



# DIGITAL PRODUCT DESIGN

CURSO ONLINE  
COORDENADO POR  
THIAGO BARCELOS

MÓDULO 27

# Protótipos de alta fidelidade

# Agenda

- Vamos entender a importância de criar protótipos detalhados e altamente interativos
- Quando, por que e como usar
- Relembrar algumas ferramentas
- Entender contextos de uso delas

**ALTA FIDELIDADE**

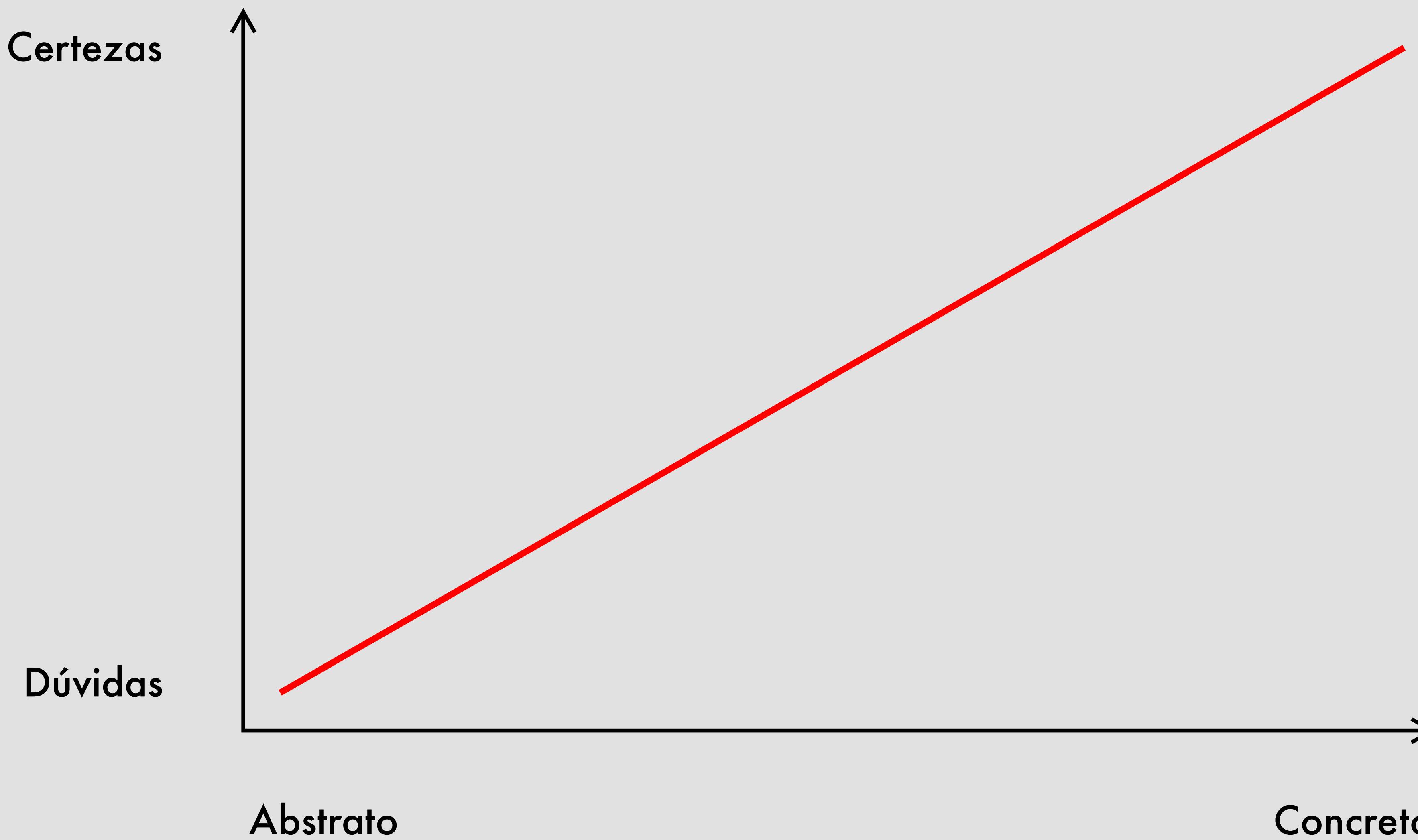
**HIGH FIDELITY**

**HI-FI**

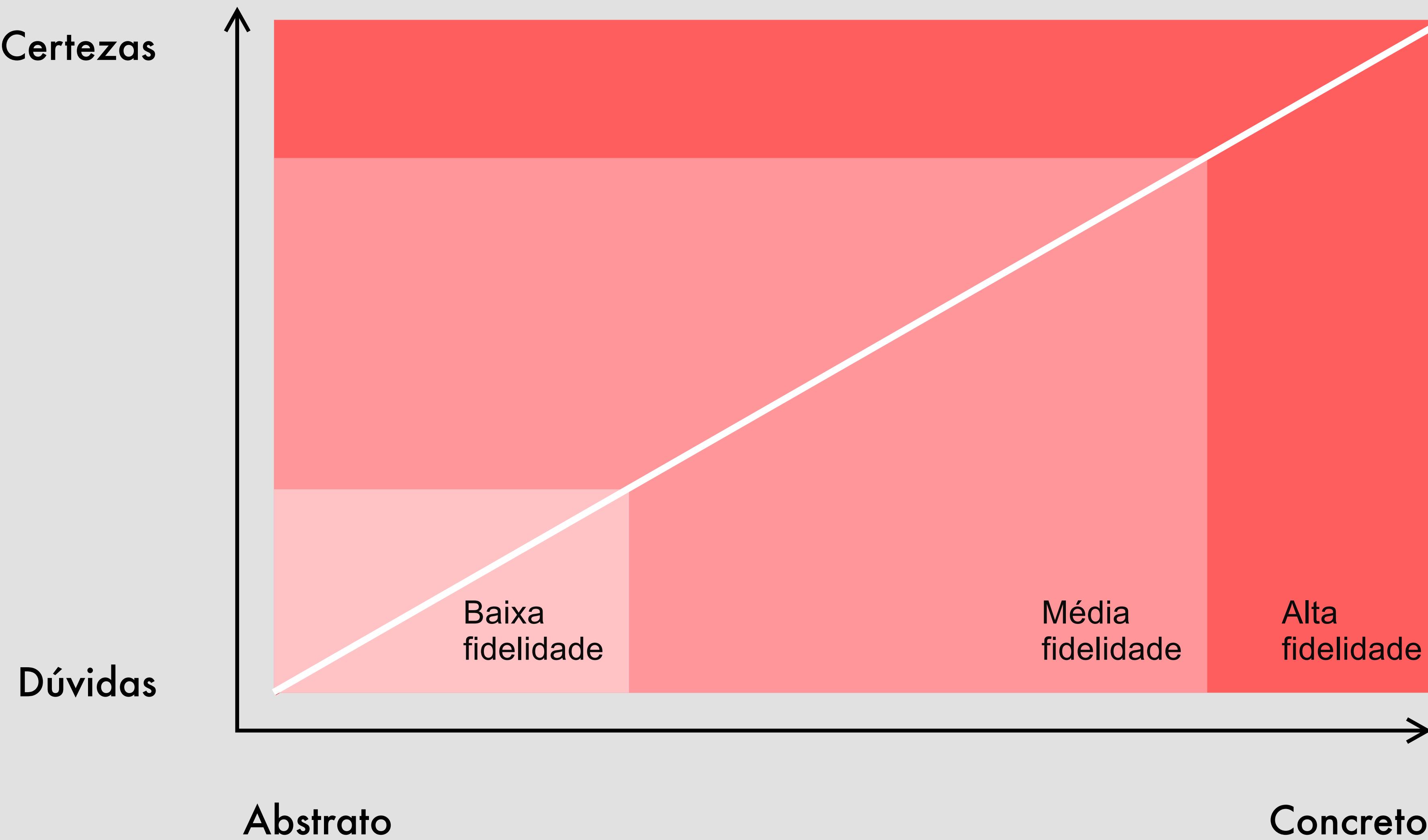
# Níveis de fidelidade

Quanto maior o nível de fidelidade de um protótipo, maior a sua definição, maior o número de detalhes e mais próximo da entrega ele está.

# Níveis de fidelidade



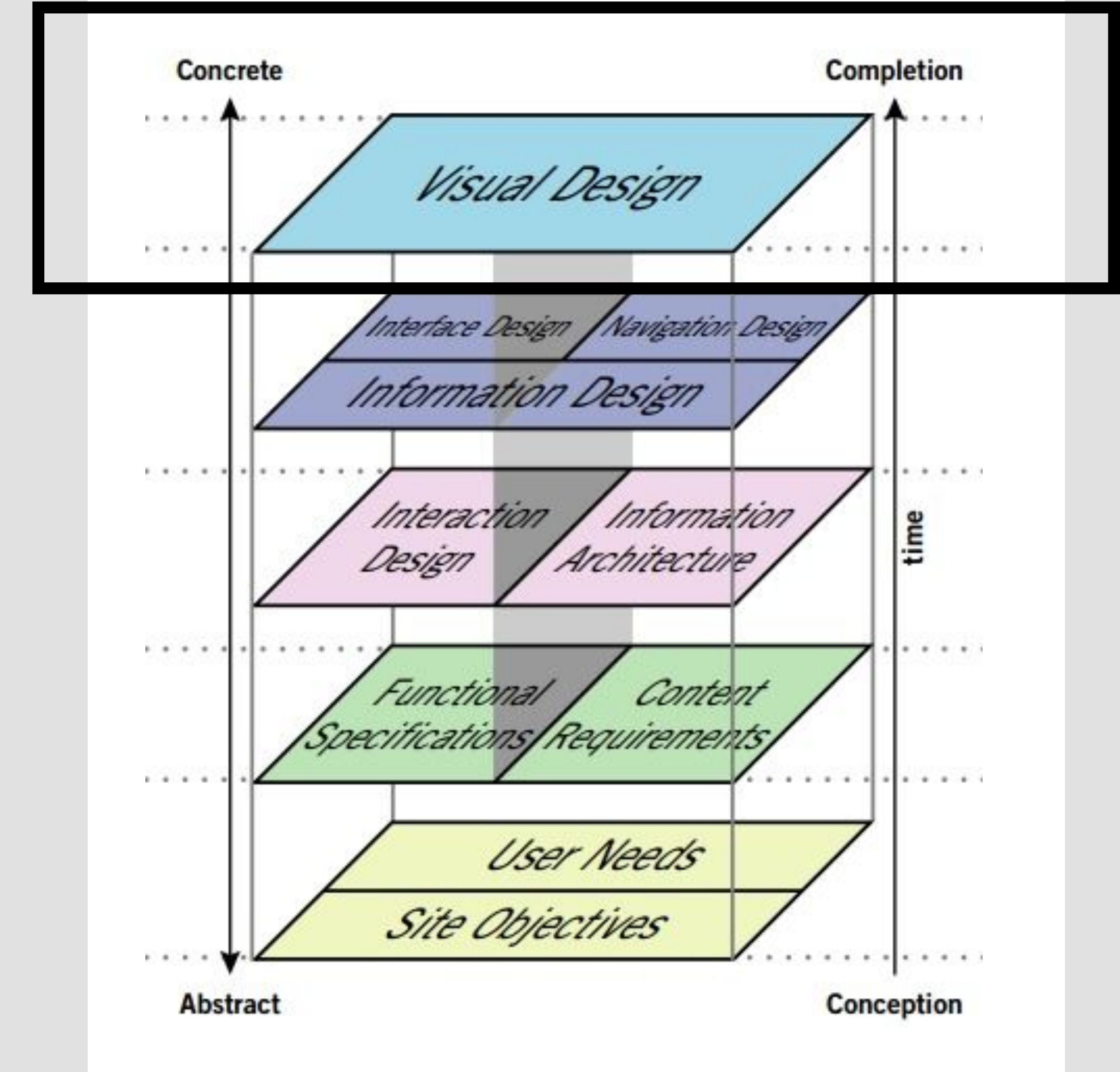
# Níveis de fidelidade



# Protótipos de alta fidelidade definem o que há de mais concreto em um projeto

Jesse James Garret

Os elementos da experiência do usuário

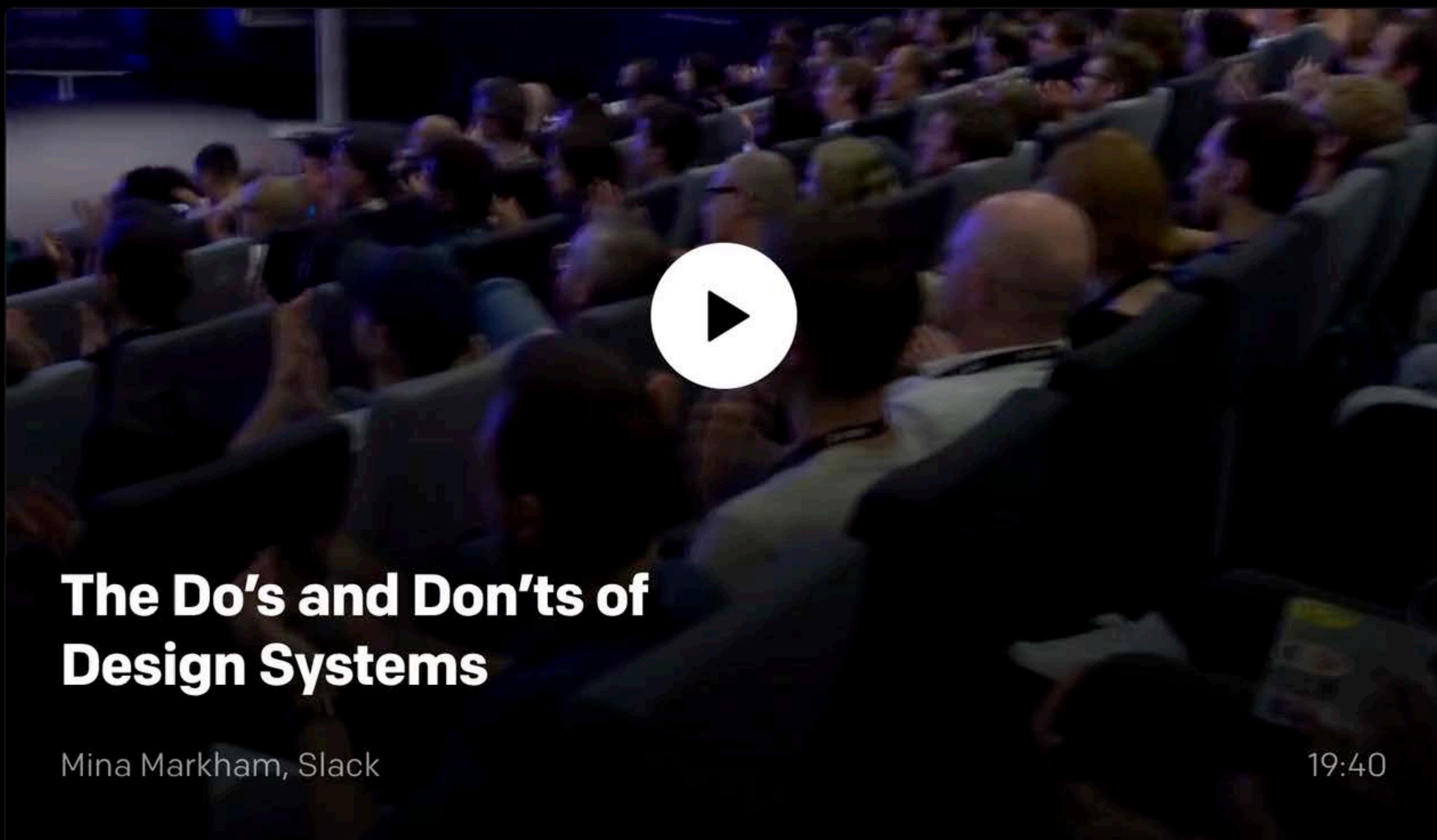


**For Reusability**

[Read more >](#)

**for Teams at Dropbox**

[Read more >](#)



## The Do's and Don'ts of Design Systems

Mina Markham, Slack

Tuesday, December 22

## Summary

KCAL

354

**Start a workout**

**Core**

With Katy



**Run**

Projects / AA\_Dan1 / Bank Customers

Data quality score

97%

↓ 4%

Selected data class

257

↓ 3

Selected data type

3008

↑ 3

Analysis status

Completed

Last column analysis

Confirmed

Last DQ analysis

Apr 07, 2018

Find a column

Name	Score	Delta
Zip, email	99%	0%
Age	97%	↓ 3%
Address	43%	↓ 7%
CNN	100%	↑ 9%
Name, person	99%	↑ 8%
Credit_rating	99%	↓ 10%
Email	99%	↓ 10%
Gender	90%	↓ 7%
Marital_status	97%	0%

Data asset

Bank customers

Add rule set +

Add rule +

Edit



Analyze



Data rules

Columns

Data quality

Data classes

Governance

Data types

Keys

## Quality score change

Last 7 days

Failed rows  
18 %Delta  
↑ 62 %Runs  
4

- ValidCreditCardNumber
- ValidEmailAddress
- CreditRatingExist



HOME MOVIES SERIES KIDS



# RAYA AND THE LAST DRAGON

PLAY NOW

WATCH LIST



Animation



Action



Scifi



Fantasy

## My List



JOKER  
BY CHRISTIAN BALE



# Prototyping meets User Testing.

Get video, voice and analytical feedback on designs and prototypes in just a few clicks. Now in private beta.

 Your full name Your email address[Get early access](#)

The image displays a screenshot of the Marvel platform's user testing feature on the left and a promotional landing page for a service on the right.

**User Testing Interface (Left):**

- Comments:** Transcription, Initiation.
- Recording by Dan Smith:**
- Comments from users:**
  - Murat Mutlu: 0:01 This button was very unclear. [Reply](#)
  - Murielle Beau: 0:05 I think here it got confusing.
    - Filippo Chiumento: 0:06 I agree, it's clear the user was confused here.
  - Jennifer Samson: 0:22 Great job this solves a lot! [Reply](#)
  - Xiu Lee: 0:25 Maybe we need better copy here? [Reply](#)

**Landing Page (Right):**

- Header:** Recording by Dan Smith
- Navigation:** HOME PLANS TOUR SHOP HELP LOGIN SIGNUP [f](#) [t](#)
- Text:** Discover a new way of delivering emails.
- Text:** Automate your process and get your newsletter out to your customers in a matter of clicks.
- Call-to-action:** Get started

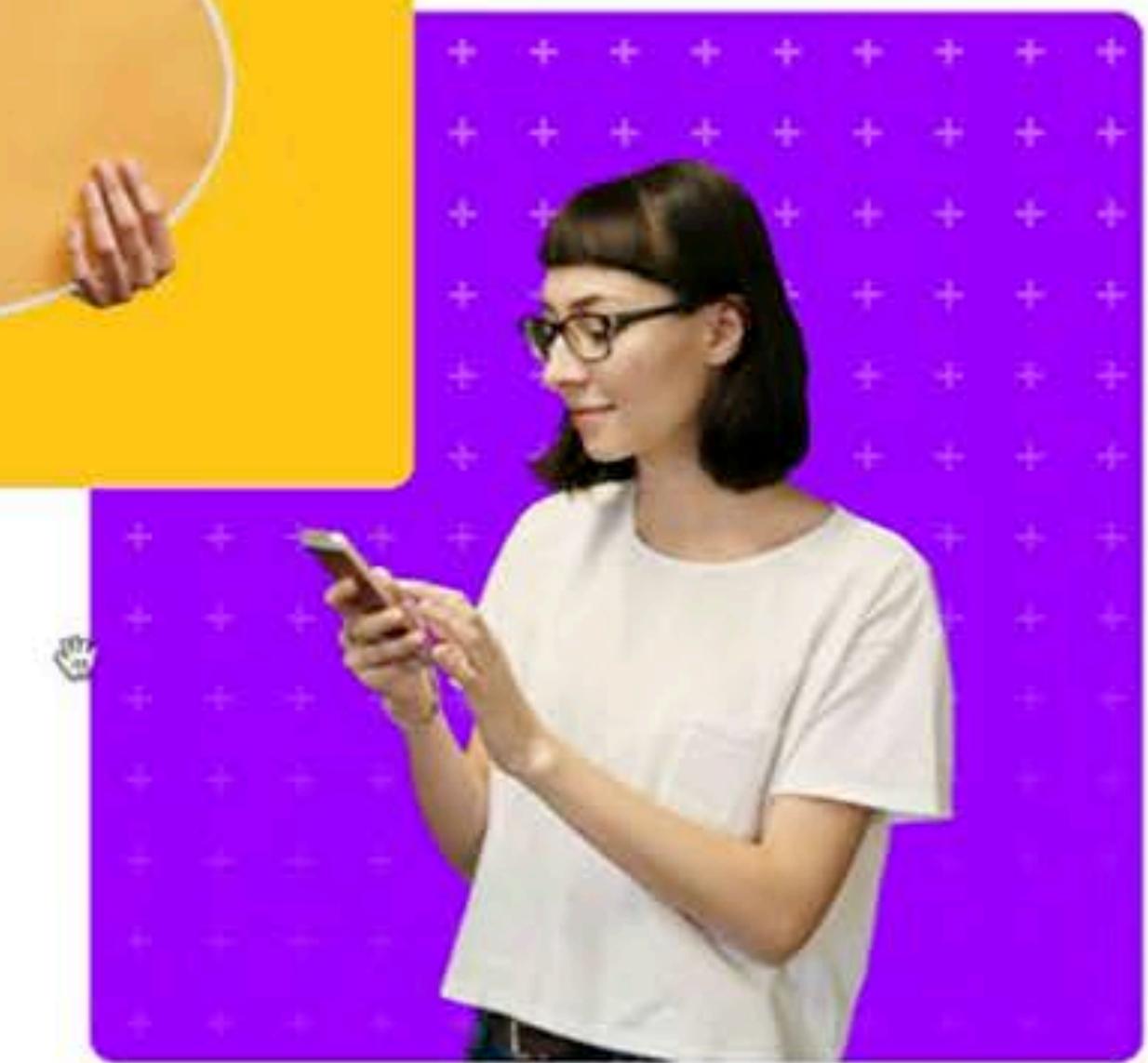
sid.



# We accelerate your business

sid. is a creative studio specializing  
in creating unique marketing solutions.

[SEE OUR PORTFOLIO >](#)





Vans / Slip On

# Cut and Paste

IDR 1.299K

Colors:



Size:



Add to Cart



01

Next

All Collection

Vans



## Old Skool

Black / IDR 750K

Vc

MC

BL

**QUANDO SÃO  
REALMENTE  
POSSIVEIS?**

# Quando é possível?

- Quando há recursos
- Quando há tempo
- Quando há pessoas com as habilidades adequadas
- Quando há processos que comportem essa etapa de detalhamento, sem que isso se torne um gargalo pro time

# **Quando é necessário?**

**1**

**Quando o projeto está em  
uma etapa avançada em  
termos visuais (identidade,  
estilo e conteúdo aplicados)**

# **Quando é necessário?**

**2**

**Quando há a necessidade de representar o comportamento de elementos interativos e transições**

# **Quando é necessário?**

**3.**

**Quando se quer testar o  
comportamento do usuário  
em relação aos elementos  
interativos**

# BENEFÍCIOS

# Benefícios

Permitem detalhar todos os aspectos de uma interface como cores, hierarquia de informação, layouts

# **Benefícios**

Ajudam a orientar melhor o time quanto ao desenvolvimento e estimativas de tempo e recursos necessários

# **Benefícios**

Ajudar como uma referência  
mais fiel do comportamento da  
interface e resultado final que  
deve ser atingido no  
desenvolvimento

# Benefícios

Ajudar a ter feedbacks mais efetivos do usuário por se assemelhar com o produto final, em produção

# TRADE-OFFS

# **Trade-offs**

**São mais onerosos e  
requerem mais tempo e  
recursos para reproduzir o  
resultado esperado**

# Trade-offs

Torna mais complexo o processo de iteração. Fazer ajustes na interface podem levar mais tempo

# Trade-offs

Pode inibir os usuários a darem feedbacks mais sinceros e fazerem críticas

# Trade-offs

Podem causar distrações ao usuário por focar menos na tarefa e mais na aparência

# PRINCIPAIS FERRAMENTAS (RECAP)

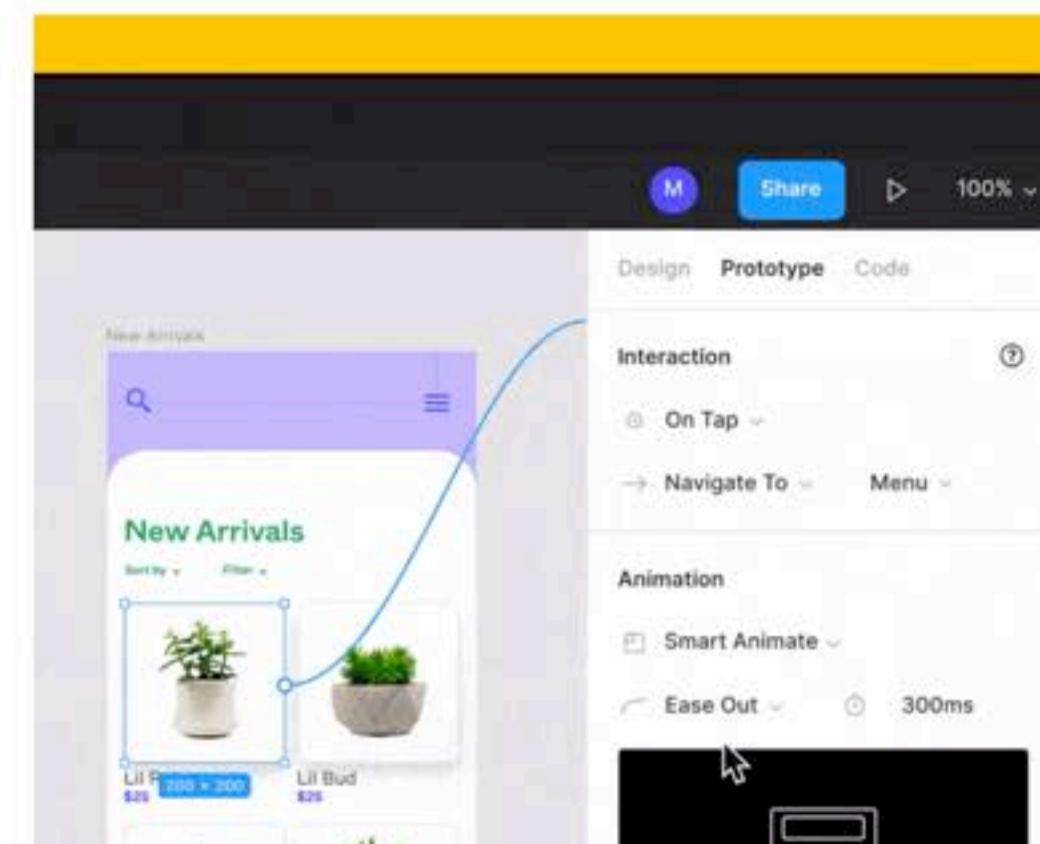
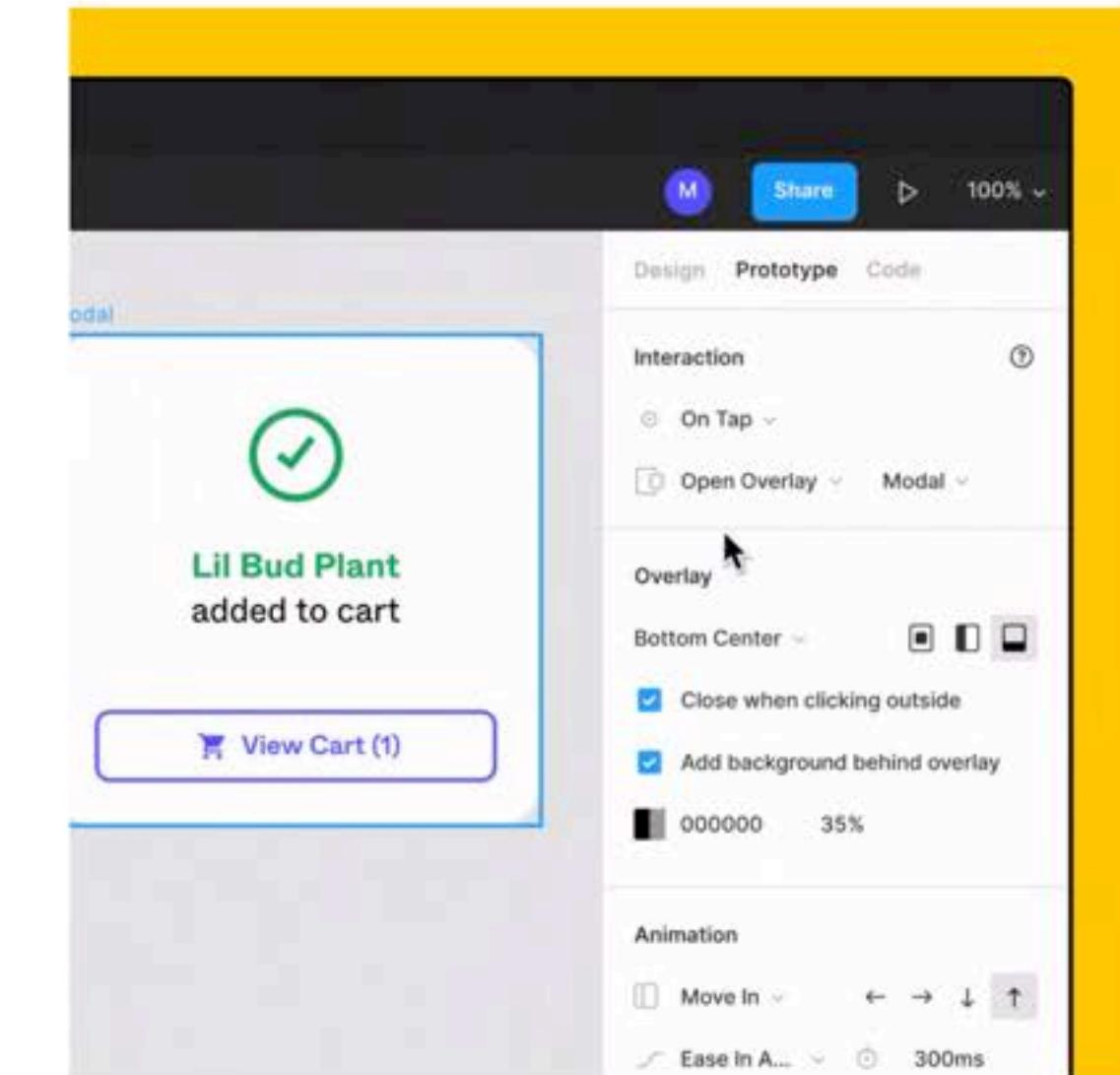
# INTERAÇÕES SIMPLÉS

# Figma

## Create prototypes that feel like the real experience

Turn your static design files into an interactive experience—no coding required.

- **Intuitive build:** Simply connect UI elements and choose your interactions and animations.
- **Interactions:** Define subtle interactions, like on click, while hovering, while pressing a button, and more.
- **Mobile-optimized:** Details like device frames and momentum scrolling make your prototypes feel like the real experience.



## Show, don't tell your interaction vision

Take the guesswork out of development by spelling out the interaction details you envision.

- **Advanced transitions with Smart Animate:** Automagically animate similar objects and create detailed transitions.
- **Dynamic overlays:** Create multiple layers of interactive content overlays.

# Adobe XD

The screenshot displays the Adobe XD website's homepage, featuring four main features:

- Animação automática**: Crie microinterações, adicione animações e impressione todo mundo com efeitos de movimento atraentes. [Saiba mais](#)
- Protótipo de voz**: Crie comandos de voz, use reprodução de fala e acrescente som com recursos habilitados por voz.
- Grupos roláveis**: Crie carrosséis interativos, faça listas e menus em loop e atribua áreas de designs para rolagem.
- Links de ancoragem**: Adicione menus de navegação, crie interações de rolagem para o início e vá para áreas diferentes dos designs com links clicáveis.

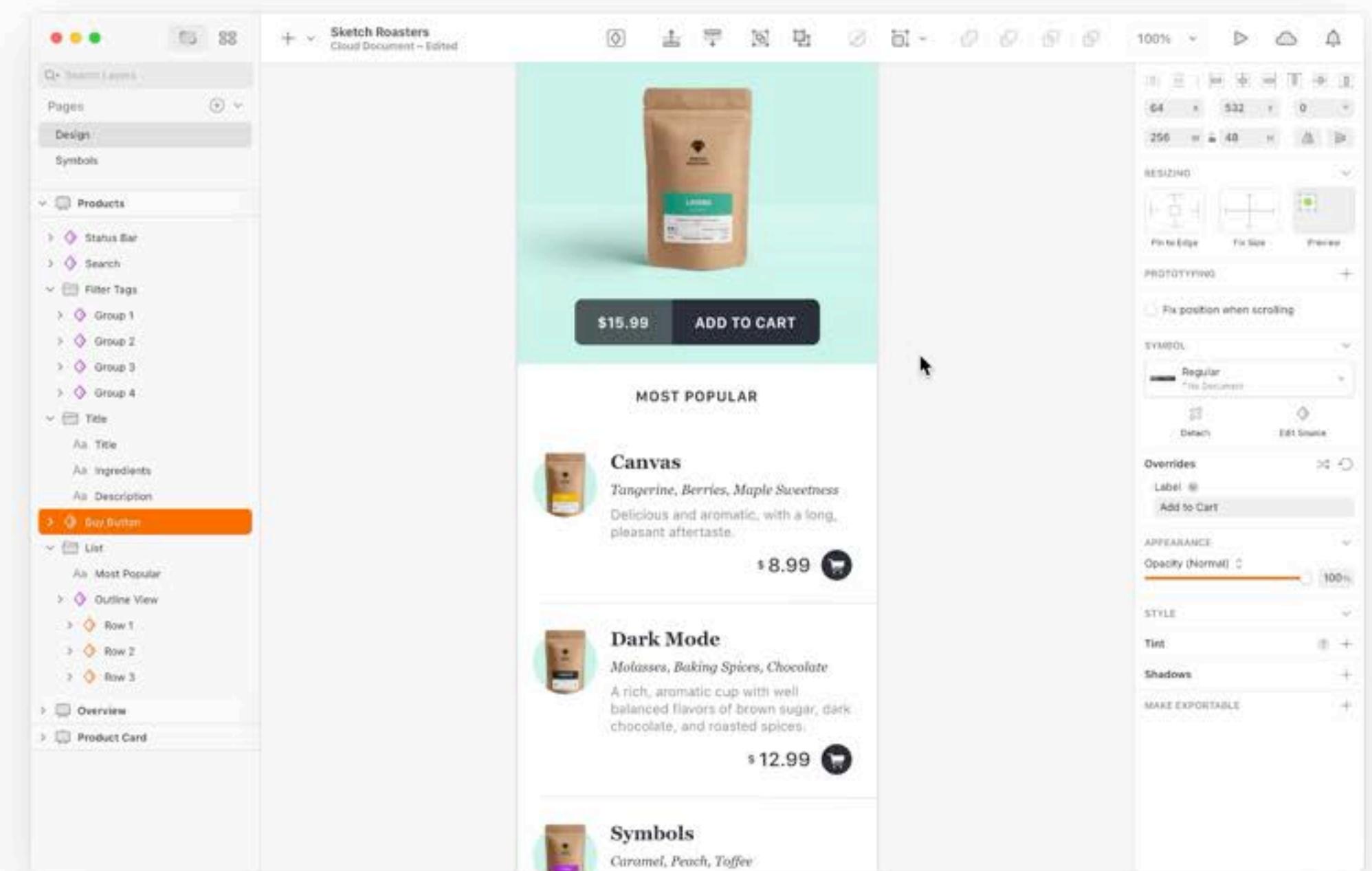
# Sketch App

## DESIGN

### Work fast, create beautifully

Your best work happens when tools stay out of the way. With an intuitive interface, thoughtful features and all the power of a native macOS app, you can stay focused on designing incredible products.

[Learn more](#)



The screenshot shows the Sketch application window titled "Sketch Roasters". The main canvas displays a product card for "Lemongrass" coffee, priced at \$15.99 with an "ADD TO CART" button. Below the card, there's a section titled "MOST POPULAR" featuring three more products: "Canvas" (Tangerine, Berries, Maple Sweetness), "Dark Mode" (Molasses, Baking Spices, Chocolate), and "Symbols" (Caramel, Peach, Toffee). The left sidebar lists various design components like "Products", "Status Bar", "Search", "Filter Tags", "Title", "List", "Overview", and "Product Card". The right sidebar contains panels for "RESIZING", "PROTOTYPING", "SYMBOL", "APPEARANCE", "STYLE", and "MAKE EXPORTABLE".

#### Bring your ideas to life

From pixel-perfect icons and scalable vector graphics, to full user flows and interactive prototypes, Sketch is the perfect place to design, create, test and iterate.

#### Build designs that scale

Lay the foundations for your product's design system with reusable, responsive components that automatically scale to fit their content. Then update them everywhere in a click.

#### Customise your workflow

Choose from hundreds of plugins and integrations that let you do everything from animating interactions to designing with live data.

[Browse extensions →](#)

# INTERAÇÕES COMPLEXAS

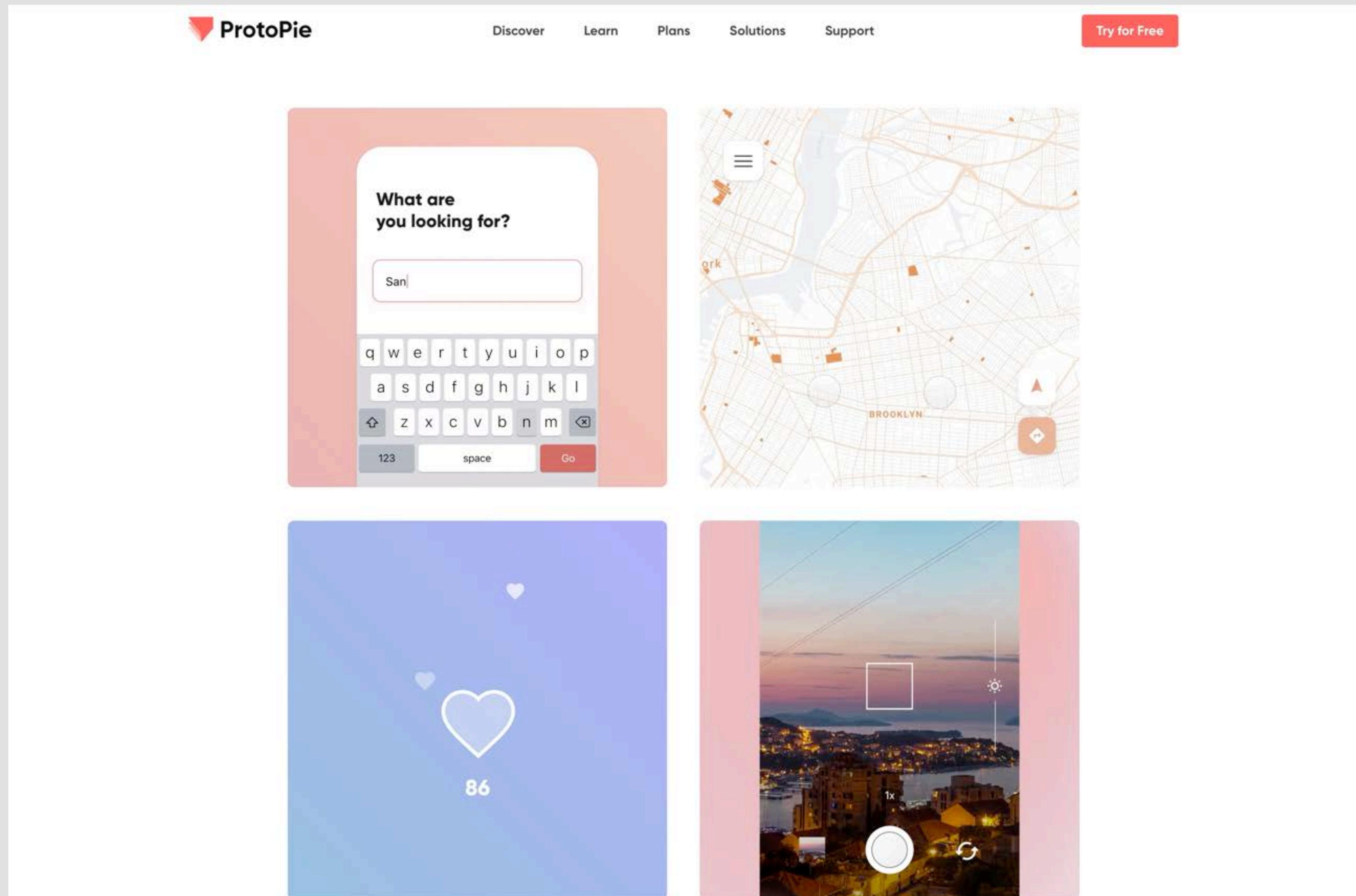
# Framer

The screenshot displays the Framer website's homepage. At the top, a navigation bar includes the Framer logo, a search icon, and links for Learn, Teams, Pricing, Blog, Updates, and Support. To the right of the navigation are buttons for "Sign in" and "Sign up for free". The main title "A free prototyping tool for teams." is prominently displayed in large white text. Below the title, a subtitle reads "Bring every design to life in Framer." Two calls-to-action buttons, "Sign up for free" and "Sign in", are located at the bottom of the main section. The lower portion of the image shows the Framer application interface. It features a dark-themed workspace with several mobile prototype screens. One screen shows a video player interface with a play button and a message from "Anne". Another screen shows a messaging interface with a message from "David". On the left, a sidebar lists various components like "Messages", "Glyps", "Data", "Motion", "Page", "Styles", "Animations", and "Rings". On the right, a panel titled "Interactions" shows settings for a "Tap" interaction, including "Transition" set to "Slide", "Layout" set to "200x100", and "Width" and "Height" both set to "360". Other settings include "Overflow" set to "Show" and "Radius" set to "40". A "Stack" button is visible at the bottom right of the panel.

# proto.io

The screenshot shows the Proto.io homepage with a dark background. At the top, there is a navigation bar with the Proto.io logo, followed by links for Features, Demos, Pricing, Customers, Enterprise, and Blog. To the right of these are Login and Start For Free buttons. The main headline reads "Give motion to your design" in large white text, with a blue wavy underline underneath the word "motion". Below the headline is a subtext: "Take your prototype's interactivity one step further by introducing micro-animations with Proto.io's powerful animation features." A large image of a mobile phone displays a prototype of a video streaming app. The app's interface includes a user profile for "Ronald Phillips", a navigation bar with Home, Documentaries, and Movies options, and a search and notification icon. The main content area shows a video thumbnail titled "Fog" with a "Watch" button and a "My List" button. Below this is a "Latest Release" section featuring several video thumbnails. The mobile phone has a black frame with rounded corners, and the overall design is modern and professional.

# Protopie



# Principle

**Principle**

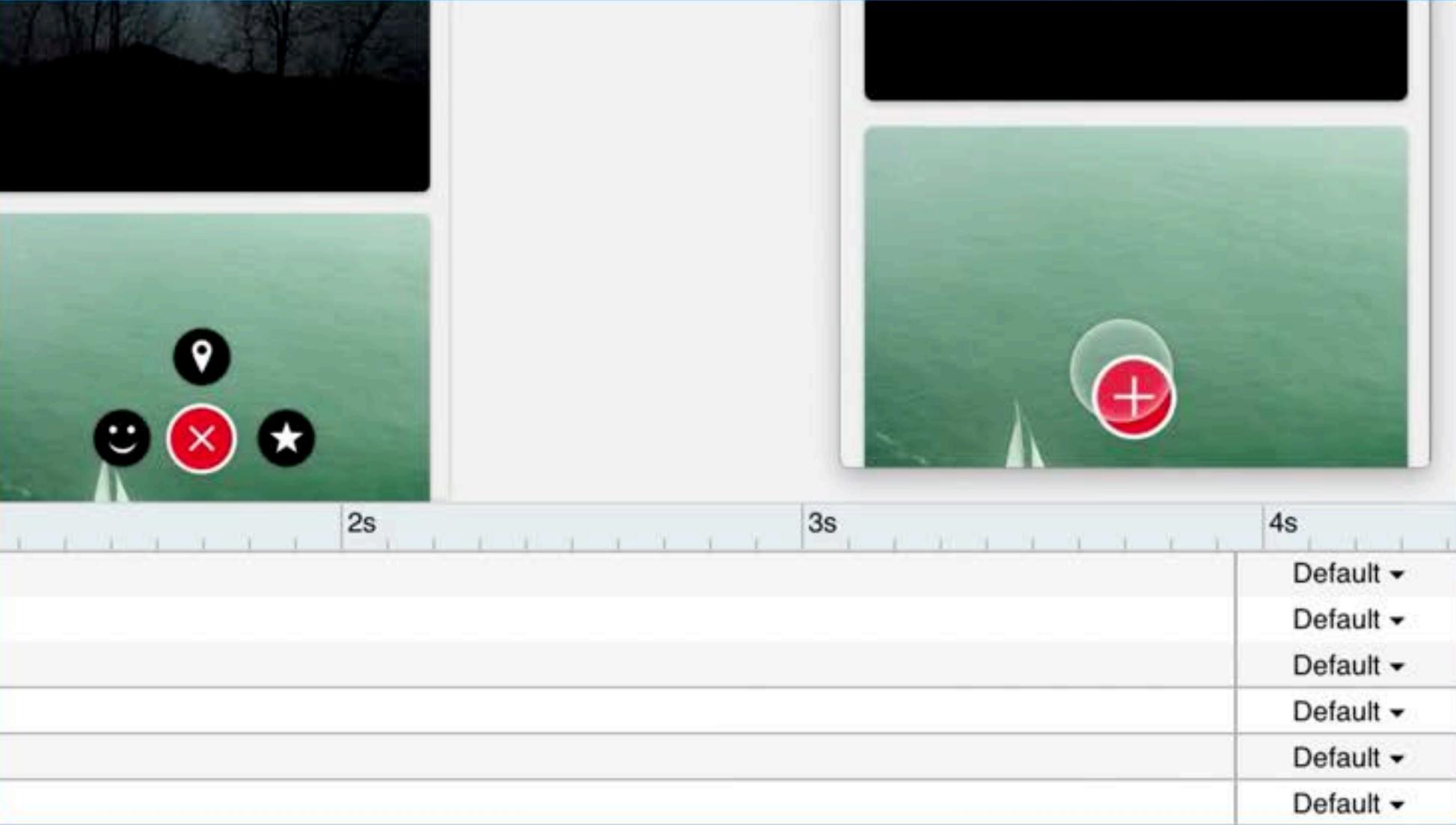
Gallery Tutorials Resources Documentation Support Download 

## Animate Your Ideas, Design Better Apps

Principle makes it easy to design animated and interactive user interfaces. Whether you're designing the flow of a multi-screen app, or new interactions and animations, Principle helps you create designs that look and feel amazing.

[DOWNLOAD](#) [BUY \\$129](#)

Or [Review](#), or [Add Seats](#)



Principle 5 Now Available

Use Principle in beautiful dark mode and import designs from Figma  
[See What's New](#)

**PRODUCTION  
READY**

# Webflow

webflow Product Case studies Resources Enterprise Log in Get started — it's free

zendesk Rakuten DELL Upwork Lattice getaround  Petal

# Build

Build production-ready experiences without coding.

**zendesk**

"Webflow helped our brand team create a platform that enables all Zendesk employees to accurately and consistently represent the company in an easy, efficient and scalable way."

 **Erin Pinkley**  
Executive Creative Director



The Designer CMS and Ecommerce Interactions

Bring your design vision to life in clean, semantic HTML5, CSS, and JavaScript — with the [Webflow Designer](#). Build completely [custom databases](#) for dynamic content types, including [online stores](#). Easily create immersive [interactions and animations](#).

Get started now — it's free →

**ANIMACÕES COM  
AFTER EFFECTS +  
LOTIE**

# After Effects

The screenshot shows the Adobe After Effects product page. At the top, there's a navigation bar with links for 'Criatividade e design', 'Marketing e comercialização', 'PDF e assinaturas eletrônicas', 'Soluções empresariais', 'Suporte', and a user profile icon. Below the navigation is a secondary menu with 'Adobe After Effects', 'Recursos', 'Vídeo e áudio', 'Destques', 'Aprendizado e suporte', 'Avaliação gratuita', and a blue 'Compre agora' button.

A large image of a person performing a backflip is the central visual. In the top left corner of this image, there's a dark blue square containing the white letters 'Ae'. To the right of the image, the text 'Torne uma cena grandiosa ainda maior.' is displayed in white. Below this, a smaller text block reads 'Tenha o After Effects como parte da Adobe Creative Cloud por apenas R\$90,00/mês.' At the bottom left of the image area are two buttons: 'Avaliação gratuita' and 'Compre agora'.

**Tudo é possível com o After Effects.**

Crie títulos de filmes, introduções e transições cinematográficas. Remova um objeto de um clipe. Crie fogo ou faça chover. Anime um logotipo ou personagem. Navegue e crie em um espaço 3D. Com o After Effects, o software de [animação](#) e [efeitos visuais](#) padrão do setor, você transforma qualquer ideia em realidade.

# Lottie

LottieFiles

Search Lottie Animations

Animations ▾ Marketplace ▾ Preview Tools ▾ Resources ▾ Login Sign Up

Featured Recent Popular Animators Marketplace Trending: Covid-19 Christmas New Year AEP Loading Hearts

Popular: Weekly Monthly All Time

Popular animations from our community

Mvsaffa Wt. Motion Athar Athallah Wt. Motion

Eduardo Couto Phil Scarano Vitra Mark Arrow

LottieFiles is a platform for sharing and discovering Lottie animations. The homepage features a grid of popular animations from the community, categorized by popularity (Weekly, Monthly, All Time). The interface includes navigation links for Featured, Recent, Animators, Marketplace, Trending (Covid-19, Christmas, New Year, AEP, Loading, Hearts), and various tools and resources. The search bar allows users to find specific Lottie animations.

# Webflow + After Effects + Lottie

The screenshot shows a course page from **webflow University**. At the top, there's a navigation bar with links for **Courses**, **Lessons**, **Contact**, and **More**. A search icon and a button to **Try Webflow — it's free** are also present. Below the navigation, a breadcrumb trail shows **All courses** > **Overview**. The main feature is a large image of a colorful, abstract motion graphic with concentric curved shapes in shades of red, blue, and white.

**Add web animations with After Effects & Lottie**

INTERMEDIATE | 1 HR 19 MIN

Create animations in Adobe After Effects — the industry standard for motion graphics. Embed and animate them in your Webflow site.

[Enroll for free →](#) [Watch trailer](#)

**Summary**

**Course outline**

GET STARTED	
① After Effects and Lottie course introduction	1:19
② How to install Bodymovin	3:14

# Ferramentas

A melhor ferramenta  
é aquela que você  
sabe usar.

**HTML**

**CSS**

**JAVASCRIPT**

# HARD SKILLS

**FIGMA**

**FRAMER**

**WEBFLOW**

MÓDULO 27

AULA 2

# Microinterações

**PROTÓTIPOS  
DE ALTA  
FIDELIDADE**

PAL / WIoTDS Website ✓

Share 18% ▾

Layers Assets Layout

Pages

Layout

Layout Demo Ebac

Symbols

Group 17

Frame 17

Frame 16

App Icon

m-Typography

m-Color Usage

m-Color

m-App Icons Usage

m-Iconography

m-splash

m-home

m-Home-menu

Typography

Typography

Color Usage

Color

Color

Color Usage

Background C6C6C6 100%

Export

The screenshot shows a design interface for a website named "WIoTDS Website". The top navigation bar includes "PAL", "Share", and a zoom level of "18%". On the left, the "Layers" panel lists various components and pages: "Layout", "Layout Demo Ebac", "Symbols", "Group 17", "Frame 17", "Frame 16", "App Icon", "m-Typography", "m-Color Usage", "m-Color", "m-App Icons Usage", "m-Iconography", "m-splash", "m-home", "m-Home-menu", "Typography", "Typography", "Color Usage", "Color", "Color", and "Color Usage". The main workspace displays six vertical cards representing different design sections: "Home" (with a large image of two people at a desk), "m-home" (with a grid of small images), "iconography" (with a grid of icons), "m-iconography" (with a grid of icons), "Color" (with a color palette and a grid of images), and "m-Color" (with a color palette and a grid of images). The right side of the interface features a "Background" section set to "C6C6C6" at 100%, and an "Export" button.

Layout - WIoTDS Website

figma.com/proto/fj83L5kjXkFjt5lzlSQa/WIoTDS-Website?node-id=0%3A41&scaling=min-zoom

Anônimas (2)

YouTube Maps Gmail Traduzir Notion - Design &... Miro Atlassian Figma - SumUp Circuit UI - Comp...

Outros favoritos

## AI Applications Design

Team

Brands

Personas

Guilds

Sponsor user program

Conceptual model

Pattern and asset library

Guidelines

Color

**App icons**

Standard icons

Typography

Voice and tone

Patterns

GaComponentsBuilds

How to contribute

Carbon Design System

Consistency means productivity

Build AI Applications at scale and speed. Drive outcomes that matter.

AI Applications

The **Pattern and Asset Library** helps IoT product and offering teams to prototype and deliver user experiences that have consistent interactions, workflows and aesthetics.

Learn more →

**Detalhe**

IBM Watson Knowledge Catalog

All catalogs ▾

Search catalogs

IBM ▾

Projects / AA\_Dan1 / Bank Customers

Data quality score

97% ↓ 4%

Selected data class

257 ↓ 3

Selected data type

3008 ↑ 3

Analysis status

Completed

Last column analysis

Confirmed

Last DQ analysis

Apr 07, 2018

Find a column

Name	Score	Delta
Zip, email	99%	0%
Age	97%	<span style="color:red">↓ 3%</span>
Address	43%	<span style="color:red">↓ 7%</span>
CNN	100%	<span style="color:green">↑ 9%</span>
Name, person	99%	<span style="color:green">↑ 8%</span>
Credit_rating	99%	<span style="color:red">↓ 10%</span>
Email	99%	<span style="color:green">↓ 10%</span>
Gender	90%	<span style="color:red">↓ 7%</span>

Data asset

# Bank customers

Add rule set + Add rule +

Data rules Columns Data quality Data classes Governance Data types Keys

### Quality score change

Last 7 days ▾

Failed rows Delta Runs

18% ↑ 62% 4

ValidCreditCardNumber  
ValidEmailAddress  
CreditRatingExist

The chart displays three data series representing the percentage of failed rows over a seven-day period. The purple line (ValidCreditCardNumber) starts at approximately 50%, peaks at about 80% on Feb 3, and then gradually declines. The teal line (ValidEmailAddress) starts at approximately 30%, peaks at about 65% on Feb 3, and then declines. The white line (CreditRatingExist) starts at approximately 35%, drops sharply to near 0% on Feb 3, and then rises again towards the end of the period.

Date	ValidCreditCardNumber (%)	ValidEmailAddress (%)	CreditRatingExist (%)
Feb 1	50	30	35
Feb 2	65	35	45
Feb 3	80	65	10
Feb 4	75	40	40
Feb 5	65	25	30
Feb 6	55	35	45
Feb 7	50	20	50

Edit

Analyze

# Microinterações

Uma microinteração é o momento contido no produto que gira em torno de um único caso de uso – uma pequena parte da funcionalidade que faz apenas uma coisa.

Publish



Delete Item



Favorite



Clap

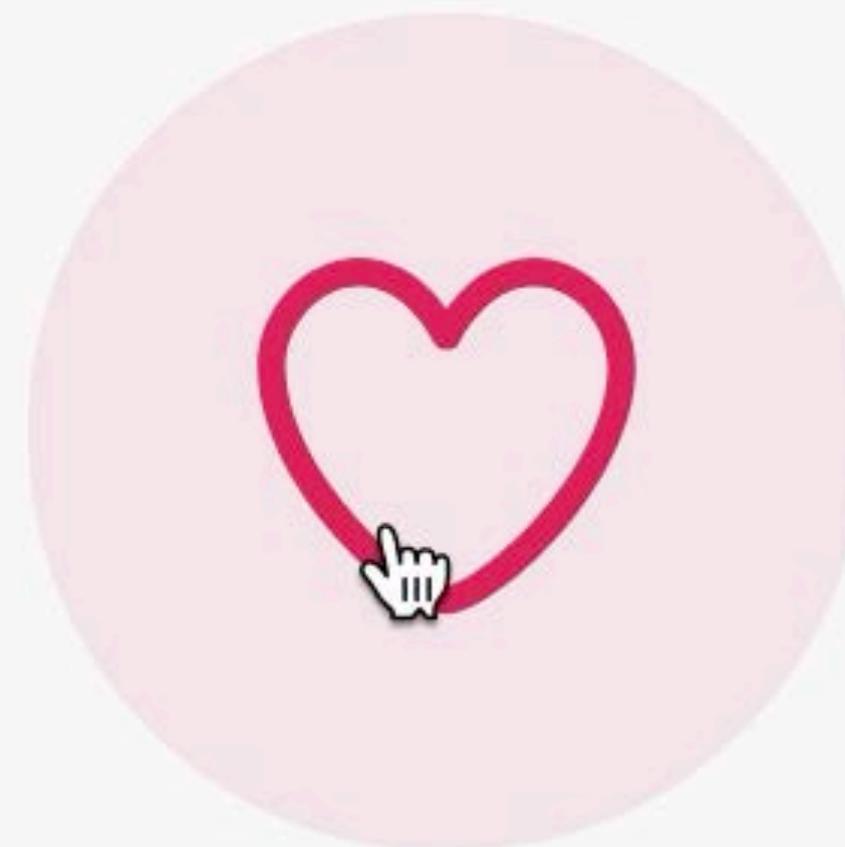


3K

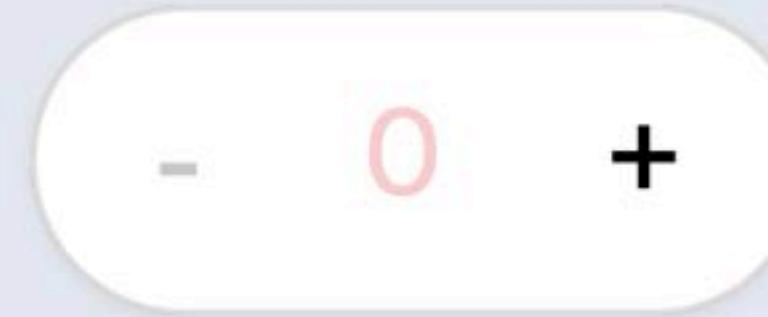


8

Click this  
Button



26



# BLOOM



Customized Series



Details

360 view



**GATILHO  
REGRAS  
FEEDBACK  
LOOPS & MODOS**

**GATILHO  
(TRIGGER)**

**Gatilho**

**Inicia a  
micointeração**

**Ex.: Botão, a foto no instagram**

# **REGRAS (RULES)**

# Regras

Determina como a  
micointeração funciona

Ex.: Ao clicar, quando passar o mouse em cima,  
quando tocar duas vezes seguidas

**RESPOSTA  
(FEEDBACK)**

# Feedback

Comportamento visual ou auditivo como resposta. Tem que ser rápido pra associar com o gatilho

Ex.: Reproduz animação, troca de cor

# LOOPS E MODOS

# **Loops & modos**

**Modos** são os estados, e o  
loop é o que inicia e o que  
reverte

**Ex.: Dá like, tira like.**

# MOTION DESIGN

**DEVE SER  
APLICADO COM  
MODERAÇÃO**

# CONTEXTO

**"Get your colleagues  
together,<sup>®</sup> they'll  
become a family!"**

Boogie, April 2015 (you know, the dog on the homepage).

"Don't do so, and they'll just be colleagues." The intern, March 2020.

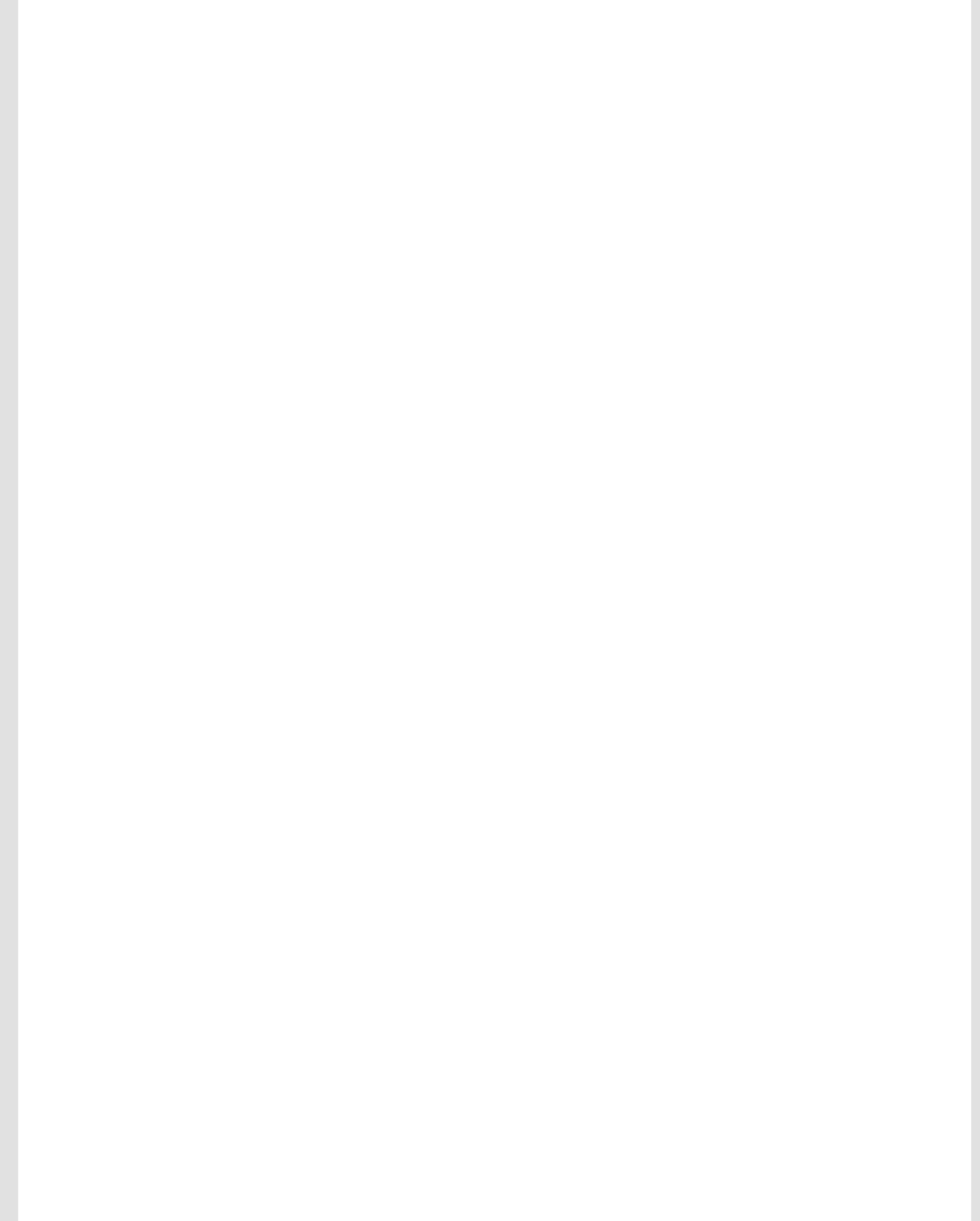
# Prototipação no Figma - Parte 1

# MICRO- INTERACÕES NO FIGMA

# Figma

- Links
- Transições
- Overlay
- Click, drag, hover...
- Duração
- Atenuações de movimento (curvas de bézier)
- Smart animate

# **Criar uma página de um produto com elementos interativos**



# **Criar uma página de um produto com elementos interativos**

- 1. Pequenos elementos (Átomos)**
- 2. Elementos médios (Moléculas)**
- 3. Transições animadas de páginas (Template)**
- 4. Elementos de background (Loops)**

# NÍVEL ÁTOMOS

- Botão
- Toggle
- Menu Hamburger

# NÍVEL MOLECULAS

- Carrossel
- Accordion

# Prototipação no Figma - Parte 2

# MICRO- INTERACÕES NO FIGMA

# NÍVEL TEMPLATE

- Transição entre páginas

# LOOPS

- Background animado
  - Vídeo
  - Grafismos

**RESULTADO  
FINAL**

**ATE A  
PRÓXIMA  
AULA!**



escola  
britânica de  
artes criativas  
& tecnologia