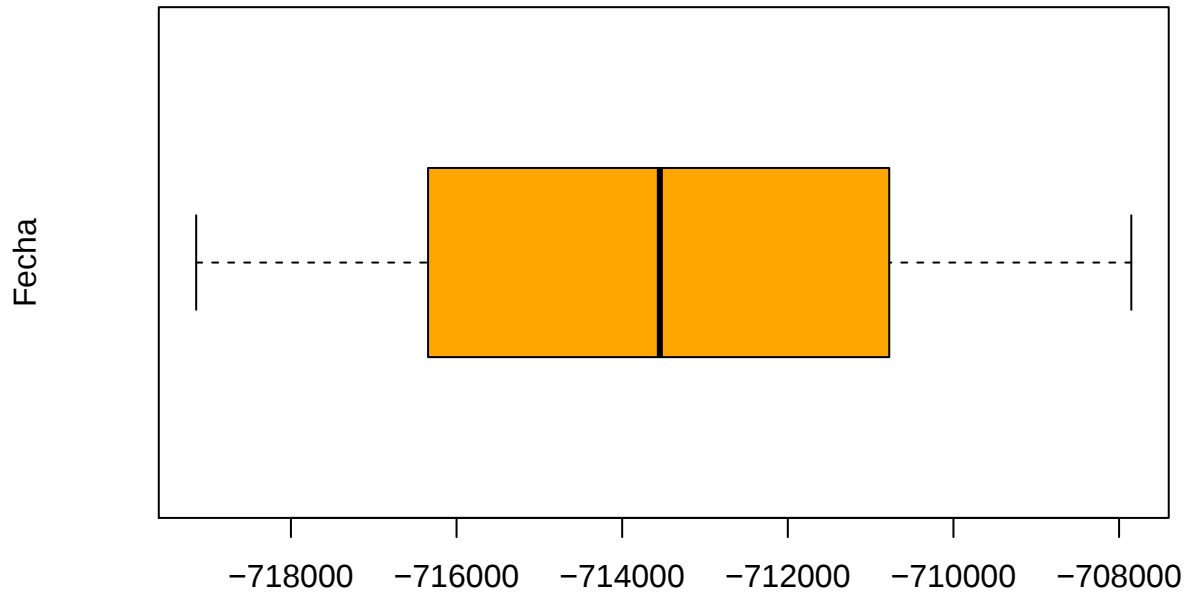
```
boxplot(fechas_num,
       main = "Diagrama de Caja - INICIO",
       ylab = "Fecha",
       col = "orange",
```

```

    horizontal = TRUE,
    yaxt = "n")
axis(2, at = pretty(fechas_num), labels = format(as.Date(pretty(fechas_num), origin = "1970-01-01"), "%

```

Diagrama de Caja – INICIO

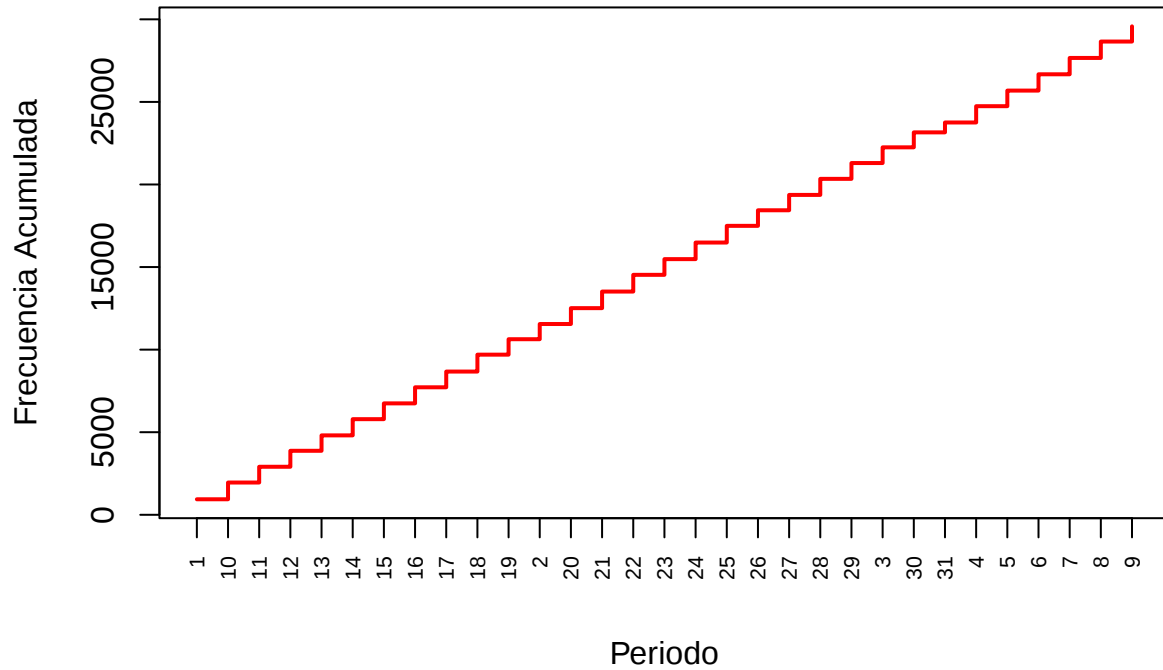


```

ojiva <- tabla_fechas$Niasc
plot(ojiva,
     type = "s",
     main = "Ojiva de INICIO",
     xlab = "Periodo",
     ylab = "Frecuencia Acumulada",
     col = "red",
     lwd = 2,
     xaxt = "n")
axis(1, at = 1:nrow(tabla_fechas), labels = tabla_fechas$Periodo, las = 2, cex.axis = 0.7)

```

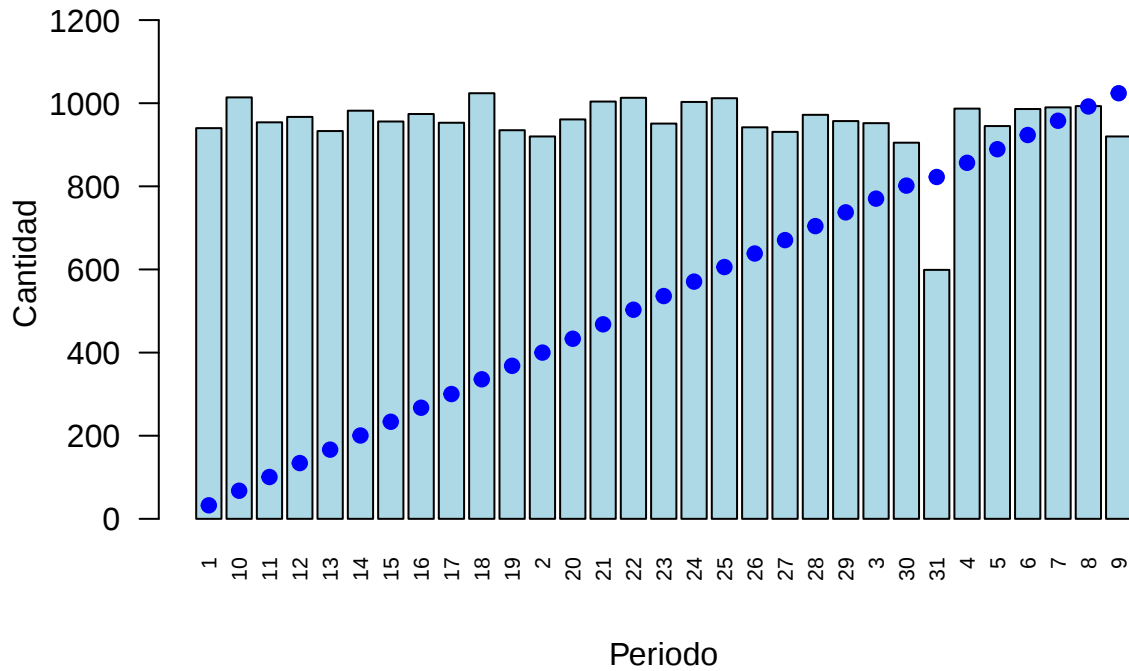
Ojiva de INICIO



```
bar_positions <- barplot(tabla_fechas$ni,
                        names.arg = tabla_fechas$Periodo,
                        las = 2,
                        col = "lightblue",
                        main = "Distribución de INICIO",
                        xlab = "Periodo",
                        ylab = "Cantidad",
                        cex.names = 0.7,
                        ylim = c(0, max(tabla_fechas$ni) * 1.2))

points(bar_positions, tabla_fechas$Hiasc * max(tabla_fechas$ni),
       type = "b", col = "blue", pch = 19)
```

Distribución de INICIO



```
#variable termino

fechas <- as.Date(datos$TERMINO)
fechas <- na.omit(fechas)
num_fechas <- length(unique(fechas))

if (num_fechas > 20) {
  agrupacion <- format(fechas, "%Y")
} else {
  agrupacion <- format(fechas, "%Y-%m")
}

tabla_fechas <- as.data.frame(table(agrupacion))
colnames(tabla_fechas) <- c("Periodo", "ni")
tabla_fechas$hi <- tabla_fechas$ni / sum(tabla_fechas$ni)
tabla_fechas$hi_porcentaje <- round(tabla_fechas$hi * 100, 2)
tabla_fechas$Hiasc <- cumsum(tabla_fechas$hi)
tabla_fechas$Niasc <- cumsum(tabla_fechas$ni)

print(tabla_fechas)
```

##	Periodo	ni	hi	hi_porcentaje	Hiasc	Niasc
## 1	1	951	0.03429622	3.43	0.03429622	951
## 2	10	897	0.03234880	3.23	0.06664503	1848
## 3	11	919	0.03314220	3.31	0.09978723	2767
## 4	12	914	0.03296188	3.30	0.13274911	3681
## 5	13	866	0.03123084	3.12	0.16397995	4547
## 6	14	900	0.03245699	3.25	0.19643694	5447
## 7	15	874	0.03151935	3.15	0.22795629	6321
## 8	16	907	0.03270944	3.27	0.26066573	7228

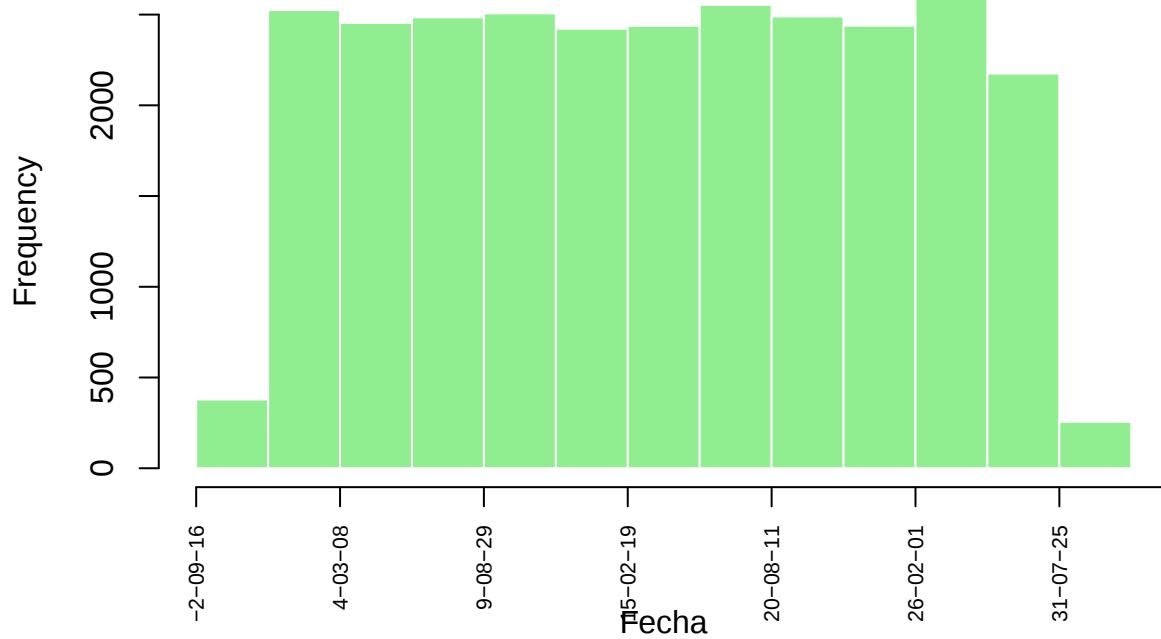
```
## 9      17 918 0.03310613    3.31 0.29377186 8146
## 10     18 958 0.03454867    3.45 0.32832053 9104
## 11     19 908 0.03274550    3.27 0.36106603 10012
## 12      2 895 0.03227668    3.23 0.39334271 10907
## 13     20 944 0.03404378    3.40 0.42738649 11851
## 14     21 894 0.03224061    3.22 0.45962711 12745
## 15     22 915 0.03299794    3.30 0.49262505 13660
## 16     23 865 0.03119478    3.12 0.52381983 14525
## 17     24 932 0.03361102    3.36 0.55743085 15457
## 18     25 854 0.03079808    3.08 0.58822893 16311
## 19     26 968 0.03490930    3.49 0.62313823 17279
## 20     27 919 0.03314220    3.31 0.65628043 18198
## 21     28 940 0.03389953    3.39 0.69017996 19138
## 22     29 853 0.03076202    3.08 0.72094197 19991
## 23      3 902 0.03252912    3.25 0.75347110 20893
## 24     30 868 0.03130297    3.13 0.78477406 21761
## 25     31 562 0.02026759    2.03 0.80504165 22323
## 26      4 876 0.03159147    3.16 0.83663313 23199
## 27      5 933 0.03364708    3.36 0.87028021 24132
## 28      6 867 0.03126690    3.13 0.90154712 24999
## 29      7 901 0.03249306    3.25 0.93404017 25900
## 30      8 933 0.03364708    3.36 0.96768726 26833
## 31      9 896 0.03231274    3.23 1.00000000 27729
```

```
fechas_num <- as.numeric(fechas)
```

```
hist(fechas_num,
     breaks = 12,
     main = "Histograma de TERMINO",
     xlab = "Fecha",
     col = "lightgreen",
     border = "white",
     xaxt = "n")
```

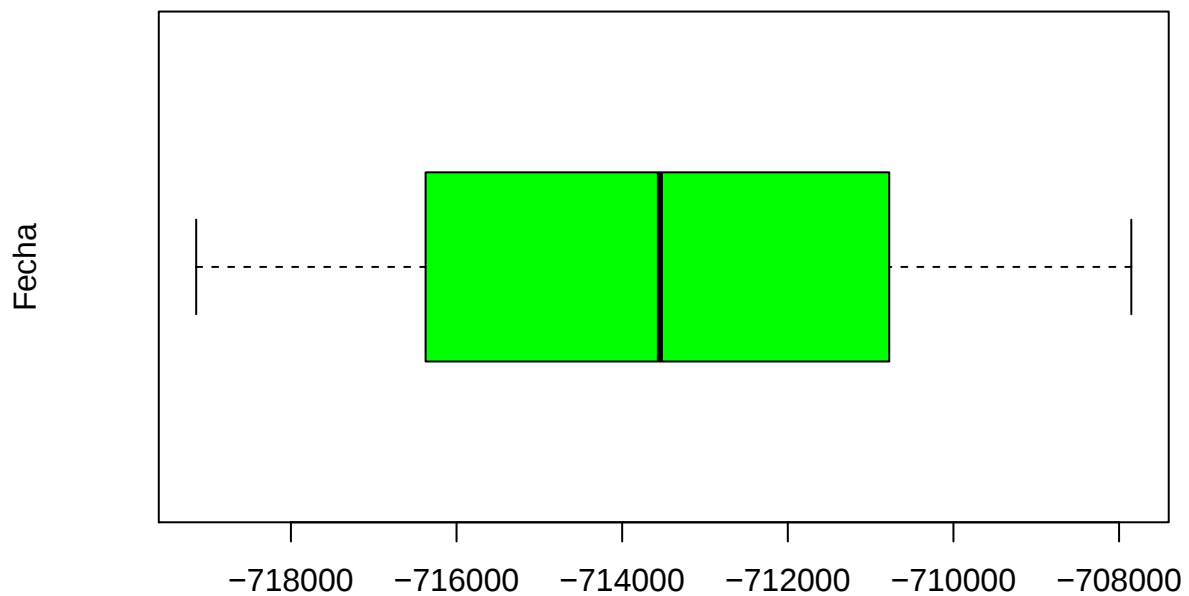
```
axis(1, at = pretty(fechas_num), labels = format(as.Date(pretty(fechas_num), origin = "1970-01-01"), "%Y-%m-%d"))
```

Histograma de TERMINO



```
boxplot(fechas_num,
        main = "Diagrama de Caja - TERMINO",
        ylab = "Fecha",
        col = "green",
        horizontal = TRUE,
        yaxt = "n")
axis(2, at = pretty(fechas_num), labels = format(as.Date(pretty(fechas_num), origin = "1970-01-01"), "%
```

Diagrama de Caja – TERMINO

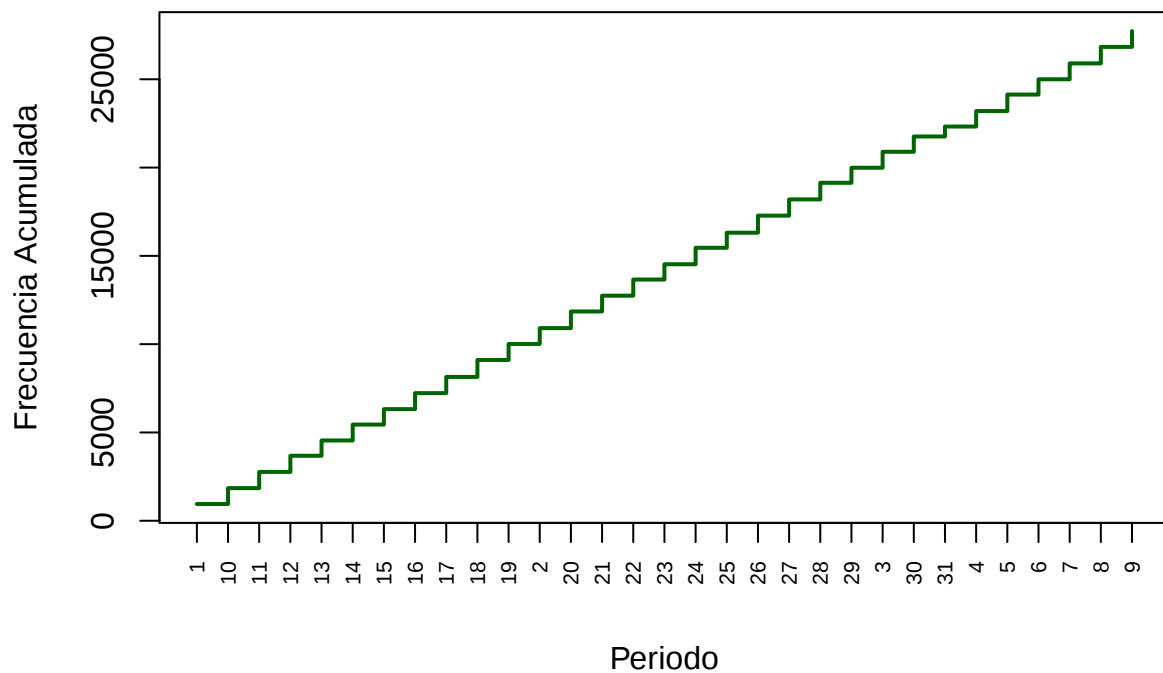


```

ojiva <- tabla_fechas$Niasc
plot(ojiva,
     type = "s",
     main = "Ojiva de TERMINO",
     xlab = "Periodo",
     ylab = "Frecuencia Acumulada",
     col = "darkgreen",
     lwd = 2,
     xaxt = "n")
axis(1, at = 1:nrow(tabla_fechas), labels = tabla_fechas$Periodo, las = 2, cex.axis = 0.7)

```

Ojiva de TERMINO



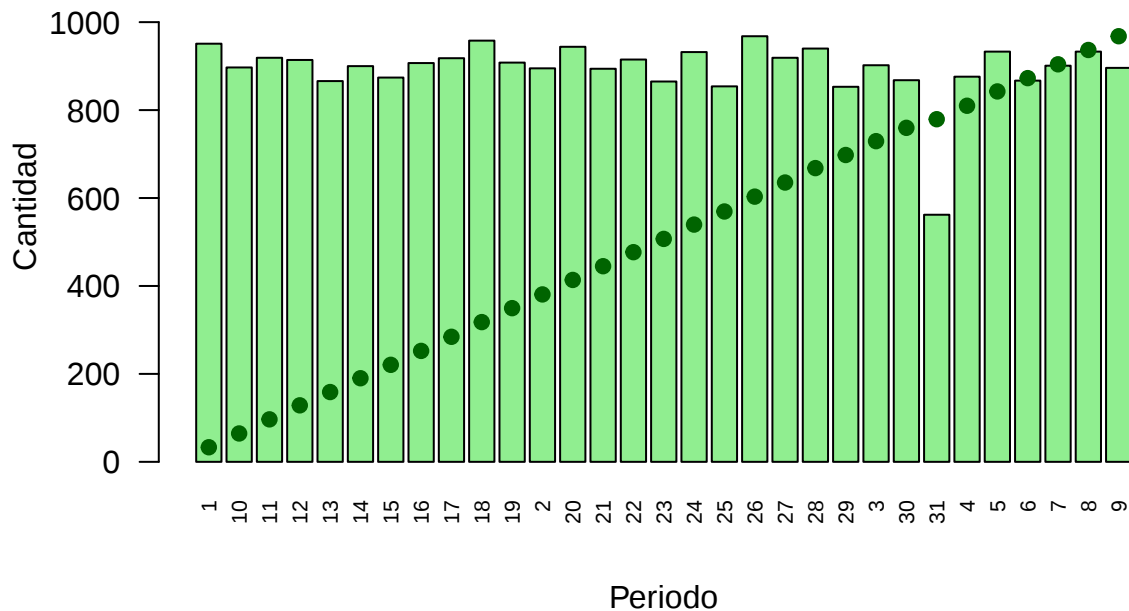
```

bar_positions <- barplot(tabla_fechas$ni,
                        names.arg = tabla_fechas$Periodo,
                        las = 2,
                        col = "lightgreen",
                        main = "Distribución de TERMINO",
                        xlab = "Periodo",
                        ylab = "Cantidad",
                        cex.names = 0.7,
                        ylim = c(0, max(tabla_fechas$ni) * 1.2))

points(bar_positions, tabla_fechas$Hiasc * max(tabla_fechas$ni),
       type = "b", col = "darkgreen", pch = 19)

```

Distribución de TERMINO



```
#variable de conclusion

fechas <- as.Date(datos$CONCLUSAO)
fechas <- na.omit(fechas)
num_fechas <- length(unique(fechas))

if (num_fechas > 20) {
  agrupacion <- format(fechas, "%Y")
} else {
  agrupacion <- format(fechas, "%Y-%m")
}

tabla_fechas <- as.data.frame(table(agrupacion))
colnames(tabla_fechas) <- c("Periodo", "ni")
tabla_fechas$hi <- tabla_fechas$ni / sum(tabla_fechas$ni)
tabla_fechas$hi_por <- round(tabla_fechas$hi * 100, 2)
tabla_fechas$Hiasc <- cumsum(tabla_fechas$hi)
tabla_fechas$Niasc <- cumsum(tabla_fechas$ni)

print(tabla_fechas)
```

##	Periodo	ni	hi	hi_por	Hiasc	Niasc
## 1	1	1012	0.03452629	3.45	0.03452629	1012
## 2	10	947	0.03230869	3.23	0.06683498	1959
## 3	11	936	0.03193340	3.19	0.09876838	2895
## 4	12	968	0.03302514	3.30	0.13179352	3863
## 5	13	964	0.03288868	3.29	0.16468220	4827
## 6	14	951	0.03244516	3.24	0.19712736	5778
## 7	15	922	0.03145577	3.15	0.22858313	6700
## 8	16	958	0.03268398	3.27	0.26126710	7658

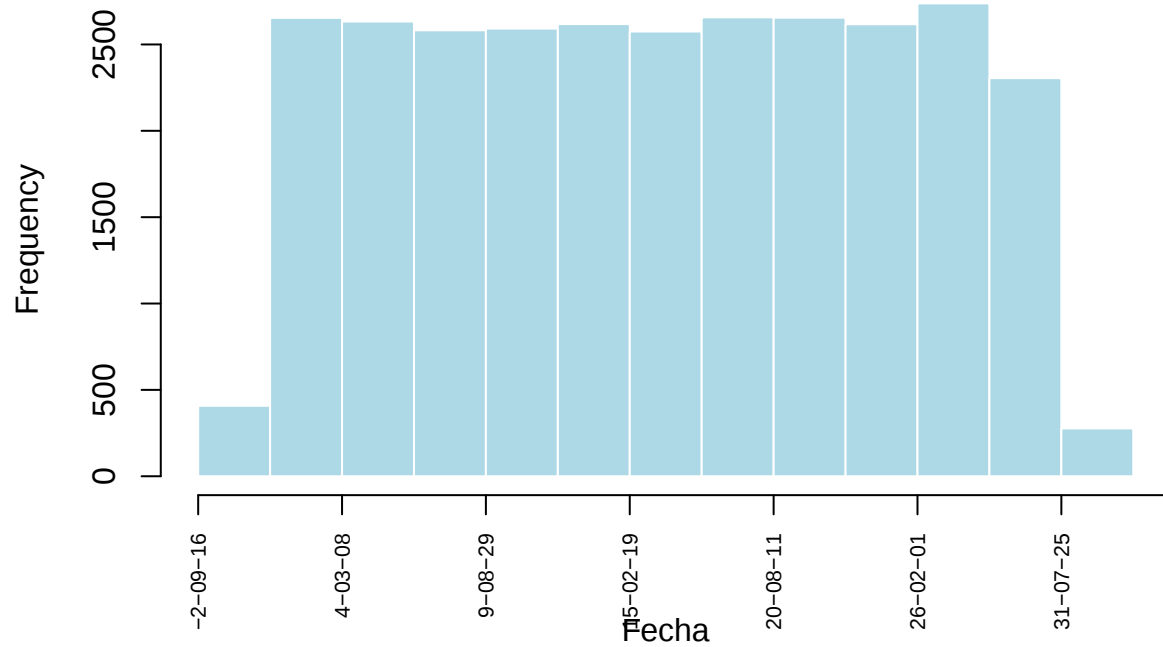
```
## 9      17  965 0.03292279    3.29 0.29418989  8623
## 10     18  993 0.03387807    3.39 0.32806796  9616
## 11     19  961 0.03278633    3.28 0.36085429 10577
## 12      2  951 0.03244516    3.24 0.39329944 11528
## 13     20  954 0.03254751    3.25 0.42584695 12482
## 14     21  948 0.03234281    3.23 0.45818976 13430
## 15     22  993 0.03387807    3.39 0.49206782 14423
## 16     23  943 0.03217222    3.22 0.52424005 15366
## 17     24  987 0.03367336    3.37 0.55791341 16353
## 18     25  916 0.03125107    3.13 0.58916448 17269
## 19     26 1034 0.03527686    3.53 0.62444134 18303
## 20     27  965 0.03292279    3.29 0.65736413 19268
## 21     28  995 0.03394630    3.39 0.69131043 20263
## 22     29  907 0.03094401    3.09 0.72225444 21170
## 23      3  936 0.03193340    3.19 0.75418785 22106
## 24     30  904 0.03084166    3.08 0.78502951 23010
## 25     31  600 0.02047013    2.05 0.80549964 23610
## 26      4  937 0.03196752    3.20 0.83746716 24547
## 27      5 1027 0.03503804    3.50 0.87250520 25574
## 28      6  903 0.03080755    3.08 0.90331275 26477
## 29      7  942 0.03213811    3.21 0.93545085 27419
## 30      8  961 0.03278633    3.28 0.96823718 28380
## 31      9  931 0.03176282    3.18 1.00000000 29311
```

```
fechas_num <- as.numeric(fechas)
```

```
hist(fechas_num,
     breaks = 12,
     main = "Histograma de CONCLUSAO",
     xlab = "Fecha",
     col = "lightblue",
     border = "white",
     xaxt = "n")
```

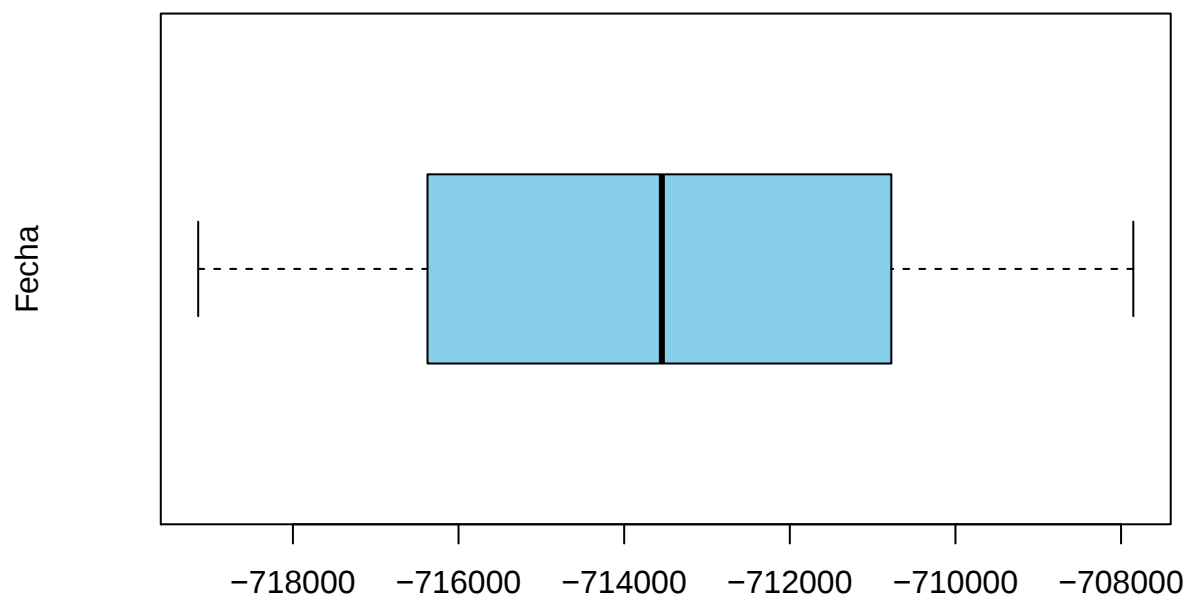
```
axis(1, at = pretty(fechas_num), labels = format(as.Date(pretty(fechas_num), origin = "1970-01-01"), "%Y-%m-%d"))
```

Histograma de CONCLUSAO



```
boxplot(fechas_num,
        main = "Diagrama de Caja - CONCLUSAO",
        ylab = "Fecha",
        col = "skyblue",
        horizontal = TRUE,
        yaxt = "n")
axis(2, at = pretty(fechas_num), labels = format(as.Date(pretty(fechas_num), origin = "1970-01-01"), "%
```

Diagrama de Caja – CONCLUSAO

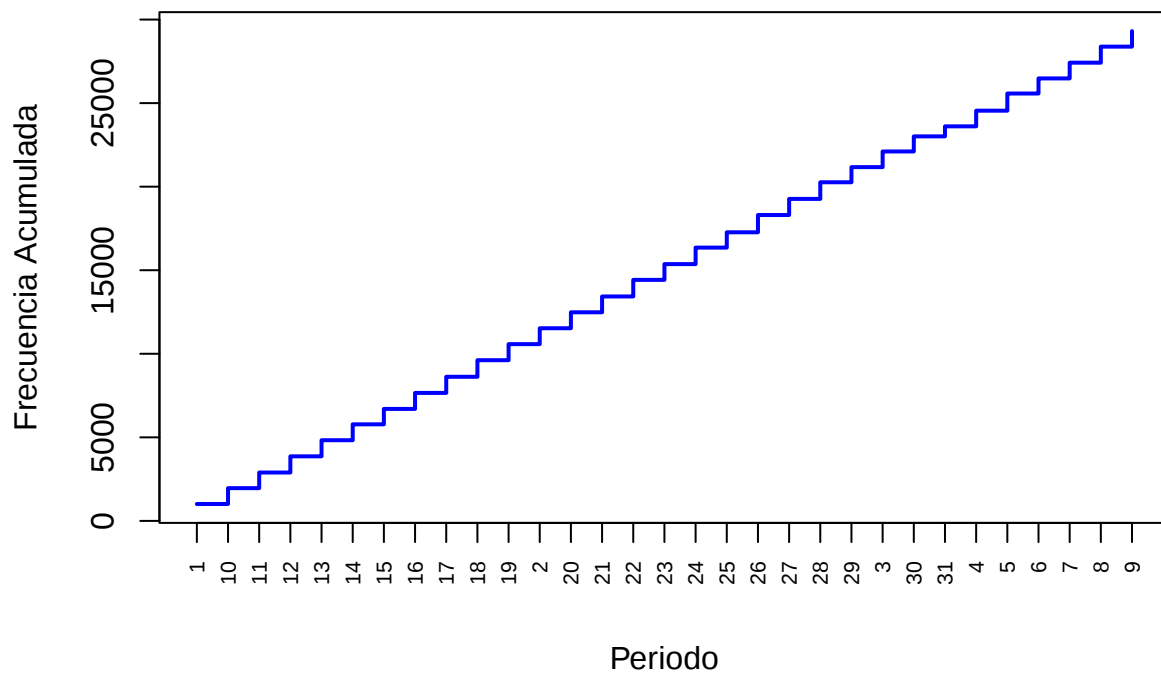


```

ojiva <- tabla_fechas$Niasc
plot(ojiva,
     type = "s",
     main = "Ojiva de CONCLUSAO",
     xlab = "Periodo",
     ylab = "Frecuencia Acumulada",
     col = "blue",
     lwd = 2,
     xaxt = "n")
axis(1, at = 1:nrow(tabla_fechas), labels = tabla_fechas$Periodo, las = 2, cex.axis = 0.7)

```

Ojiva de CONCLUSAO



```

bar_positions <- barplot(tabla_fechas$ni,
                        names.arg = tabla_fechas$Periodo,
                        las = 2,
                        col = "lightblue",
                        main = "Distribución de CONCLUSAO",
                        xlab = "Periodo",
                        ylab = "Cantidad",
                        cex.names = 0.7,
                        ylim = c(0, max(tabla_fechas$ni) * 1.2))

points(bar_positions, tabla_fechas$Hiasc * max(tabla_fechas$ni),
       type = "b", col = "blue", pch = 19)

```

Distribución de CONCLUSAO

