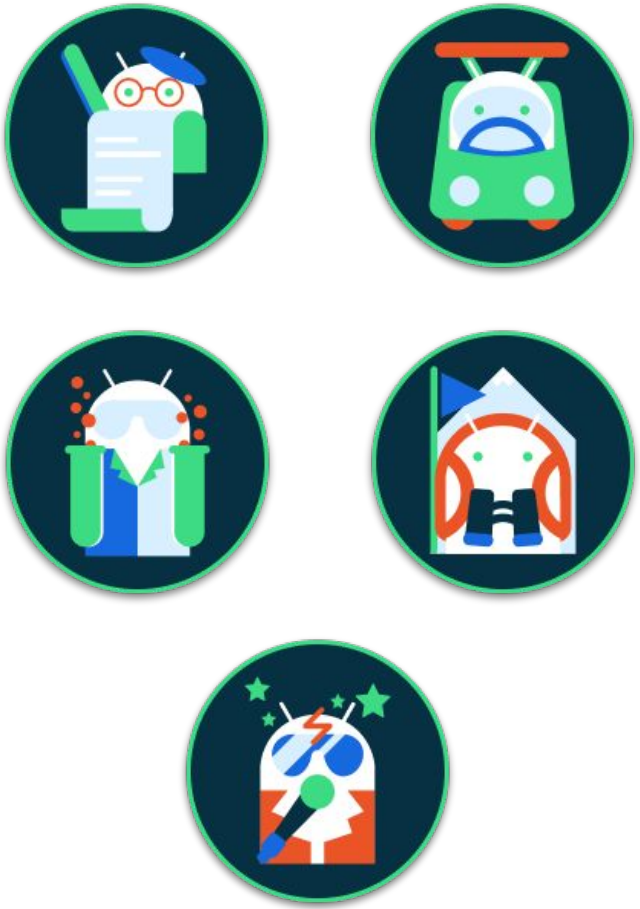
HOW MAD IS YOUR ANDROID APPLICATION?

TDC Connections 2021

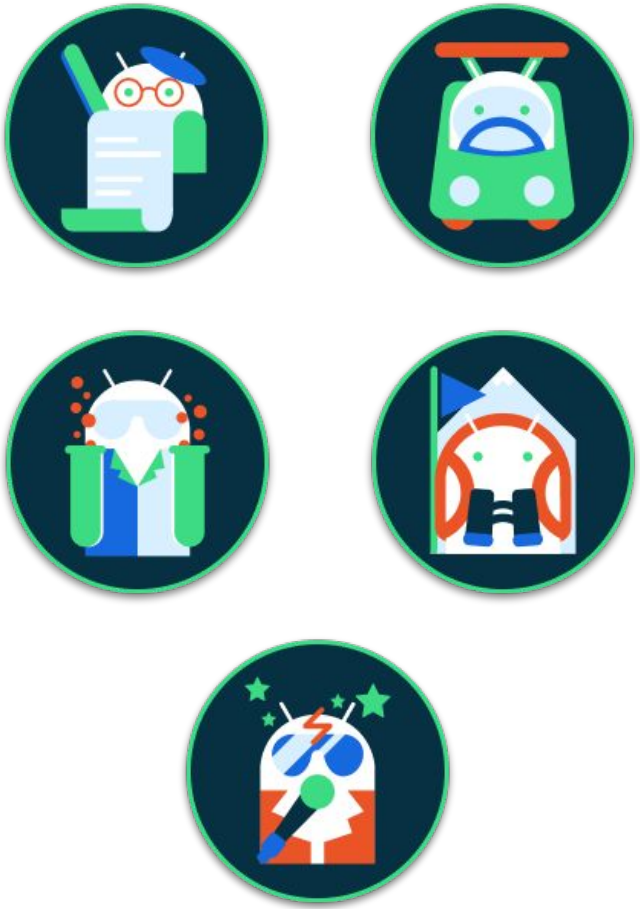
Pether Silva

Wellington Cabral

QUÃO LOUCA É A SUA APLICAÇÃO ANDROID?



QUÃO MAD É A SUA APLICAÇÃO ANDROID?



Você conhece o termo MAD?

Modern
Android
Development

Desenvolvimento Android Moderno

Alguns desafios no desenvolvimento Android

1. Java ou Kotlin?
2. Fragmentação
3. Conhecer bem os componentes do Android: activity, fragment, broadcast receiver, services
4. Ciclo de vida
5. Processamento pesado em background
6. Agendamento de tarefas
7. Problemas de segurança
8. Capacidade de armazenamento e bateria
9. Testes
..
Entre outros...

Modern Android Development

Ferramentas de desenvolvimento, APIs, linguagem e tecnologias de distribuição recomendadas pela equipe do Android para ajudar os desenvolvedores a serem produtivos e criar apps melhores que podem ser executados em bilhões de dispositivos.

Criado por especialistas

Reúne os aprendizados adquiridos ao longo de uma década de desenvolvimento avançado de apps Android.

Fragmentação comprimida para ir direto ao ponto

Diminua a complexidade com bibliotecas que funcionam de maneira consistente em mais dispositivos. Percorra os conceitos básicos dos apps com ferramentas e bibliotecas que reduzem o código boilerplate.

Para todos os níveis e velocidades

Projetado para todos os desenvolvedores e equipes, não importa o tamanho. Criado para funcionar em conjunto, permitindo que você use o que precisa no momento certo.

O que eu preciso fazer para desenvolver aplicativos Android modernos?

Kit básico de desenvolvimento

Kit básico de desenvolvimento

Kotlin

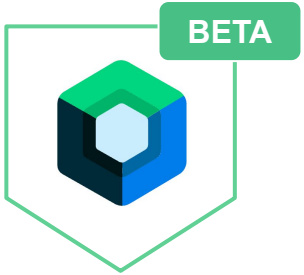
Linguagem de desenvolvimento

Android Studio

Ambiente de desenvolvimento

Android Jetpack

Kit de bibliotecas e ferramentas para melhorar a experiência em desenvolver apps Android.



Jetpack Compose

Kit de ferramenta para criar UI nativa mais simples e rápido

Android App Bundle

Empacotar, lançar apps e otimizar os downloads para os dispositivos dos usuários

1

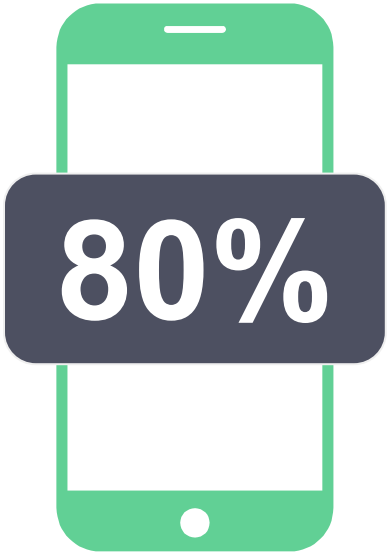
Kotlin

Lançada oficialmente para Android em 2017

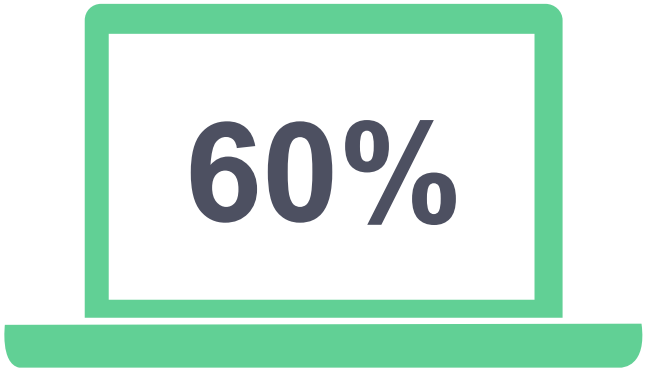
Kotlin

- Expressiva e concisa
- Código mais seguro
- Interoperabilidade
- Concorrência estruturada

Por que usar Kotlin?



Top 1000 apps contém código Kotlin



Desenvolvedores Android profissionais usam Kotlin

Desafios

1. Processamento pesado em background → **Coroutines**
2. Atualizações em tempo real → **Flow**
3. Reuso e redução de código clichê → **Biblioteca KTX**

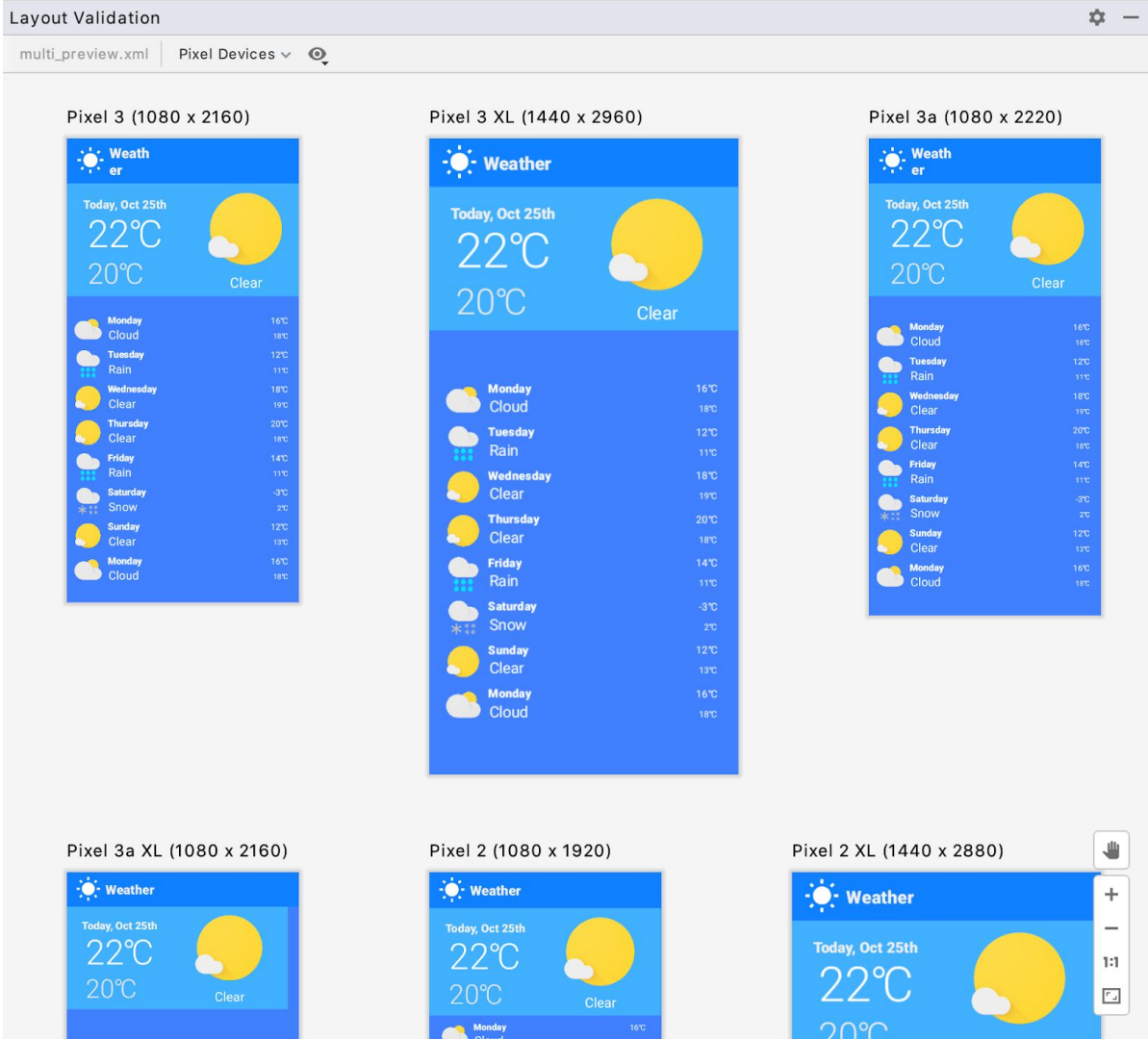
Vantagens do Kotlin

- Coroutines (Flow + StateFlow + SharedFlow)
- Expressões lambda + funções inline
- Funções de extensão
- Null Safe
- Casts inteligentes
- String template
- Inferência de tipo
- Singletons
- Expressões de intervalo (Ranges)
- Companion objects
- Data Classes
- API poderosa de Collections

Android Studio

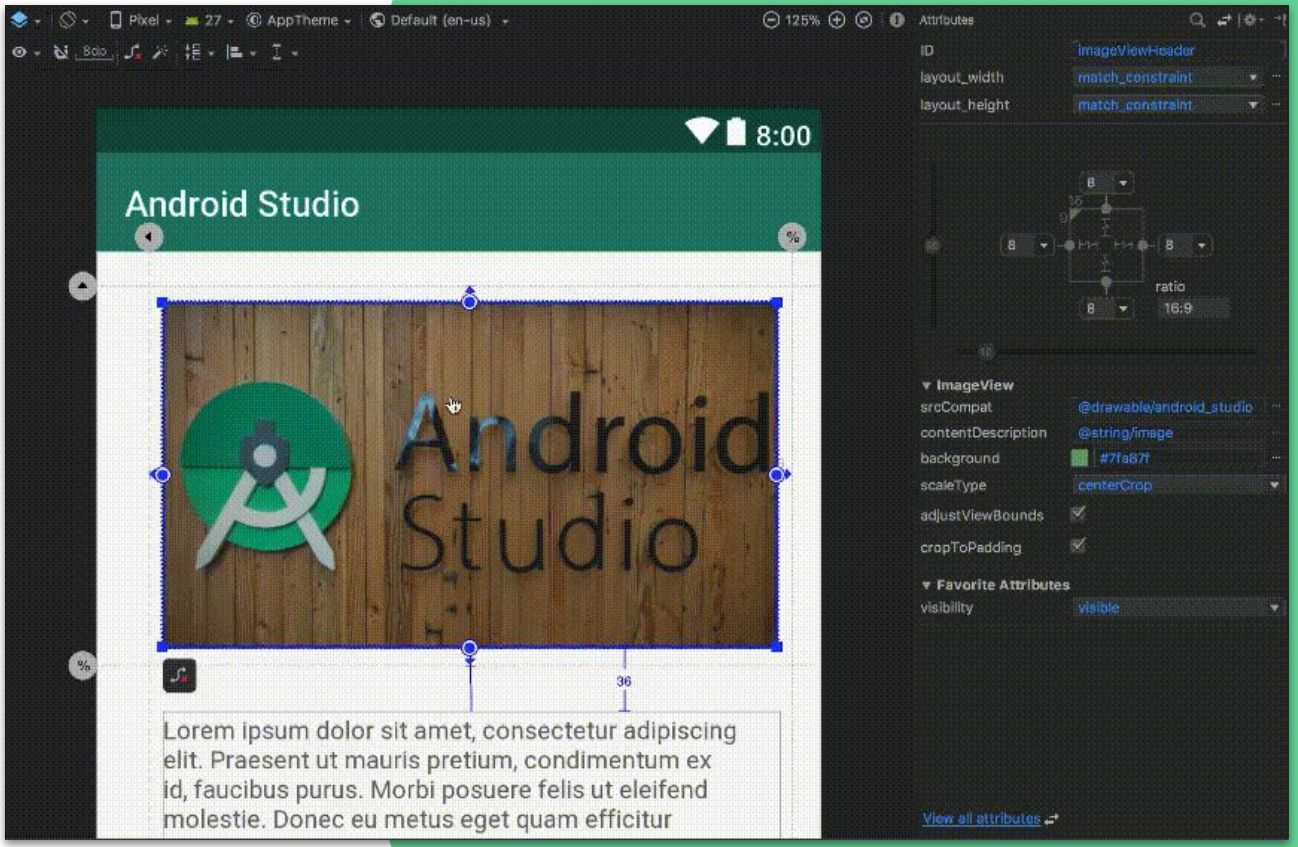
- Ambiente de desenvolvimento integrado oficial
- Criado especificamente para o Android
- Fornece recursos para aumentar a produtividade na criação de apps Android

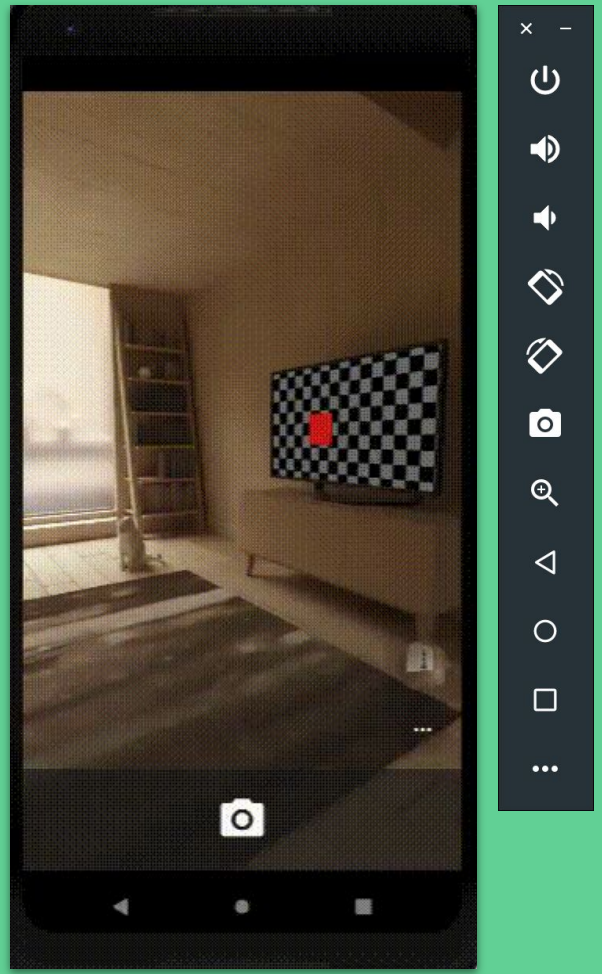
Layout Validation



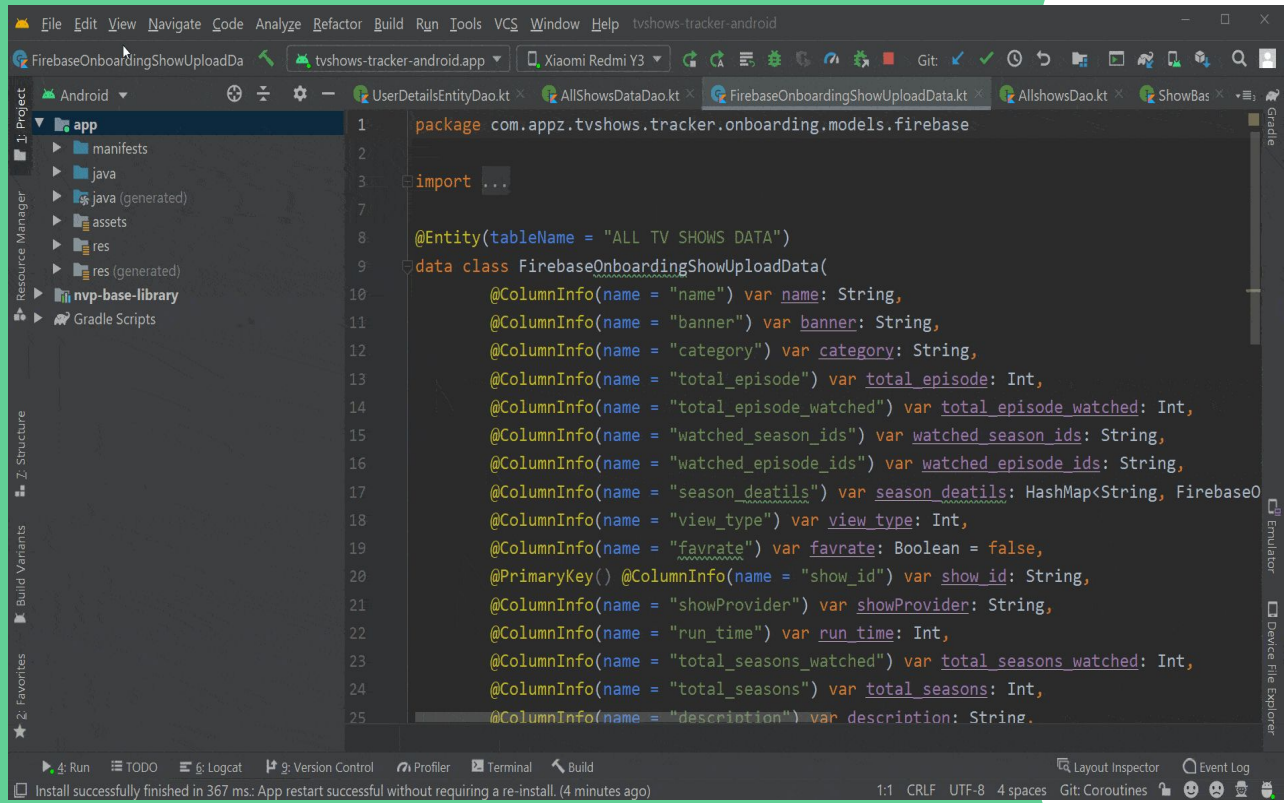
Android Profiler

Editor de layout visual





Emulador integrado

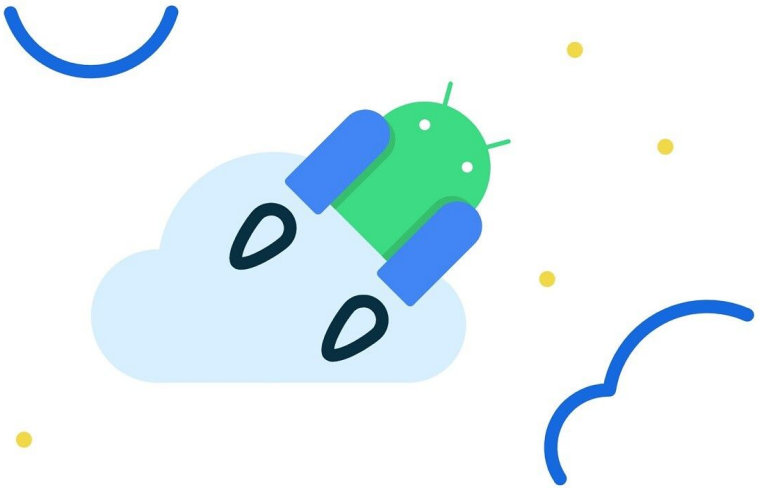


Database Inspector

3

Jetpack

Conjunto de bibliotecas que ajuda desenvolvedores a seguir as práticas recomendadas



Android Jetpack

- Siga as práticas recomendadas
- Elimine os códigos boilerplate
- Reduza a complexidade

Desafios

1	Gerenciar o fluxo de navegação do app	→	**Navigation Component**
2	Carregar grande quantidade de dados	→	**Paging**
3	Agendar tarefas futuras	→	**WorkManager**
4	Gerenciar ciclo de vida	→	**Lifecycles, LiveData, ViewModel**
5	Injeção de dependências	→	**Hilt**

Android Jetpack

01	**Architecture**	• Data Binding • Lifecycles • LiveData • Navigation	• Paging • Room • ViewModel • WorkManager
02	**UI**	• Animation & Transitions • Auto, TV & Wear • Emoji	• Fragment • Layout • Palette
03	**Behavior**	• Download Manager • Media & Playback • Permissions	• Notifications • Sharing • Slices
04	**Foundation**	• AppCompat • Android KTX • Multidex	• Test

Android Jetpack

01	**Architecture**	• **Data Binding** • **Lifecycles** • **LiveData** • **Navigation**	• Paging • **Room** • **ViewModel** • **WorkManager**
02	**UI**	• Animation & Transitions • Auto, TV & Wear • Emoji	• **Fragment** • Layout • Palette
03	**Behavior**	• Download Manager • Media & Playback • **Permissions**	• Notifications • Sharing • Slices
04	**Foundation**	• **AppCompat** • **Android KTX** • Multidex	• **Test**

Jetpack Compose

Lidar com os desafios técnicos de criar uma UI sofisticada com rapidez e eficiência.

Não é simples criar uma custom view (Component.kt, component.xml, attrs.xml, styles.xml…)

UI totalmente escrita em Kotlin

Melhor organizar e escrever código Kotlin que em arquivos XML

BETA

App Bundle

- Dynamic Delivery
- Dynamic Feature Module
- Não precisa gerenciar múltiplos APKs
- Reduzir o tamanho do APK

Como medir a sua melhor habilidade de MAD?

MAD ScoreCard Plugin

Settings

Appearance & Behavior
Appearance
Menus and Toolbars
System Settings
File Colors
Scopes
Notifications
Quick Lists
Path Variables
Keymap
Editor
Plugins
Version Control
Build, Execution, Deployme
Languages & Frameworks
Tools
Other Settings
Experimental

Plugins
Marketplace Installed

mads

Search Results (1)

MAD Scorecard
1.2 Google LLC

MAD Scorecard
Google LLC
1.2

Disable

Plugin homepage ↗

Description:

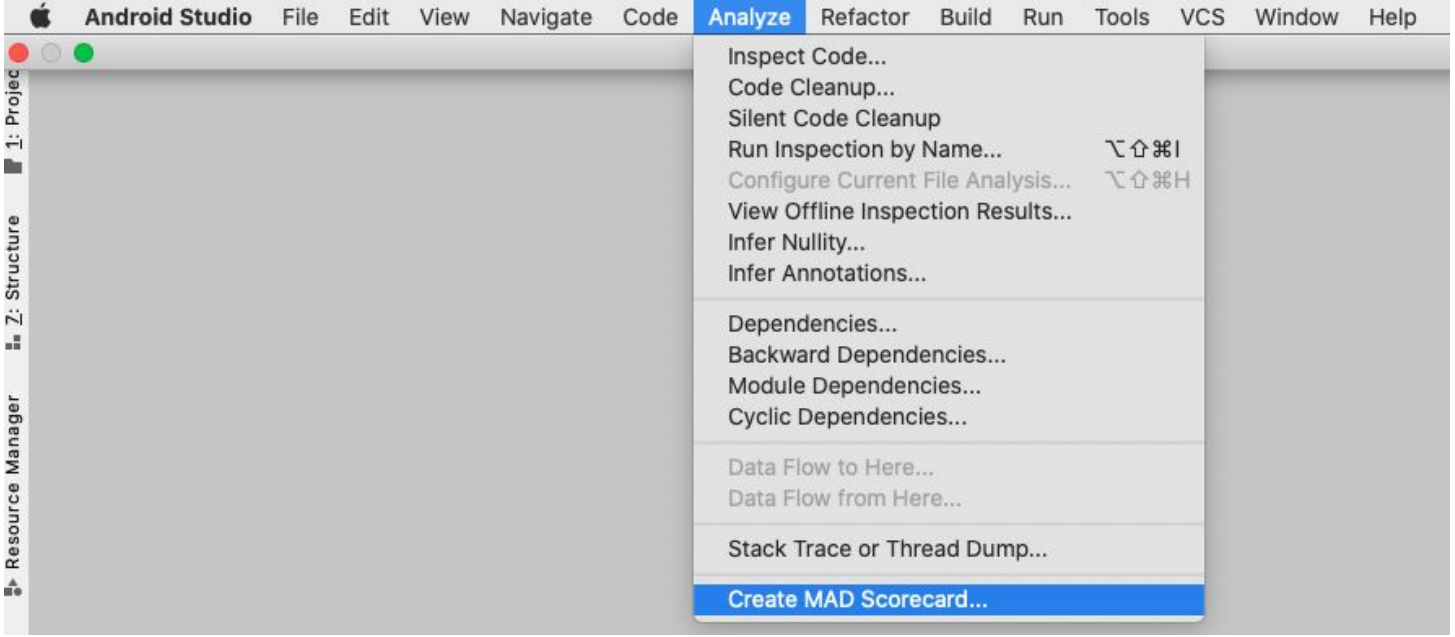
What's your #MADscore? From Kotlin to Jetpack, Android Studio to the Android App Bundle, modern Android development (MAD) is your blueprint for building better apps.

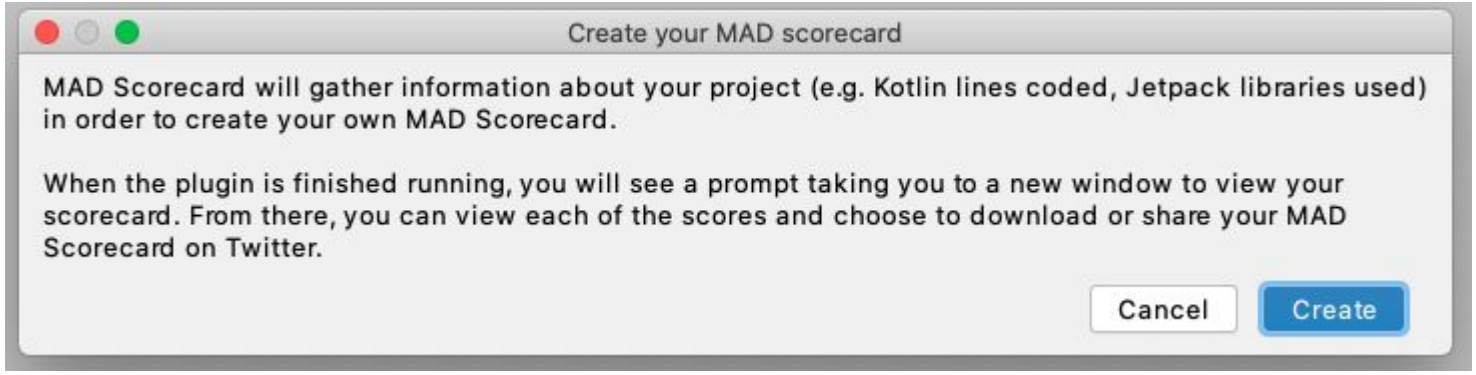
With the MAD scorecard, we've created a plugin for Android Studio so you can see (and share!) just how modern an Android developer you are.

Once your scorecard has been generated, you will be able to access your results through a unique URL. From there, you can explore each of your scores and share your scorecard with your followers on Twitter and more!

To create your scorecard, the plugin will scan and analyze the selected Android Studio project to collects information around the project's use of key modern Android development tools and technologies like Kotlin (the percentage of client code written in Kotlin, as well as whether your project is using Kotlin 1.4 Coroutines

OK
Cancel
Apply


Android Studio
File
Edit
View
Navigate
Code
Analyze
Refactor
Build
Run
Tools
VCS
Window
Help
1: Project
Z: Structure
Resource Manager
Inspect Code...
Code Cleanup...
Silent Code Cleanup
Run Inspection by Name... ⌥⇧⌘I
Configure Current File Analysis... ⌥⇧⌘H
View Offline Inspection Results...
Infer Nullity...
Infer Annotations...
Dependencies...
Backward Dependencies...
Module Dependencies...
Cyclic Dependencies...
Data Flow to Here...
Data Flow from Here...
Stack Trace or Thread Dump...
Create MAD Scorecard...


Create your MAD scorecard
MAD Scorecard will gather information about your project (e.g. Kotlin lines coded, Jetpack libraries used) in order to create your own MAD Scorecard.
When the plugin is finished running, you will see a prompt taking you to a new window to view your scorecard. From there, you can view each of the scores and choose to download or share your MAD Scorecard on Twitter.
Cancel
Create

MAD SCORECARD

MODERN ANDROID DEVELOPMENT

G.O.A.T.

You're a MAD legend, the Greatest Of All Time of Android development.

100% — **Kotlin**
app code in Kotlin

4.1.2 — **Android Studio**
version currently used

38 — **Jetpack**
libraries used in current project

46% — **Android App Bundle**
size savings

Create your MAD scorecard at: goo.gle/MADscore

100%

app code in Kotlin*

NEW KOTLIN FEATURES

- Kotlin 1.4
- ✓ KTX Libraries
- ✓ Coroutines
- ✓ Flow

*app code excludes generated code and resources, which might not be in Kotlin.

Create your MAD scorecard at: goo.gle/MADscore

38

Jetpack libraries used on current project

HIGHLIGHTED JETPACK LIBRARIES

- WorkManager
- ✓ Navigation
- ✓ Room
- ✓ ViewModel
- ✓ Material Components

4.1.2

Android Studio version currently using

HIGHLIGHTED ANDROID STUDIO FEATURES

Layout Inspector

Performance profilers

Android Emulator

46%

size savings*
by app bundle

80 TB

saved when 1 million users
download your app

*compared to a universal APK for a representative device.

Link Úteis

https://developer.android.com/modern-android-development

https://www.youtube.com/hashtag/madskills

E ai? How MAD is your Android application?

Dúvidas?

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

—Someone Famous

Table of Contents

1

Introduction

Here you could describe the topic of the section

2

Analysis

Here you could describe the topic of the section

3

Description

Here you could describe the topic of the section

4

Conclusion

Here you could describe the topic of the section

1

First Section

You could enter a subtitle here if you need it

You Can Use Two Columns

1

Mercury

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

2

Venus

Venus has a beautiful name and is the second planet from the Sun. It’s terribly hot

You Can Use Three Columns, Why Not?

1

Jupiter

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

2

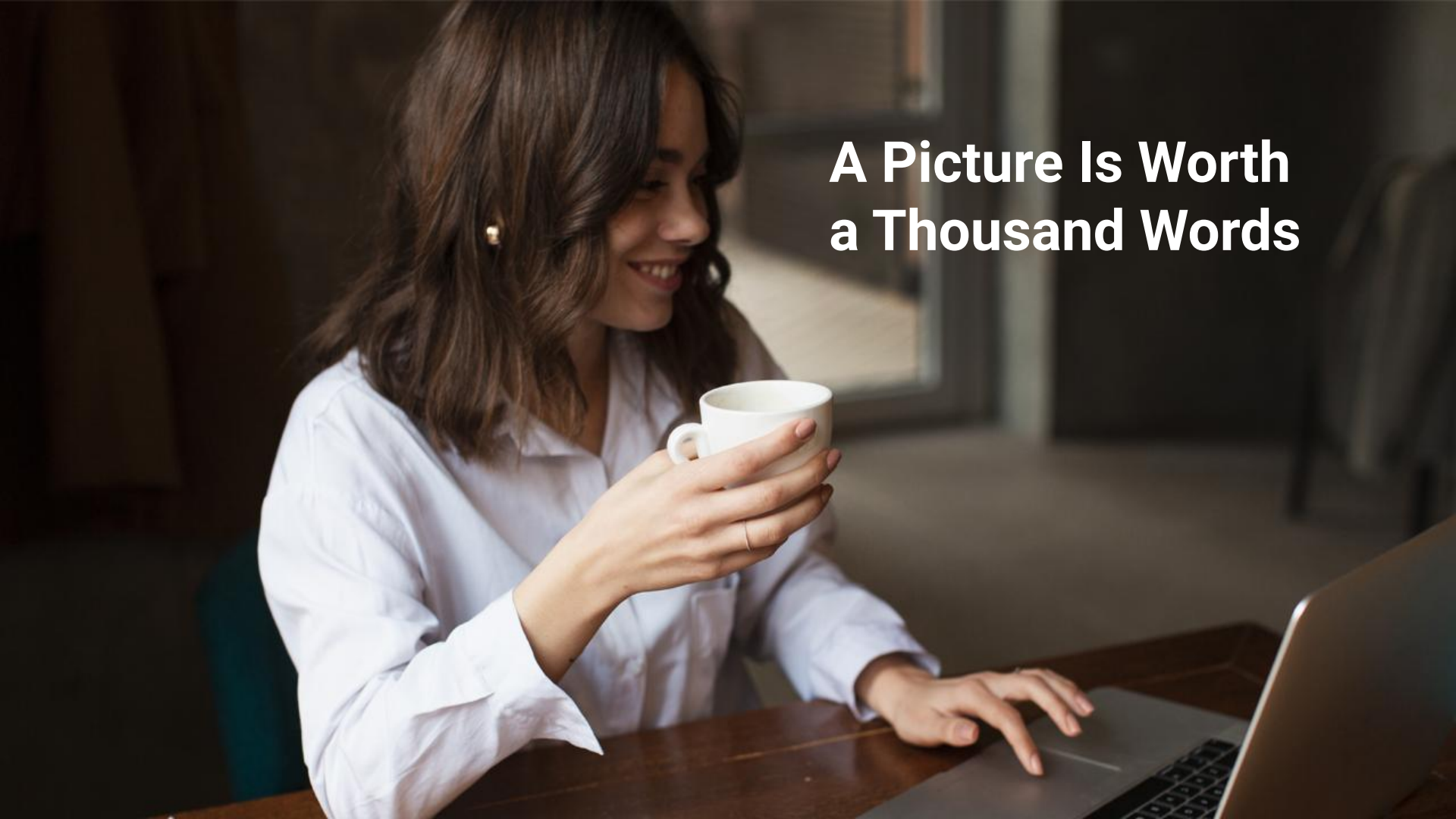
Mercury

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

3

Venus

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


A Picture Is Worth
a Thousand Words

A Picture Always Reinforces the Concept

Image reveals large amounts of data, so remember, use an image instead of a long text

Awesome Words

8,635,763,842

A big number to highlight an important piece of data

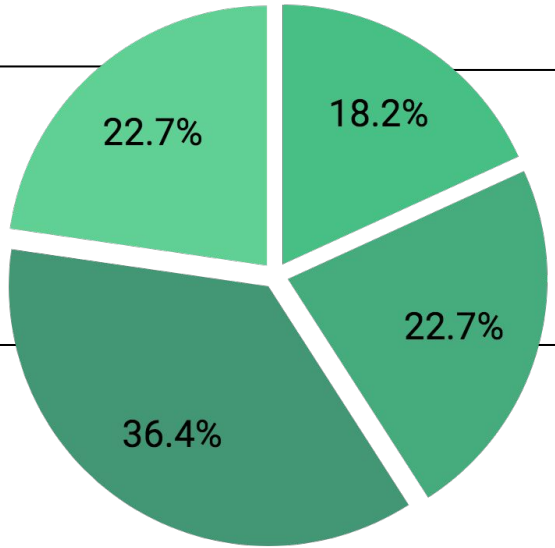
This Is a Graph

Jupiter

It’s the biggest planet of all

Mercury

Mercury is the smallest planet



Mars

Despite being red, Mars is cold

Saturn

Saturn is the ringed one

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

Here You Have Six Columns

Mars

Despite being red, Mars is cold

Mercury

Mercury is the smallest planet

Neptune

Neptune is the farthest planet

Venus

Venus is the second planet

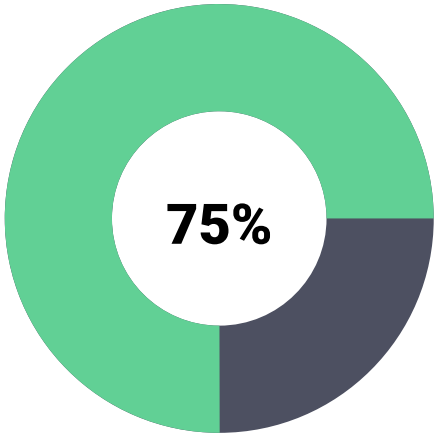
Saturn

It’s a gas giant and has rings

Jupiter

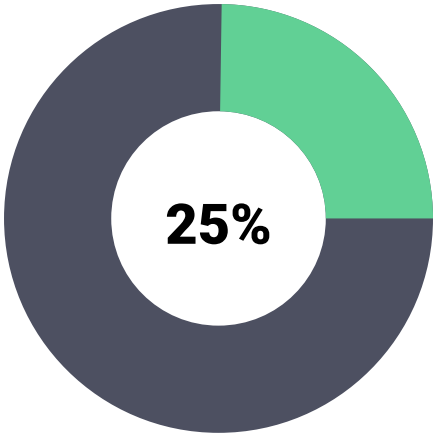
It’s the biggest planet of them all

How about the Percentages



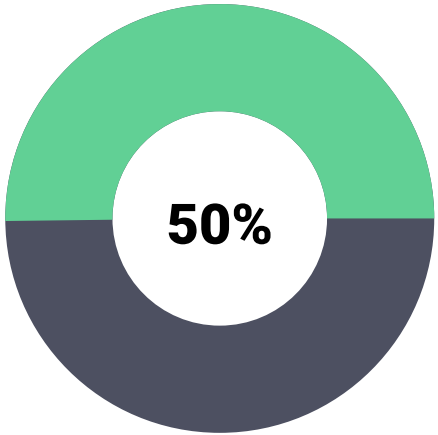
Mercury

It’s the closest planet to the Sun



Saturn

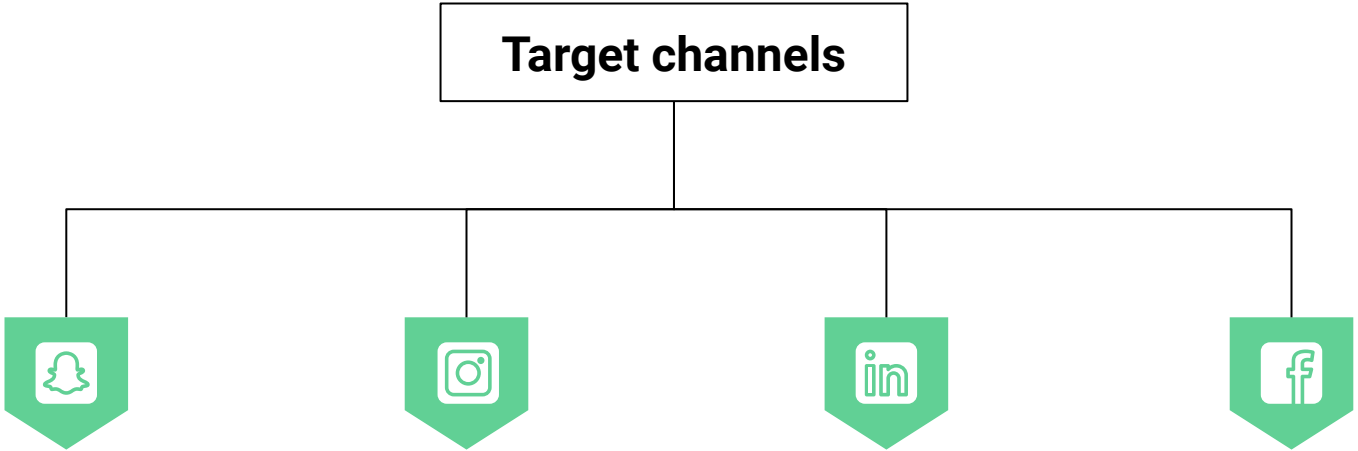
Saturn is a gas giant and has rings



Mars

Despite being red, Mars is cold

Infographics make your idea understandable…



Mercury

It is the closest planet to the Sun

Mars

Despite being red, Mars is a cold place

Venus

Venus is the second planet from the Sun

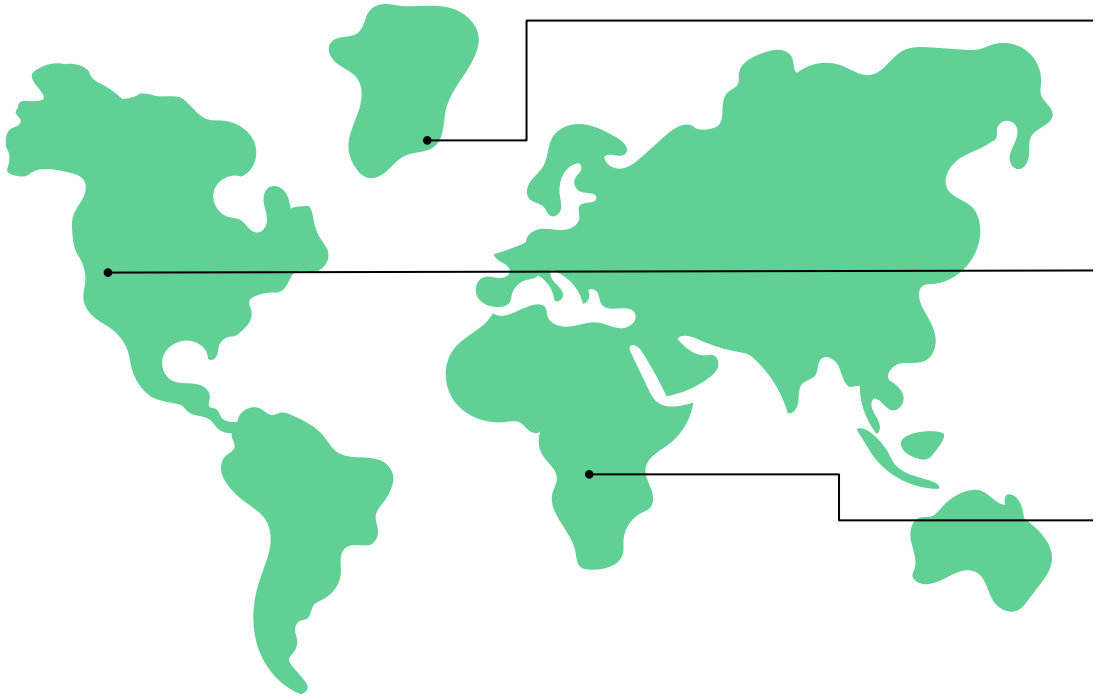
Jupiter

It’s the biggest planet of them all

This Is a Table

	Mass	Diameter	Gravity
Jupiter	100	355	370
Mercury	490	150	890
Venus	1,000	260	245

This Is a Map



Mars

Despite being red, Mars is a cold place

Jupiter

It’s the biggest planet in the Solar System

Saturn

Yes, this is the ringed one. It’s a gas giant

A Timeline Always Works Well

Jupiter

The biggest planet in the Solar System

Mars

Despite being red, it's a very cold place

Mercury

It is the smallest planet of them all

Saturn

This is the ringed one and a gas giant

Neptune

It is the farthest known planet from the Sun

8,483,943,671

More big numbers to highlight an important piece of data

5,685,953,333

More big numbers to highlight an important piece of data

7,858,124,377

More big numbers to highlight an important piece of data

Our Team

John Doe

Here you could talk a bit about this person

Jay Doe

Here you could talk a bit about this person

Laura Smith

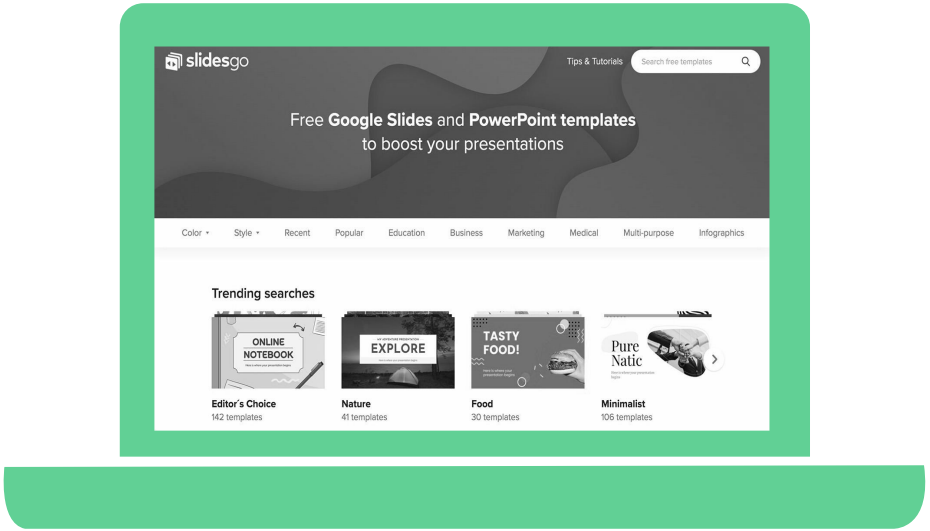
Here you could talk a bit about this person

Helena Smith

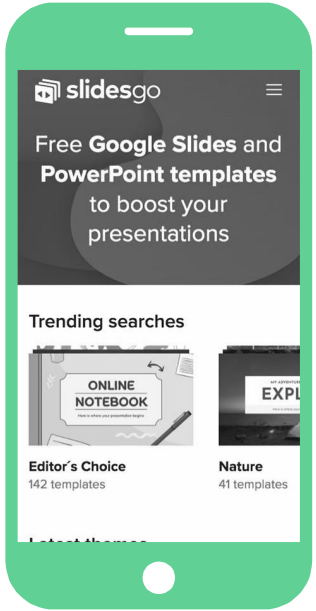
Here you could talk a bit about this person

Desktop Software

You can replace the image on the screen with your own work. Just delete this one and add yours



Mobile Web



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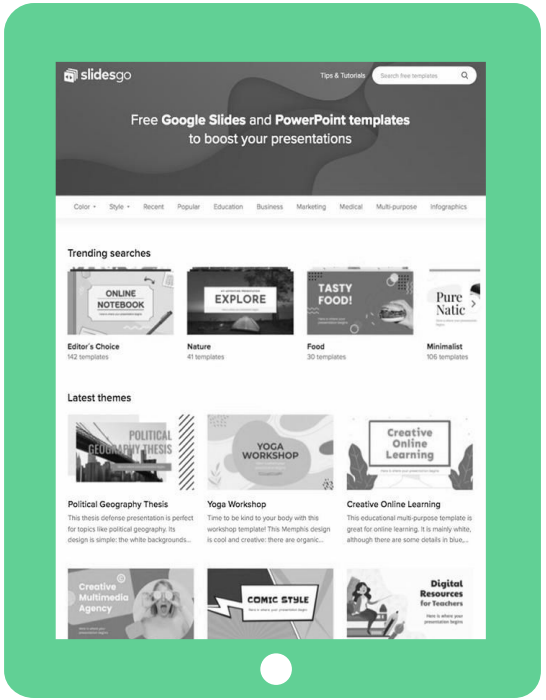
Tablet App

You can replace the image on the screen with your own work. Just delete this one and add yours



The Slide Title Goes Here!

Do you know what helps you 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

Here You Have Four Columns

1

Venus

Venus has a beautiful name and is the second planet

2

Mars

Despite being red, Mars is actually a very cold place

3

Saturn

Saturn is a gas giant made of hydrogen and helium

4

Jupiter

Jupiter is a gas giant and the biggest planet of them all

2

Second Section

You could enter a subtitle here if you need it

Maybe You Need to Divide the Content

1

Mercury

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

2

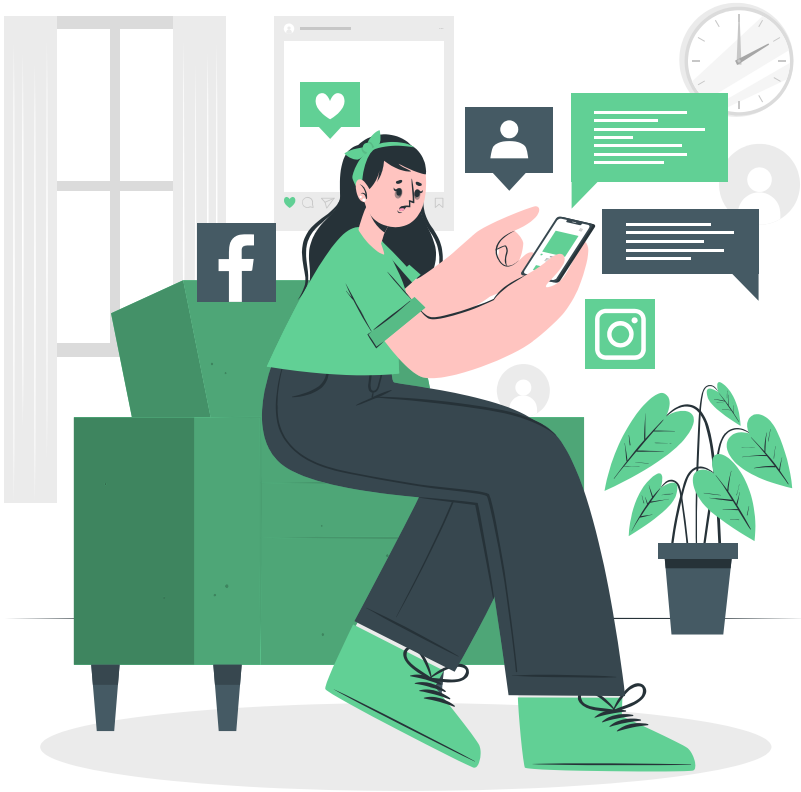
Venus

Venus has a beautiful name and is the second planet from the Sun. It’s terribly hot

Use a List!

Just in case you need a checklist...

- This is an item from your list
- This is an item from your list
- This is an item from your list
- This is an item from your list



Launching Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	9:00				9:00	
			16:00			
				14:30		
			11:00		11:00	
	10:20					

Thanks!

Do you have any questions?
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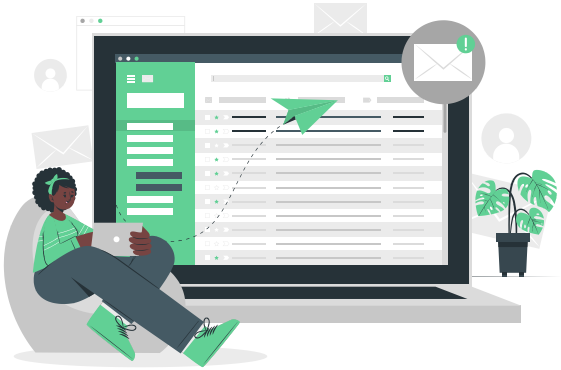
Collaboration



Emails

Finance

Alternative Resources

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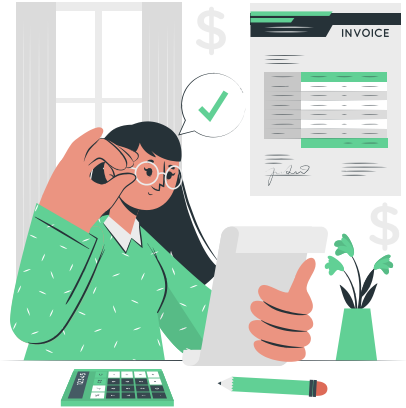
Ok



Invoices

Analytics

Resources

Vectors

- Mobile marketing
- Business plan
- Ethnic friendship
- Social media
- Email campaign
- Social dashboard
- FOMO

Photos

- Smiley woman holding cup of coffee and working on laptop
- Ethnic female employee with glasses working at laptop

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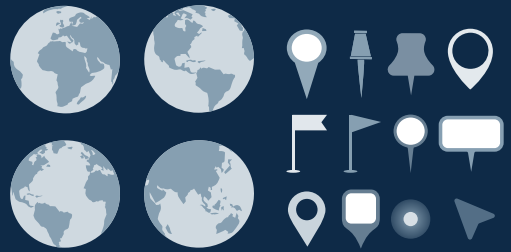

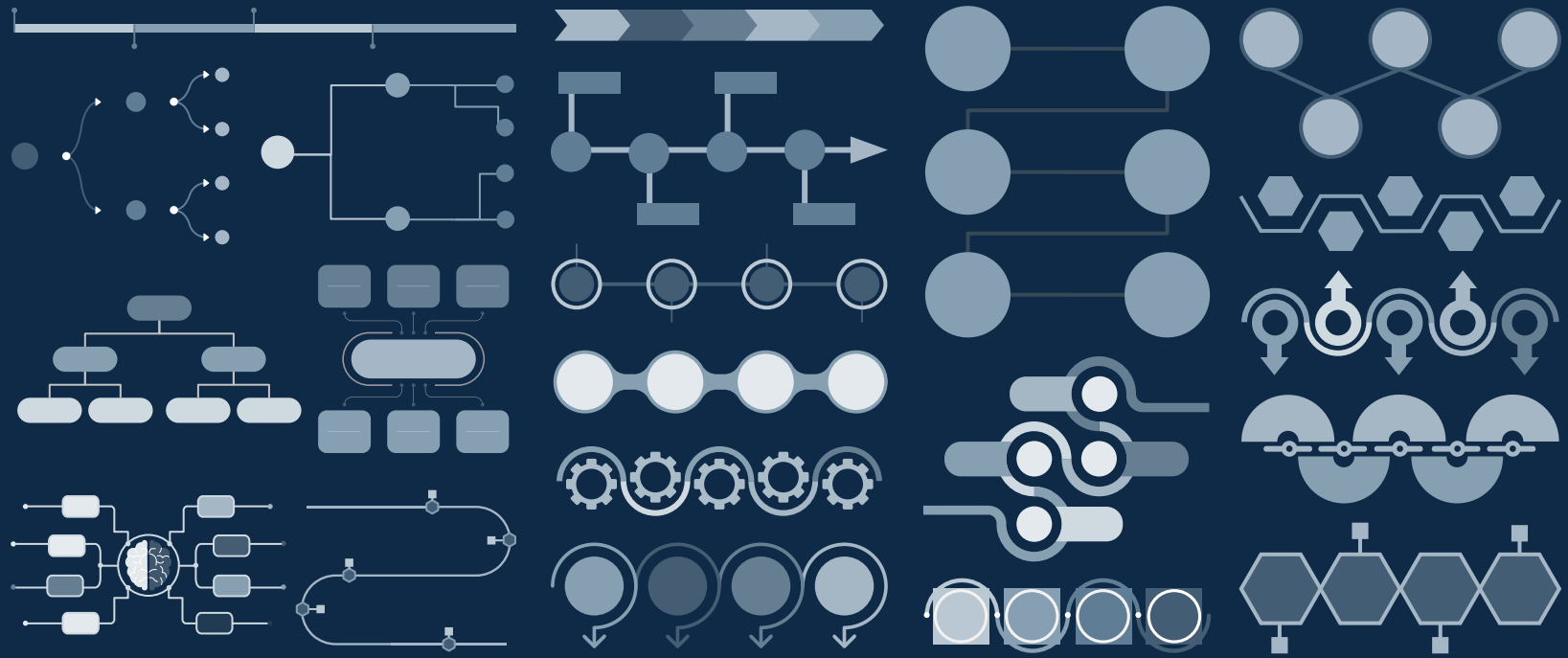

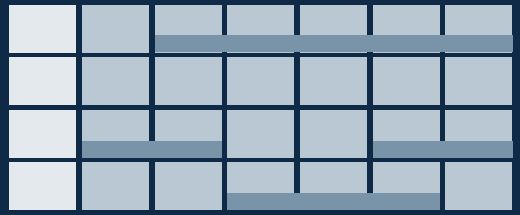

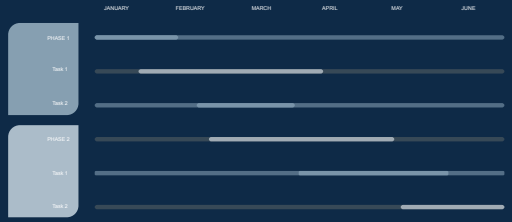
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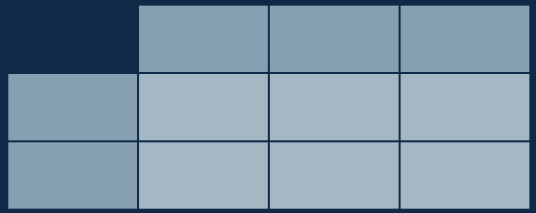

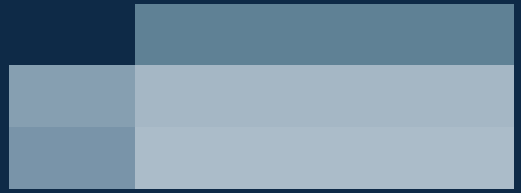

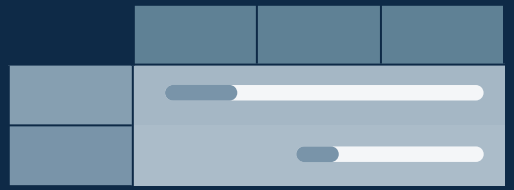

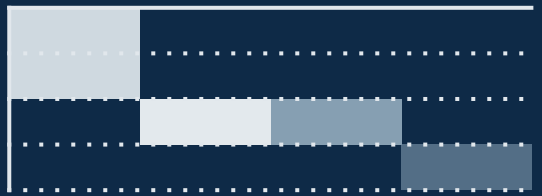

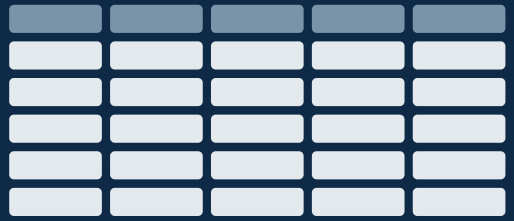

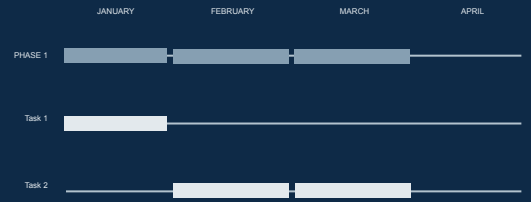
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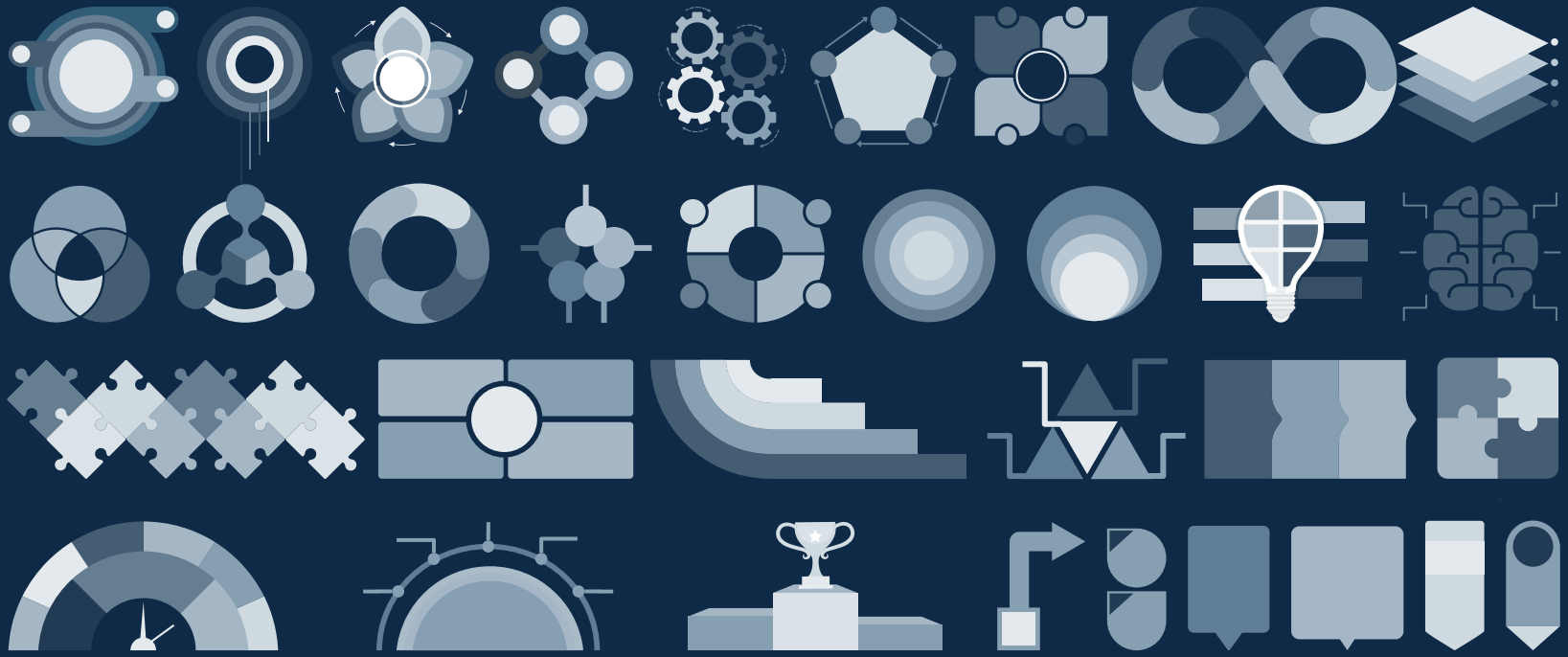

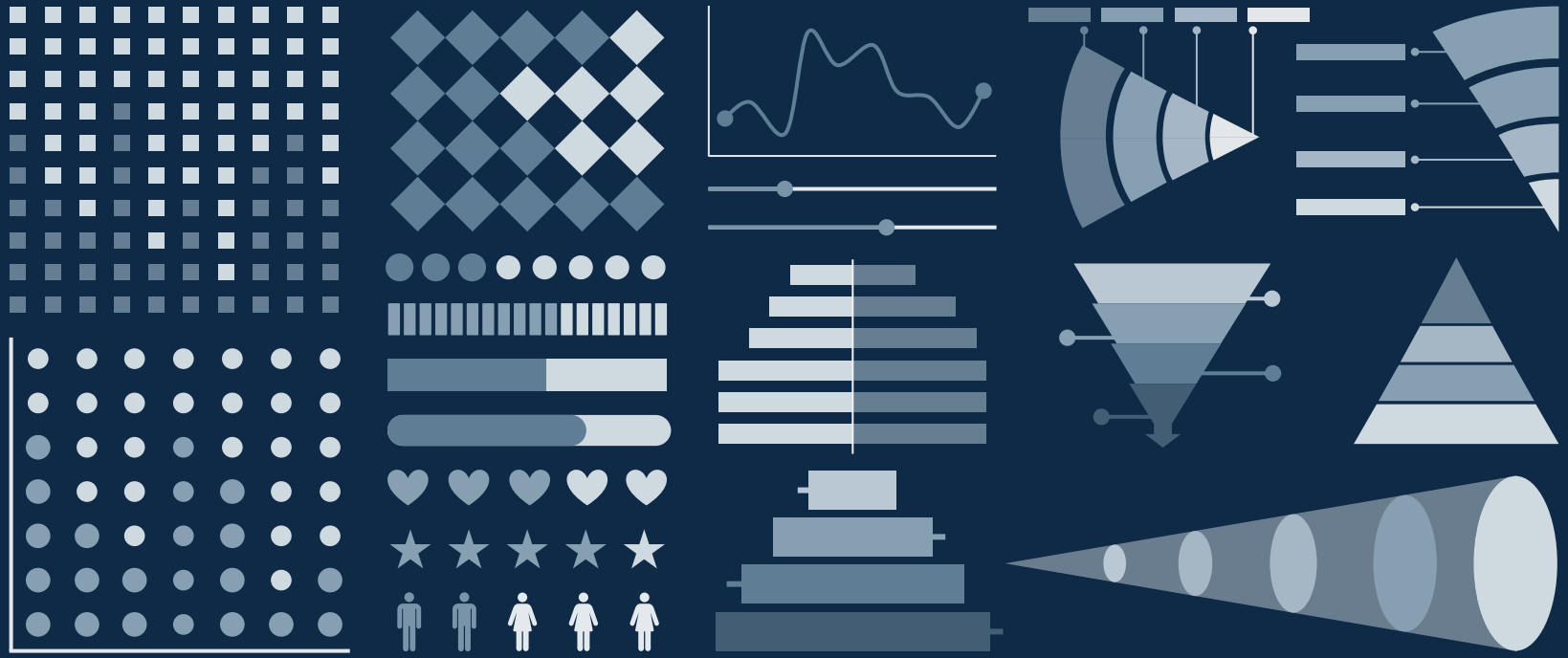

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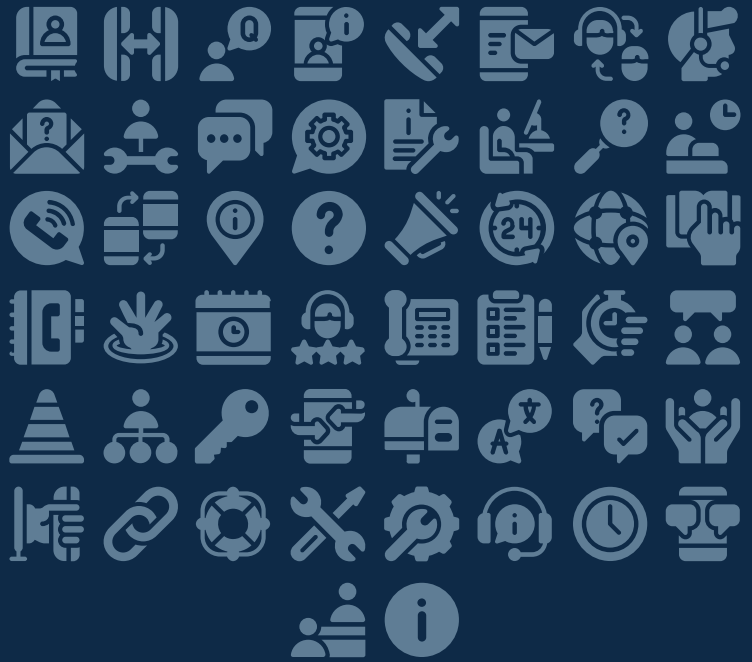

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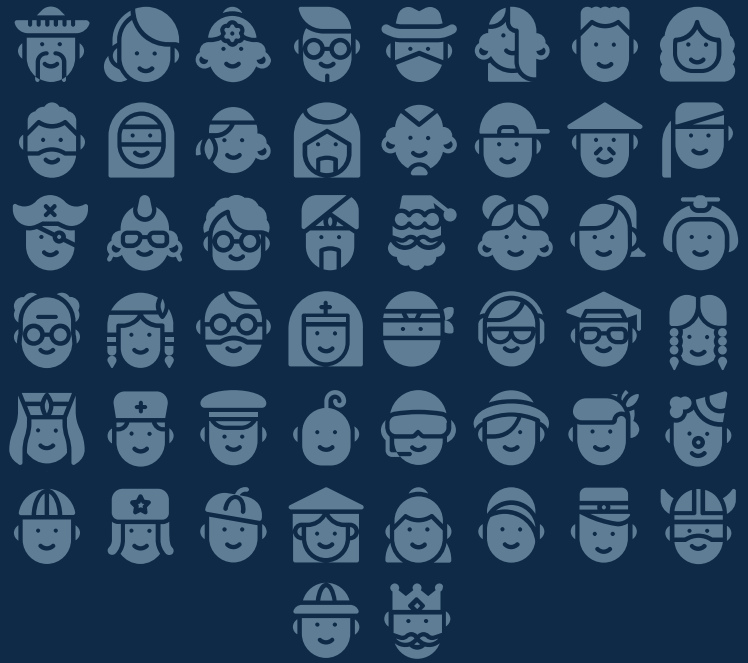

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