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In [ ]:
```
%load_ext rpy2.ipython
```

```
The rpy2.ipython extension is already loaded. To reload it, use:
  %reload_ext rpy2.ipython
```

Genera un data frame compuesto de la información de un examen para 10 alumnos:

- Nombre
- Calificación
- Número de veces que ha presentado el examen
- Aprobado o no

In [ ]:
```
%%R

exam_data = data.frame(
name = c('Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Mat
score = c(12.5, 9, 16.5, 12, 9, 20, 14.5, 13.5, 8, 19),
attempts = c(1, 3, 2, 3, 2, 3, 1, 1, 2, 1),
qualify = c('yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes')
)
print("Original dataframe:")
print(exam_data)
```

```
[1] "Original dataframe:"
        name score attempts qualify
1  Anastasia  12.5        1     yes
2       Dima   9.0        3      no
3  Katherine  16.5        2     yes
4      James  12.0        3      no
5      Emily   9.0        2      no
6    Michael  20.0        3     yes
7    Matthew  14.5        1     yes
8      Laura  13.5        1      no
9      Kevin   8.0        2      no
10     Jonas  19.0        1     yes
```

a) Imprima el renglón 3 y 5 con la información de la primera y tercer columna.

In [ ]:
```
%%R

print("Extract 3rd and 5th rows with 1st and 3rd columns :")
result =  exam_data[c(3,5),c(1,3)]
print(result)
```

```
[1] "Extract 3rd and 5th rows with 1st and 3rd columns :"
       name attempts
3 Katherine        2
5     Emily        2
```

b) Añada dos nuevos renglones con la información de dos alumnos

In [ ]:
```
%%R
new_exam_data = data.frame(
name = c('Robert', 'Sophia'),
score = c(10.5, 9),
attempts = c(1, 3),
qualify = c('yes', 'no')
)
exam_data =  rbind(exam_data, new_exam_data)
print("After adding new row(s) to an existing data frame:")
print(exam_data)
```

```
[1] "After adding new row(s) to an existing data frame:"
        name score attempts qualify
1  Anastasia  12.5        1     yes
2       Dima   9.0        3      no
3  Katherine  16.5        2     yes
4      James  12.0        3      no
5      Emily   9.0        2      no
6    Michael  20.0        3     yes
7    Matthew  14.5        1     yes
8      Laura  13.5        1      no
9      Kevin   8.0        2      no
10     Jonas  19.0        1     yes
11    Robert  10.5        1     yes
12    Sophia   9.0        3      no
```

c) Guarde la información de la hoja de datos en un archivo

> A través de drive

In [ ]:
```
from google.colab import drive
drive.mount('/content/drive')
```

```
Drive already mounted at /content/drive; to attempt to forcibly remount, cal
l drive.mount("/content/drive", force_remount=True).
```

In [ ]:
```
%%R
write.csv(exam_data, file = '/content/drive/MyDrive/Taller_R/Sesion1_Taller_
```

> A través de github

In [ ]:
```
!apt-get install -y git
```

```
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.10).
0 upgraded, 0 newly installed, 0 to remove and 18 not upgraded.
```

In [ ]:
```
!git clone https://github.com/agarciam/Taller-R-UABC-Ejercicio_1
```

```
fatal: destination path 'Taller-R-UABC-Ejercicio_1' already exists and is no
t an empty directory.
```

In [ ]:
```
%%R
write.csv(exam_data, file = '/content/Taller-R-UABC-Ejercicio_1/exam_data.cs
```

In [ ]:
```
cd Taller-R-UABC-Ejercicio_1/
```

```
/content/Taller-R-UABC-Ejercicio_1
```

In [ ]:
```
!git config --global user.email "correo"
!git config --global user.name "nombre"
```

Se debe obtener un token de acceso:

https://github.com/settings/tokens

In [ ]:
```
!git init
!git pull https://token@github.com/path
!git add .
!git commit -m "2023-10-03: Avance de proyecto"
!git push https://token@github.com/path
```

```
Reinitialized existing Git repository in /content/Taller-R-UABC-Ejercicio_
1/.git/
From https://github.com/agarciam/Taller-R-UABC-Ejercicio_1
 * branch            HEAD       -> FETCH_HEAD
Already up to date.
On branch main
Your branch is based on 'origin/main', but the upstream is gone.
  (use "git branch --unset-upstream" to fixup)

nothing to commit, working tree clean
Everything up-to-date
```

d) Abra el archivo y asigne la informacion a una nueva variable

In [ ]:
```
%%R
exam_data_load <- read.csv('/content/Taller-R-UABC-Ejercicio_1/exam_data.csv
print(exam_data_load)
```

```
        name score attempts qualify
1  Anastasia  12.5        1     yes
2       Dima   9.0        3      no
3  Katherine  16.5        2     yes
4      James  12.0        3      no
5      Emily   9.0        2      no
6    Michael  20.0        3     yes
7    Matthew  14.5        1     yes
8      Laura  13.5        1      no
9      Kevin   8.0        2      no
10     Jonas  19.0        1     yes
11    Robert  10.5        1     yes
12    Sophia   9.0        3      no
```

e) Grafique attemps vs. score

f) Grafique el histograma de attemps y score en un lienzo con dos subfiguras

g) Guarde el grafico en drive

Nota: Practique modificando los valores por default de los graficos

In [ ]:
```
%%R
```

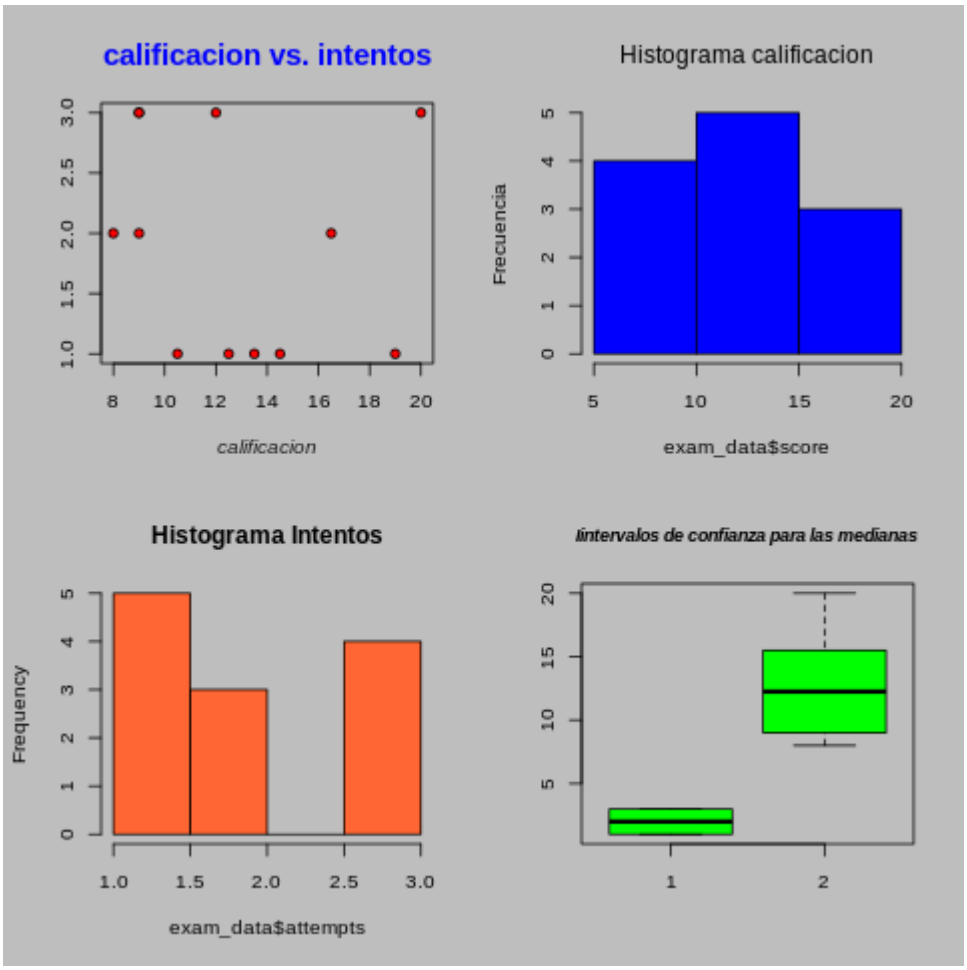
In [ ]:
```
%%R
par(mfrow=c(2,2))
opar <- par(bg = "gray") # parámetros: bg=background color
X <- cbind(exam_data$score,exam_data$attempts)

plot(X, ann = FALSE, type = "n")
points(X, bg = "red", pch = 21)
title(main = "calificacion vs. intentos",
      xlab = "calificacion",
      col.main = "blue", col.lab = gray(.1),
      cex.main = 1.5, cex.lab = 1.0, font.main = 2,
      font.lab = 3)

hist(exam_data$score,breaks=3, col="blue", main="", ylab="Frecuencia")
title(main="Histograma calificacion",font.main=1)

hist(exam_data$attempts,breaks=3,col='#FF6633',main="Histograma Intentos",fo

boxplot(cbind(exam_data$attempts,exam_data$score),col='green')
title(main="Intervalos de confianza para las medianas", font.main=4, font.la
```



In [ ]:
```
%%R
png(filename = '/content/drive/MyDrive/Taller_R/Sesion1_Taller_R/figures/exa
par(mfrow=c(2,2))
plot(exam_data$score,exam_data$attempts)
hist(exam_data$score,breaks=3)
hist(exam_data$attempts,breaks=3)
boxplot(cbind(exam_data$attempts,exam_data$score))
dev.off()
```

```
png
  2
```