



# A career in software engineering... How does that look like?

LAILA BOUGRIA

# Laila Bougria

hello



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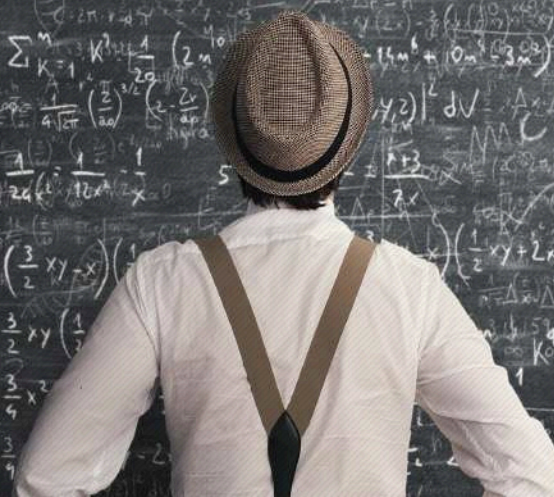


Particular  
Software




Microsoft®  
Most Valuable  
Professional

Don't you have to be a  
math genius  
to code?



A person wearing a grey hoodie and large headphones is sitting at a desk with multiple computer monitors. The person is typing on a keyboard. The monitors display various data, including code snippets, a world map, and a globe. The text "Sitting in front of a computer all day is not for me." is overlaid on the image in a large, white, sans-serif font.

Sitting in front of a computer all day is not for me.

The background of the image is a dark, almost black, space filled with a dense, intricate network of glowing lines and nodes. The lines are thin and curved, creating a sense of movement and flow. They are primarily blue and purple, with some orange and yellow highlights. The nodes are small, bright white or light blue spheres that serve as connection points for the lines. The overall effect is that of a complex, interconnected system, possibly representing a neural network, a data network, or a complex biological structure. The text is centered in the middle of the image, in a clean, white, sans-serif font.

That sounds way too  
complex & cryptic.

A 3D rendering of an office cubicle farm. The cubicles are arranged in a grid pattern, receding into the distance. Each cubicle contains a desk with a computer monitor, keyboard, mouse, and office chair. Some cubicles also have a desk lamp and a telephone. The overall scene is brightly lit, with a clean, modern aesthetic.

Isn't software  
engineering super  
boring?

Really?  
A woman  
who codes?

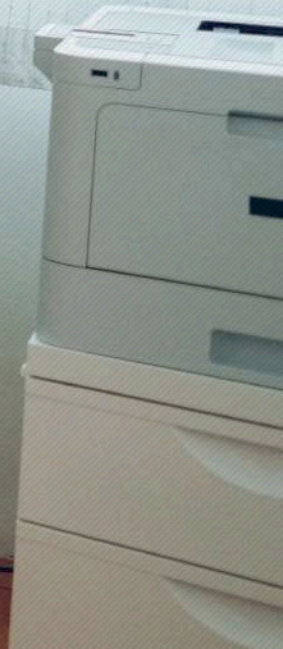


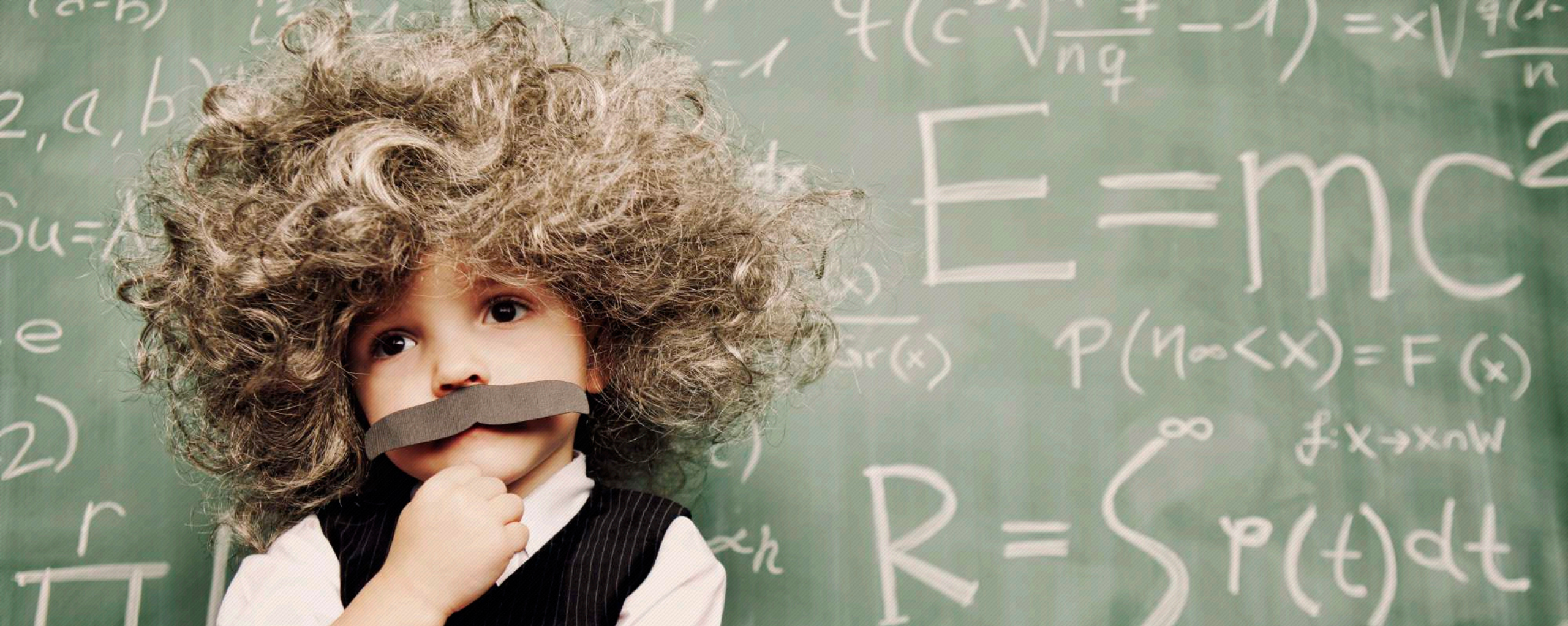




About that desk job...

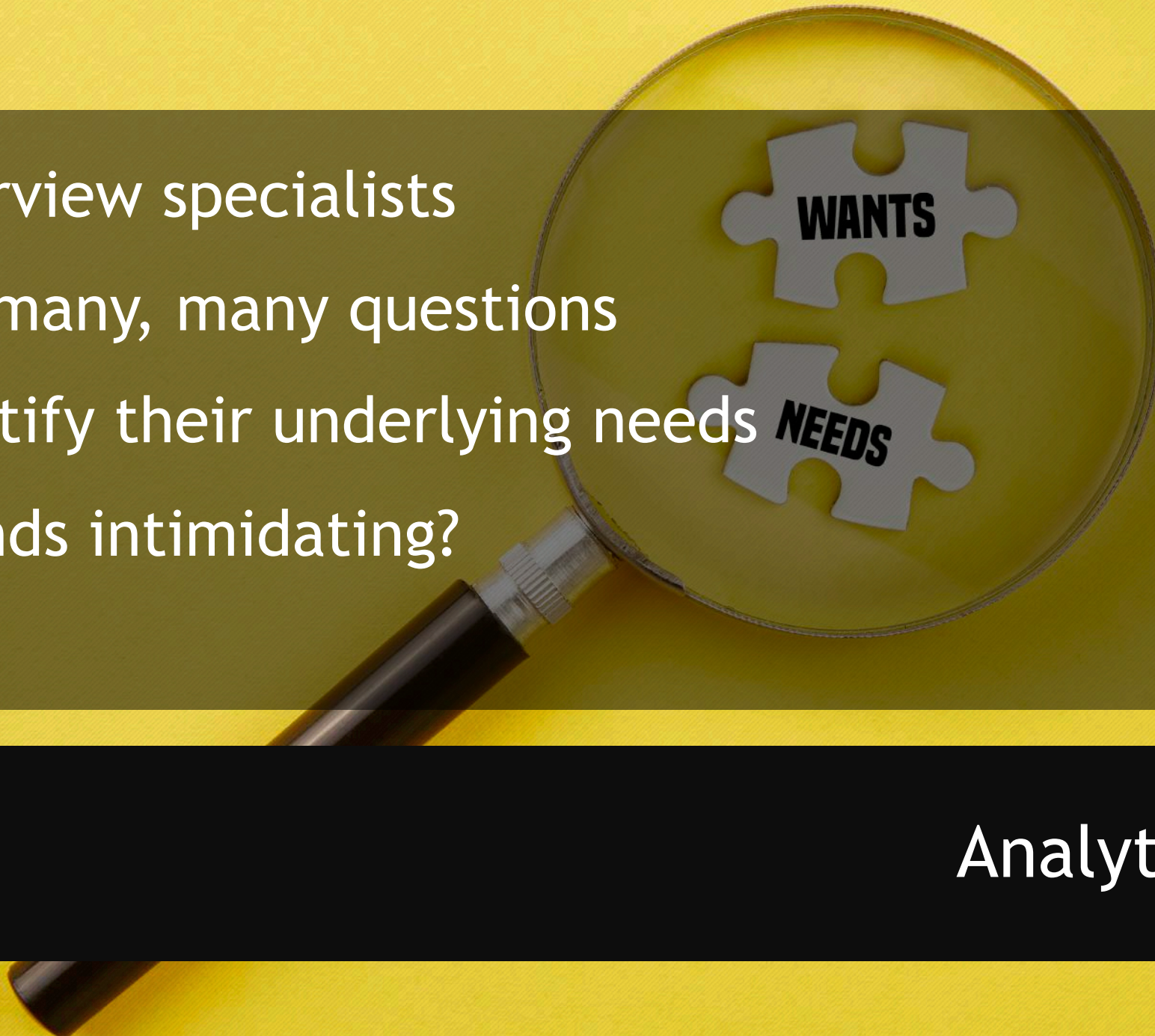




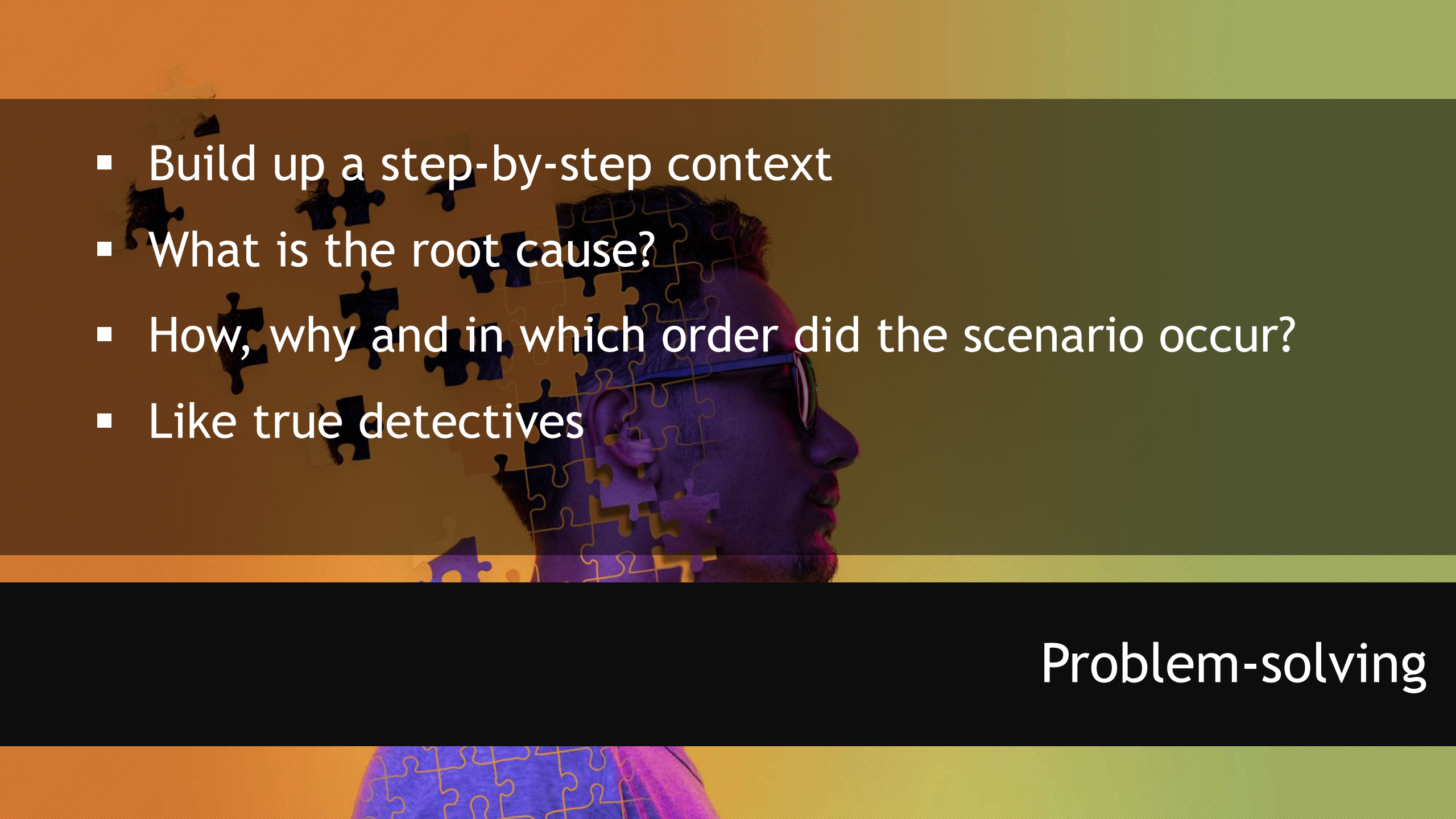


It's more about logic than it is about math

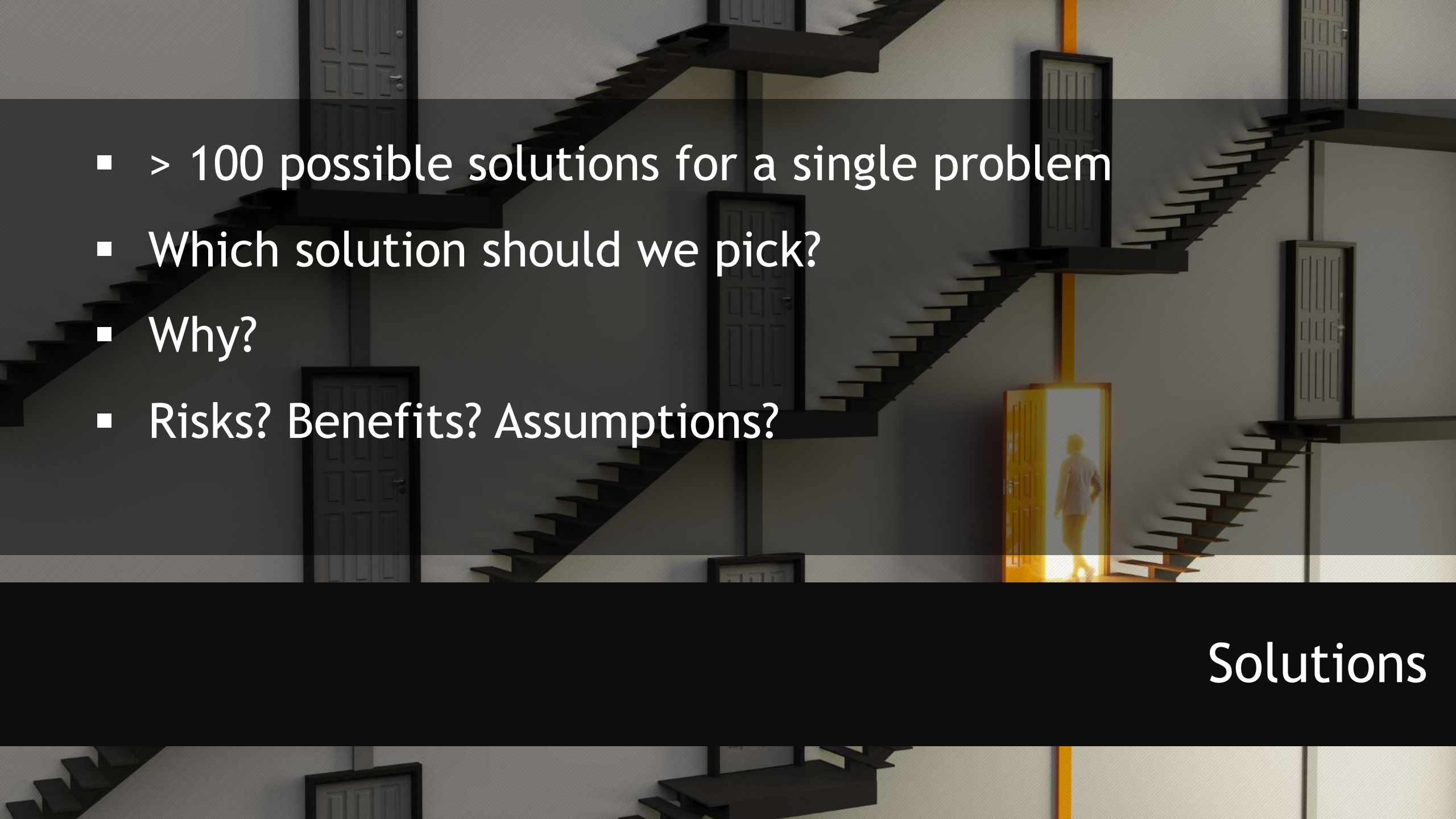
- Interview specialists
- Ask many, many questions
- Identify their underlying needs
- Sounds intimidating?



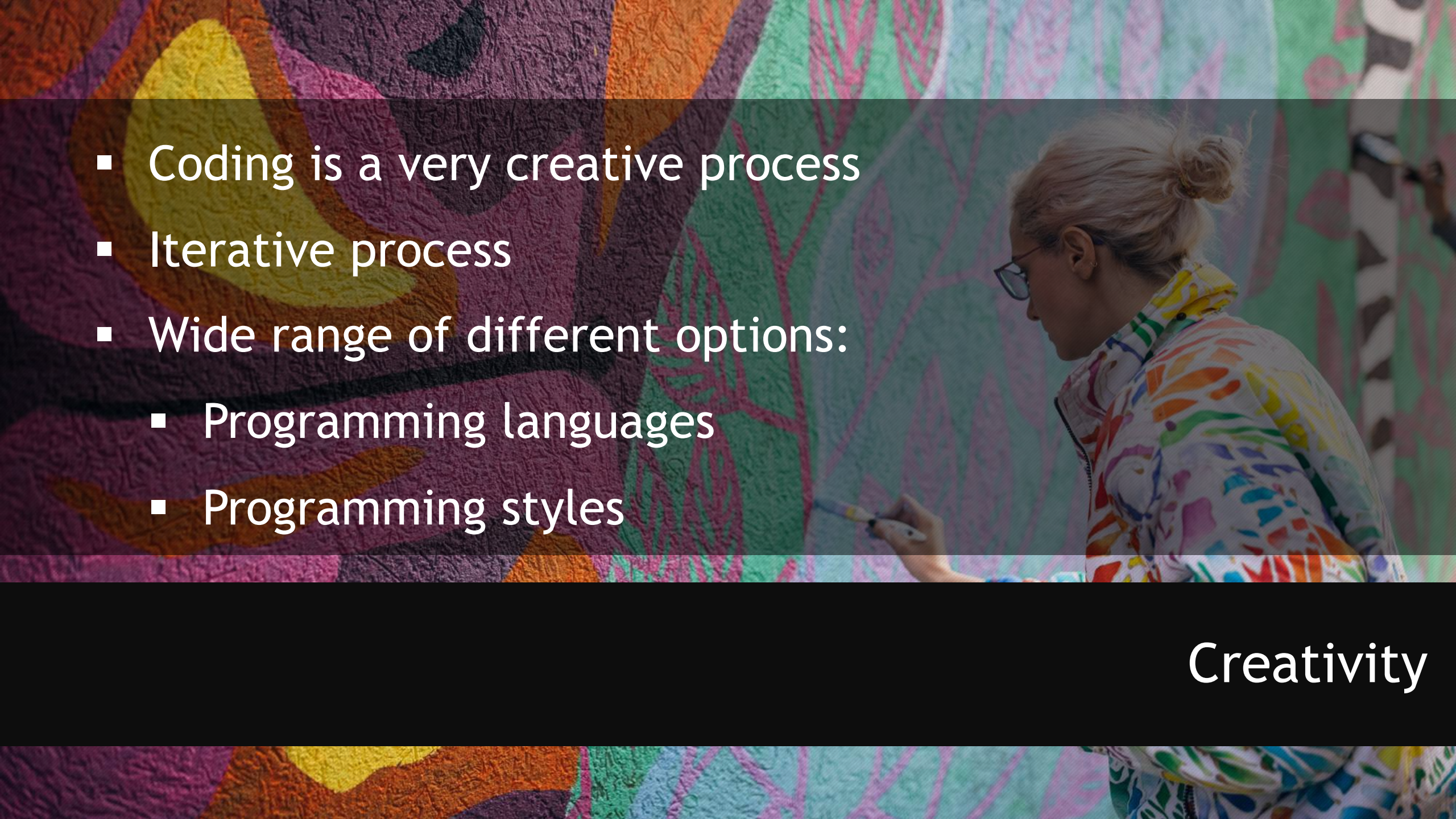
Analytical thinking

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- A man's profile is shown in silhouette, facing right. His head and neck are composed of interlocking puzzle pieces. The background is a gradient of orange, yellow, and green. The text is white and positioned on the left side of the image.
- Build up a step-by-step context
  - What is the root cause?
  - How, why and in which order did the scenario occur?
  - Like true detectives

Problem-solving

- 
- > 100 possible solutions for a single problem
  - Which solution should we pick?
  - Why?
  - Risks? Benefits? Assumptions?

Solutions

- 
- A woman with blonde hair in a bun, wearing glasses and a colorful patterned jacket, is painting a large, vibrant abstract mural. The mural features various colors like purple, yellow, orange, green, and pink, with textured brushstrokes. She is holding a paintbrush and looking intently at her work.
- Coding is a very creative process
  - Iterative process
  - Wide range of different options:
    - Programming languages
    - Programming styles

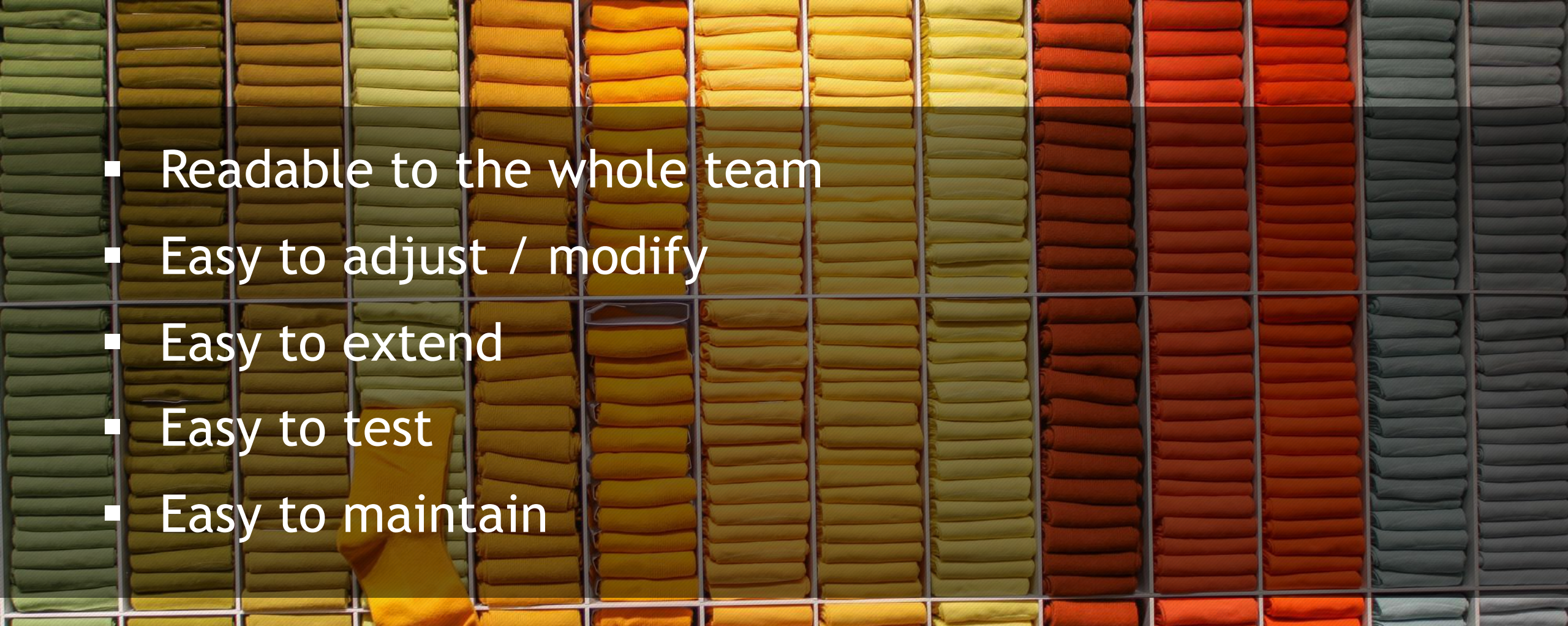
Creativity



Code is cryptic



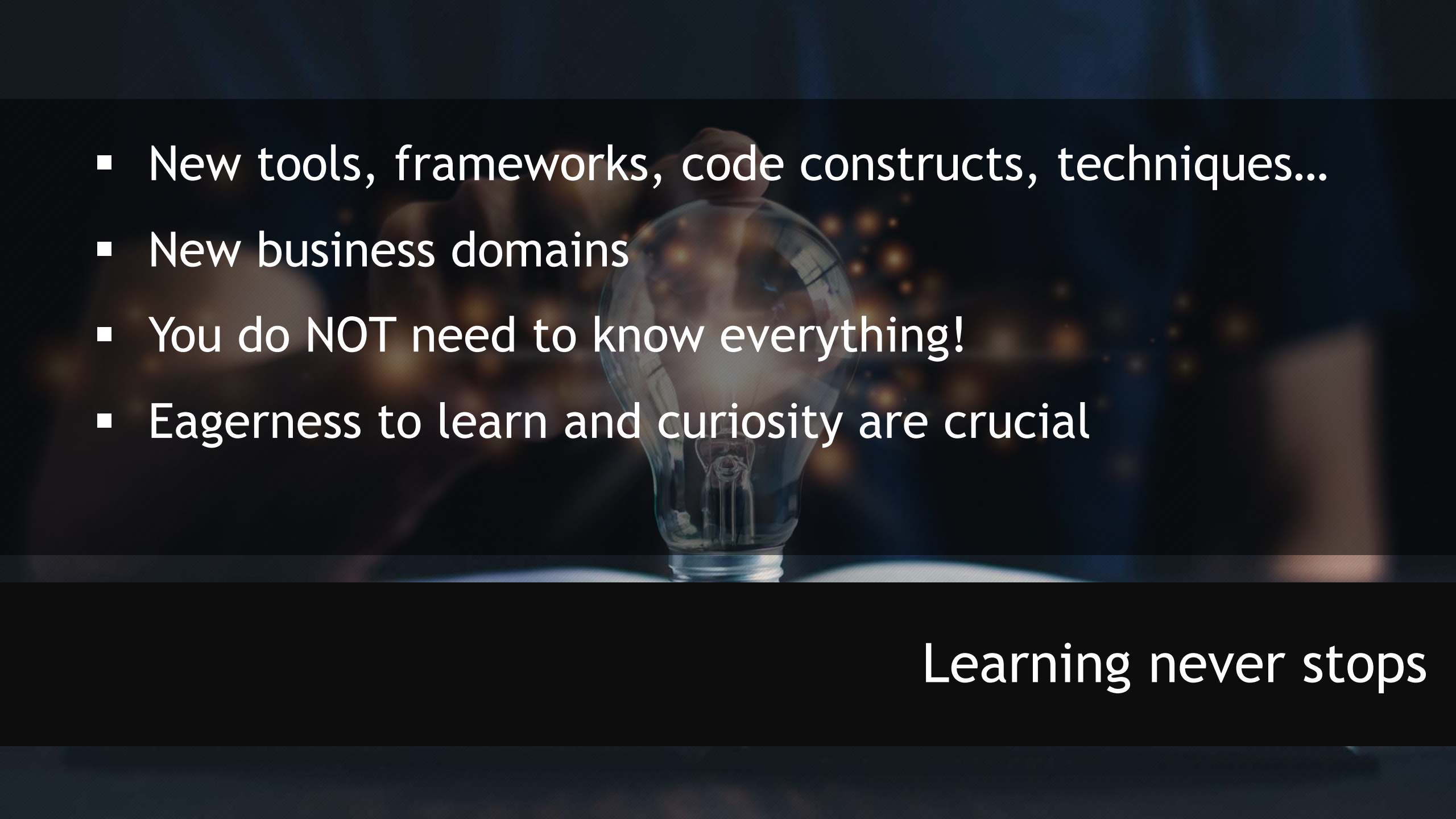
```
1 public static Delegate CreatePipelineExecutionExpression(this IBehavior[] behaviors, List<Expression> expressions = null)
2 {
3     Delegate lambdaExpression = null;
4     var behaviorCount = behaviors.Length - 1;
5     // We start from the end of the list know the lambda expressions deeper in the call stack in advance
6     for (var i = behaviorCount; i >= 0; i--)
7     {
8         var currentBehavior = behaviors[i];
9         var behaviorInterfaceType = currentBehavior.GetType().GetBehaviorInterface();
10        if (behaviorInterfaceType == null)
11        {
12            throw new InvalidOperationException("Behaviors must implement IBehavior<TInContext, TOutContext>");
13        }
14        // Select the method on the type which was implemented from the behavior interface.
15        var methodInfo = currentBehavior.GetType().GetInterfaceMap(behaviorInterfaceType).TargetMethods.FirstOrDefault();
16        if (methodInfo == null)
17        {
18            throw new InvalidOperationException("Behaviors must implement IBehavior<TInContext, TOutContext> and provide an invocation method.");
19        }
20
21        var genericArguments = behaviorInterfaceType.GetGenericArguments();
22        var inContextType = genericArguments[0];
23        var outContextType = genericArguments[1];
24
25        var inContextParameter = Expression.Parameter(inContextType, $"context{i}");
26
27        if (i == behaviorCount)
28        {
29            var doneDelegate = CreateDoneDelegate(outContextType, i);
30            lambdaExpression = CreateBehaviorCallDelegate(methodInfo, inContextParameter, currentBehavior.GetType(), doneDelegate, i, expressions);
31            continue;
32        }
33
34        lambdaExpression = CreateBehaviorCallDelegate(methodInfo, inContextParameter, currentBehavior.GetType(), lambdaExpression, i, expressions);
35    }
36
37    return lambdaExpression;
38 }
```

- 
- Readable to the whole team
  - Easy to adjust / modify
  - Easy to extend
  - Easy to test
  - Easy to maintain

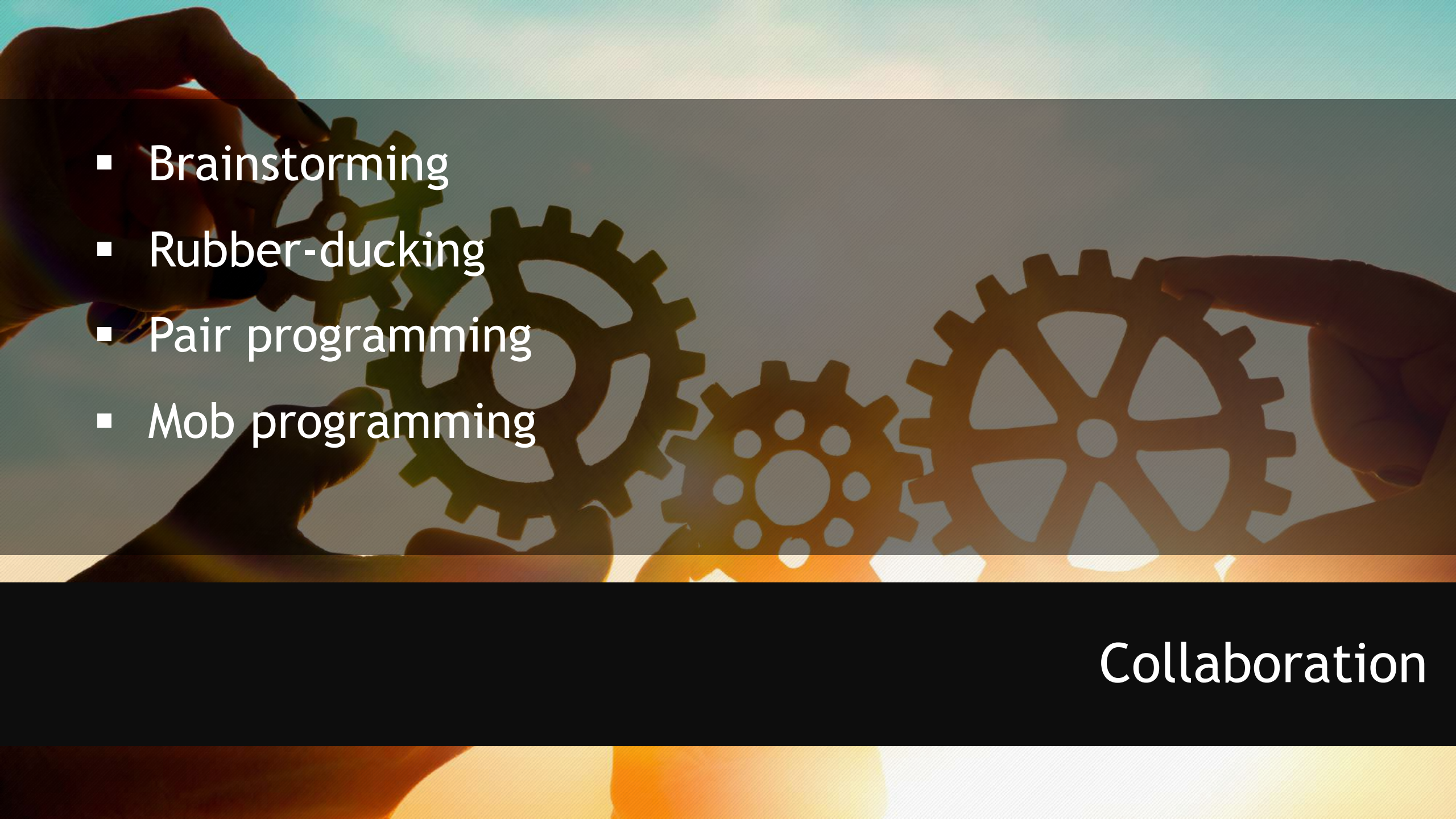
Clean code

# Clean code example

```
1 public void WhenASaleCompletes(Order order, Customer customer)
2 {
3     var nrOfOrders = dataStore.GetNumberOfFulfilledOrdersForCustomer(customer.Id);
4     if (nrOfOrders == 1)
5     {
6         // This is the customer's first order, let's grant them a discount code so they come back
7         GrantDiscountCode(customer.Id);
8     }
9
10    if (customer.IsRegularCustomer() && nrOfOrders == 100)
11    {
12        GrantGoldStatus(customer.Id);
13    }
14 }
```

- 
- A hand holding a glowing lightbulb against a dark background with bokeh lights.
- New tools, frameworks, code constructs, techniques...
  - New business domains
  - You do NOT need to know everything!
  - Eagerness to learn and curiosity are crucial

Learning never stops

- 
- The background of the slide features a silhouette of several hands interacting with a series of interlocking gears of various sizes. The scene is set against a soft, warm sunset or sunrise sky, with colors transitioning from a pale blue at the top to a bright orange and yellow at the bottom. The hands are positioned as if they are adjusting or turning the gears, symbolizing teamwork and collaboration.
- Brainstorming
  - Rubber-ducking
  - Pair programming
  - Mob programming

Collaboration

Twitter / Mastodon

StackOverflow

Conferences

Blogs

Official documentation

YouTube / Twitch

TikTok

User groups

Pluralsight

Discord groups

Webinars

LinkedIn Learning

Community

# Diversity in software engineering

A top-down view of several people's hands stacked together in a circle, symbolizing teamwork and diversity. The hands are of various skin tones and are positioned in a way that suggests a unified group. The background is a soft, out-of-focus light blue and white.

- Different backgrounds
- Different opinions & perspectives
- Different ideas
- Different approaches
- Significantly impacts the end product!





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t h a n k y o u