

Solving the fork dilemma

How we built a maintainable Matrix messenger

Strasbourg, 2025-10-18



A man with short dark hair, wearing a light blue dress shirt and a dark tie, is pointing his right index finger directly at the camera. He has a serious, urgent expression on his face, with his mouth slightly open as if speaking. The background is a plain, dark grey wall.

We need a Messenger!

A wide-angle photograph of a lush green field, likely a crop field, stretching to the horizon. The sky is a vibrant blue, filled with large, fluffy white cumulus clouds. The field is densely packed with green plants, possibly wheat or barley, and the horizon line is straight and level. The overall scene is bright and clear, suggesting a sunny day.

Greenfield.

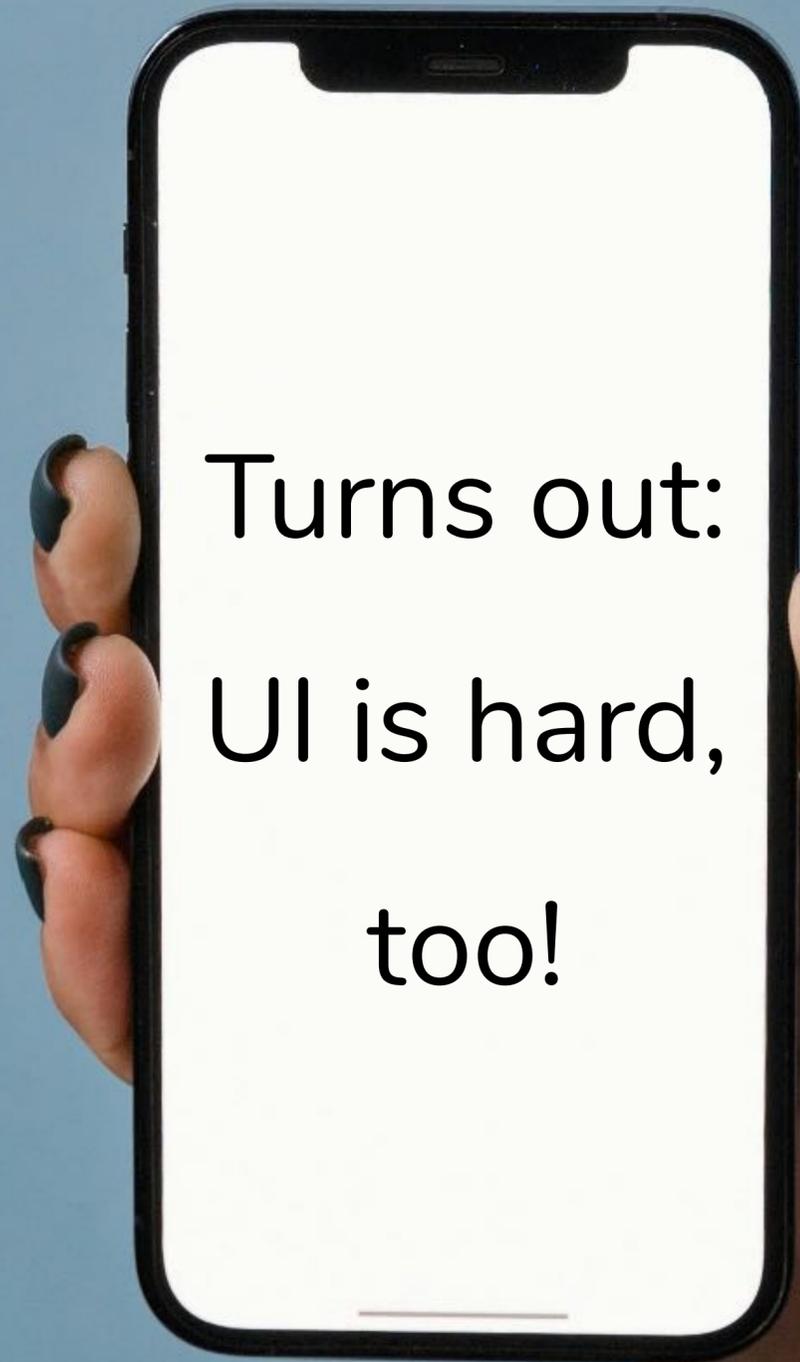
A wide-angle photograph of a lush green field, likely a crop field, stretching to the horizon. The sky is a vibrant blue, filled with large, fluffy white cumulus clouds. The field is densely packed with green plants, possibly wheat or barley, and the perspective is from a low angle, looking across the field towards the horizon.

Greenfield.

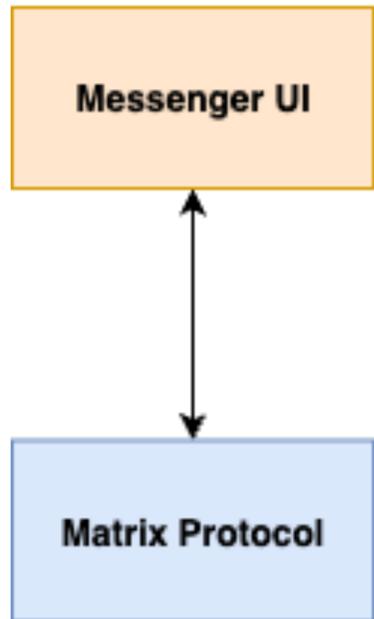
But: writing a Matrix Client is hard!

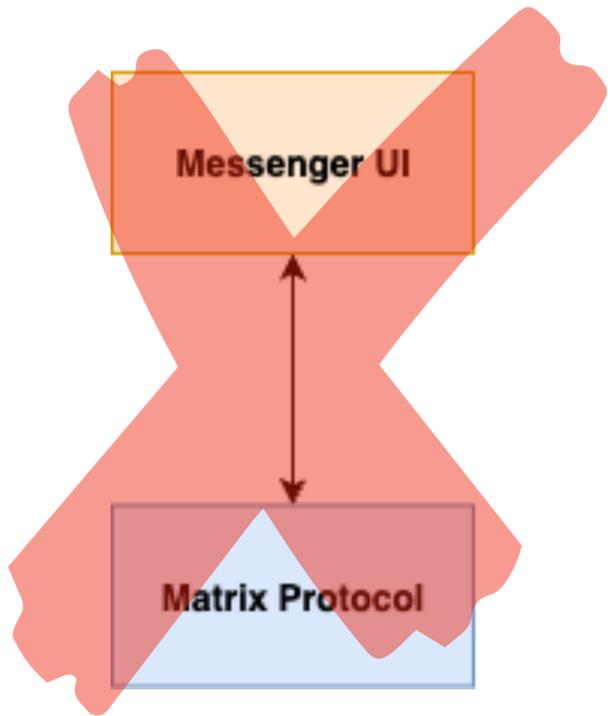


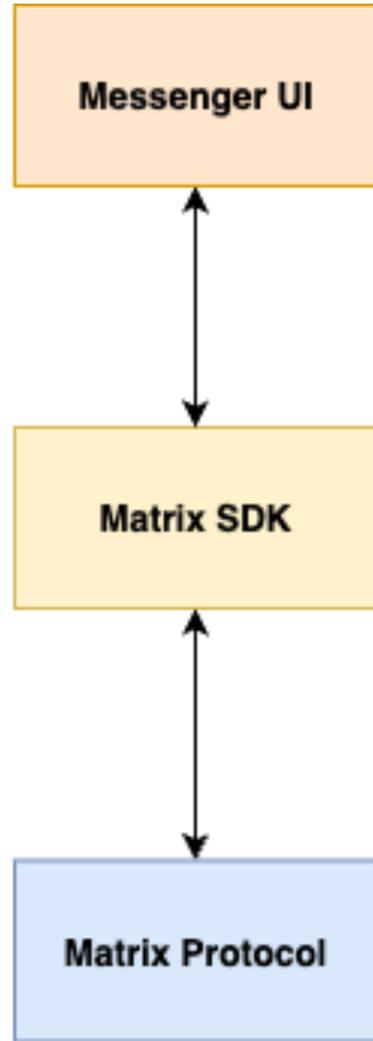
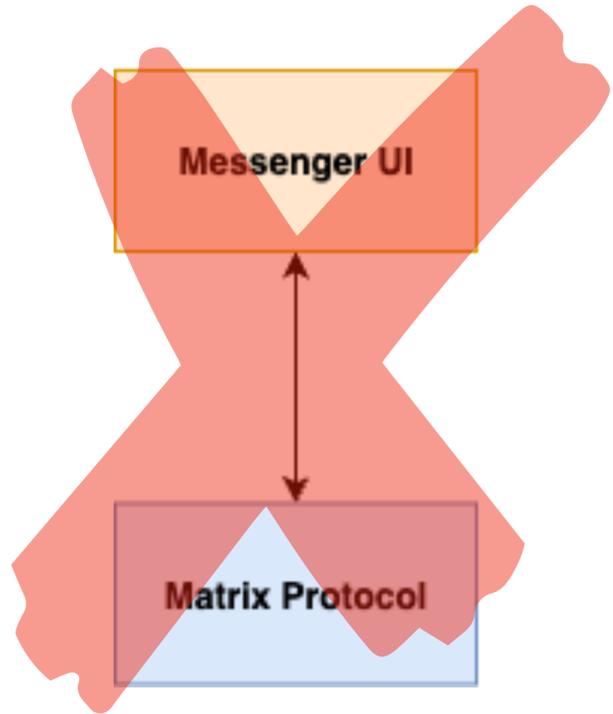
SDKs to the rescue!

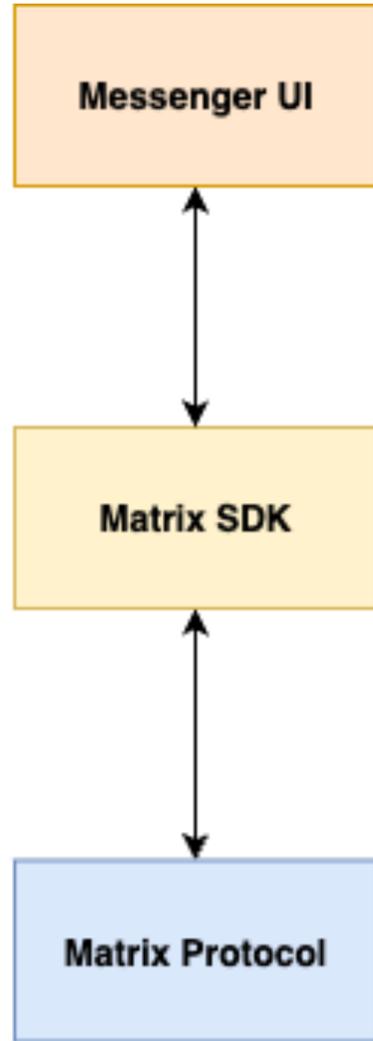
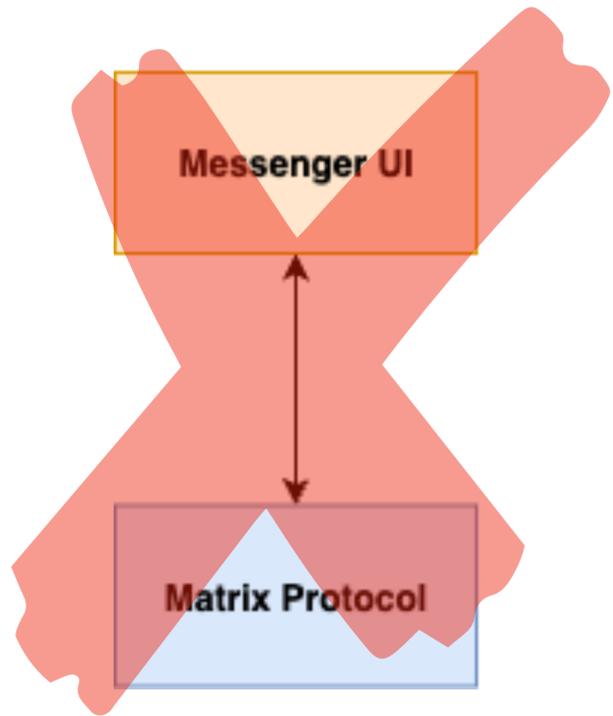


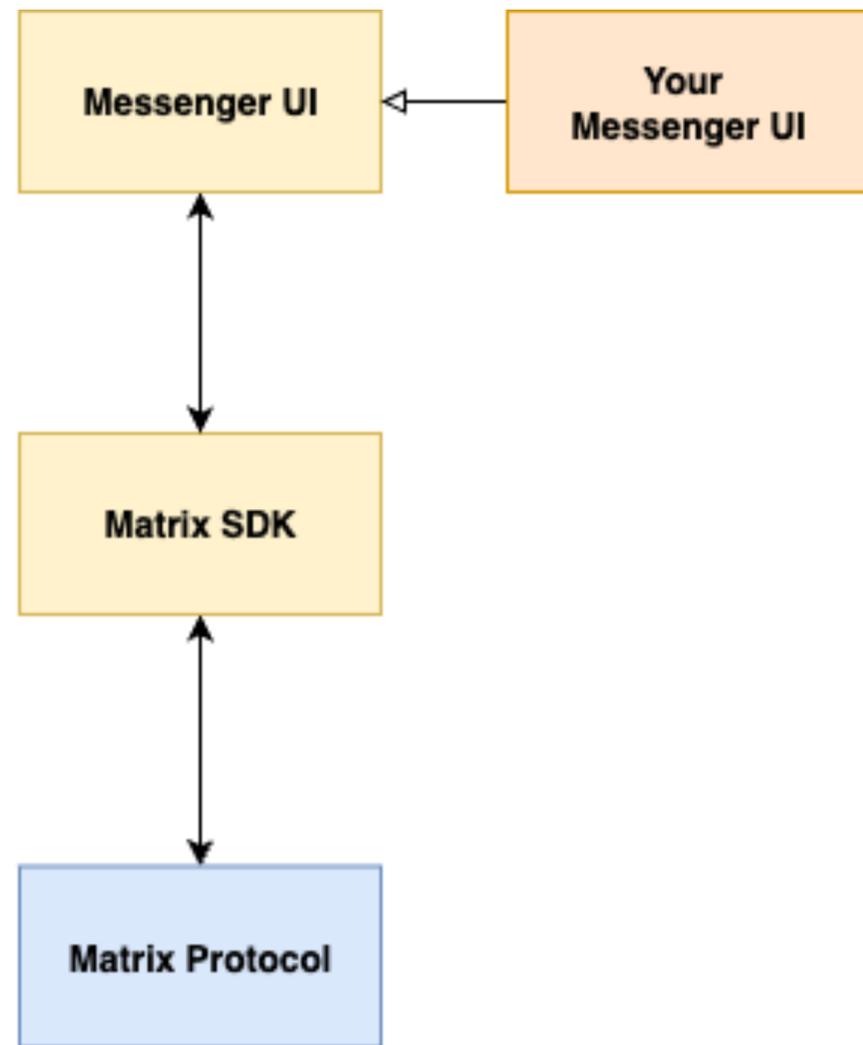
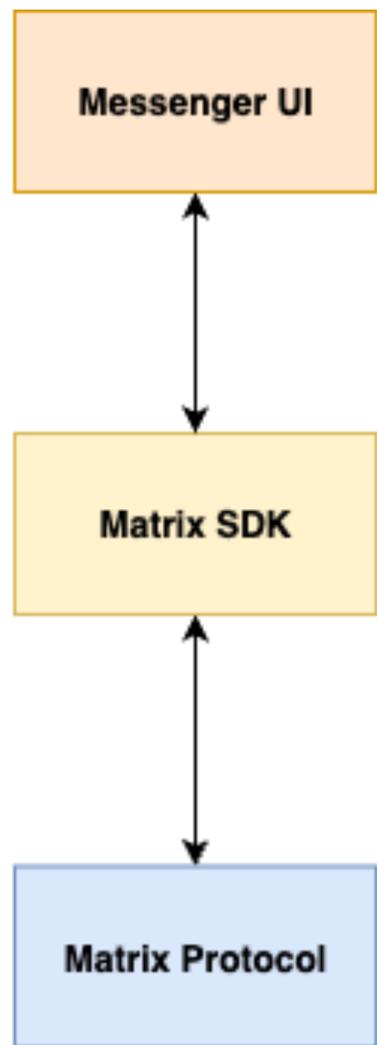
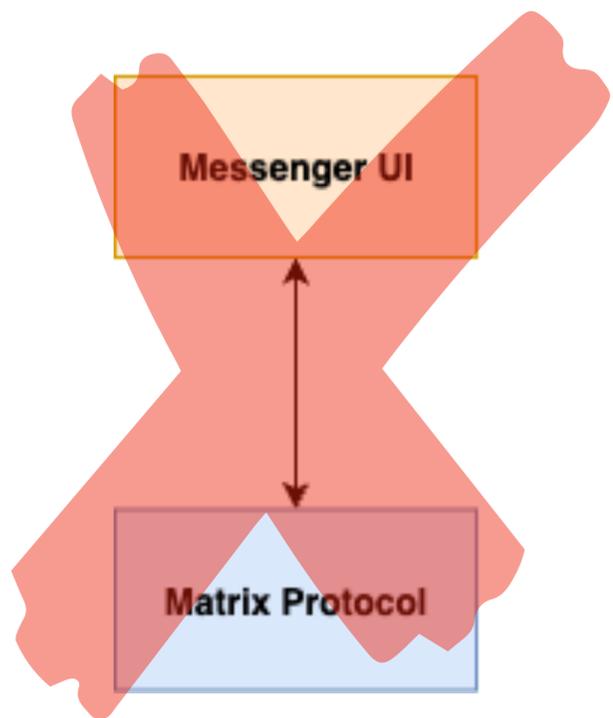
Turns out:
UI is hard,
too!

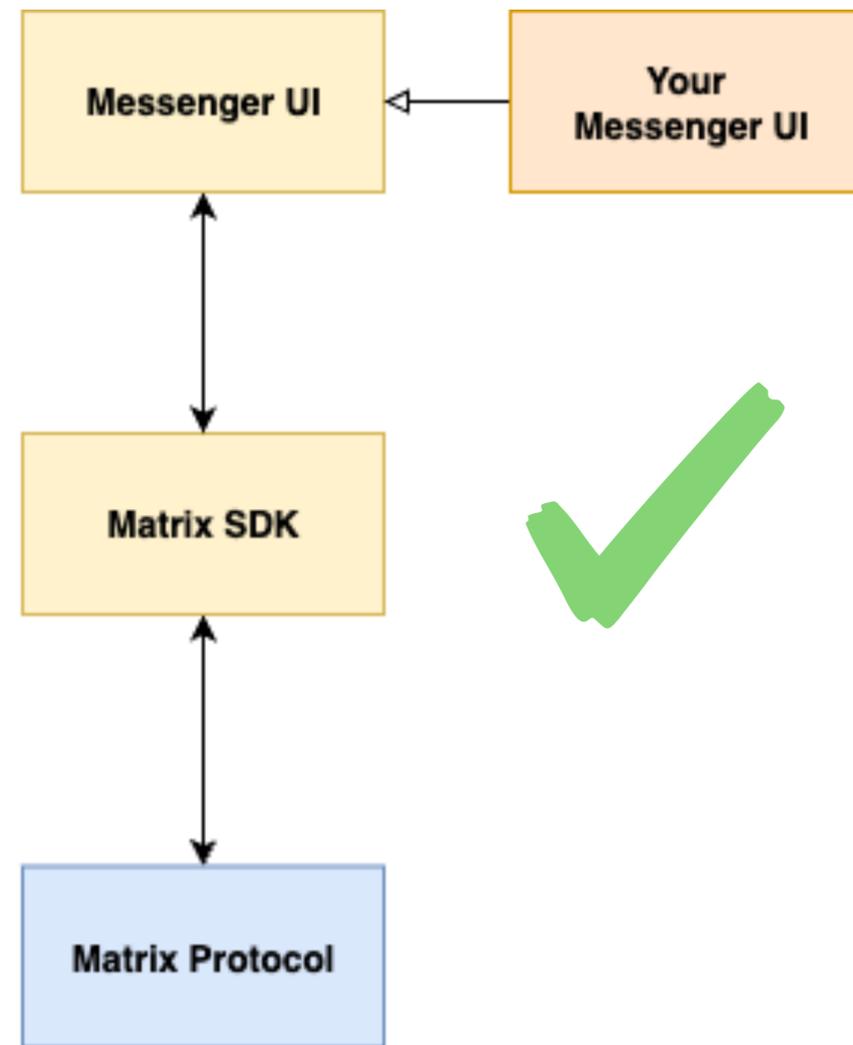
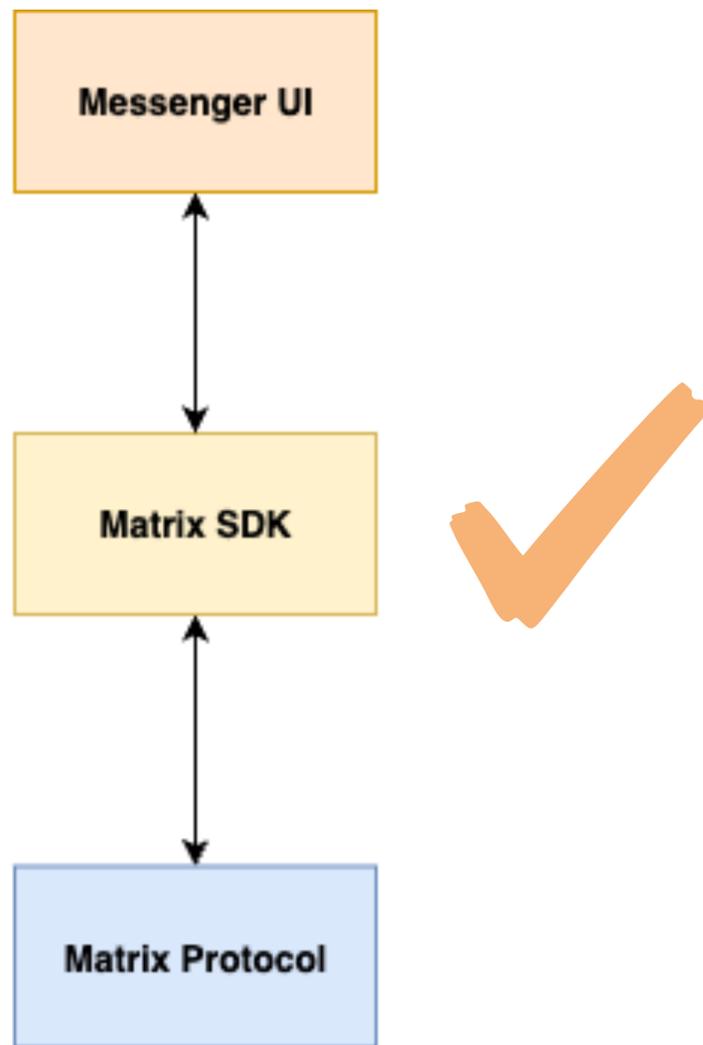
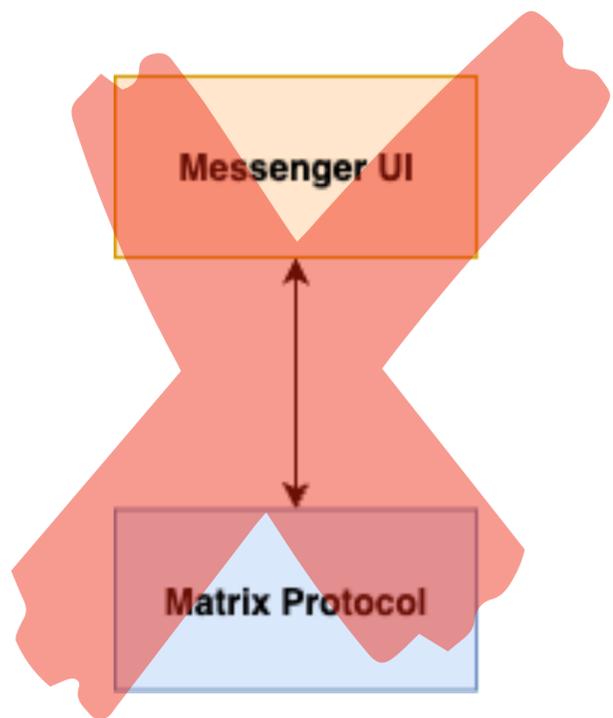






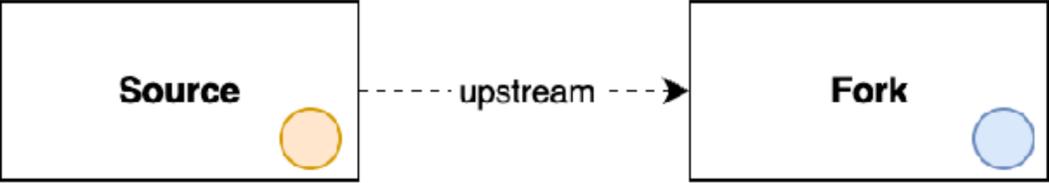




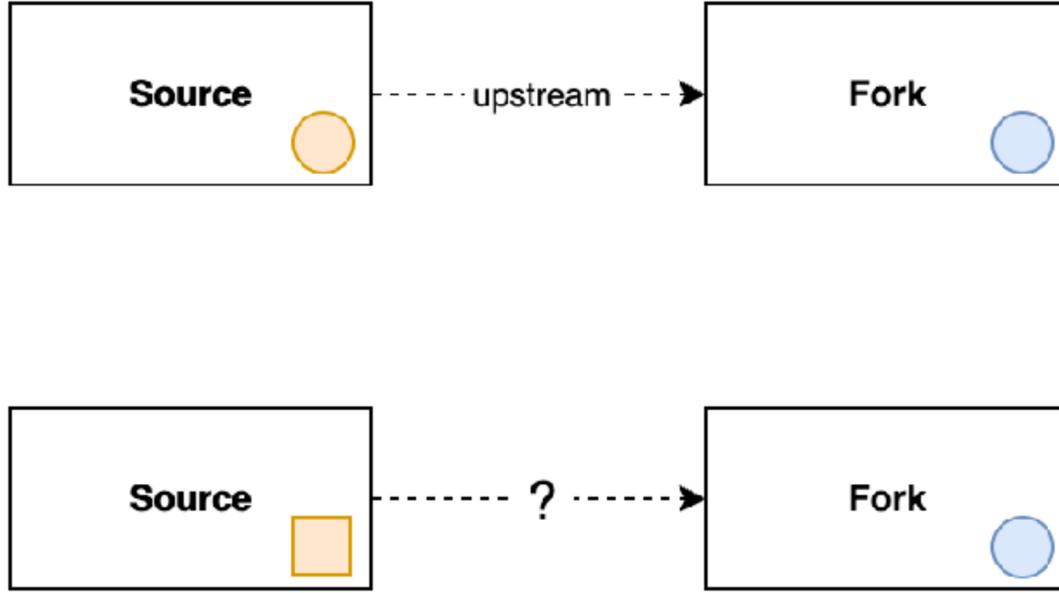




Let's fork!



time



time

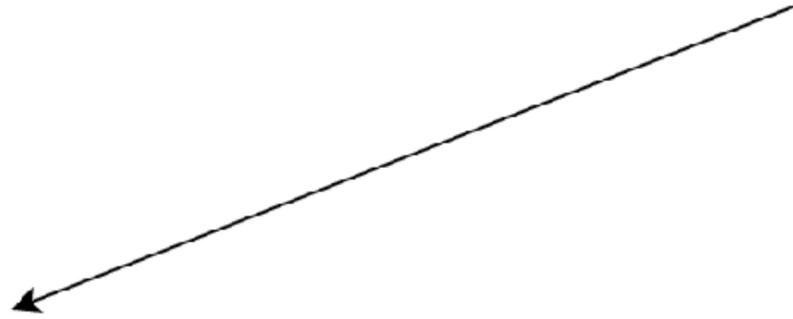
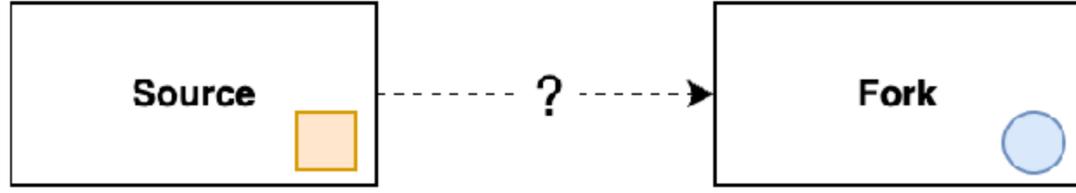
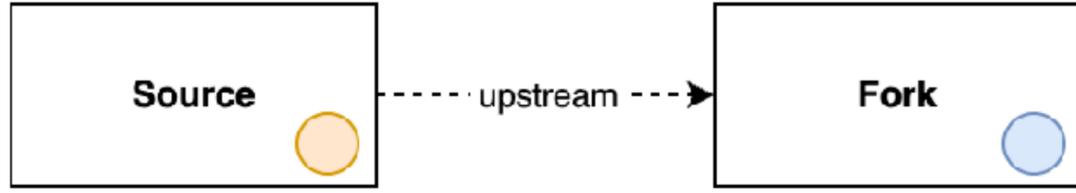


upstream

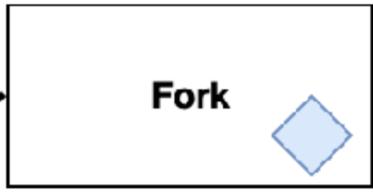
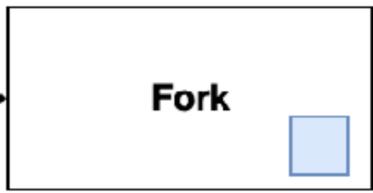
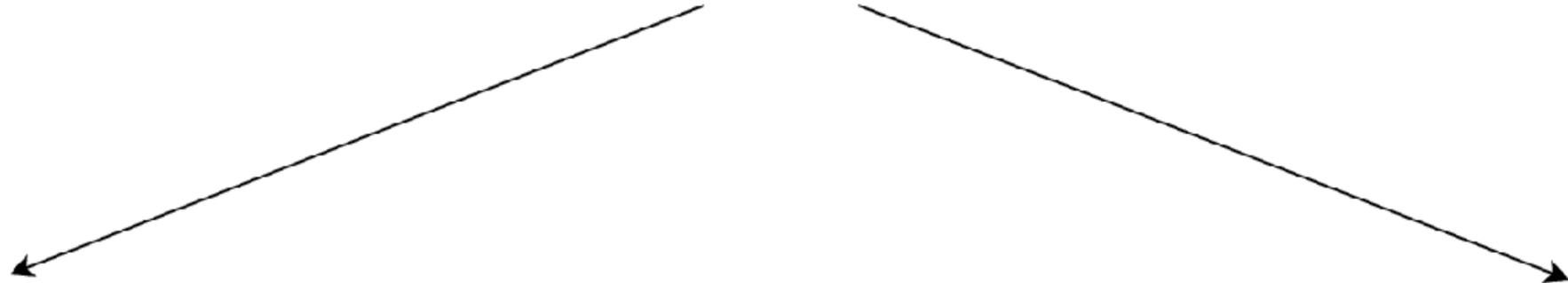
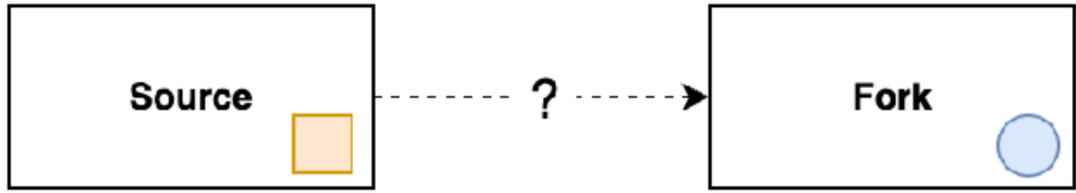
?



time



time



Pros

Cons



Pros

Cons

Easy

Fast results

All the power!





Pros

Cons

Easy

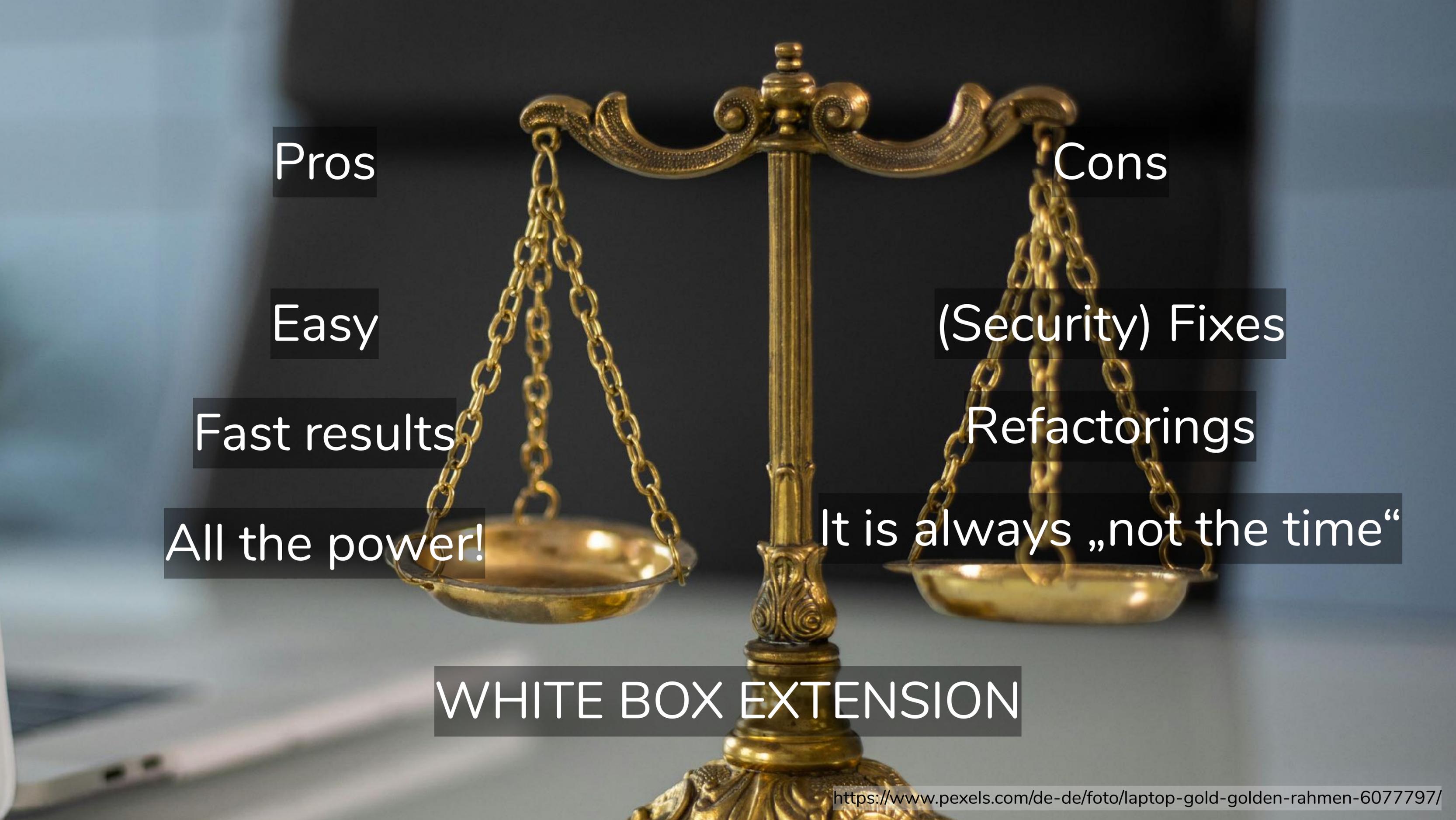
(Security) Fixes

Fast results

Refactorings

All the power!

It is always „not the time“



Pros

Cons

Easy

(Security) Fixes

Fast results

Refactorings

All the power!

It is always „not the time“

WHITE BOX EXTENSION

White Box Extensions



White Box Extensions

Developers have no control

over what is considered private

or public.



Black/Grey Box Extensions



Black/Grey Box Extensions

Developers define which part
is visible and can be extended.

—> API that can be stable





Fork

Extension





upstream

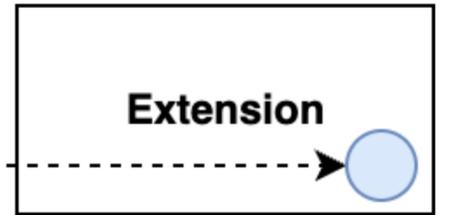


Fork

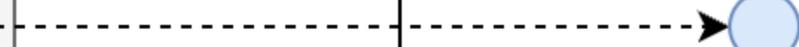
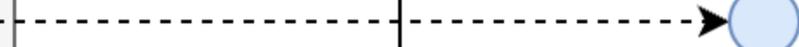
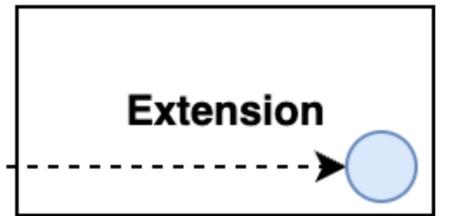
Extension



Interface
implementation



Replacement
(e.g. via Delegate Pattern)

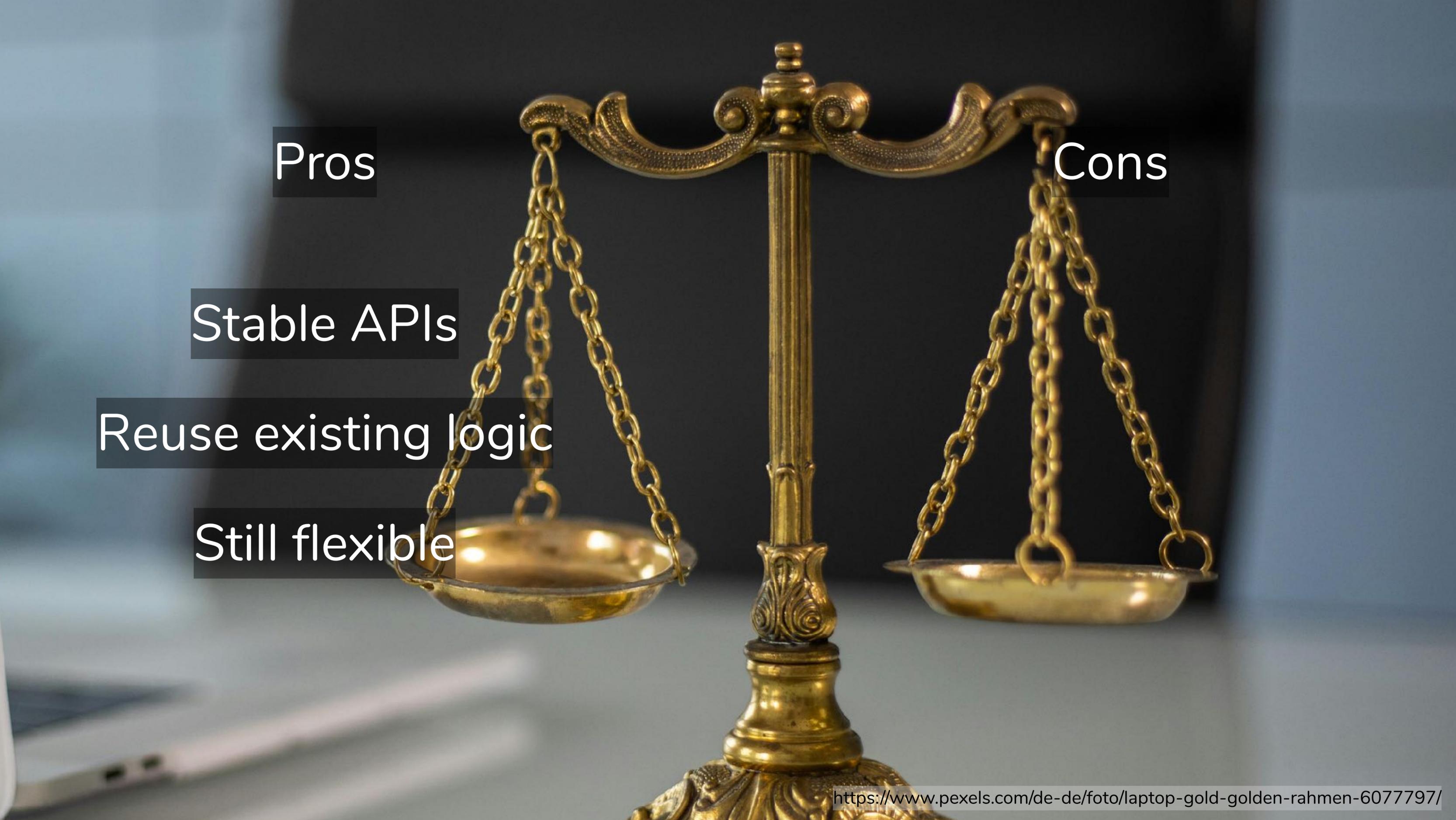


Too abstract - show us some code!

Pros

Cons





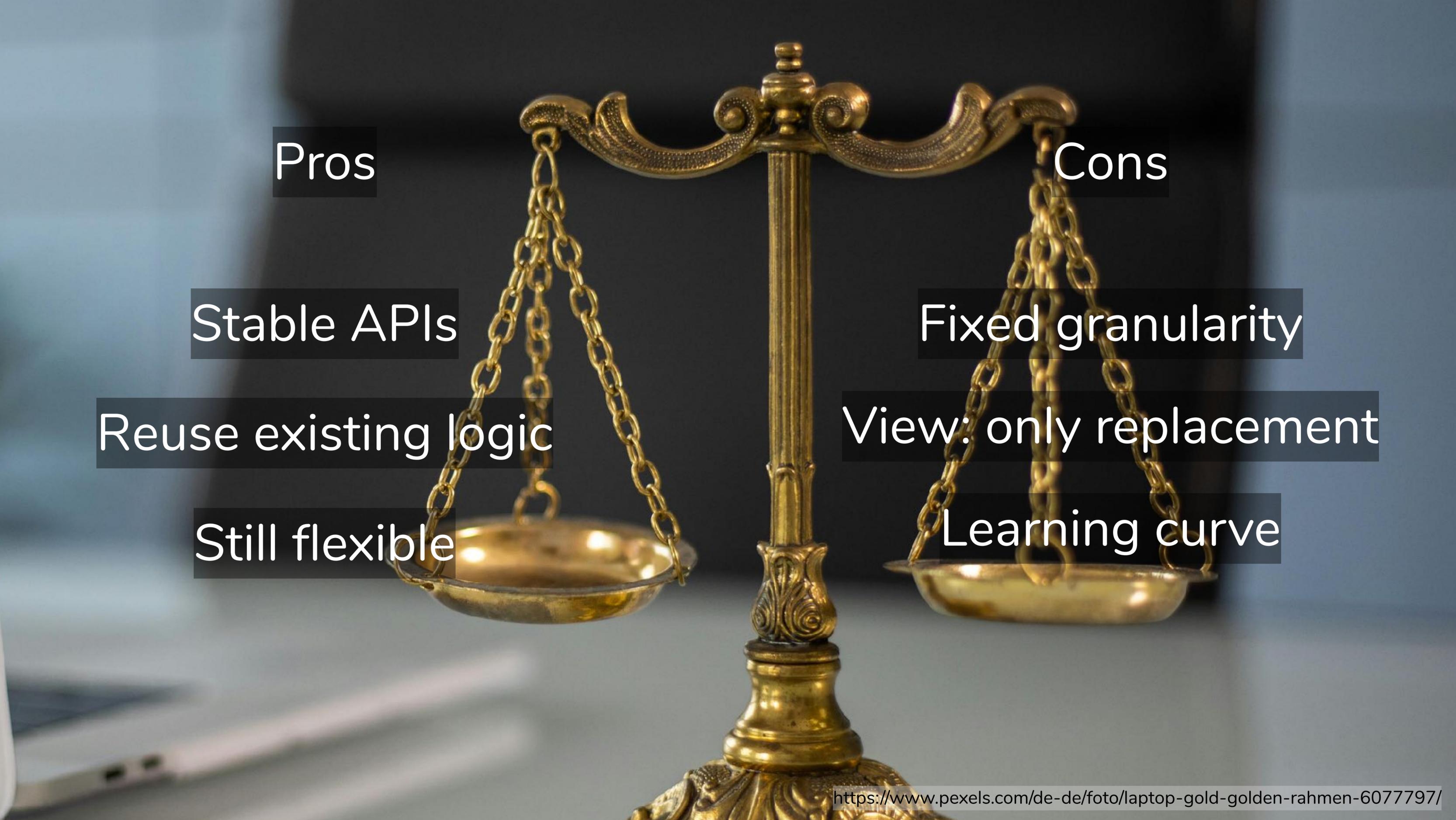
Pros

Cons

Stable APIs

Reuse existing logic

Still flexible



Pros

Stable APIs

Reuse existing logic

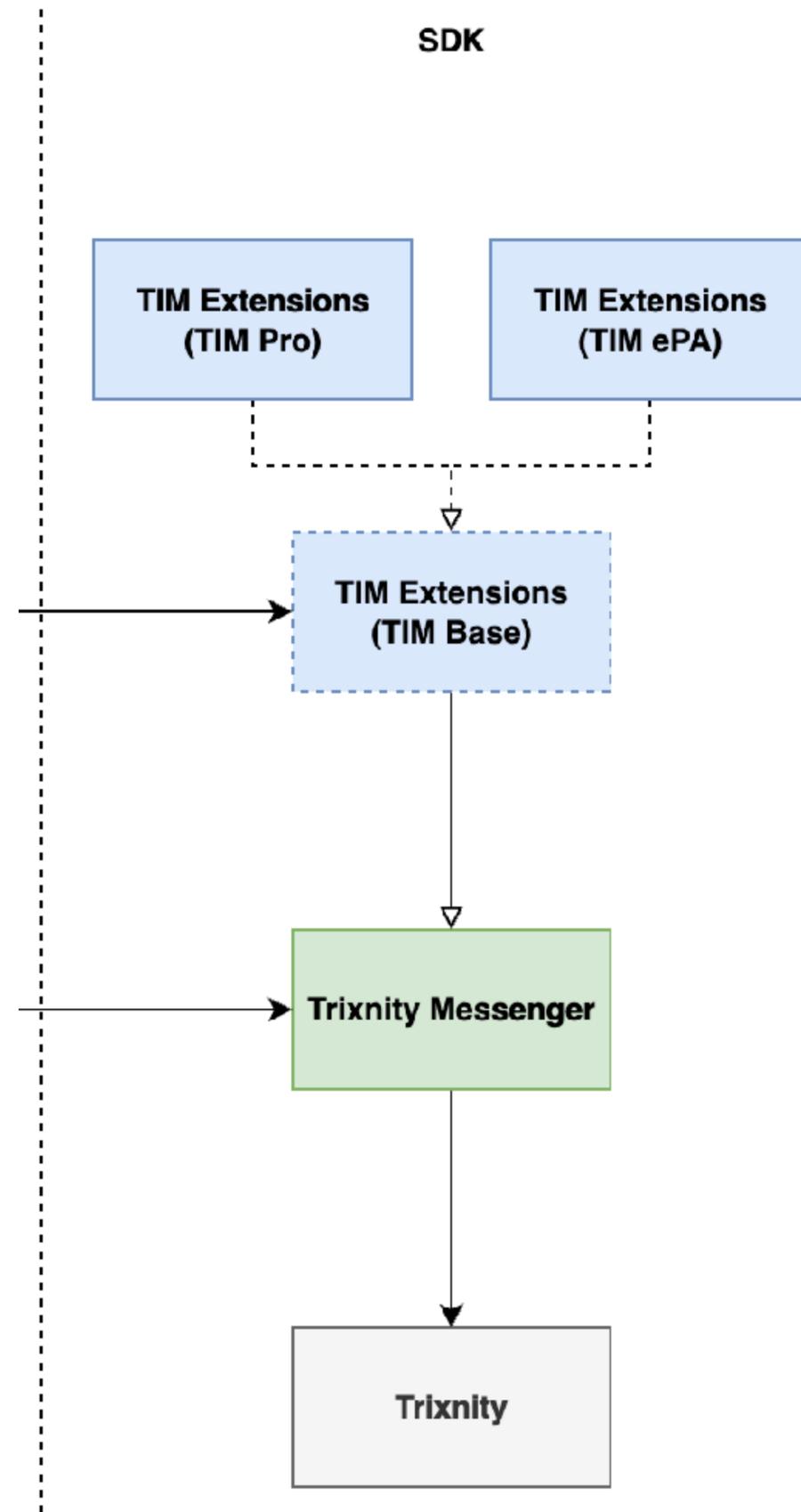
Still flexible

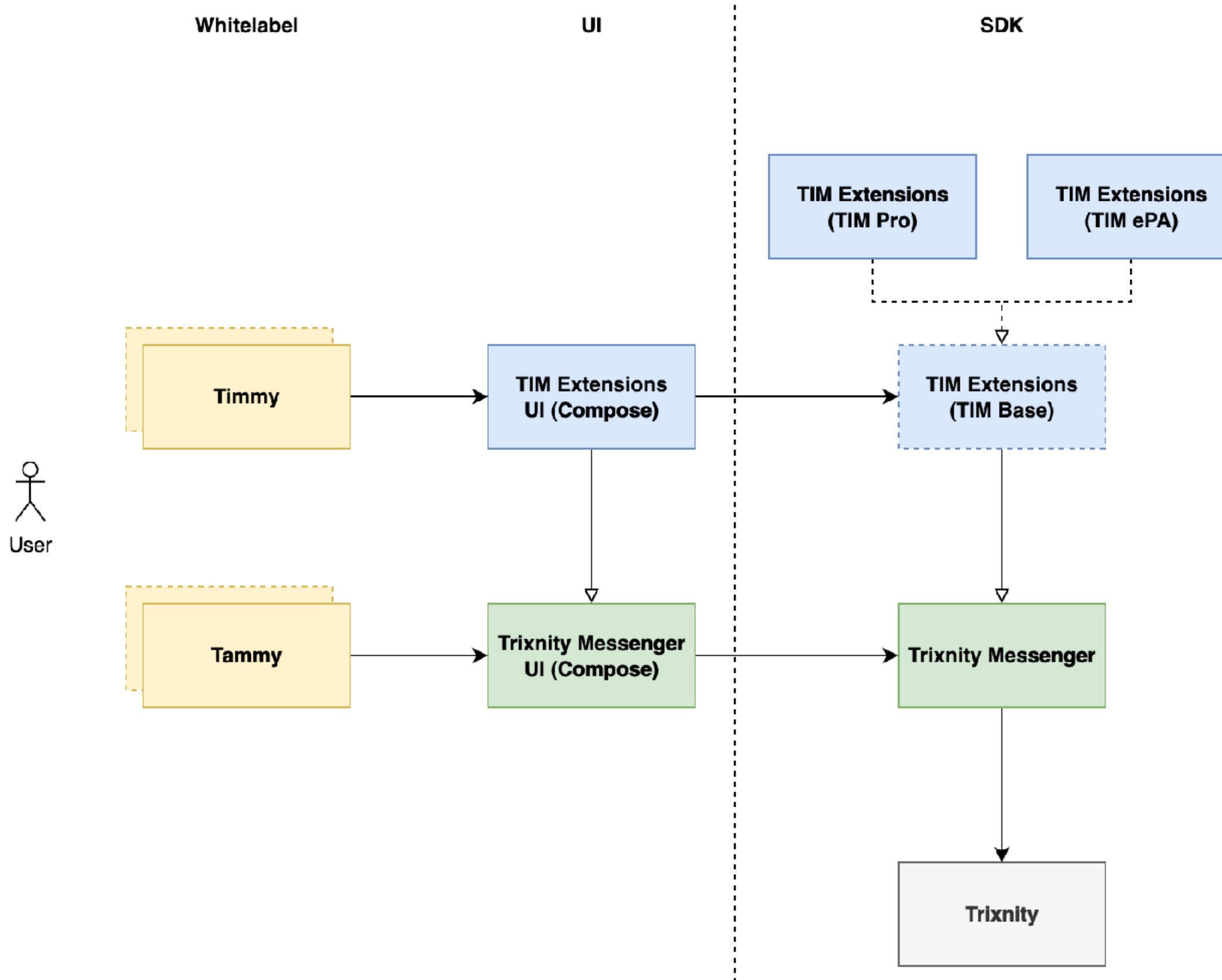
Cons

Fixed granularity

View: only replacement

Learning curve





Value

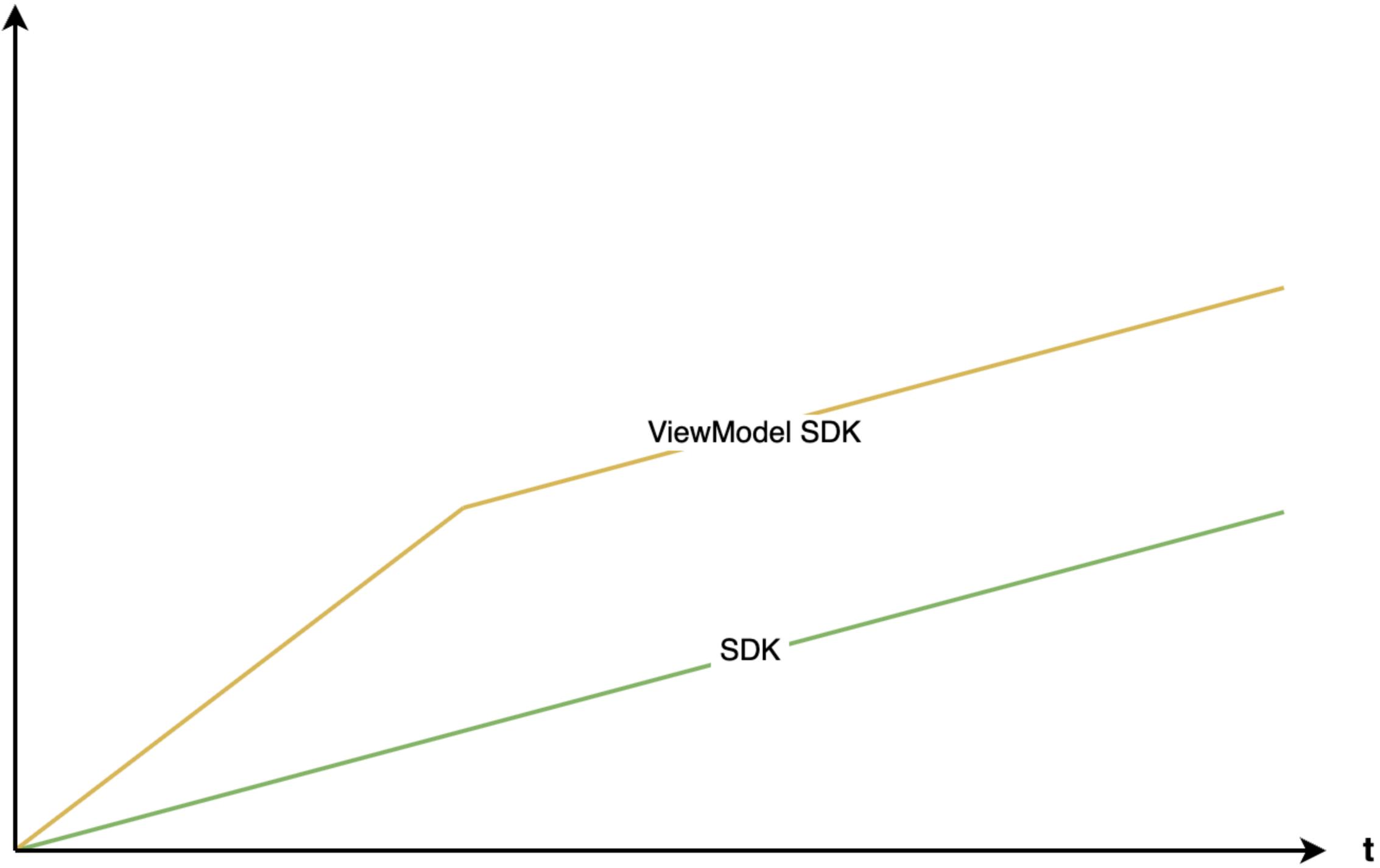


t

SDK



Value

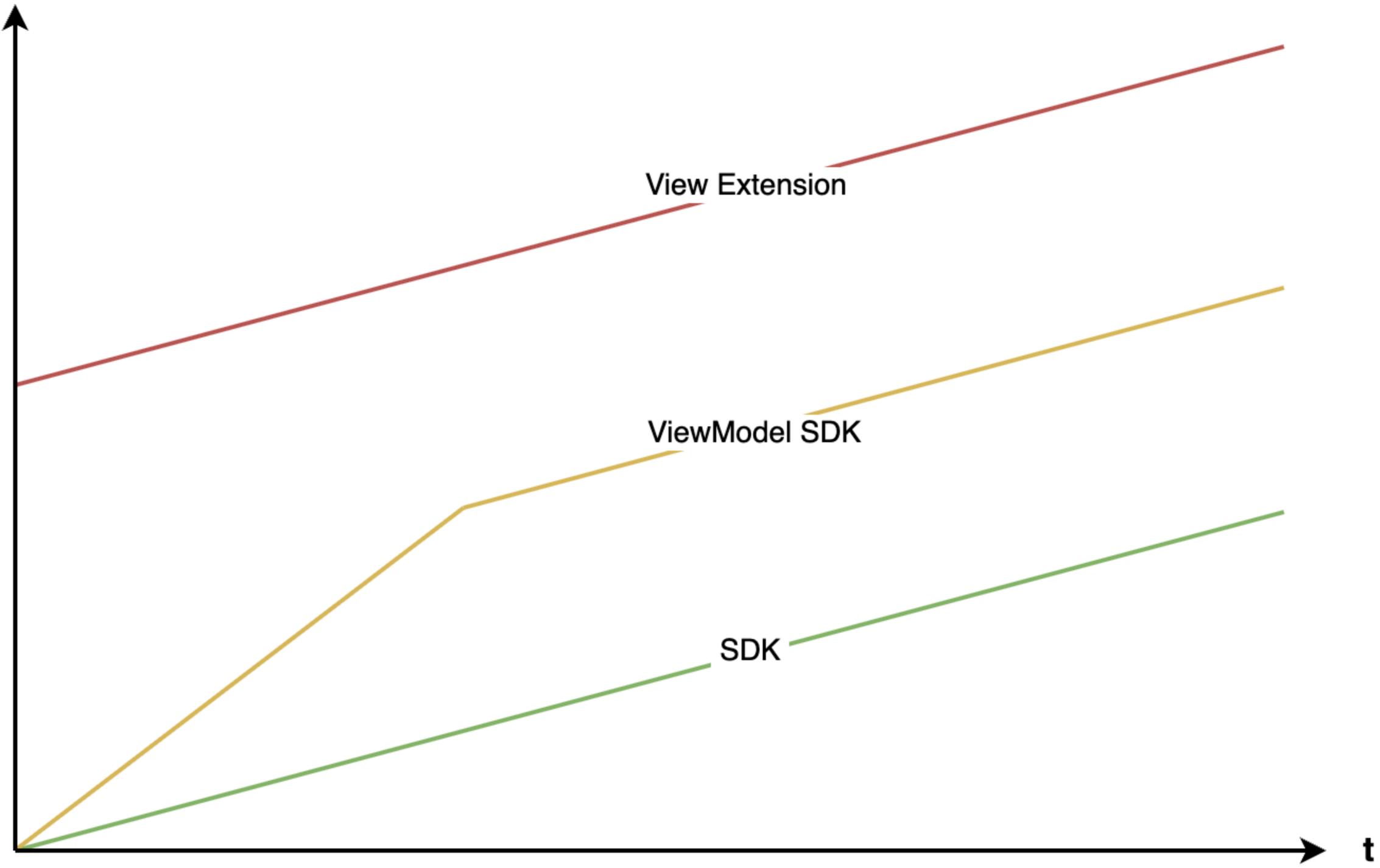


ViewModel SDK

SDK

t

Value



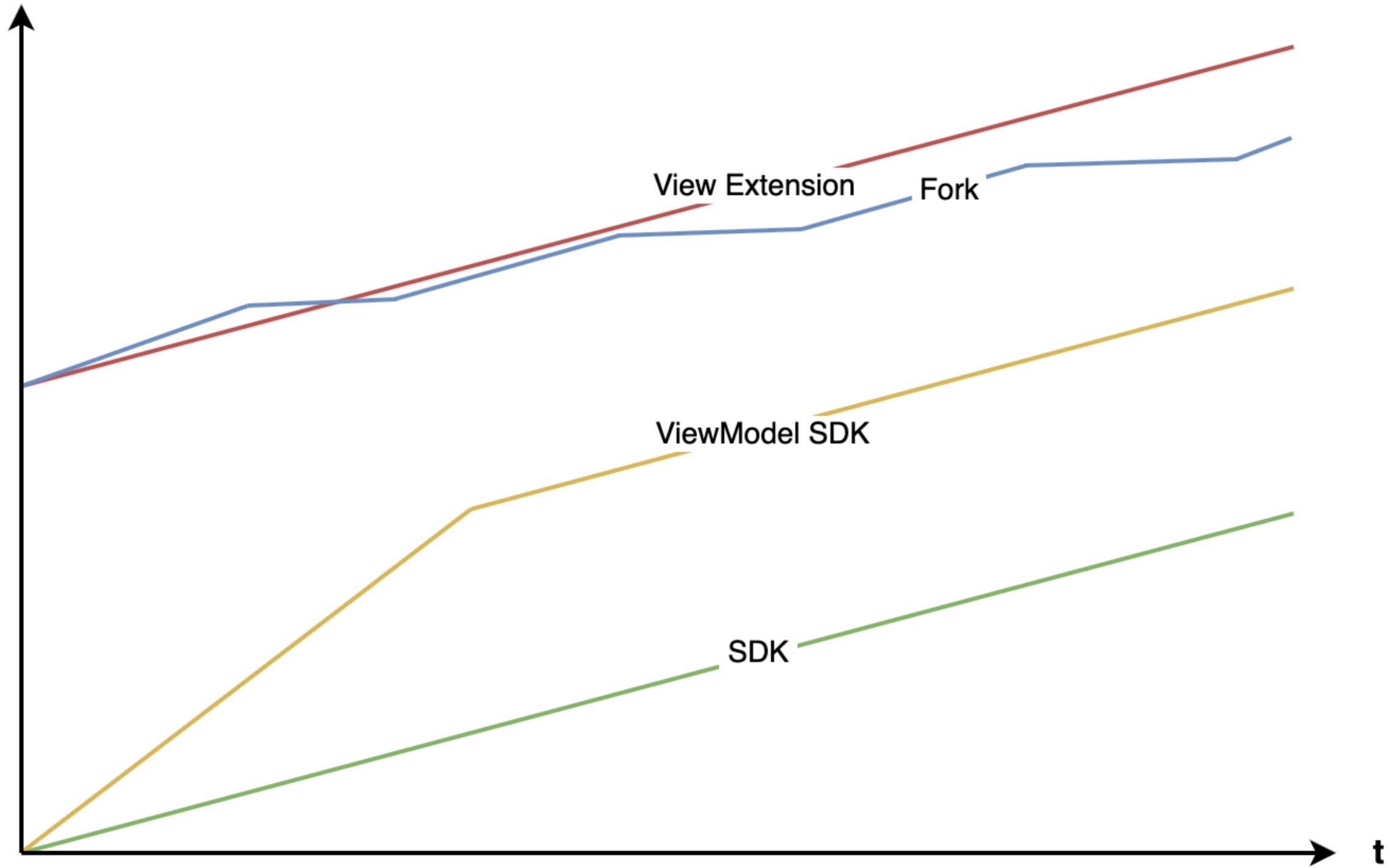
View Extension

ViewModel SDK

SDK

t

Value



View Extension

Fork

ViewModel SDK

SDK

t



Matrix clients

as a library



Tammy

<https://tammy.connect2x.de>



Trixinity Messenger

<https://gitlab.com/trixinity-messenger>

