IA y Estadística

En Diabetes tipo 2

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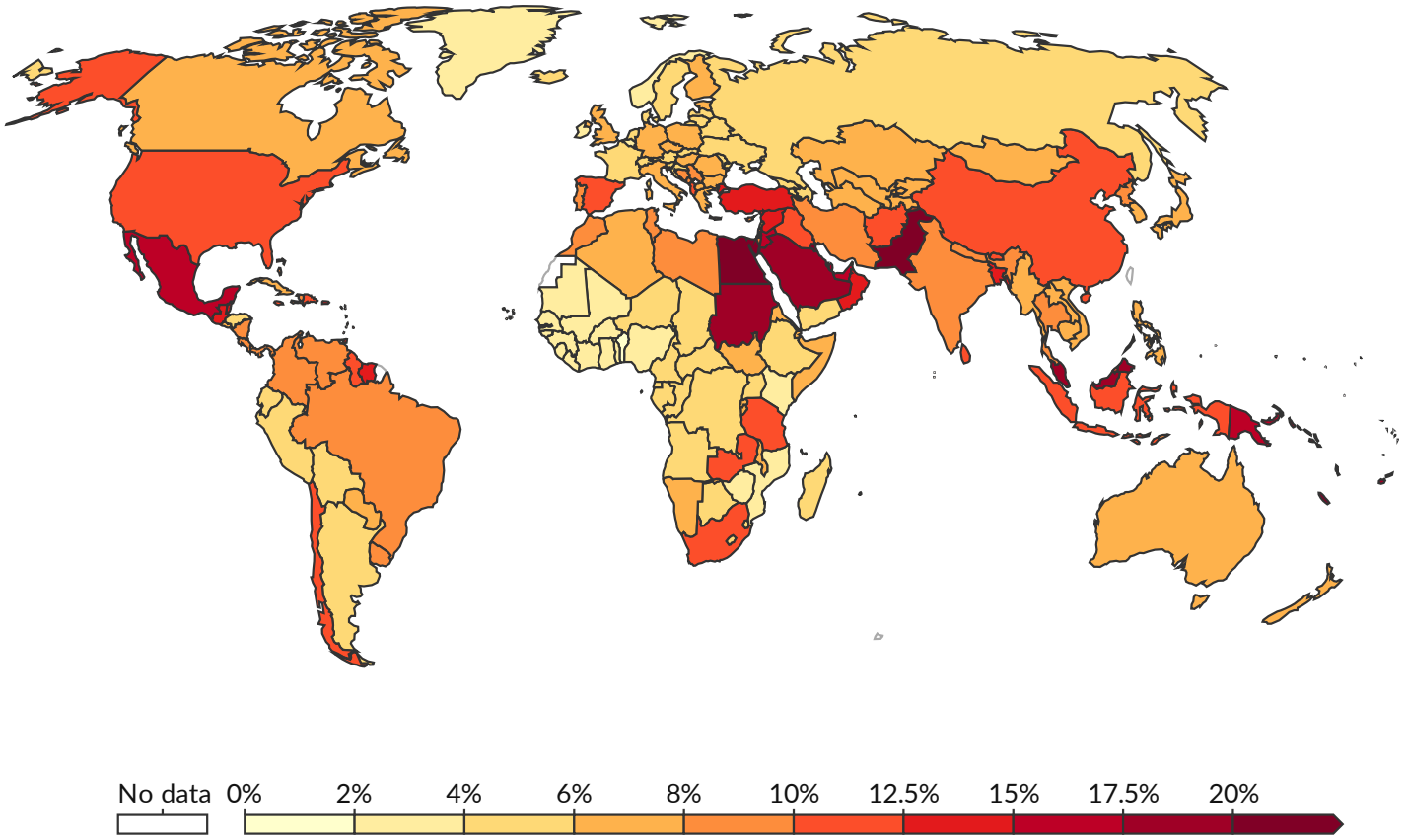
Introducción: Diabetes Tipo 2



Source: International Diabetes Federation (via World Bank)

OurWorldInData.org/burden-of-disease • CC BY

10.2%

Presupuesto nacional de salud de Chile

[1] Sapunar, Z. J. (2016).

01

Diagnostico oportuno

1 de cada 5 personas no conoce su diagnostico.
(Centers for Disease Control and Prevention, 2023)

DATA

01

Cleaning

Limpieza de datos atipicos en el data set presentado

02

Augmentation

Apoyarse en la literatura para agregar nuevos *features*

03

Analysis

Correlacion y test no parametricos de Kruskal Wallis

“This is a quote, words full of wisdom that someone important said and can make the reader get inspired.”

—Someone Famous

HOMA-IR!

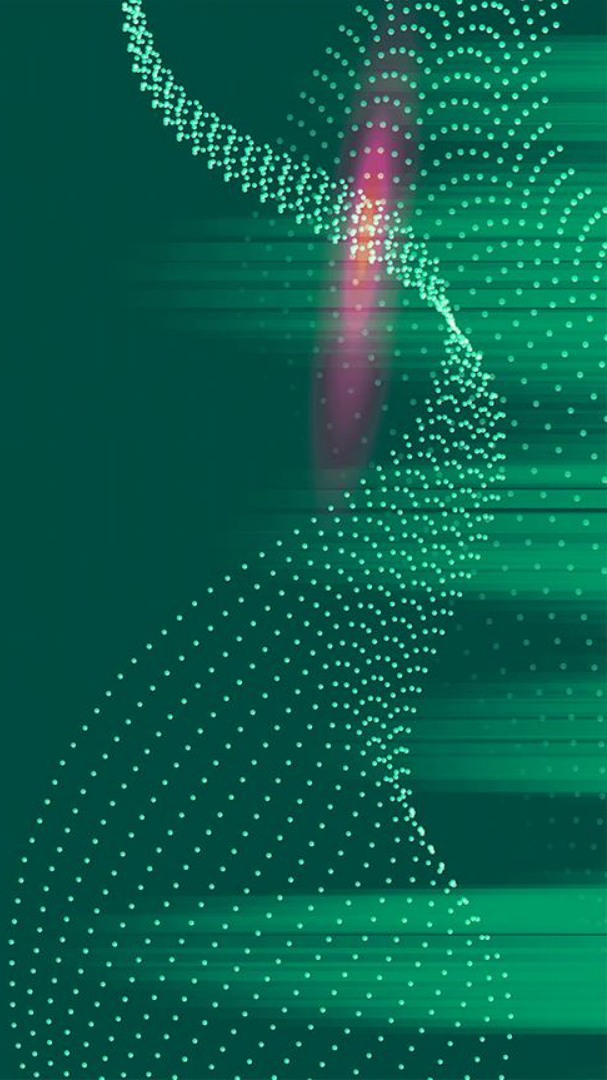
This could be the part of the presentation where you can introduce yourself, write your email...

THE SLIDE TITLE GOES HERE!

Do you know what helps to make your point clear? Lists like this: one

- They’re simple
- You can organize your ideas clearly
- You’ll never forget to buy milk!

And the most important thing: the audience won’t miss the point of your presentation



Estadística: División de grupos

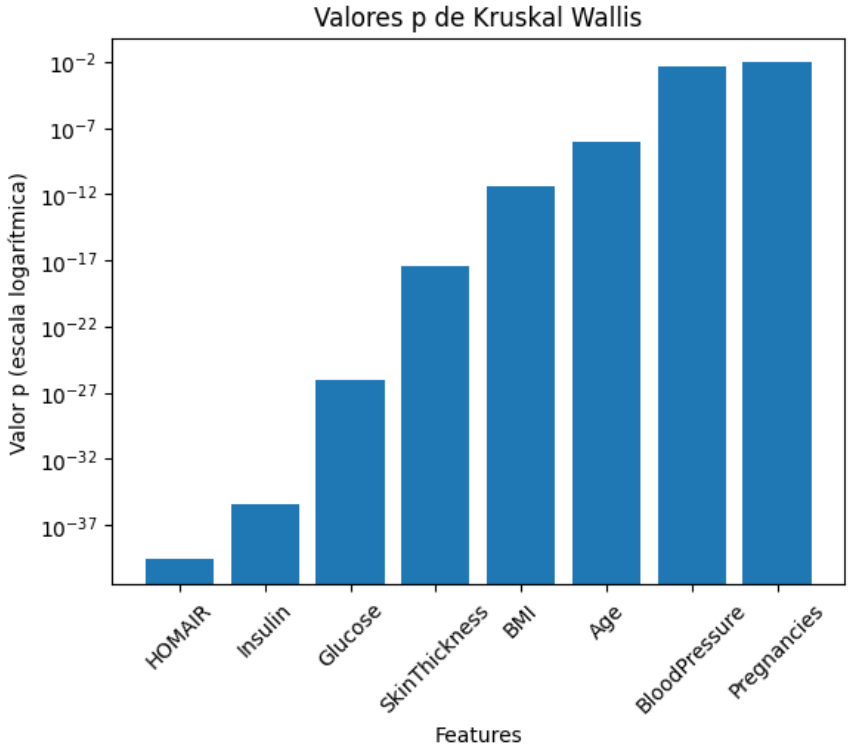
Diabeticas

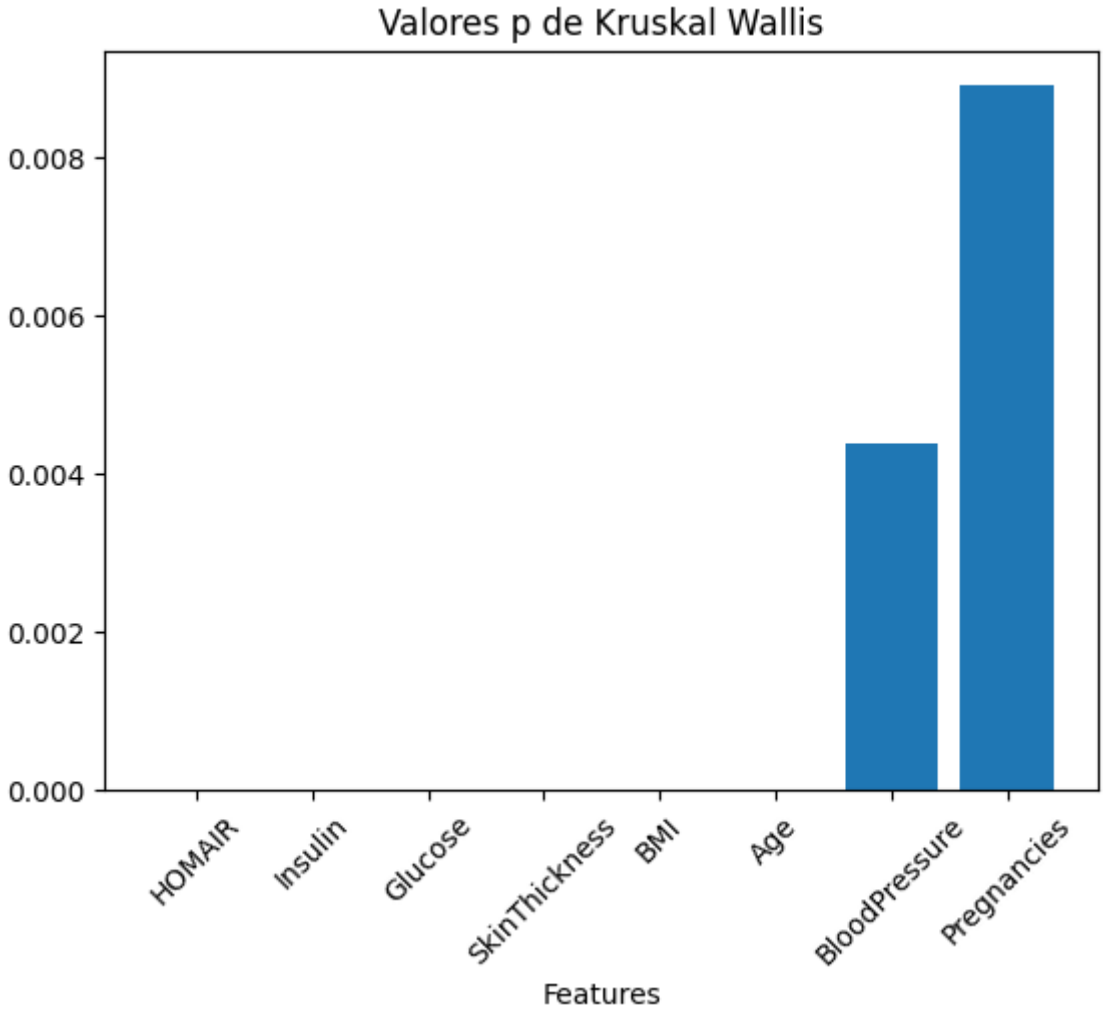
No Diabeticas

Resultados Test Kruskal Wallis

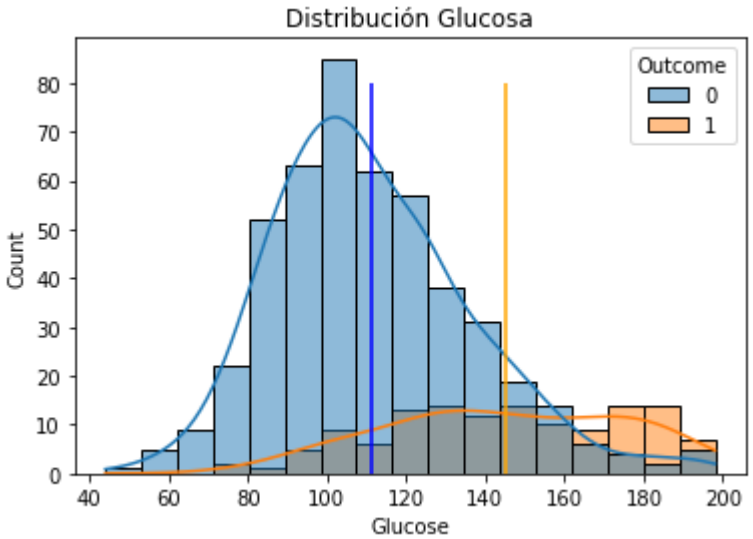
$$H = (N-1)\frac{\sum_{i=1}^{g} n_i (\bar{r}_{i\cdot} - \bar{r})^2}{\sum_{i=1}^{g}\sum_{j=1}^{n_i} (r_{ij} - \bar{r})^2}$$

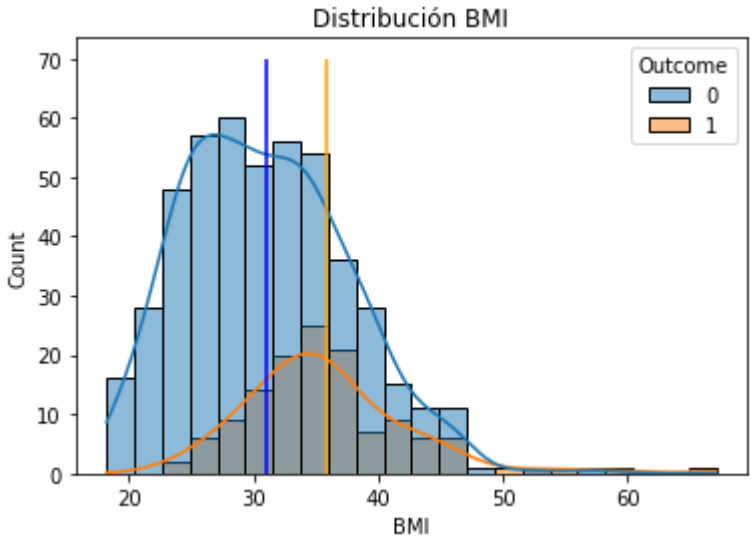
$$\Pr(\chi^2_{g-1} \geq H)$$



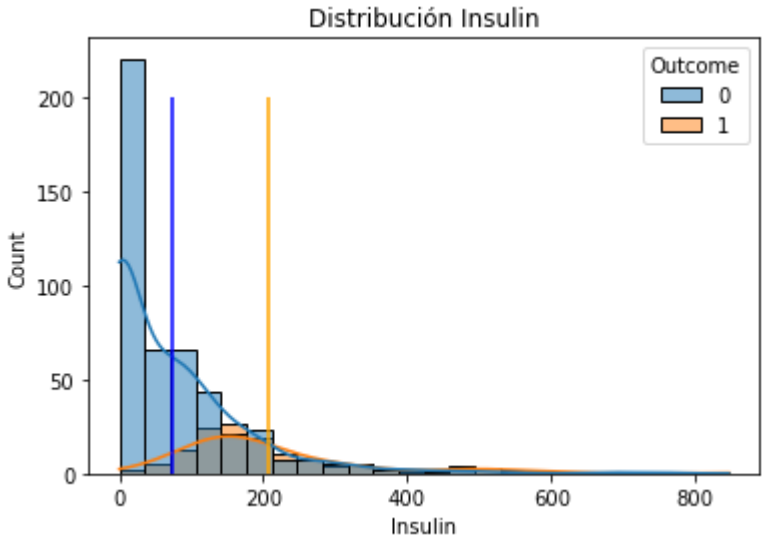

Valores p de Kruskal Wallis
0.008
0.006
0.004
0.002
0.000
HOMAIR
Insulin
Glucose
SkinThickness
BMI
Age
BloodPressure
Pregnancies
Features

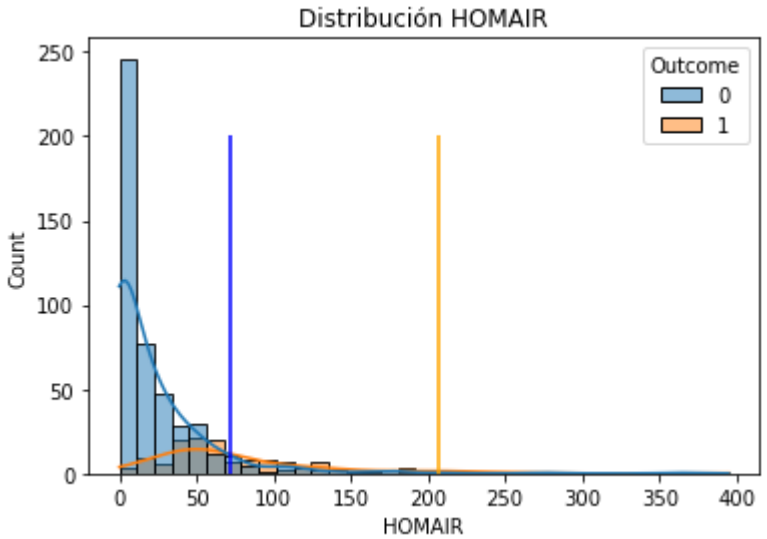
División


Distribución Glucosa
Outcome
0
1
Count
Glucose
0
10
20
30
40
50
60
70
80
40
60
80
100
120
140
160
180
200


Distribución BMI
Outcome
0
1
Count
BMI
0
10
20
30
40
50
60
70
20
30
40
50
60

División


Distribución Insulin
Outcome
0
1
Count
Insulin
0
50
100
150
200
0
200
400
600
800


Distribución HOMAIR
Outcome
0
1
Count
HOMAIR
0
50
100
150
200
250
0
50
100
150
200
250
300
350
400

Se comparan 3 modelos de ML

NN

- Mayor training
+ flexibilidad
- Muchos hiperparametros

RandomForest

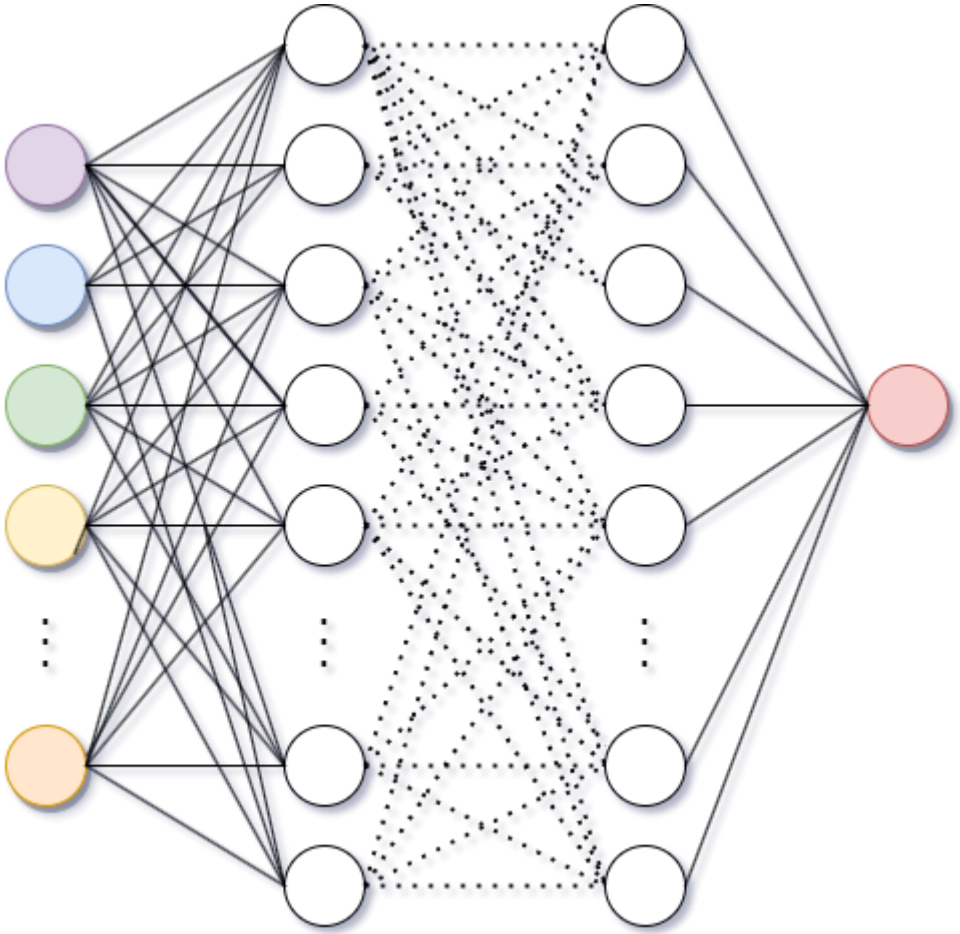
+ training rápido
+ buena precisión

PCA

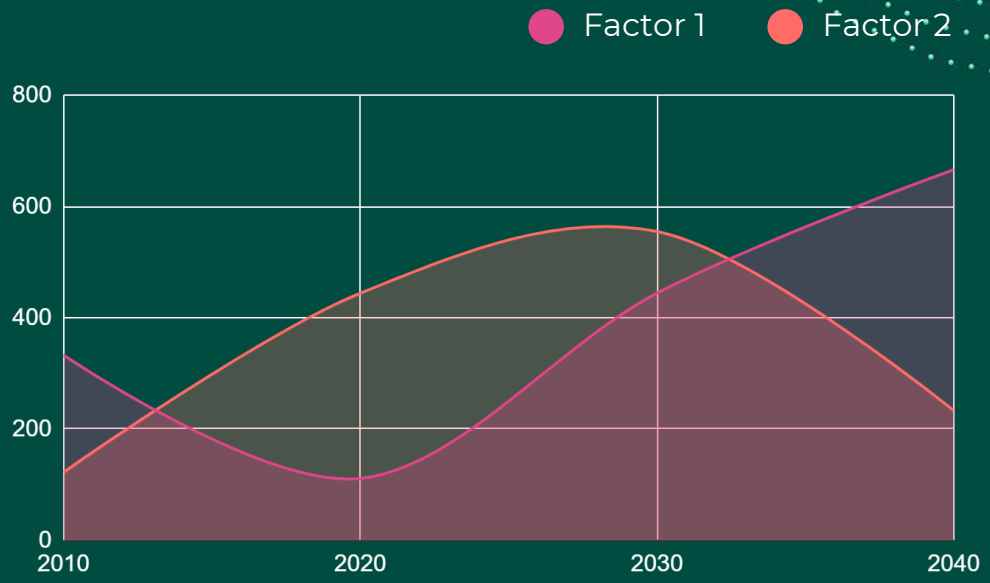
+ rápido
- poco poder

AWESOME WORDS

Because key words are great for catching
your audience's attention



THIS IS A GRAPH!



To modify this graph, click on it, follow the link, change the data and paste the new graph here

... AND THE SAME GOES FOR TABLES

	Precisión	Falsos negativos	Tiempo (min)
Red neuronal	71%	0.38	+400
Rm.Forest	81%	0.53	0.38
PCA	82%	9.4	1.16

Competencia de modelos

71%

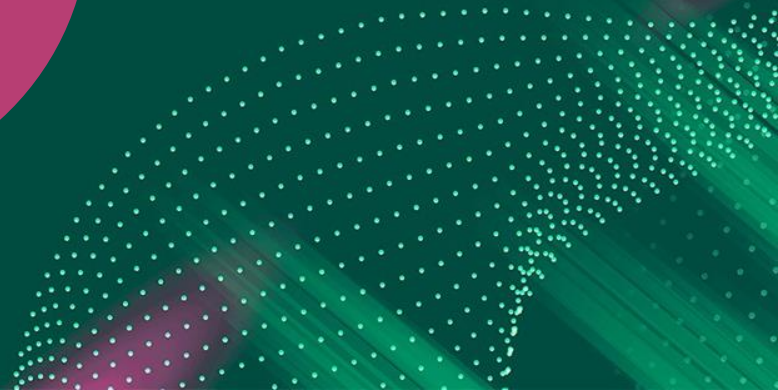
Red neuronal

48%

Mercury is the smallest planet

18%

Jupiter is the biggest one



333,000

Mercury is the smallest planet

245,00

Jupiter is the biggest planet

386,000

Despite being red, Mars is cold

REVIEWING CONCEPTS IS A GOOD IDEA

MERCURY

Mercury is the smallest planet

VENUS

Venus has a beautiful name

MARS

Mars is actually a cold place

JUPITER

It’s a gas giant and the biggest one

SATURN

Saturn is the ringed one and a gas giant

NEPTUNE

It’s the farthest planet from the Sun

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