

Arquitectura Moderna MVVM + Jetpack Compose



Nodos
Academy



Jetpack Compose ha reducido el tiempo de desarrollo de interfaces de usuario en un 50%. El 70% de los desarrolladores reportan mejoras significativas en eficiencia y calidad.

-Jetbrains

MVVM ha transformado el desarrollo de aplicaciones Android, facilitando el mantenimiento y la escalabilidad. Un estudio reciente mostró un 40% menos de errores y un 30% más de facilidad de mantenimiento en comparación con otras arquitecturas

Agenda

01

Arquitectura

¿Qué es arquitectura de software?

03

Compose + MVVM

Como se unen estos dos conceptos para crear mejores apps

02

P. arqui vs P. diseño

Diferencias entre patrones de diseño y de arquitectura

04

Ejercicio práctico

Veamos un ejemplo básico de código



**Les voy a
contar una
historia...**

Así estaba yo
cuando me
dijeron que
tenía que hacer
un **refactor** de
todo el **inicio**
de sesión de
XML a **Compose**.





Estaba **perdido** y **ni idea qué hacer**, apenas y sabía lo **básico de compose** y ya tenía que hacer un **refactor**

Empecé a darle a **compose** y a usarlo con **MVVM**, y más **enredado** estaba...



Por alguna
razón **empezó**
rápidamente
todo a
adaptarse, todo
de repente era
más fluido y
con **menos**
esfuerzo





**Finalmente
logré entender
rápidamente los
beneficios de
esta
combinación**

MVVM + Compose .

Me presento

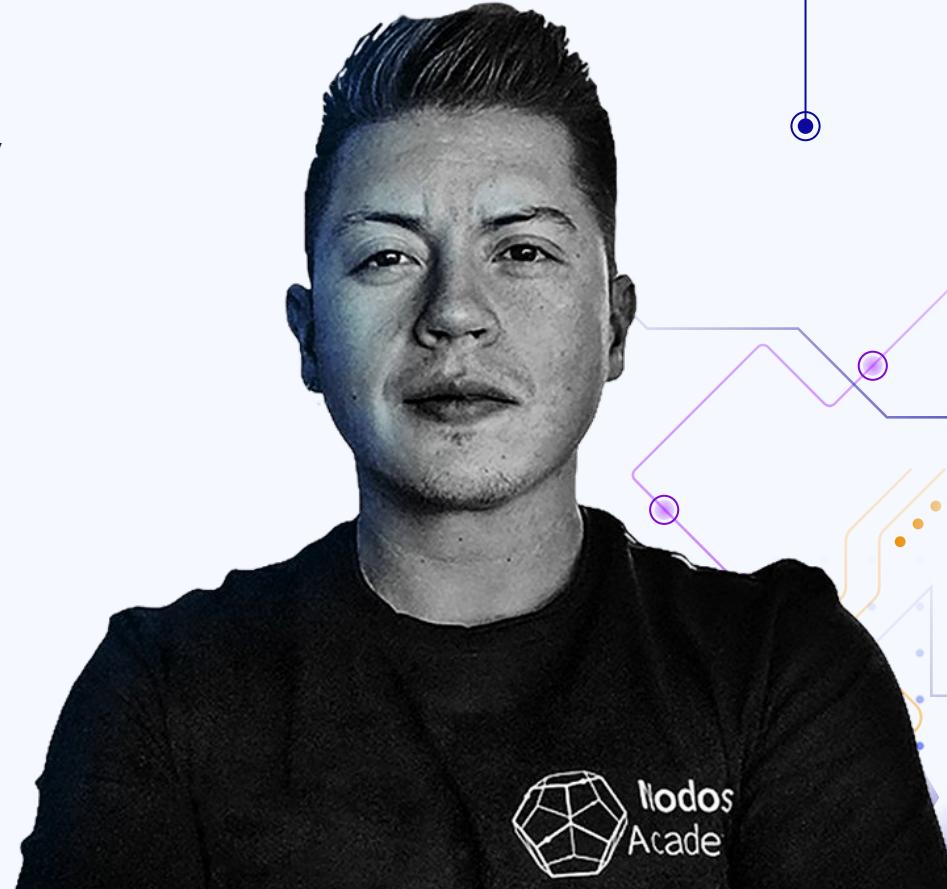


Tengo 8 años de **experiencia** en **desarrollo de aplicaciones móviles** a nivel nacional e internacional. **He ganado** varios **hackathones**, incluyendo la de Scotiabank Colpatria en Colombia.

He **liderado** equipos de **arquitectura móvil** en **MercadoLibre** y trabajado como **Ingeniero Android** en Reddit, Scotiabank Colpatria, Disney, y Mensajeros Urbanos, entre otros.

Como **apasionado de la enseñanza**, soy **profesor en Platzi** y coach de certificación Android. Poseo la certificación de **Android Developer por Google**.

Además, soy el fundador de **Nodos Academy**.



01

Arquitectura de software

Vamos a lo fundamental

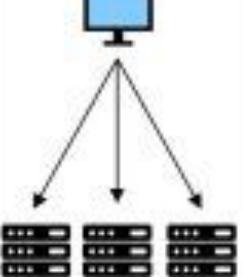
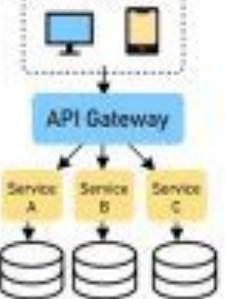
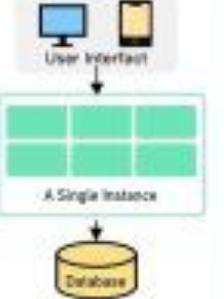


Arquitectura de Software

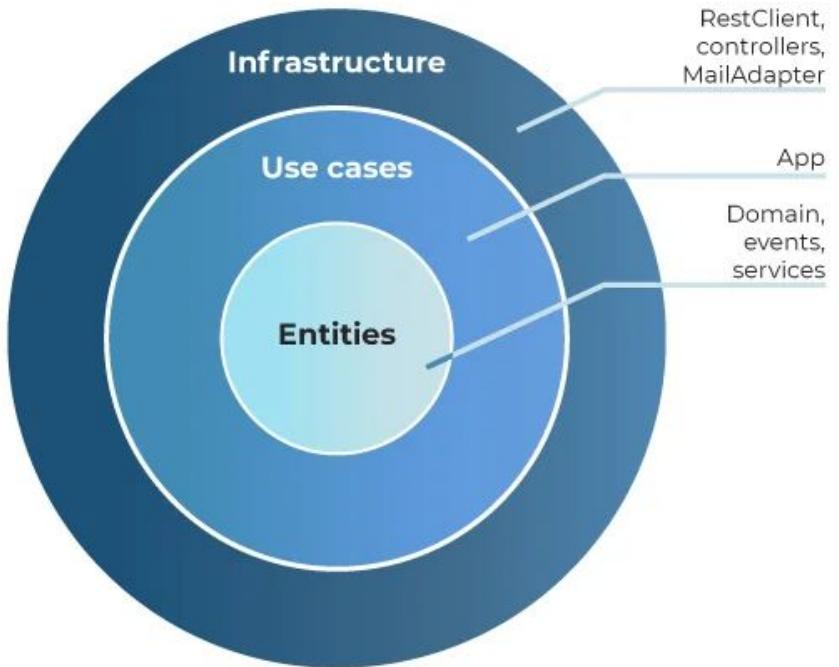
Para mí, la **arquitectura de software** es la **estructura** que se le da a un aplicativo, permitiendo que sea **escalable, mantenible y robusto**. Esta arquitectura **define** los **componentes principales** del sistema, sus **interacciones** y las **relaciones** entre ellos.

Incluye **decisiones** sobre la **organización** del código, los **patrones de diseño** utilizados, y los **principios y prácticas** que guían el desarrollo del **software**.

Top 5 Most-Used Architecture Patterns

| Layered architecture | Event-driven architecture | Microkernel architecture | Microservices | Monolithic architecture |
|---|---|--|---|---|
|  <p>Presentation Layer Business Layer Persistence Layer Database Layer</p> |  |  |  |  |

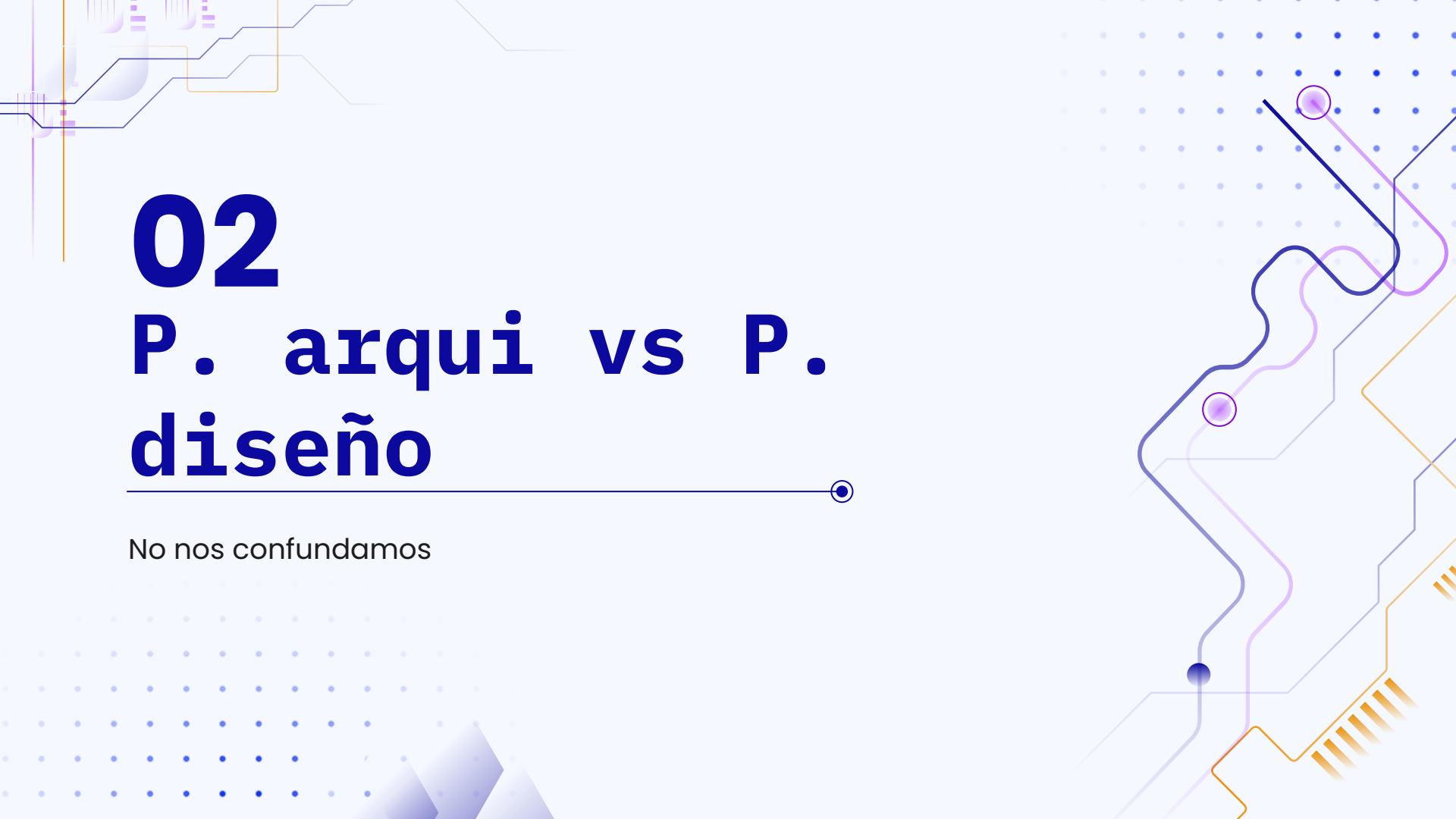
CLEAN ARCHITECTURE



02

P. arqui vs P. diseño

No nos confundamos



Tipos de patrones



Arquitectura

Son soluciones que nos ayudan a darle estructura, reglas y normas a nuestro proyecto



Diseño

Se basan en soluciones para problemas comunes en el desarrollo, dando un modelo de solución a cada problema

Tipos de patrones de arquitectura



MVP

- Model
- View
- Presenter



MVVI

- Model
- View
- Intent



MVVM

- Model
- View
- ViewModel

Patrones de diseño



Observer



Singleton



Proxy



Adapter



Factory



Etc...

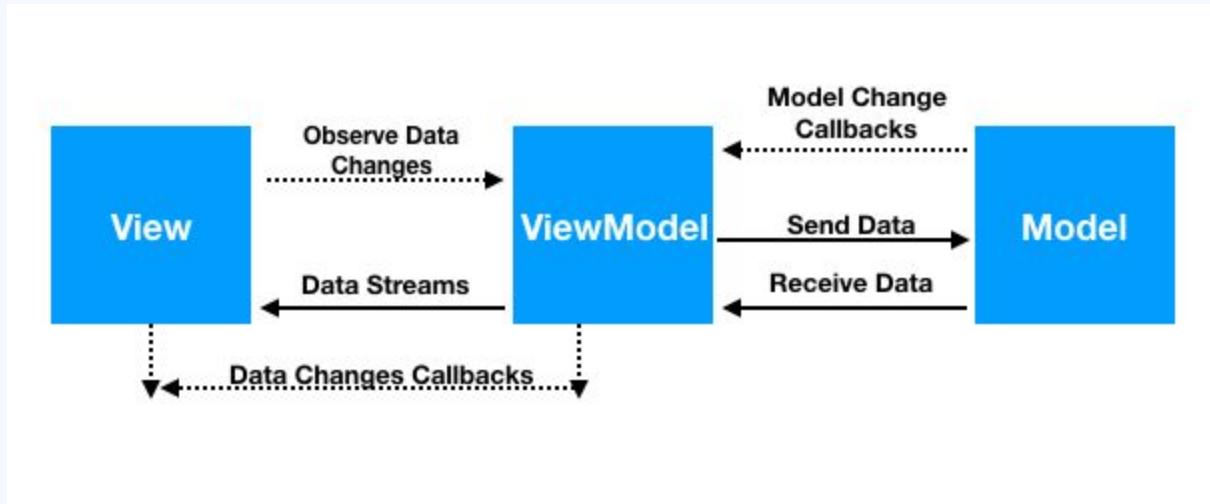
03

Compose + MVVM

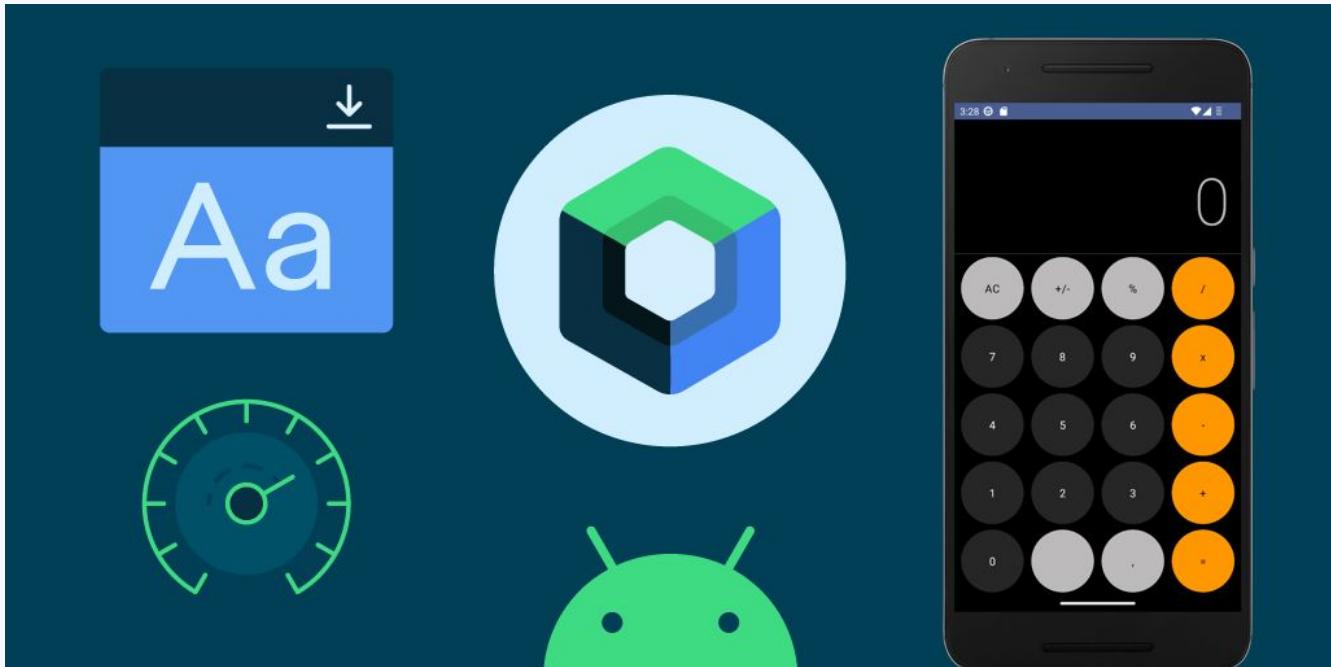
Veamos como se unen

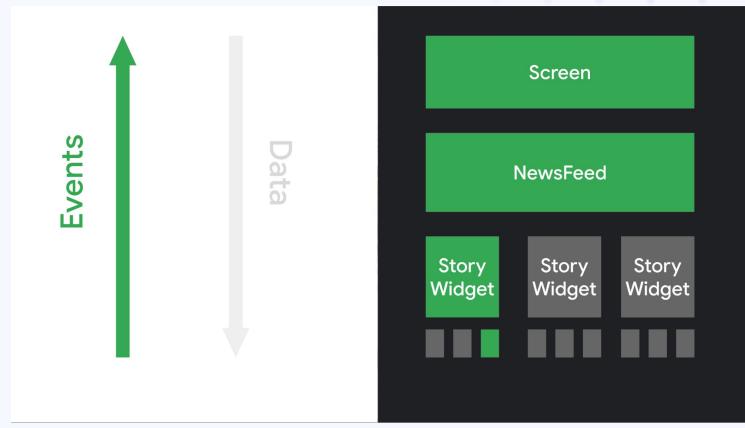
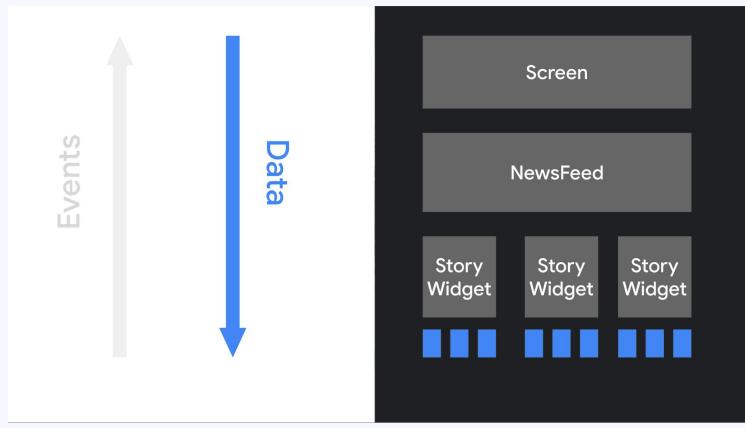


MVVM



Compose



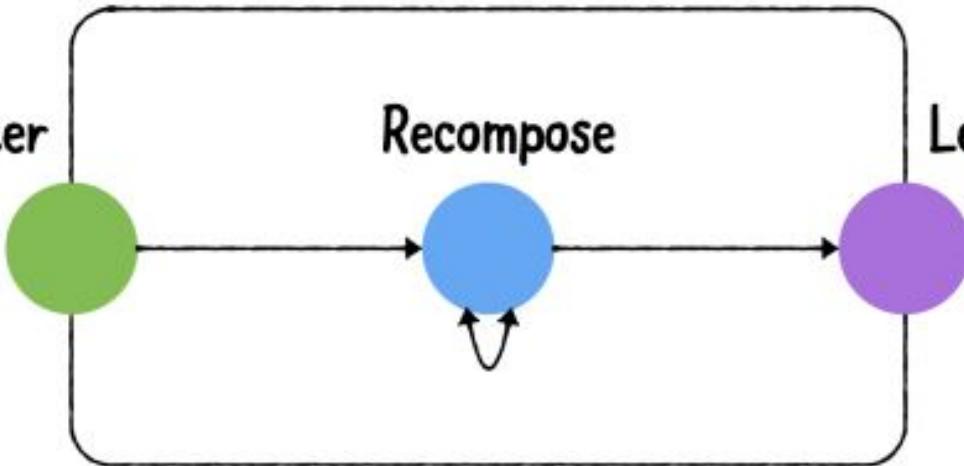


Composition

Enter

Recompose

Leave

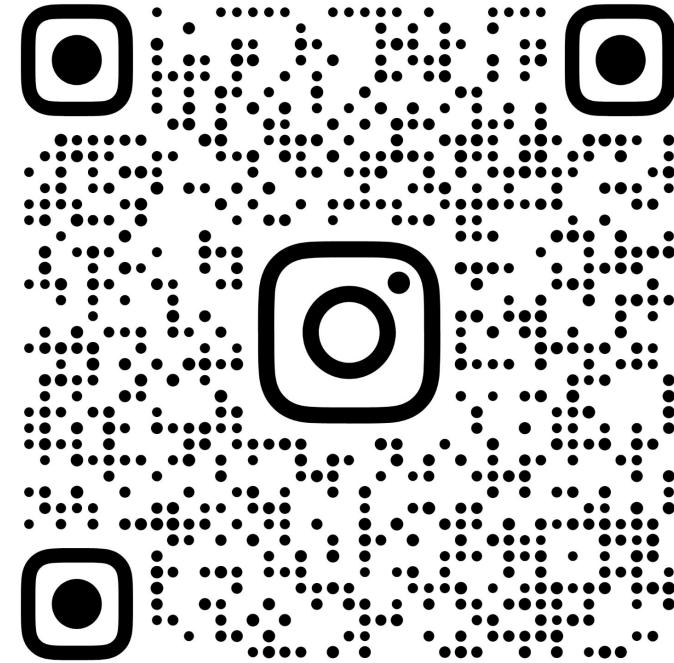


```
@Composable
fun ComposableTestFunction() {
    Box(
        modifier = Modifier
            .fillMaxSize()
            .background(Color.Black)
            .padding(80.dp)
    ) {
        Text(
            text = "Jetpack Compose",
            color = Color.White,
            fontFamily = FontFamily.SansSerif,
            fontSize = 30.sp,
            fontWeight = FontWeight.Bold,
            fontStyle = FontStyle.Italic,
            textAlign = TextAlign.Center,
            textDecoration =
            TextDecoration.None
        )
    }
}
```

Ejercicio práctico

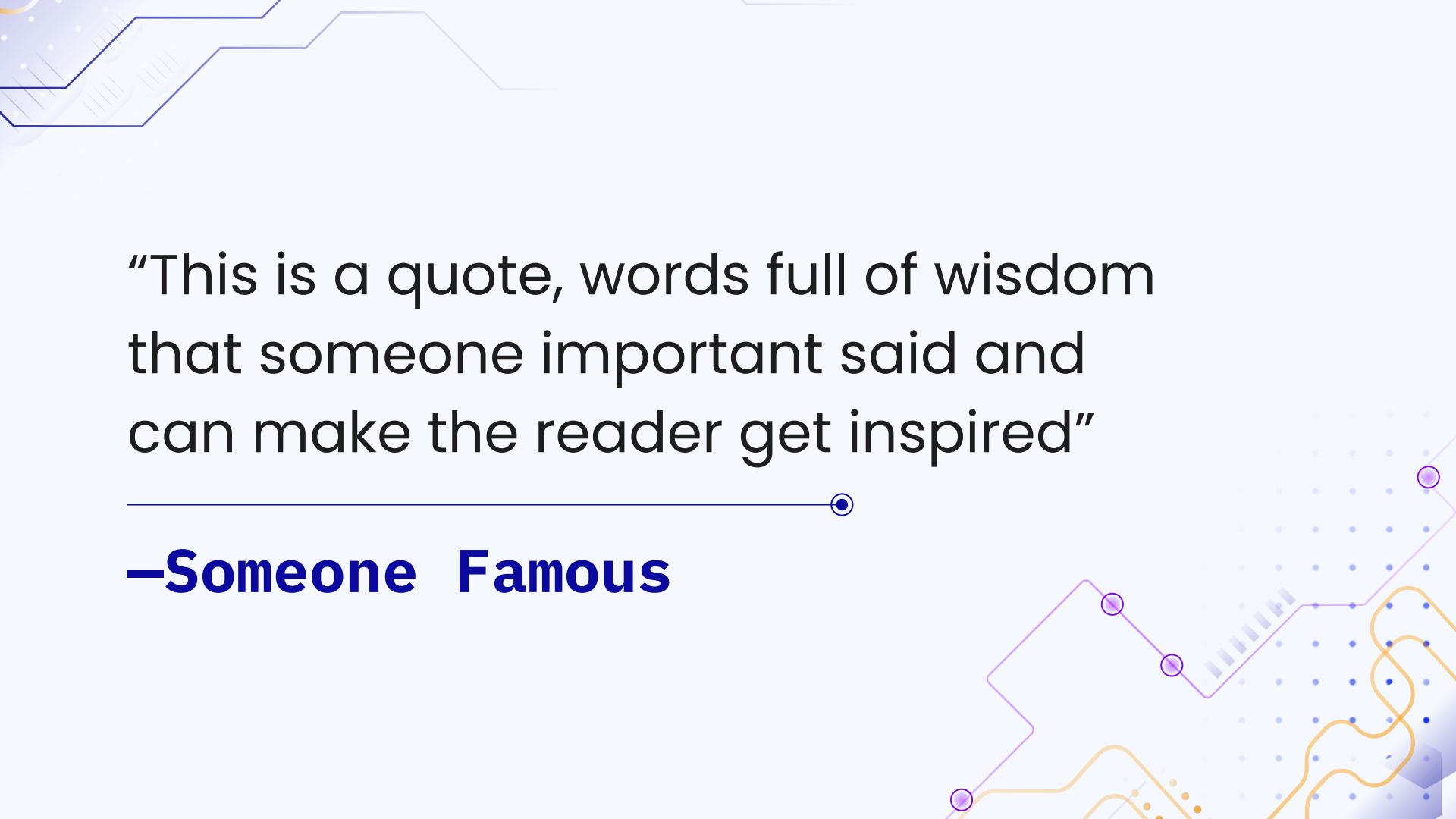


Mis redes sociales



CRIS.VILLAMIL

Gracias



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

—Someone Famous

Features of the topic

Mars

Despite **being red**,
Mars is very cold

Neptune

It's the farthest
planet from the Sun

Jupiter

Jupiter is the biggest
planet of them all

Saturn

Saturn is a **gas giant**
and has several rings

Examples



Mercury

It's the closest planet to the Sun and the **smallest** in the Solar System



Venus

Venus has a beautiful name and is the second planet from the Sun



Mars

Despite being red, Mars is actually a **cold place**. It's full of iron oxide dust

Recommendations



Mars

Despite being red,
Mars is very cold



Mercury

Mercury is the closest
planet to the Sun



Venus

Venus is the second
planet from the Sun



Saturn

Saturn is a gas giant
and has several rings



Neptune

Neptune is the farthest
planet from the Sun



Jupiter

Jupiter is the biggest
planet of them all

Image always reinforce the concept

You can give a brief description of the topic you want to talk about here. For example, if you want to talk about Mercury, you can say that it's the smallest planet in the entire Solar System



4,498,300,000

Big numbers catch your audience's attention

9h 55m 23s

Jupiter's rotation period

333,000

The Sun's mass compared to Earth's

386,000 km

Distance between the Earth and the Moon

Awesome words

Ejercicio práctico



Practical exercise - calculator

Objective:

Introduce participants to basic coding concepts by building a **simple calculator**

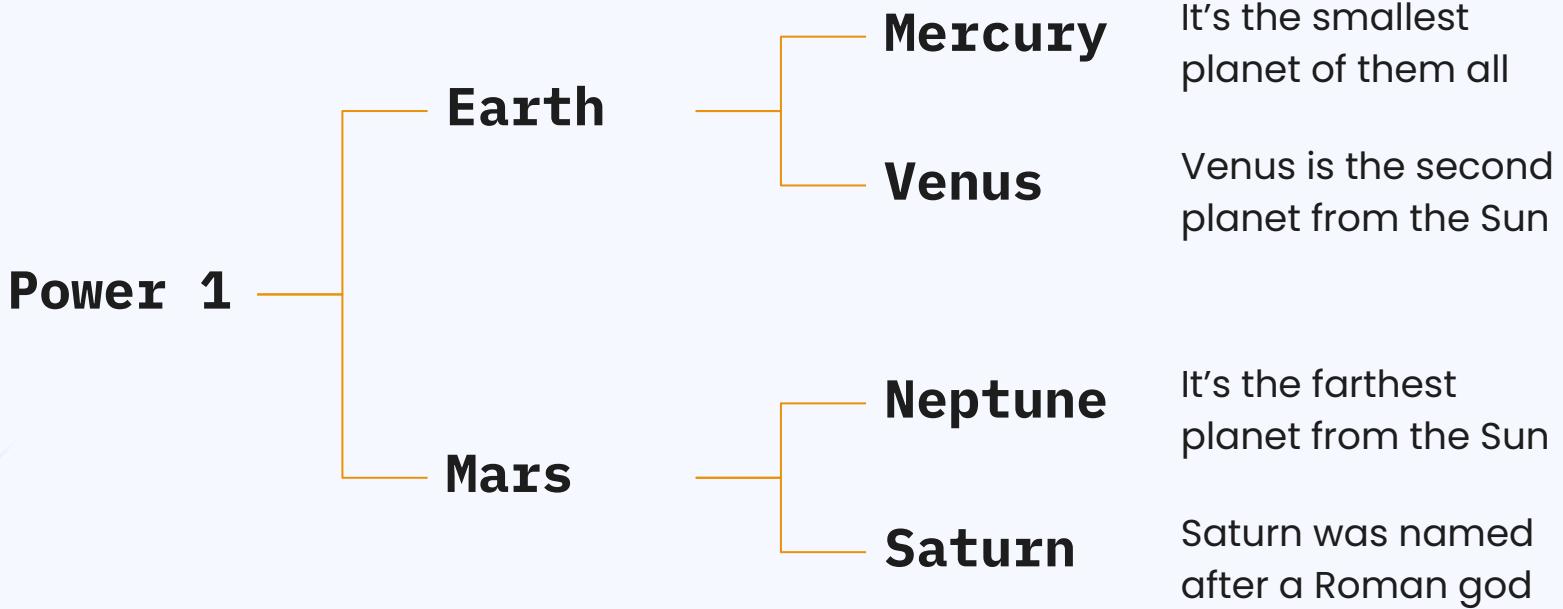
Instructions:

1. Open a Python development environment and write the following code:

```
# Simple Calculator  
num1 = int(input("Enter the first number: "))  
num2 = int(input("Enter the second number: "))  
print("Sum:", num1 + num2)  
print("Difference:", num1 - num2)  
print("Product:", num1 * num2)  
print("Quotient:", num1 / num2)
```

2. Run the program and experiment with different numbers
3. Observe the output

Brainstorm and idea generation



Main topic and details

Mars

Despite being red,
Mars is **very cold**

Jupiter

Jupiter is the biggest
planet of them all

Neptune

It's the farthest
planet from the Sun

Saturn

It's a gas giant and
has **several rings**



Popular programming languages

01

Neptune

Mercury is the closest planet to the Sun and the **smallest** of them all

02

Venus

Venus has a beautiful name and is the **second planet from the Sun**

03

Earth

Earth is the third planet from the Sun and the only one that harbors life in the Solar System

04

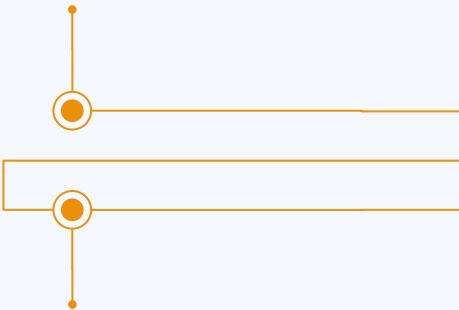
Saturn

Saturn is a gas giant and has several rings. It's composed mostly of hydrogen and helium

Sequences

Saturn is composed of
hydrogen and helium

First

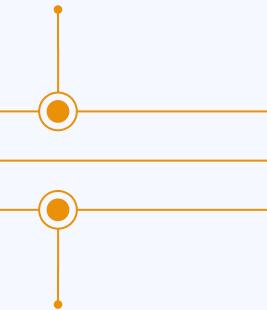


Next

Despite being red,
Mars is **very cold**

Mercury is the **closest**
planet to the Sun

Next



Next

Earth is the third
planet from the Sun

Jupiter was named
after a Roman god

Next



Last

Venus has extremely
high temperatures

Classification

| Mars | Venus | Mercury | Jupiter |
|--|--|--|--|
| <ul style="list-style-type: none">• Small• Red• Cold• Rocky | <ul style="list-style-type: none">• Small• Hot• Dry• Volcanic | <ul style="list-style-type: none">• Small• Hot• Rocky• Cratered | <ul style="list-style-type: none">• Large• Cold• Gassy• Striped |
| Mars is full of iron oxide dust | Venus has high temperatures | Mercury is quite a small planet | Jupiter is a huge gas giant |

Cause and effect

Problem

Mars

Despite being red,
Mars is very cold

Venus

Venus is the second
planet from the Sun

Solution

Mercury

Mercury is the closest
planet to the Sun

Saturn

Saturn is a gas giant
and has several rings

Question and answer

Question

Is Mercury the closest planet to the Sun and the smallest one in the Solar System? **Note that it's a bit larger than the Moon**

Answer

Venus has a beautiful name and is **the second planet from the Sun**. It's hot and has a poisonous atmosphere

Step-by-step coding

01



Earth

It's the only planet known to **harbor life**

02



Mercury

Mercury is the closest planet to the Sun

03



Jupiter

Jupiter is the **biggest** planet of them all

04



Saturn

Saturn was named after a Roman god

Parts and whole

The whole objective

Mercury is the closest planet to the Sun and the smallest one in the entire Solar System

Parts of the object

- Mercury
- Jupiter
- Venus
- Mars
- Earth
- Saturn
- Mercury

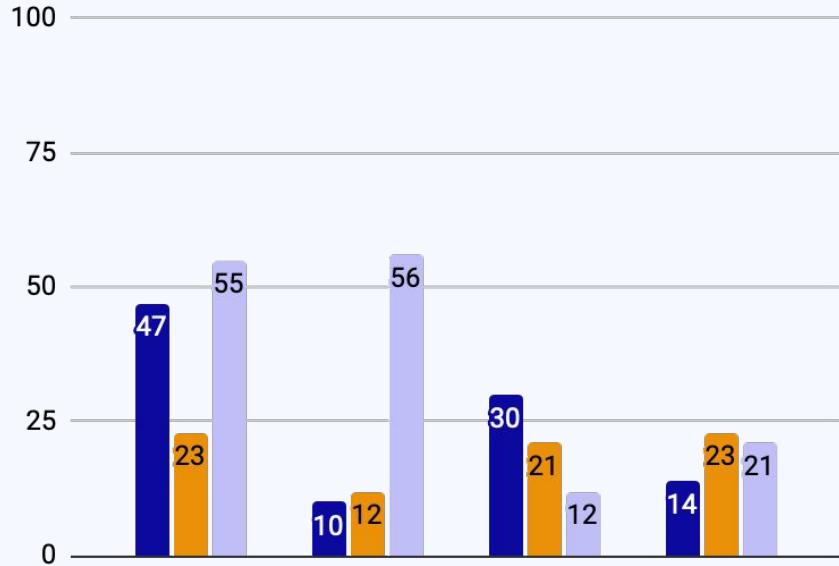
What happens if the parts are missing?

Earth is the third planet from the Sun and the **only one that harbors life in the Solar System**

What's the function of the parts?

Jupiter is a gas giant and the biggest planet in the Solar System

You can use this graph



Follow the link in the graph to modify its data and then paste the new one here. [For more info, click here](#)



Mercury

Mercury is the closest planet to the Sun



Jupiter

Jupiter is the biggest planet of them all



Saturn

Saturn was named after a Roman god

This is a map

USA

Despite being red, Mars is **very cold**

India

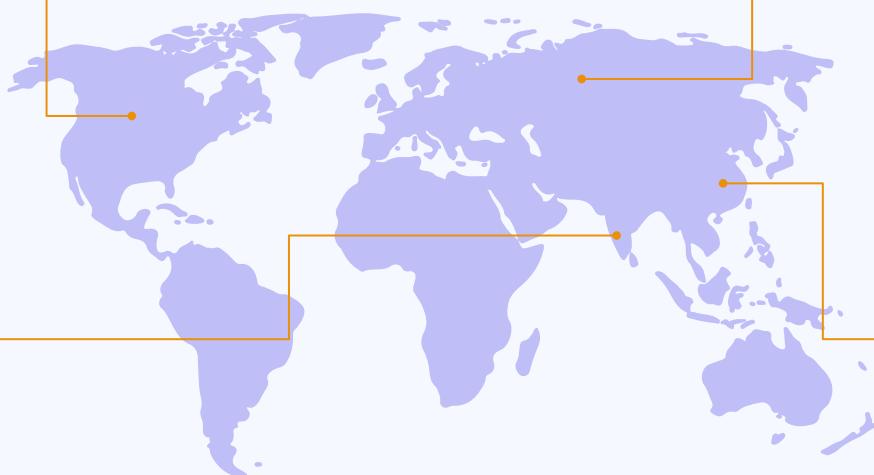
Jupiter is the biggest planet of them all

Russia

Neptune is the farthest planet from the Sun

China

Saturn is **a gas giant** and has several rings



Mockups

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Thanks !

Do you have any questions?

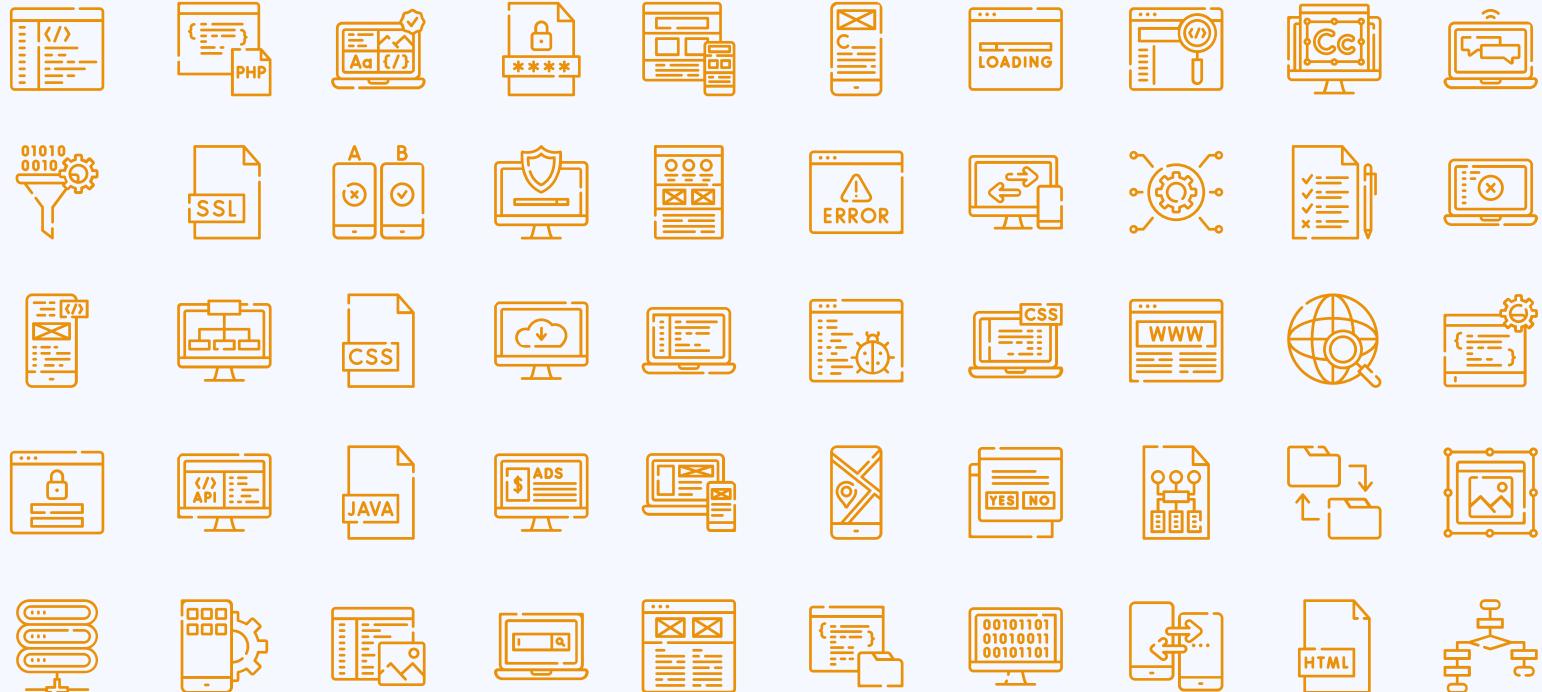
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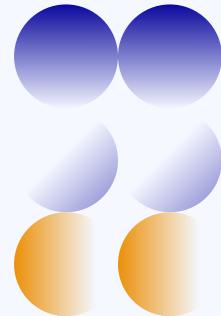
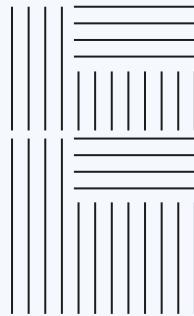
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Icon pack



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Pana



Amico



Bro



Rafiki



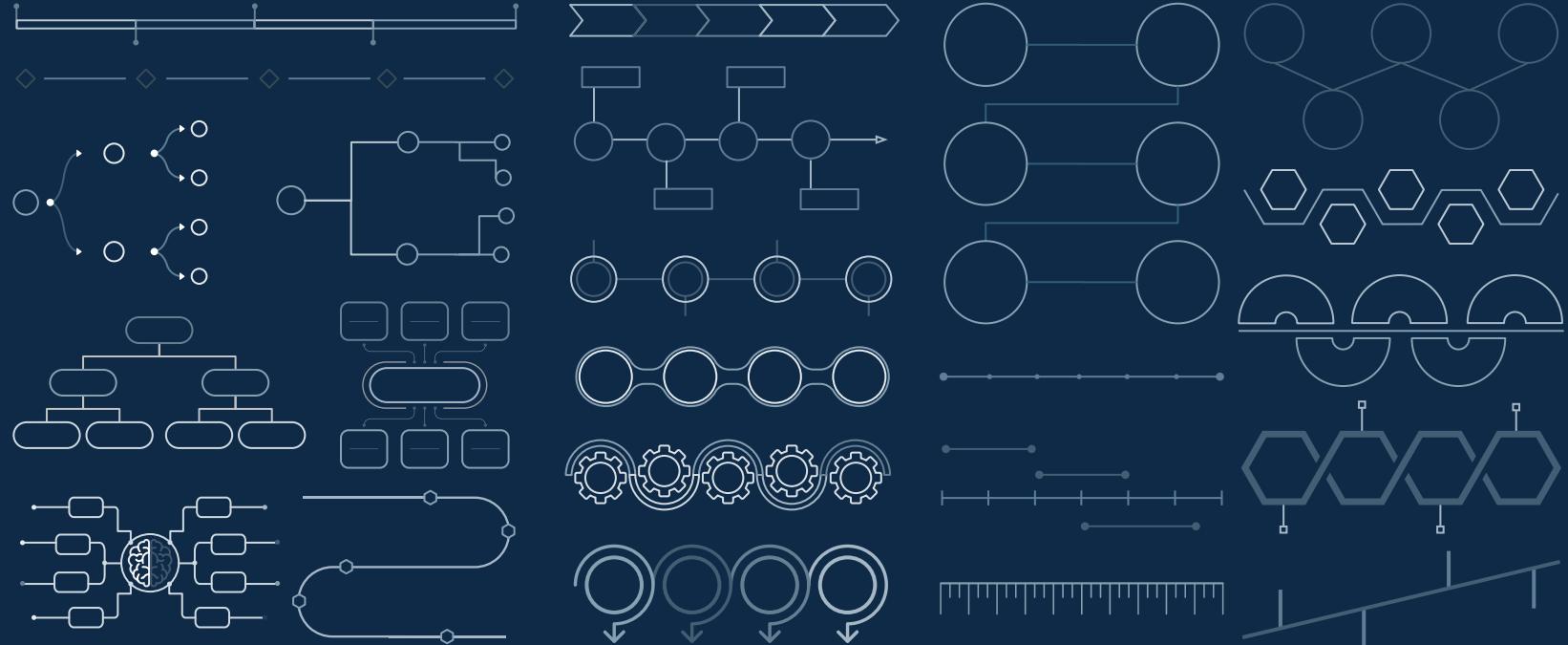
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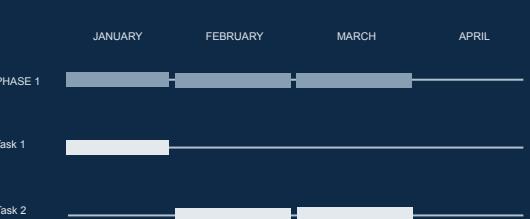
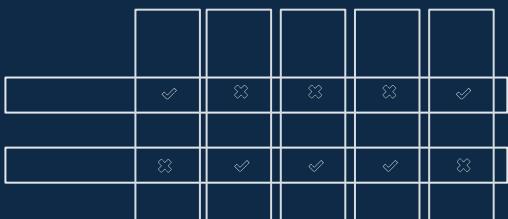
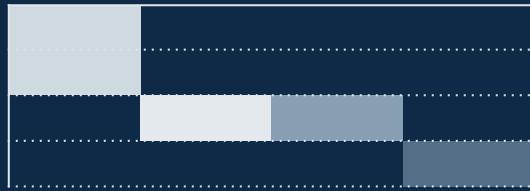
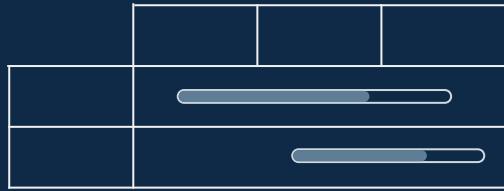
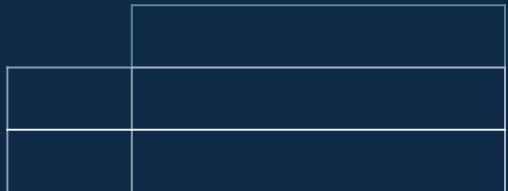
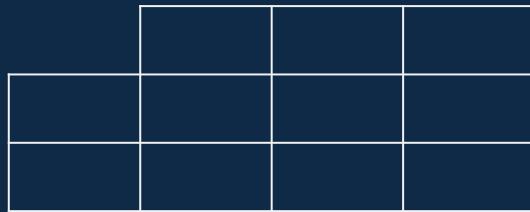
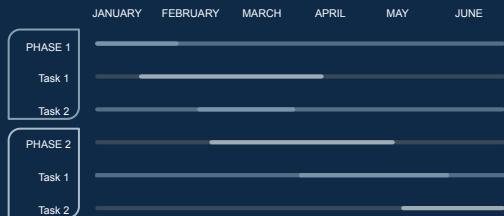
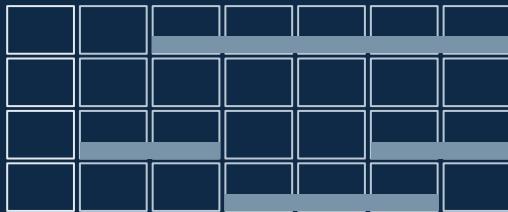
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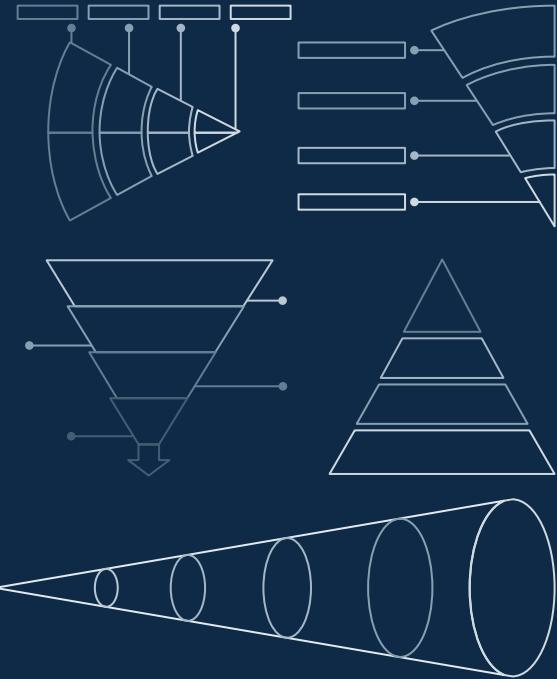
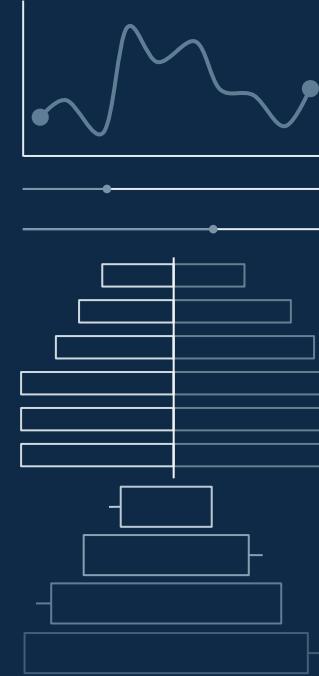
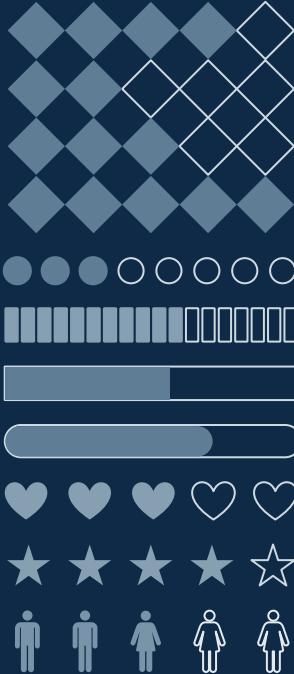
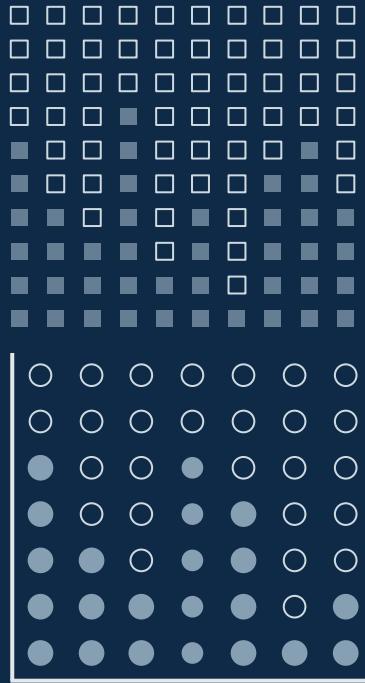












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