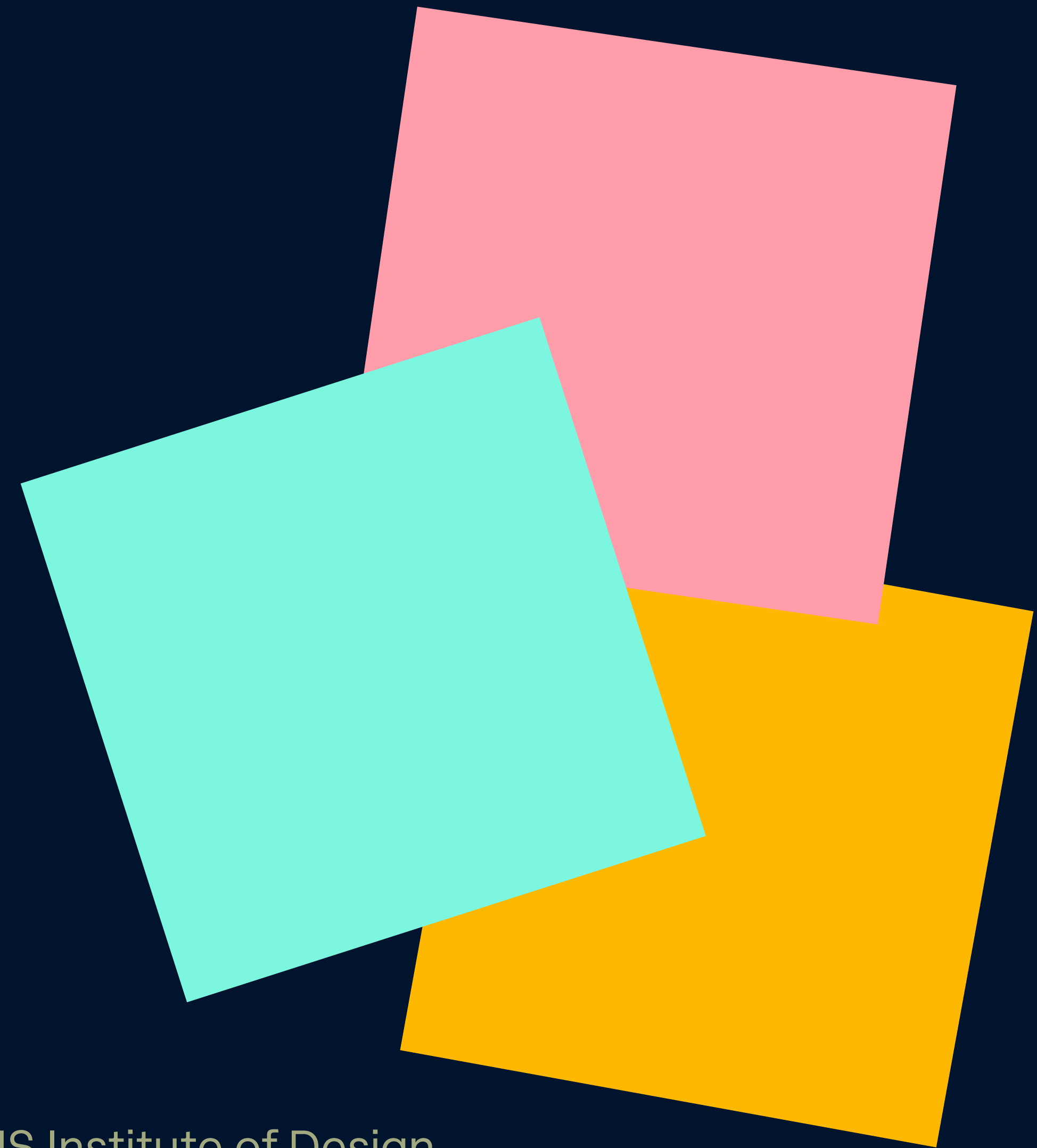


Lecture 1

# Ergonomics - Physical and Cognitive

Good design

22 August 2025 · Gyan Lakhwani · [gyanlakhwani@gmail.com](mailto:gyanlakhwani@gmail.com) · JS Institute of Design



# Ergonomics - Physical and Cognitive

12 Lectures expected

1 mid-semester project

1 end-semester project



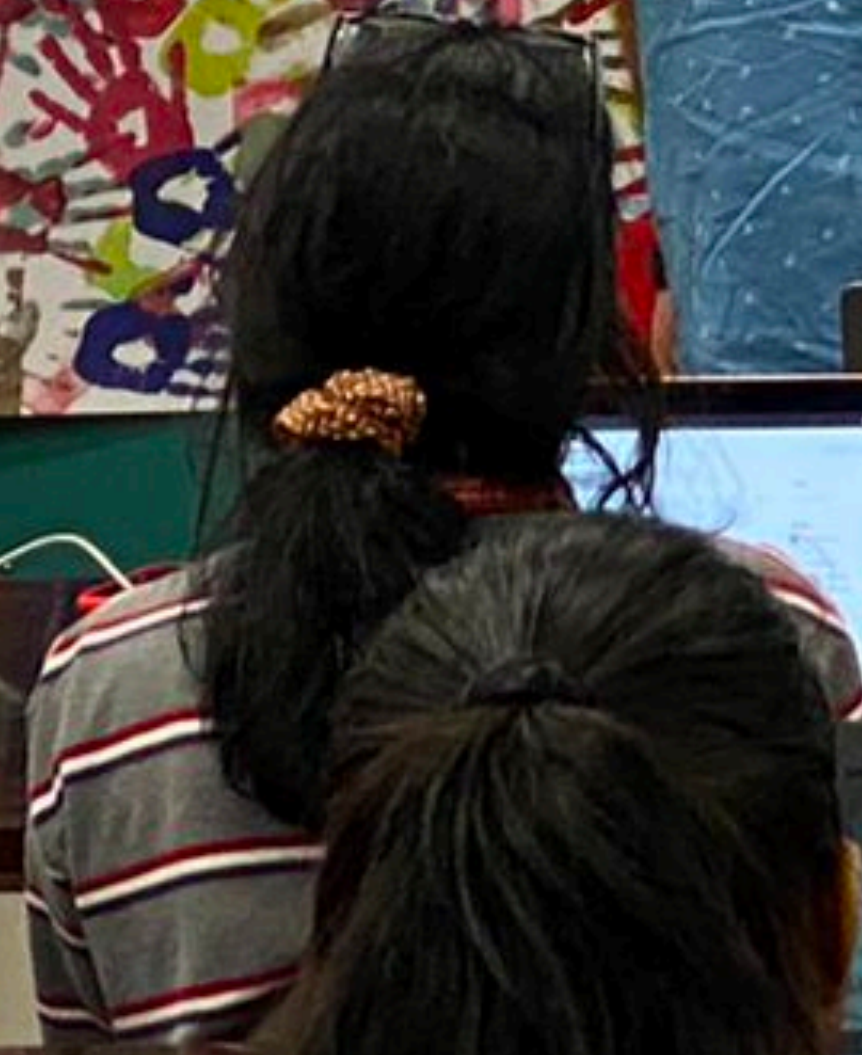
# About me

- *Designer*
- *Nerd*
- *Likes bullet points*
- *Masters in Interaction Design from IDC School of Design*
- *UX Designer at Microsoft*
- *Uses Figma (almost) every day*

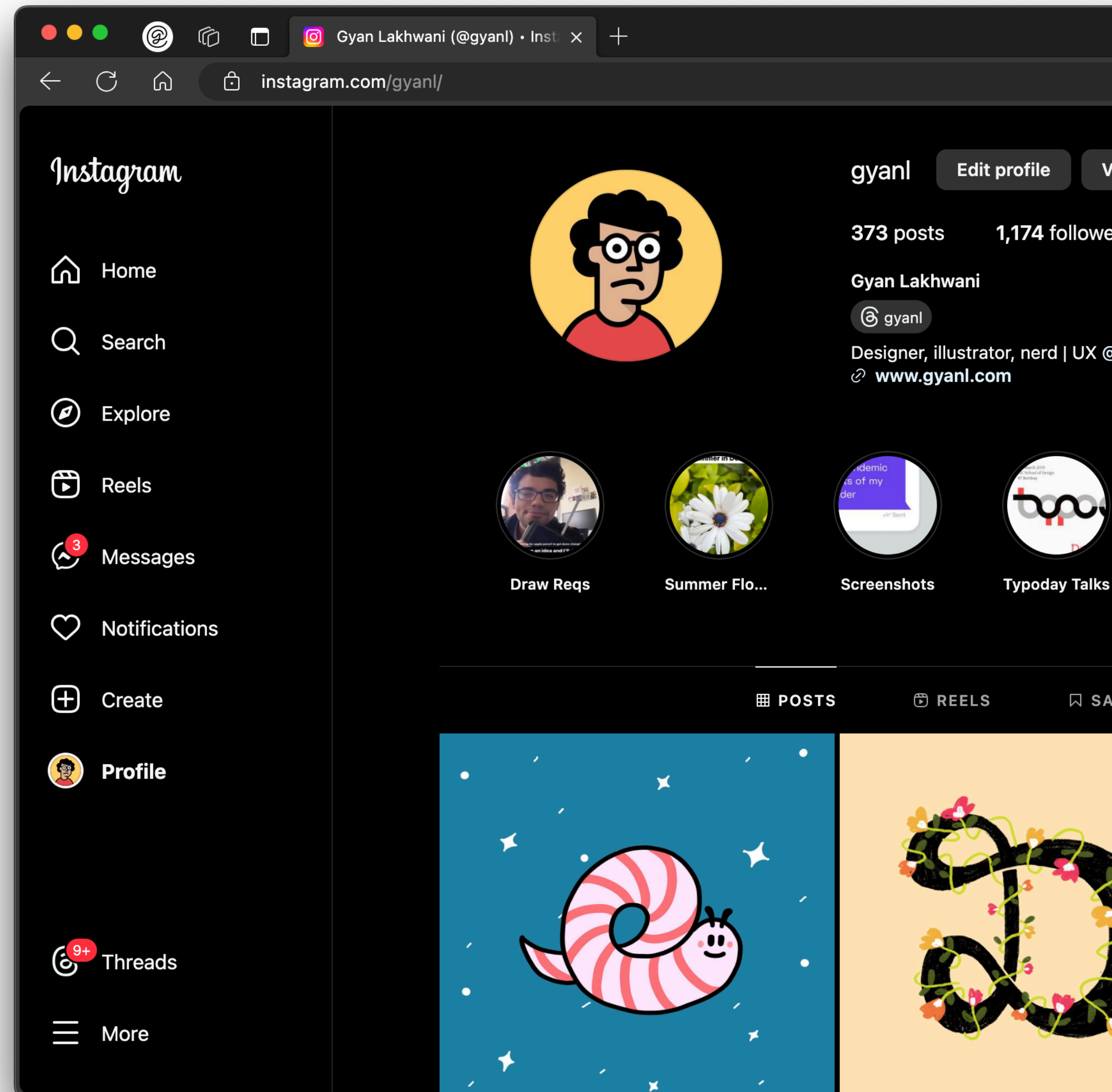


# About me

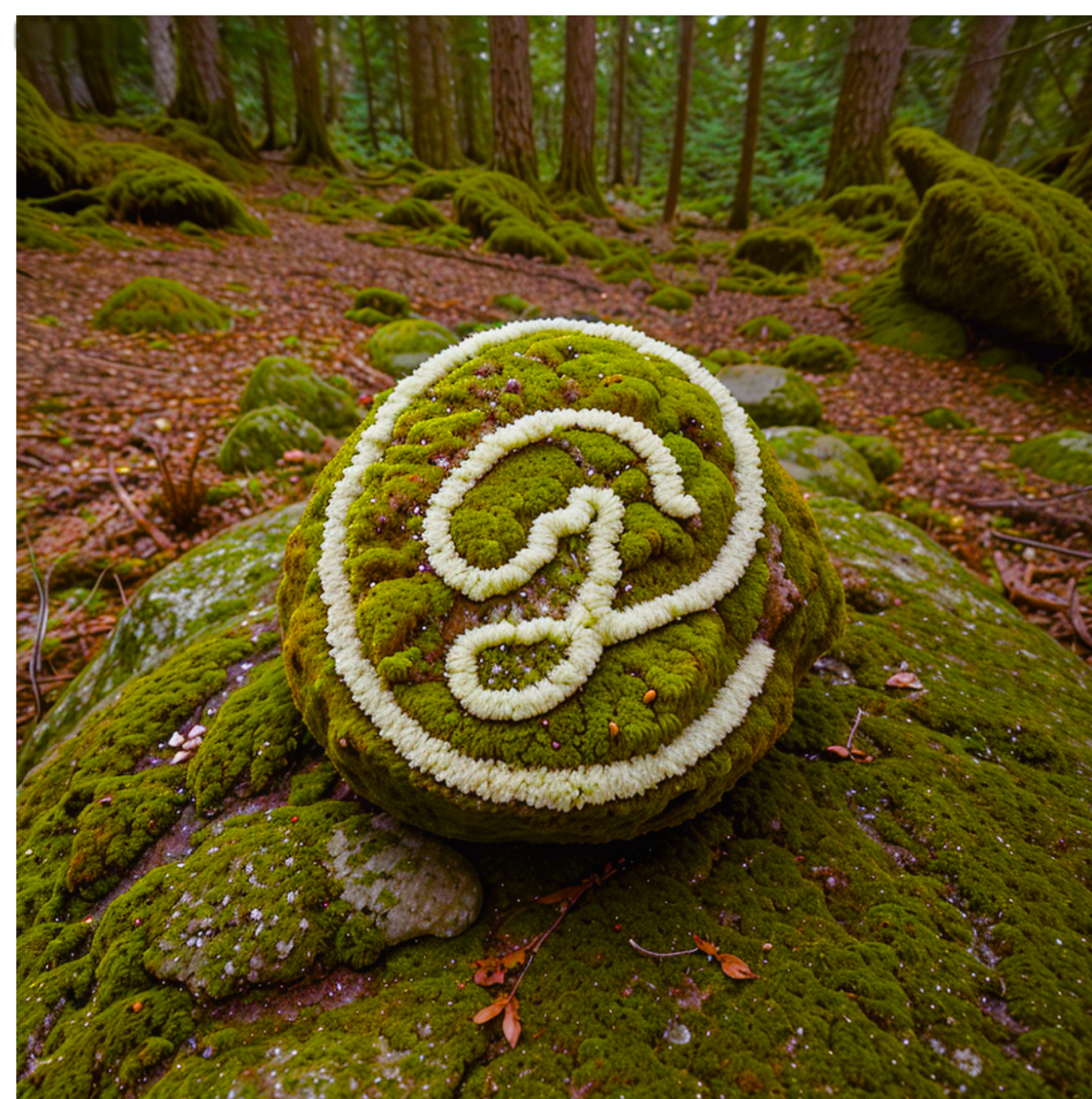
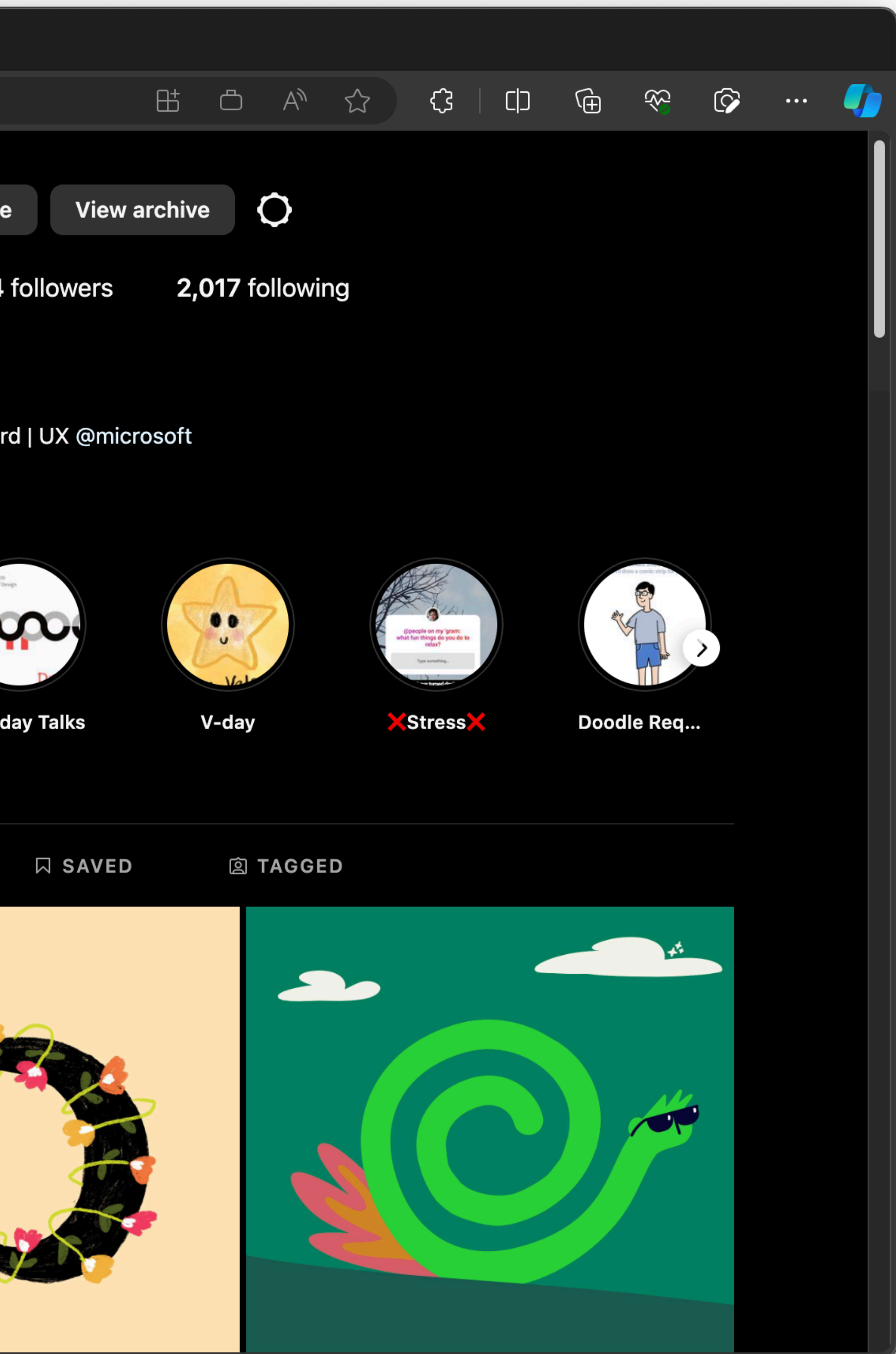
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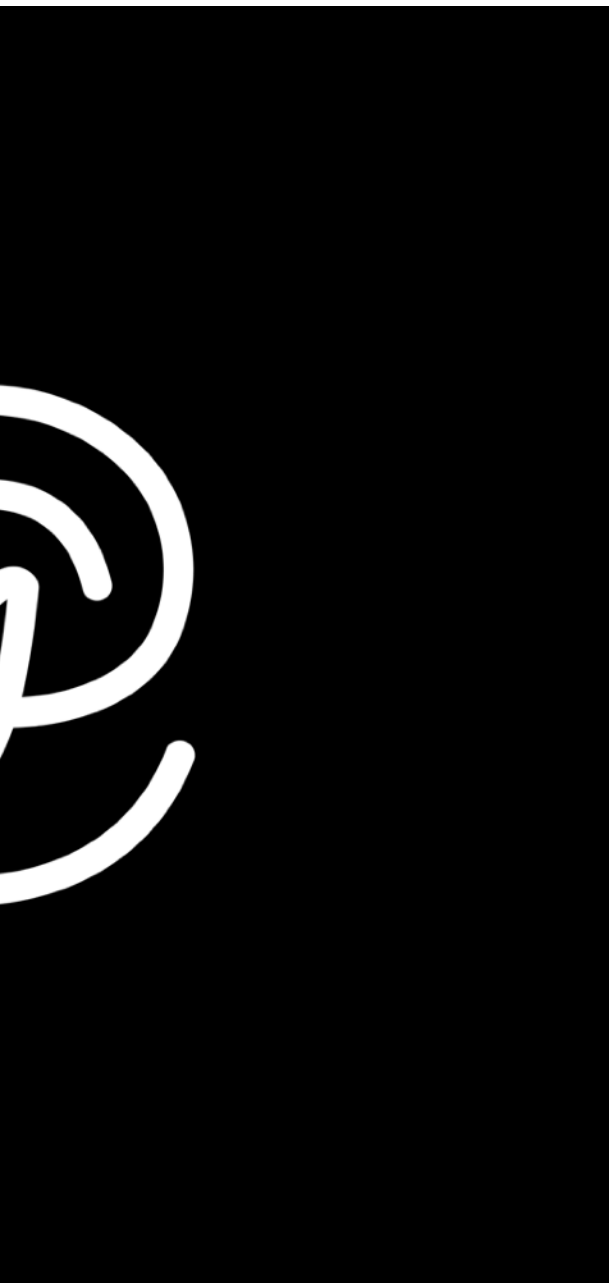














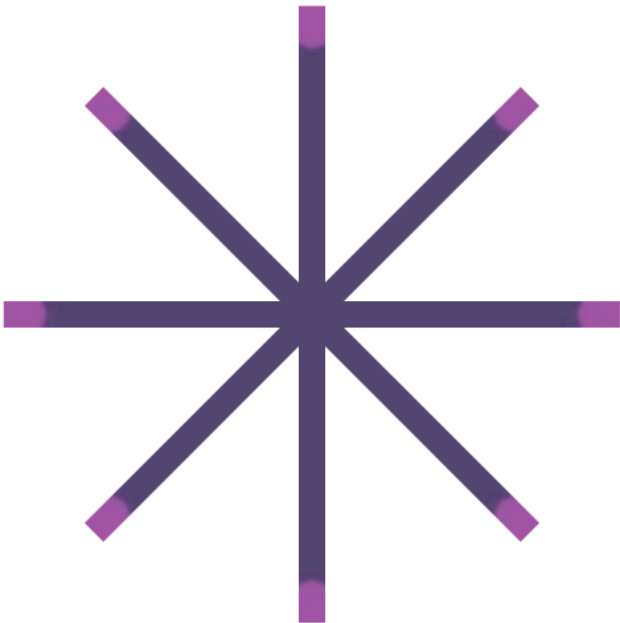




studio\*  
/ public  
knowledge

Public Knowledge Studio is an India-based design studio focused on crafting technology with care. We build interfaces and experiences with precision, personality, and purpose.

Talk to us about your project  
2 Slots left for Oct 2025!



[ SCROLL TO START ]





**So Gyan,  
what is design?**

**IDC** School of Design  
अभिकल्प विद्यालय



**What makes  
something well  
designed?**



# **Lets play a game.**

I will show you some objects. If you think the object is well designed, say good design. If you think it's poorly designed, say bad design.





**Koenigsegg Jesko Absolut  
2020**

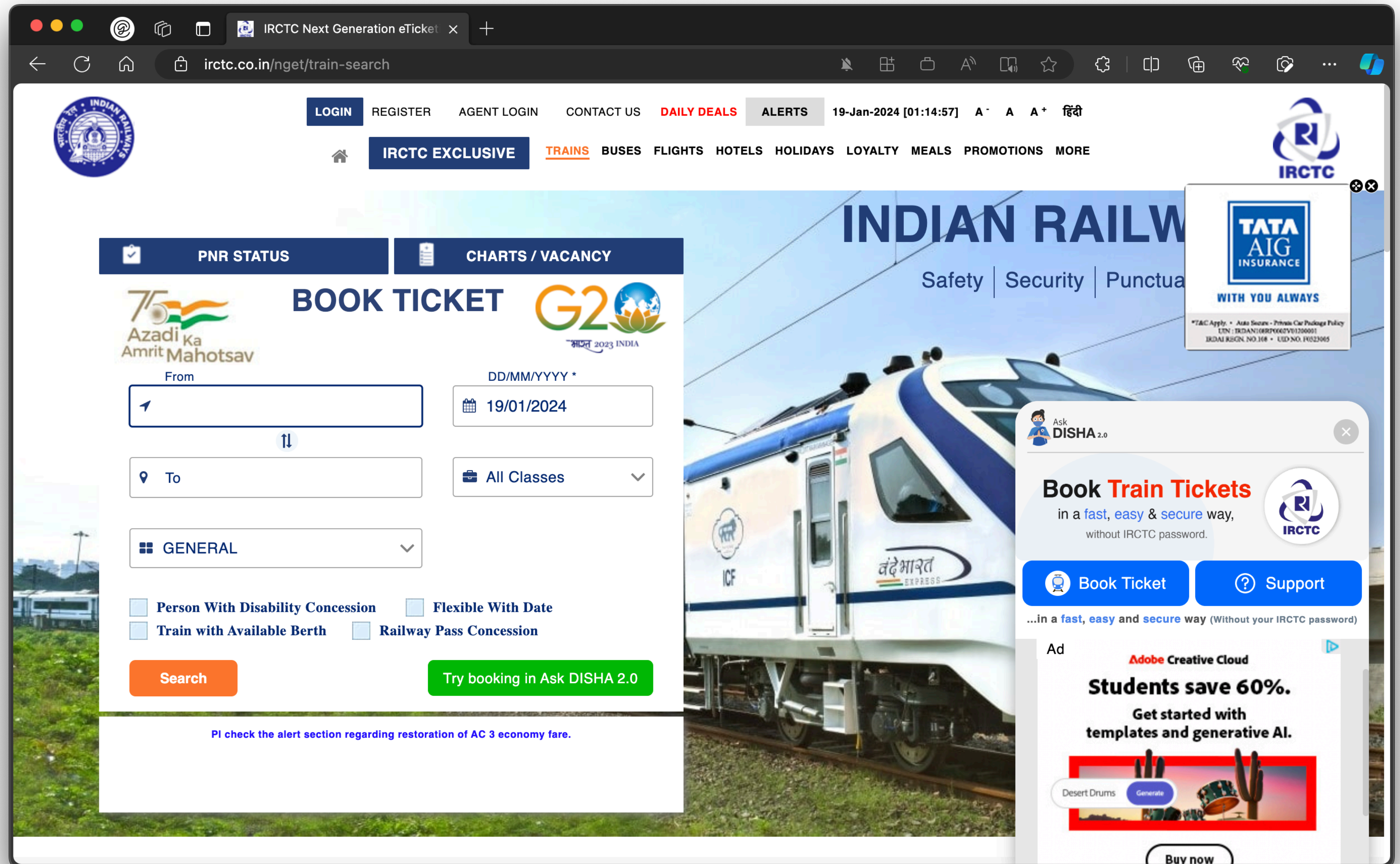




**Rabbit R1  
2024**

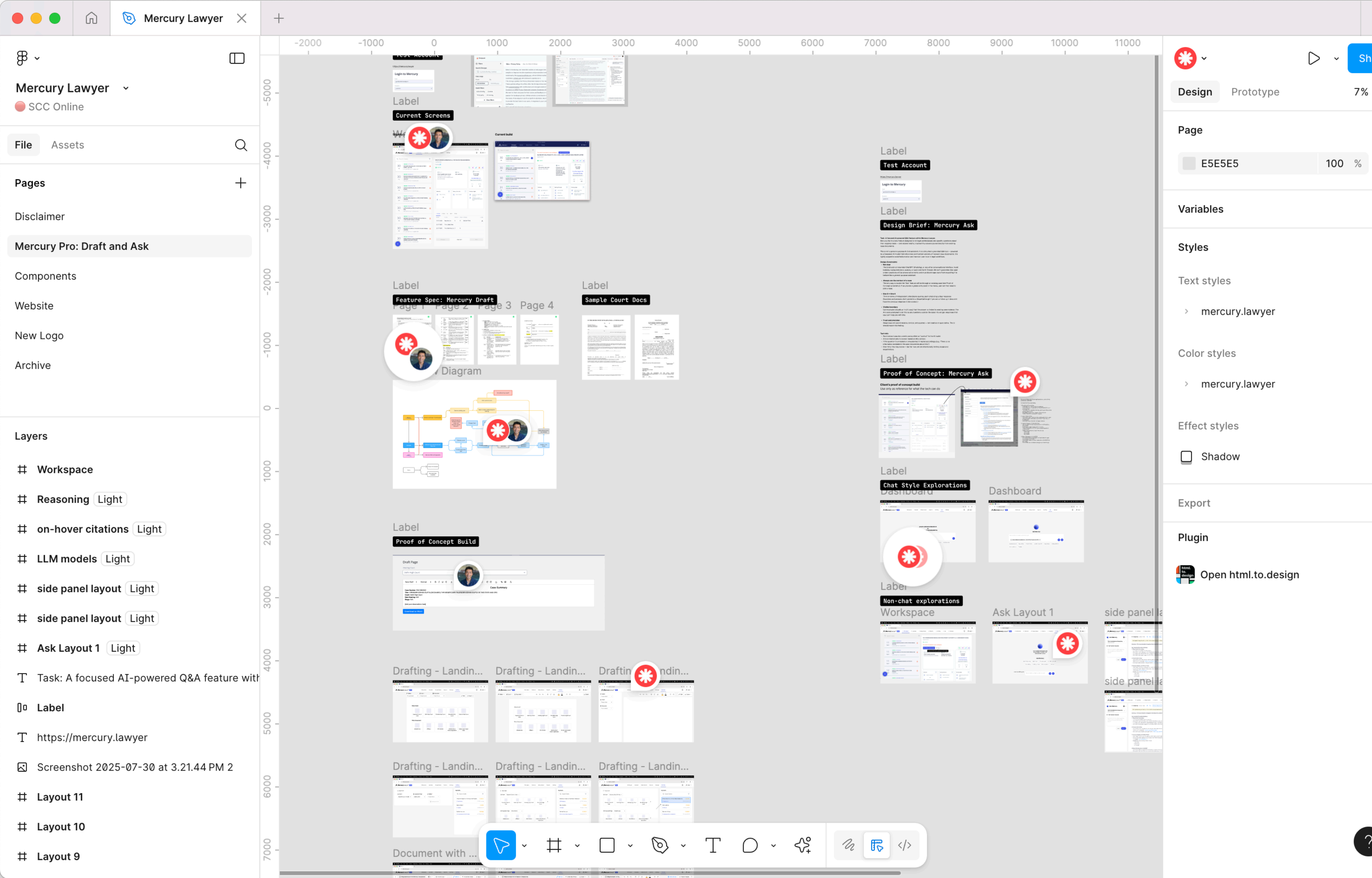


# IRCTC





# Figma (2025)







**Nike Swoosh**  
**1971**





**TV Remote**





**TV Remote  
“Improved”**



# Airbus A380 Cockpit 2010s





**Juicy Salif**  
**1990**





**Casio F-91W**  
**1989**





# Apple Watch Series 9 2023



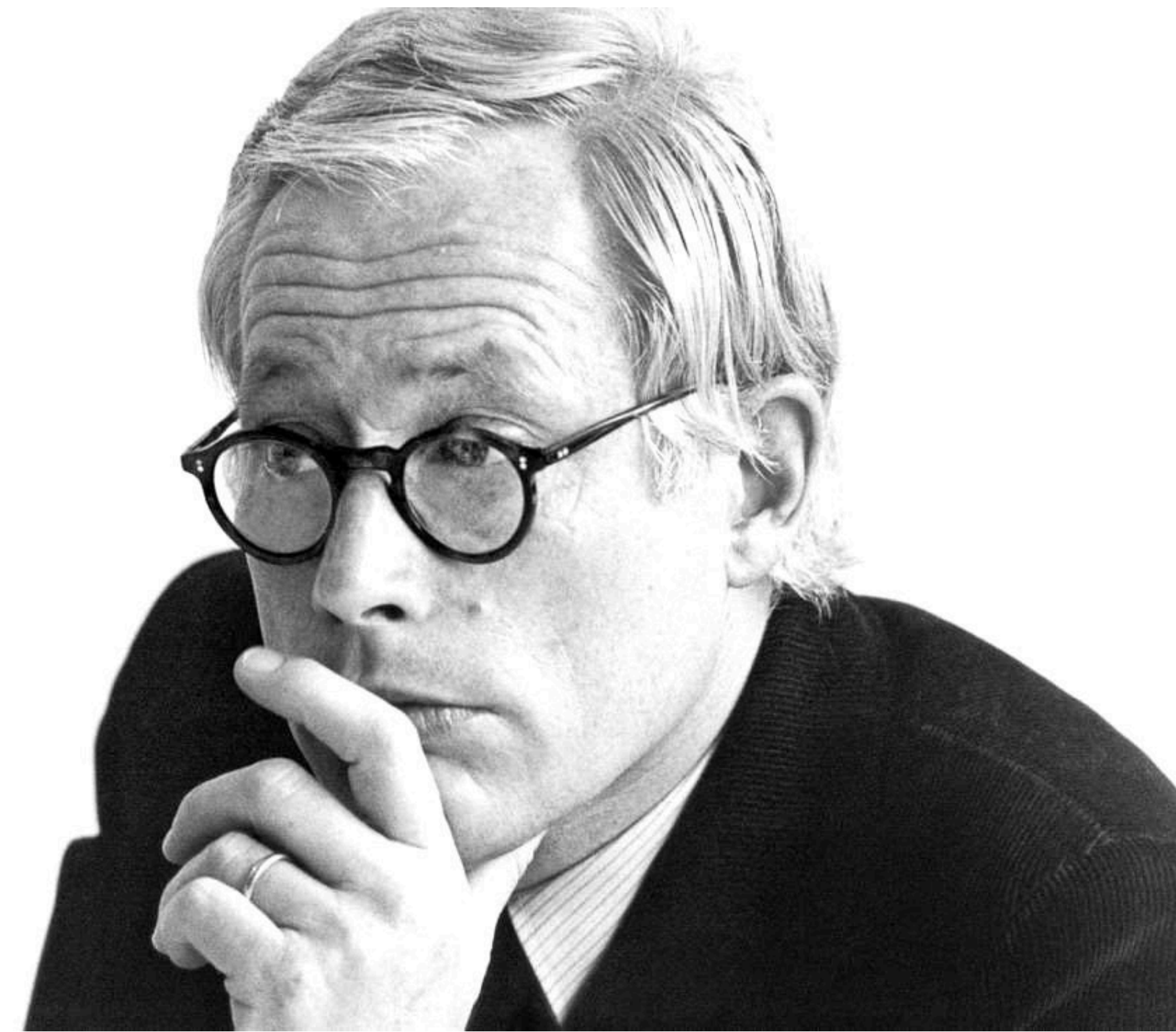




**Safety Pin  
1849**



**Dieter Rams**  
**Industrial Designer**



**Braun Pocket Radio**  
**1958**







**Braun Pocket Radio  
1958**



**iPod Classic  
2014**



# **Zips 1891**





**Herman Miller Aeron**  
**1994**





**Monobloc  
1970s**



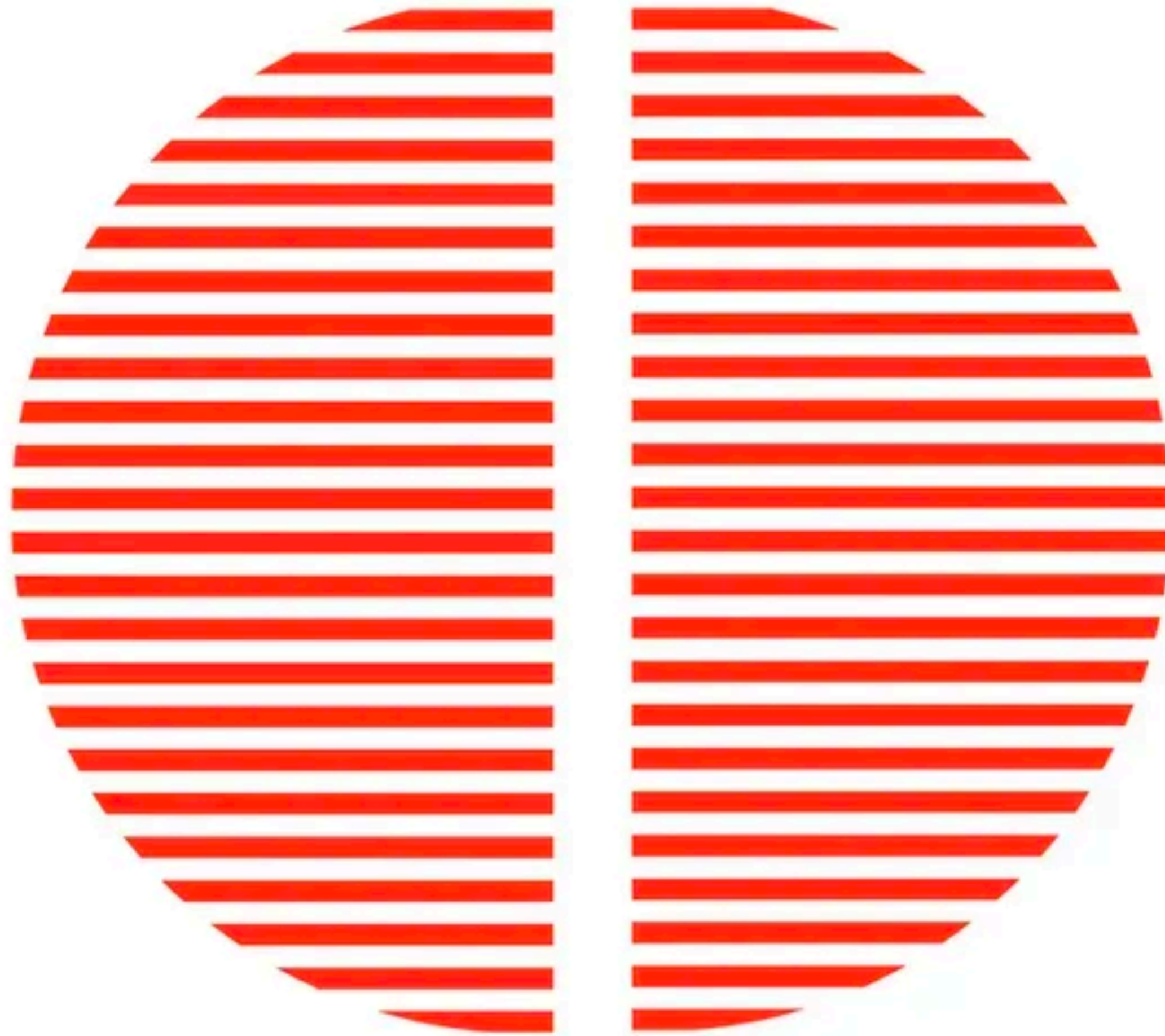


# What's something that you used recently that felt uncomfortable or confusing?

Take a minute or two to think if you need.



- 1 Good design is **innovative.**
- 2 Good design makes a product **useful.**
- 3 Good design is **aesthetic.**
- 4 Good design is makes a product **understandable.**
- 5 Good design is **unobtrusive.**



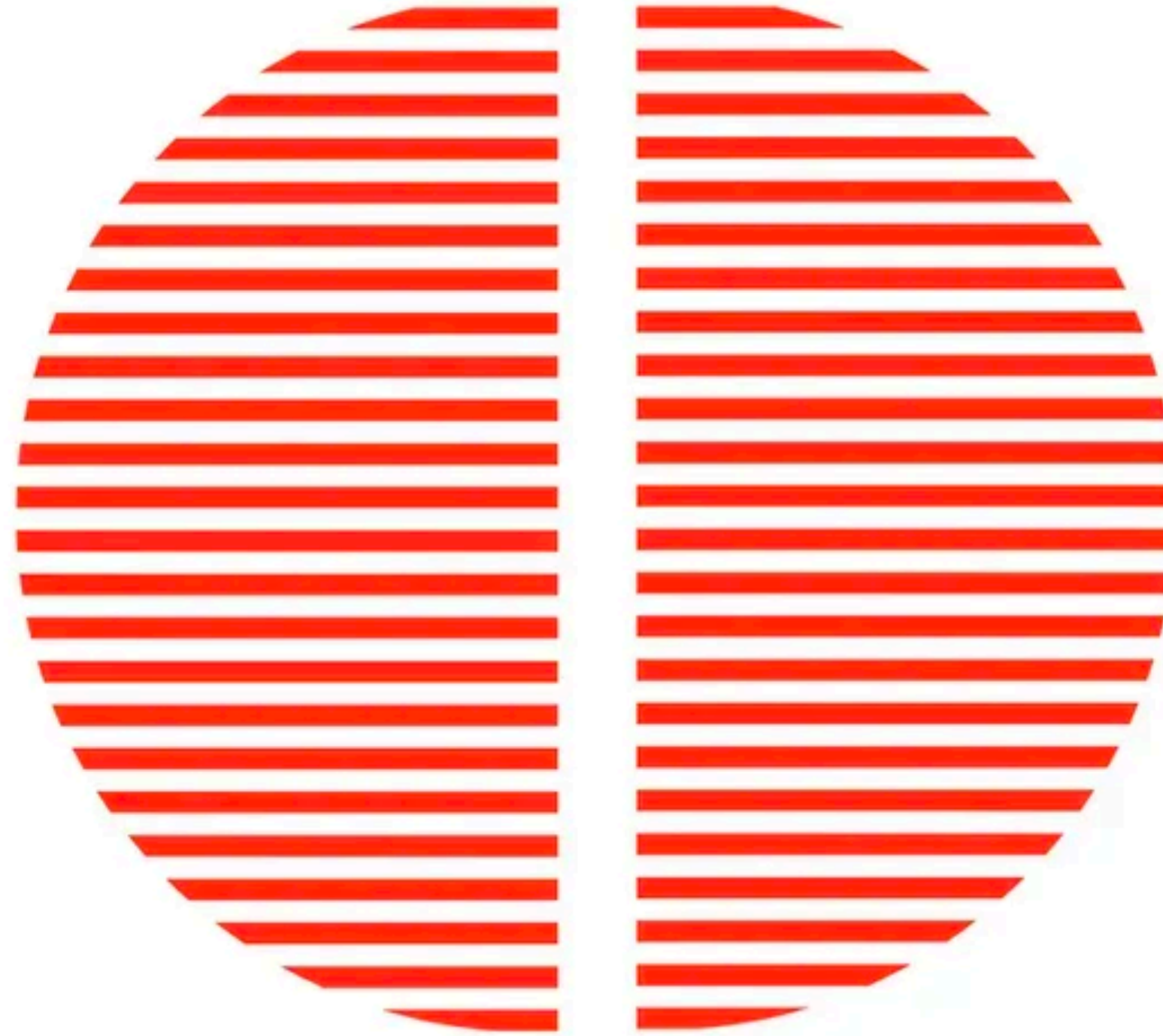
- 6 Good design is **honest.**
- 7 Good design makes a product **long-lasting.**
- 8 Good design is **thorough.**
- 9 Good design is **environmentally friendly.**
- 10 Good design is **as little design as possible.**





**Safety Pin  
1849**

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“Don’t make something unless  
it is both necessary and useful;  
but if it is both, don’t hesitate  
to make it beautiful.”



“Don’t make something unless  
it is both **necessary** and **useful**;  
but if it is both, don’t hesitate  
to make it **beautiful**.”

**Need**

A use case

+

**Function**

What it does

+

**Form**

How it looks



# Does form affect function?

Can the shape of an object tell me  
something about how it should be  
used?



# Signifiers

Cues or signals that communicate where and how an action should be performed.

- A chair's flat seat surface invites you to sit on it
- A blinking cursor in a text box signals you can type.
- An underline on a hyperlink indicates that you can click it



# Affordances

The action possibilities of an object — what the object allows you to do.

- A chair affords sitting.
- A button affords pressing.
- A text field affords typing.



# Affordances + Signifiers

Together

- **Affordance:** What can be done.
- **Signifier:** How you know what can be done.











# What is Ergonomics?

Ergonomics is a scientific discipline that addresses the effective design of products, work environments and more.



# What is Ergonomics?

Ergonomics is a scientific discipline that addresses the effective design of products, work environments and more.

In user experience (UX) design, it refers to how designers streamline digital products to minimize effort, movement and cognitive loads for users, so lessening their fatigue while improving productivity and—by association—a product's desirability.



# What is Ergonomics?

The study of people's efficiency in their working environment.

Ergon: work

Economos: economics

Good ergonomics reduces user fatigue, errors, and injuries, and improves efficiency and satisfaction.



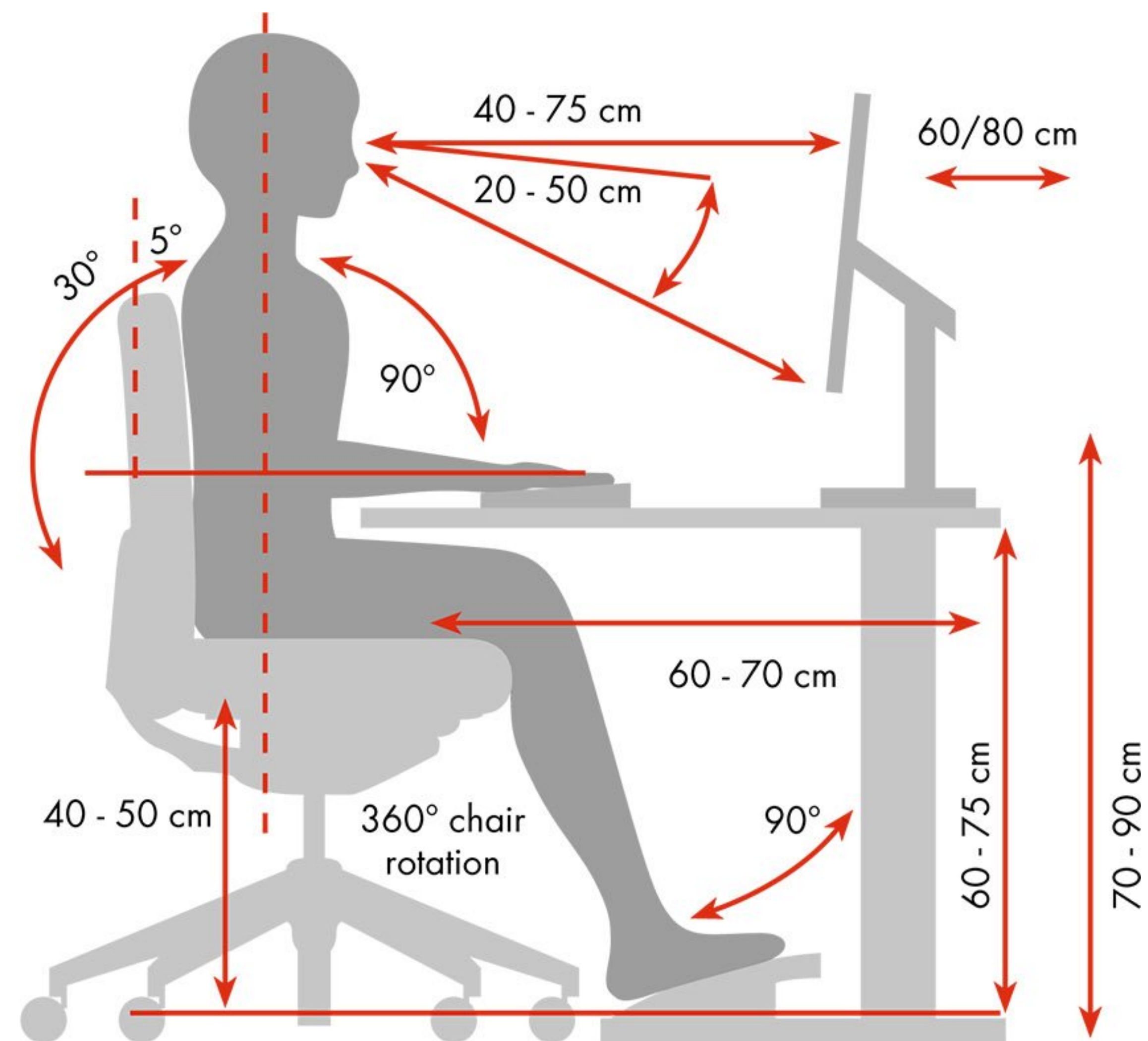
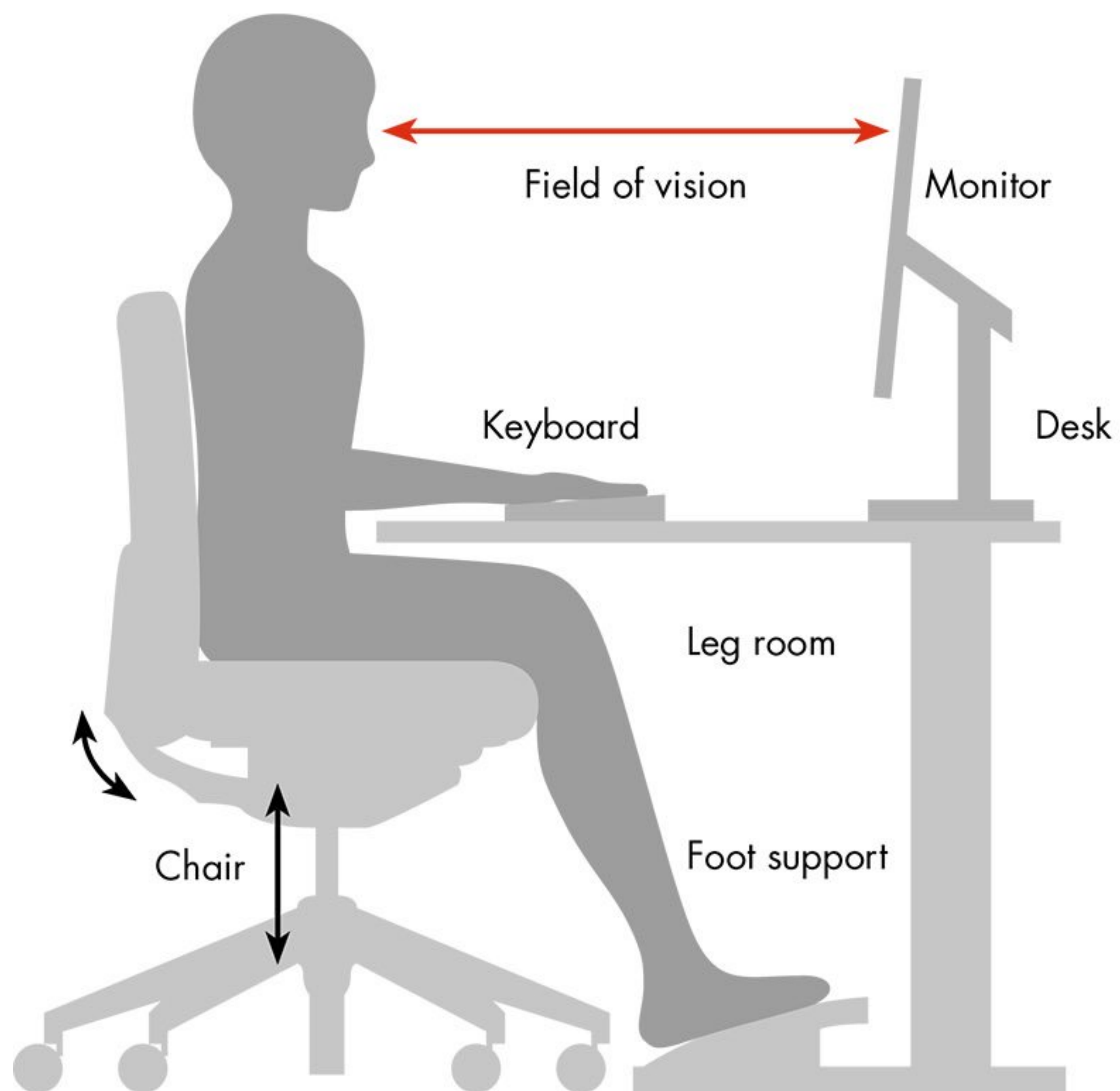
# Why bother studying Ergonomics?



**What would I need to know to design the Aeron chair so that it is comfortable for everyone?**









# Class Objectives

By the end of this course, you should be able to:

1. Identify ergonomic issues
2. In physical and digital interfaces
3. Apply human factors principles to design decisions
4. Design interfaces and products that align with human capabilities and limitations
5. Perform usability audits and evaluations on products for ergonomics issues and propose solutions