

Estadística Aplicada y Procesamiento de Datos con R

Código en: 

Clase 5. Ggplot e Introducción a Jamovi

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Introducción

- GGPlot:
 - Gramática de los gráficos por capas (<http://vita.had.co.nz/papers/layers-grammar.pdf>)
 - Permite seguir los pasos y los distintos componentes del gráfico
 - Permite una fácil forma de iteración para distintos gráficos

**Torpedo sobre ggplot*

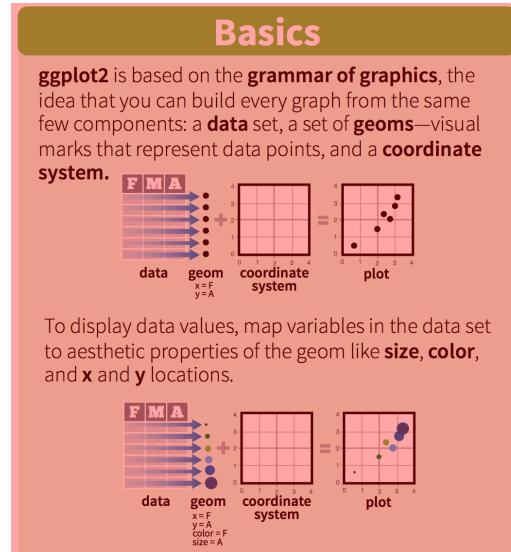
Elementos

Gramática	Explicación
Datos	Base de datos a graficar
Geométrica	Forma geométrica que representará los datos (e.g., diagrama de cajas y puntos, histogramas)
Estética	La estética del objeto geométrico (e.g., color, tamaño, forma)

Traducción del github de @oliviergimenez

- Signo +
- `geom_point()` es un gráfico de puntos, `geom_line()` is un gráfico de líneas, `geom_col()` es un gráfico de columnas o barras, etc.
- `aes()` dinámico/variable
- Algunos argumentos son `color` (colores líneas o puntos), `fill`(rellenar el área), `linetype` para ver el tipo de línea (discontinua, continua, con puntos),`pch` estilo de puntos (forma), `size` tamaño o grueso de las líneas y `alpha` que es la opacidad (transparencia, de 1 a 0)

Elementos (2)



Aplicación

Estructura hipotética

Añadimos

Añadimos una etiqueta para el eje x y un formato

Añadimos un tema y la ubicación de leyenda

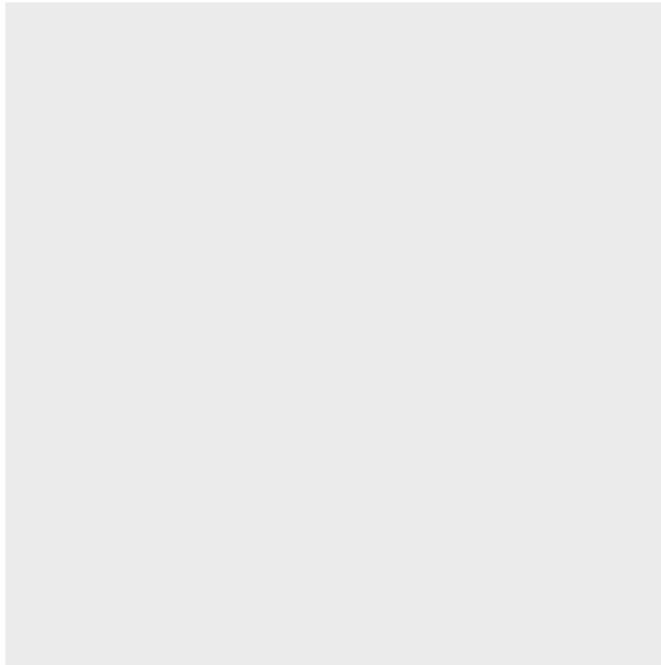
Se dividen los gráficos por región

- Generamos los datos

► código

- Hacemos un código en que definimos que faremos un gráfico desde la base de datos **covid19_chile_coq_val**.

```
library(ggplot2)
covid19_chile_coq_val %>%
  ggplot()
```



Aplicación

Estructura hipotética

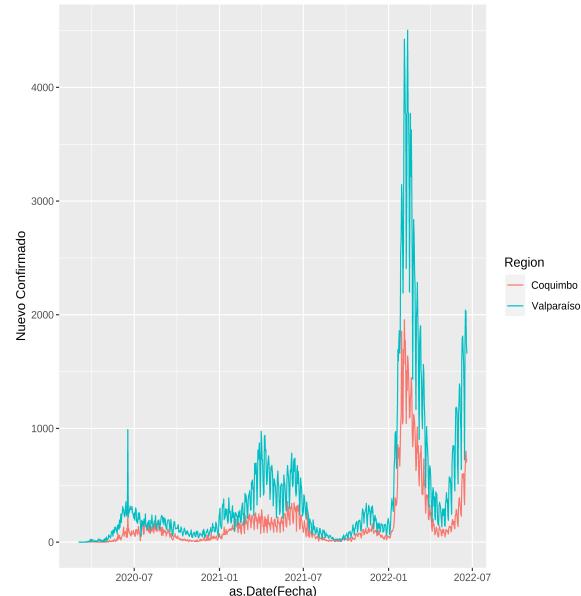
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```
covid19_chile_coq_val %>%
ggplot()+
  geom_line(aes(x=as.Date(Fecha), y=`Nuevo Confirmado`, color=Region))
```



Aplicación

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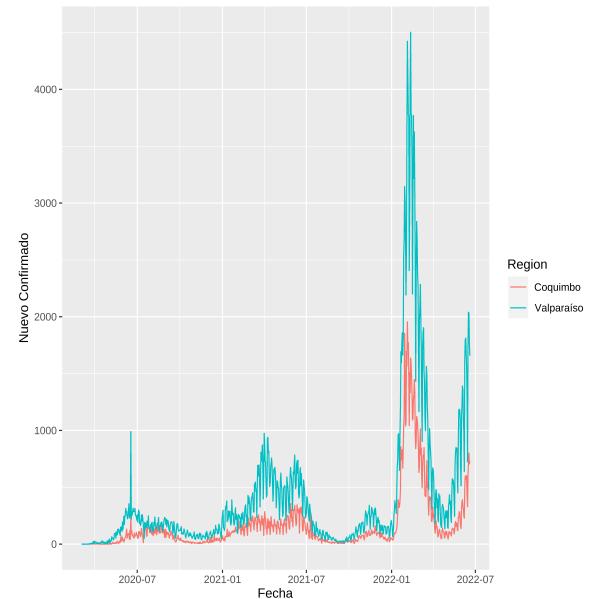
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```
covid19_chile_coq_val %>%
  ggplot()+
    geom_line(aes(x=as.Date(Fecha), y='Nuevo Confirmado', color=Region))+
    scale_x_date()+
    xlab("Fecha")
```



Aplicación

Estructura hipotética

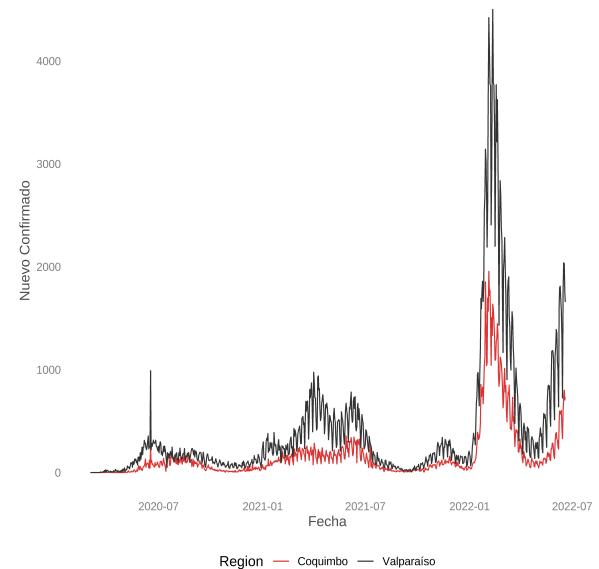
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```
library(sjPlot)
covid19_chile_coq_val %>%
ggplot()+
  geom_line(aes(x=as.Date(Fecha), y=`Nuevo Confirmado`, color=Region))+
  scale_x_date()+
  xlab("Fecha")+
  sjPlot::theme_blank()+
  theme(legend.position="bottom")+
  scale_color_manual(values=c("#DD3333","#333333"))
```



Aplicación

Estructura hipotética

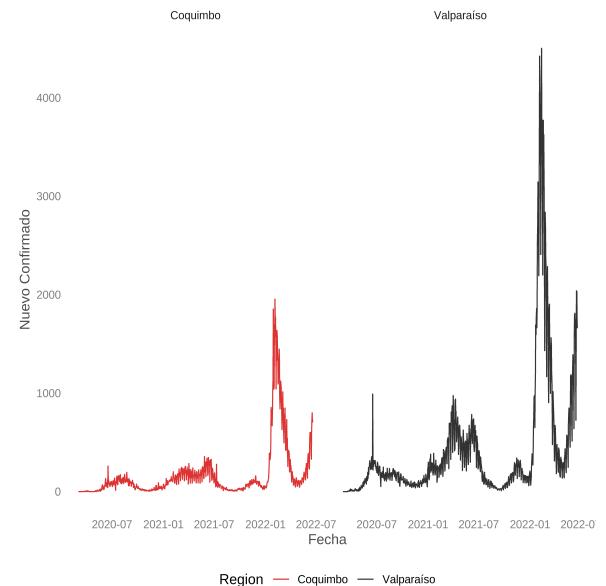
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ggplot()+
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  scale_x_date()+
  xlab("Fecha")+
  sjPlot::theme_blank()+
  theme(legend.position="bottom")+
  scale_color_manual(values=c("#DD3333","#333333"))+
  facet_wrap(~Region)
```



```
#guardamos los datos
ggplot2::ggsave("./_figs/1.png", width = 5, height = 10, dpi = 100)
```

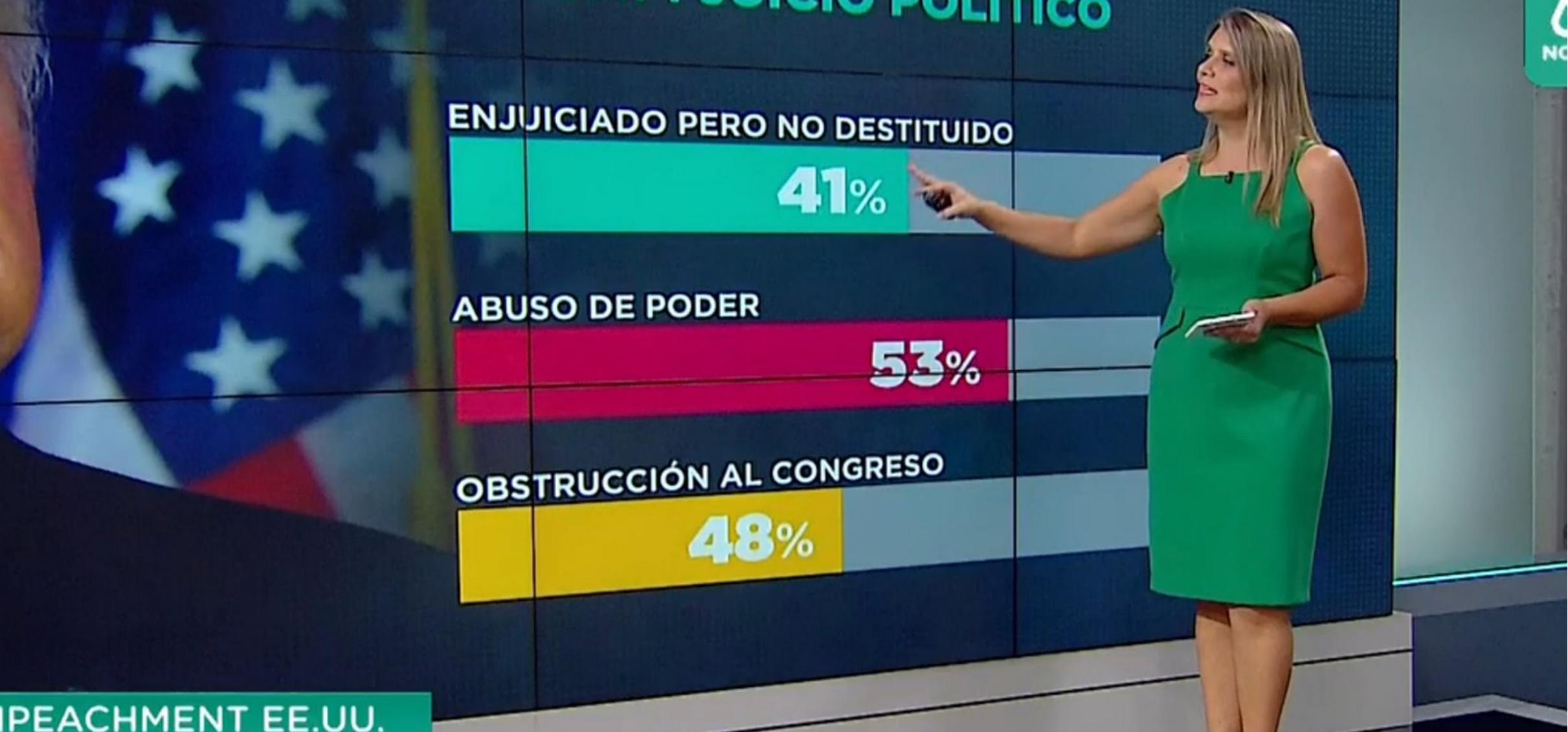
Observaciones

- Autoexplicativo
- Los gráficos pueden estar sujetos a sesgos (cc. o icc.)
- Es necesario explicitar cómo se construyó el gráfico
- Misma escala
- Orden de los datos
- Citar fuentes (con caption)

Ejemplos:

- Datos Victimización
- Datos ENUSC
- Datos CASEN
- Desafíos gobierno
- Tasa de positividad
- Días sandwich
- Gráfico ritmo vacunación
- Aprobación presidencial





IMPEACHMENT EE.UU.

REPORTE PARA APROBAR JUICIO CONTRA TRUMP

Aplicación (2)

Estructura hipotética

Usamos la base, la transformamos y hacemos un gráfico de barra

Añadimos una temática con una escala de colores

Se definen etiquetas y se gira el gráfico de barras, se pone el gráfico en mínimo

```
library(jsonlite)
history1 = fromJSON("_data/StreamingHistory0.json", flatten = TRUE)
history2 = fromJSON("_data/StreamingHistory1.json", flatten = TRUE)
st = rbind(history1, history2)
rm(history1, history2)
# what does the dataframe contain.
head(st) %>%
knitr::kable("markdown")
```

endTime	artistName	trackName	msPlayed
2021-03-23 12:20	FREE SOLO	FREE SOLO - Chalas en Paris	2247988
2021-04-07 00:05	The Shapeshifters	Back To Basics	327280
2021-04-07 00:11	Fish Go Deep	The Cure & The Cause - Dr Packer Extended Remix	377121
2021-04-07 00:19	Pete Heller's Big Love	Big Love - Dr Packer Extended Remix	469124
2021-04-07 00:25	The Shapeshifters	Lola's Theme Recut - Dr Packer Remix	393015
2021-04-07 00:33	ATFC	Sleep Talk (feat. Lisa Millett) - Dr Packer Extended Remix	452070

Aplicación (2)

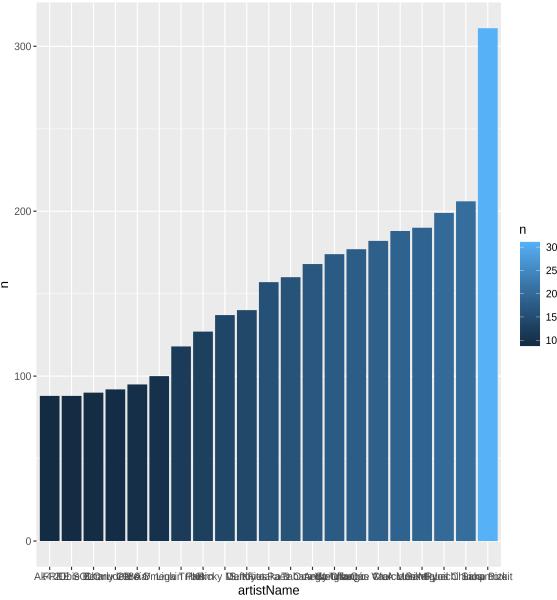
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```
st %>%
  dplyr::count(artistName, sort = TRUE) %>%
  dplyr::top_n(20) %>%
  dplyr::mutate(artistName = reorder(artistName, n)) %>%
  ggplot(aes(x = artistName, y = n)) +
  geom_bar(aes(fill=n),
           stat="identity")
```



Aplicación (2)

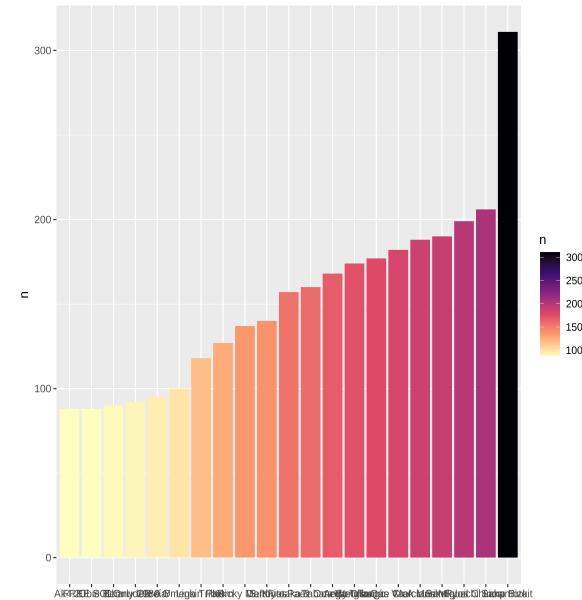
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  geom_bar(aes(fill=n),
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  scale_fill_viridis_c(option = "magma", direction = -1) +
  xlab(NULL)
```



Aplicación (2)

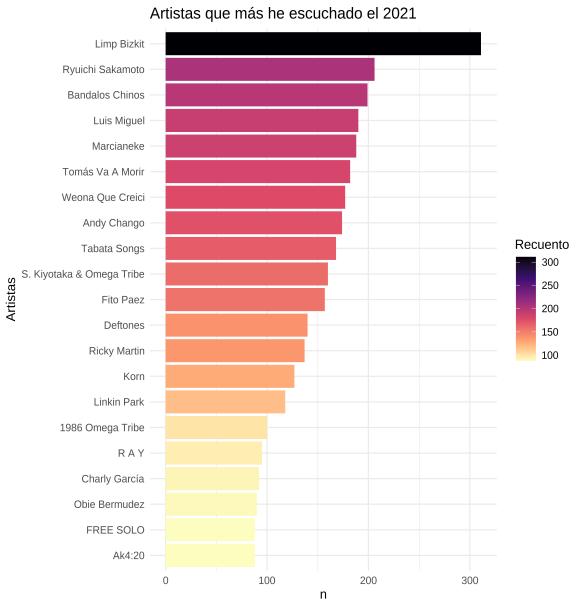
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  geom_bar(aes(fill=n),
           stat="identity") +
  scale_fill_viridis_c(option = "magma", direction = -1) +
  xlab(NULL) +
  coord_flip() +
  labs(x = "Artistas",
       title = "Artistas que más he escuchado el 2021",
       fill = "Recuento") +
  theme_minimal()
```

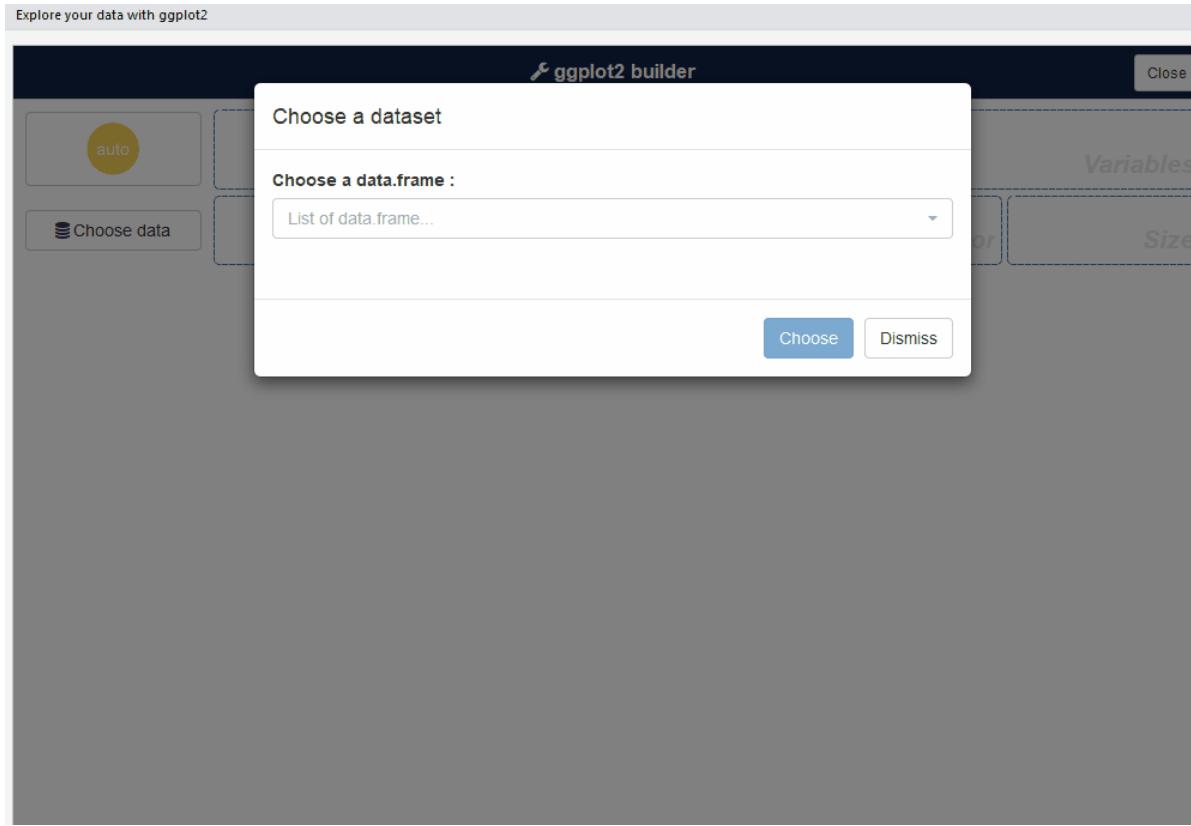


Ejercicios sobre ggplot2

- Descargar e importar desde CANVAS: [base_2022.xlsx](#)
- Desarrollar [Introduccion a ggplot2.R](#)

Otros paquetes relacionados

- [ggstatsplot](#)
- [gganimate](#)
- [ggplotly](#)
- [ggvis](#)
- [esquise](#)



JAMOVI

- Software que utiliza el lenguaje de R pero con una interfaz amigable
- Tiene versión cloud [Click aquí](#)
- La versión cloud tiene un límite de 40 minutos
- Pueden chequear su funcionalidad [aquí](#)



Ventajas de JAMOVI

- Interfaz amigable: Intuitiva y fácil de usar.
- Código abierto: Gratuito y transparente.
- Extensible: Amplía funcionalidades con módulos.
- Resultados en vivo: Actualizaciones automáticas.
- Formato familiar: Similitud con hojas de cálculo.
- Integración con R: Combina facilidad y potencia



Desventajas

- Menor flexibilidad
- Menor soporte
- Menor eficiencia
- Menos funciones
- Comunidad más pequeña
- Visualización básica

Ejercicio

- Ingrese a la versión cloud de JAMOVI
- Abra el [proyecto.omv](#)
- Abra el [proyecto2.omv](#)

Fuentes

- Ballari, D. (2018). Funcion ggplot() de ggplot2. <https://rpubs.com/daniballari/ggplot>
- Close, G. (2022). Technical Writing and Publishing Data-Rich Articles with Quarto. Unpublished. <https://doi.org/10.13140/RG.2.2.14862.43846/1>
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