Xpirit

Resilient connected app

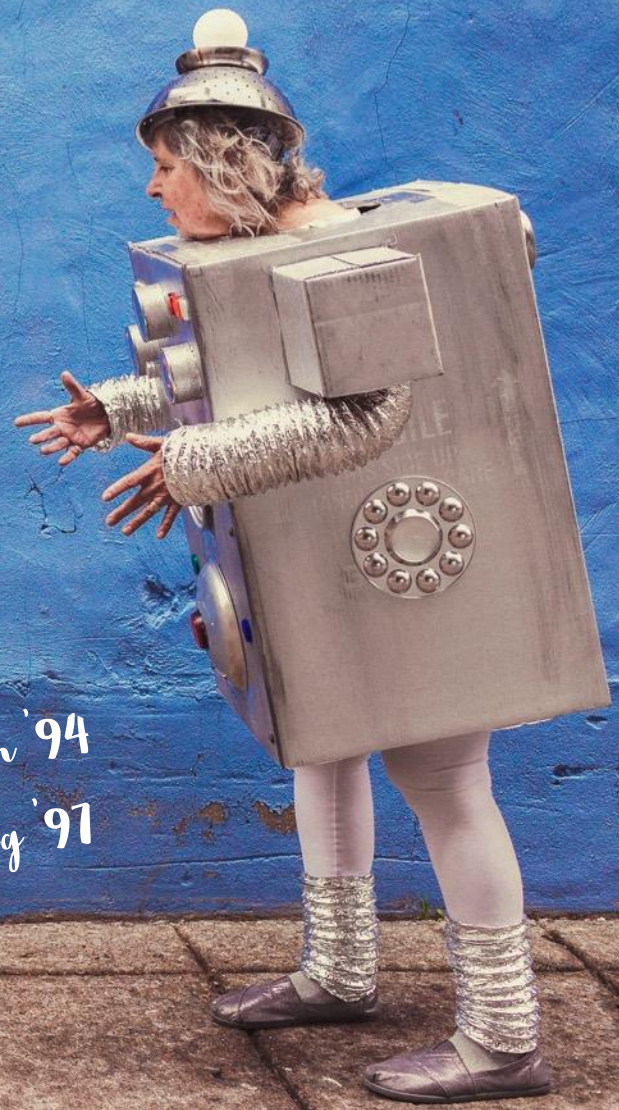
Xamarin hands-on-labs


HAPPY USER
GRUMPY USER

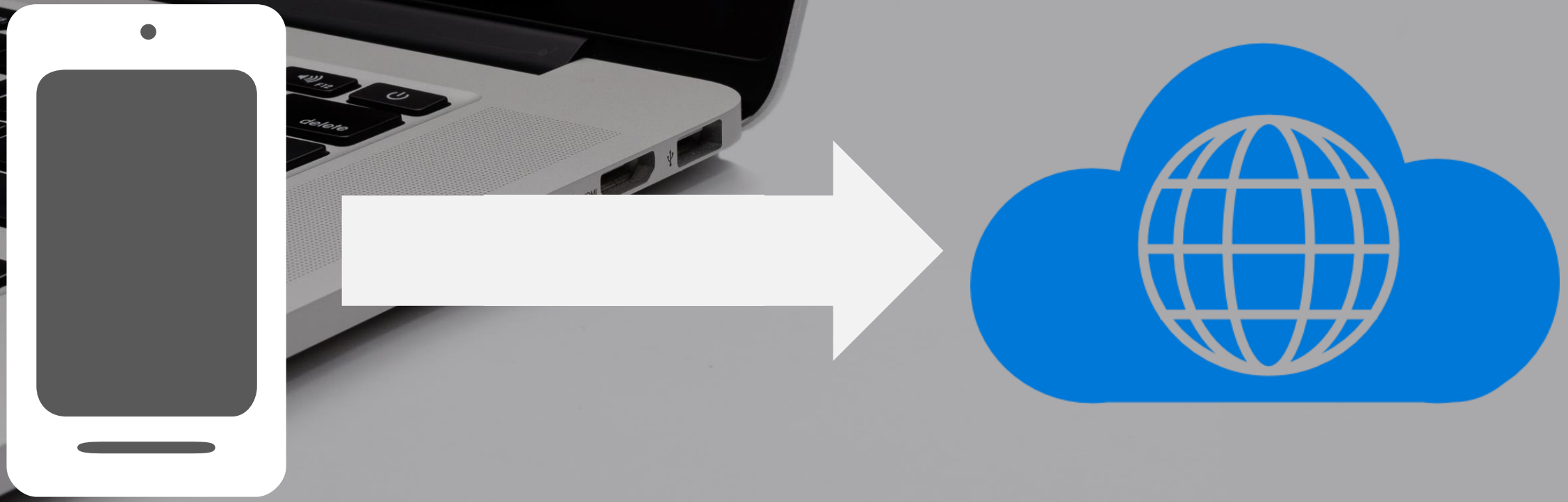
8 FALLACIES OF DISTRIBUTED COMPUTING

1. THE NETWORK IS RELIABLE.
2. LATENCY IS ZERO.
3. BANDWIDTH IS INFINITE.
4. THE NETWORK IS SECURE.
5. TOPOLOGY DOESN□ CHANGE.
6. THERE IS ONE ADMINISTRATOR.
7. TRANSPORT COST IS ZERO.
8. THE NETWORK IS HOMOGENEOUS.

Deutsch '94
Gosling '97



ARCHITECTURE



OUR GOALS

1. Do less coding
2. Speed!
3. Work offline
4. Deal with errors

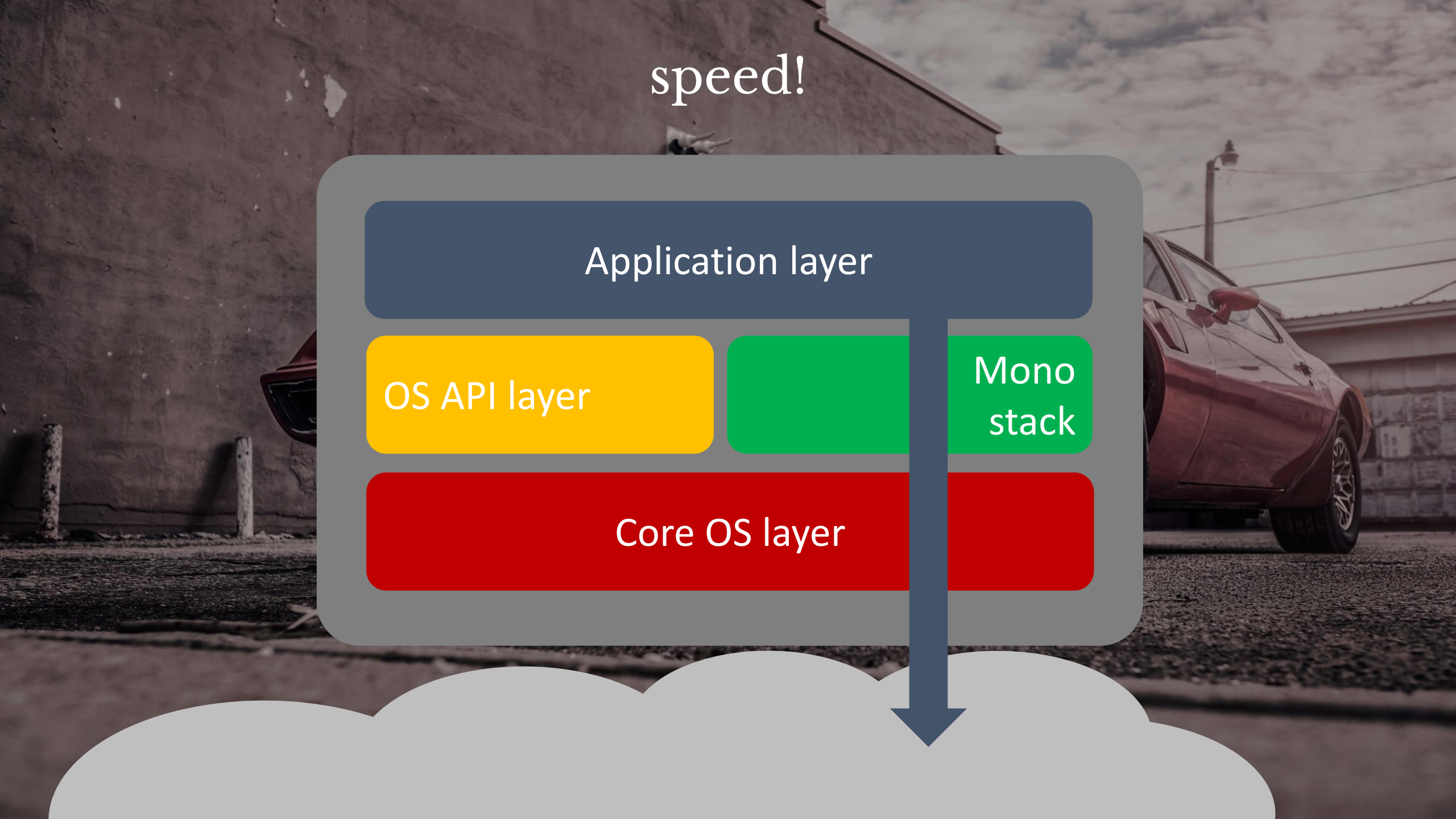

GOAL #1
be a lazy dev
(do less coding)


be a lazy dev
> Install-Package Refit
(thanks Ana Betts!)

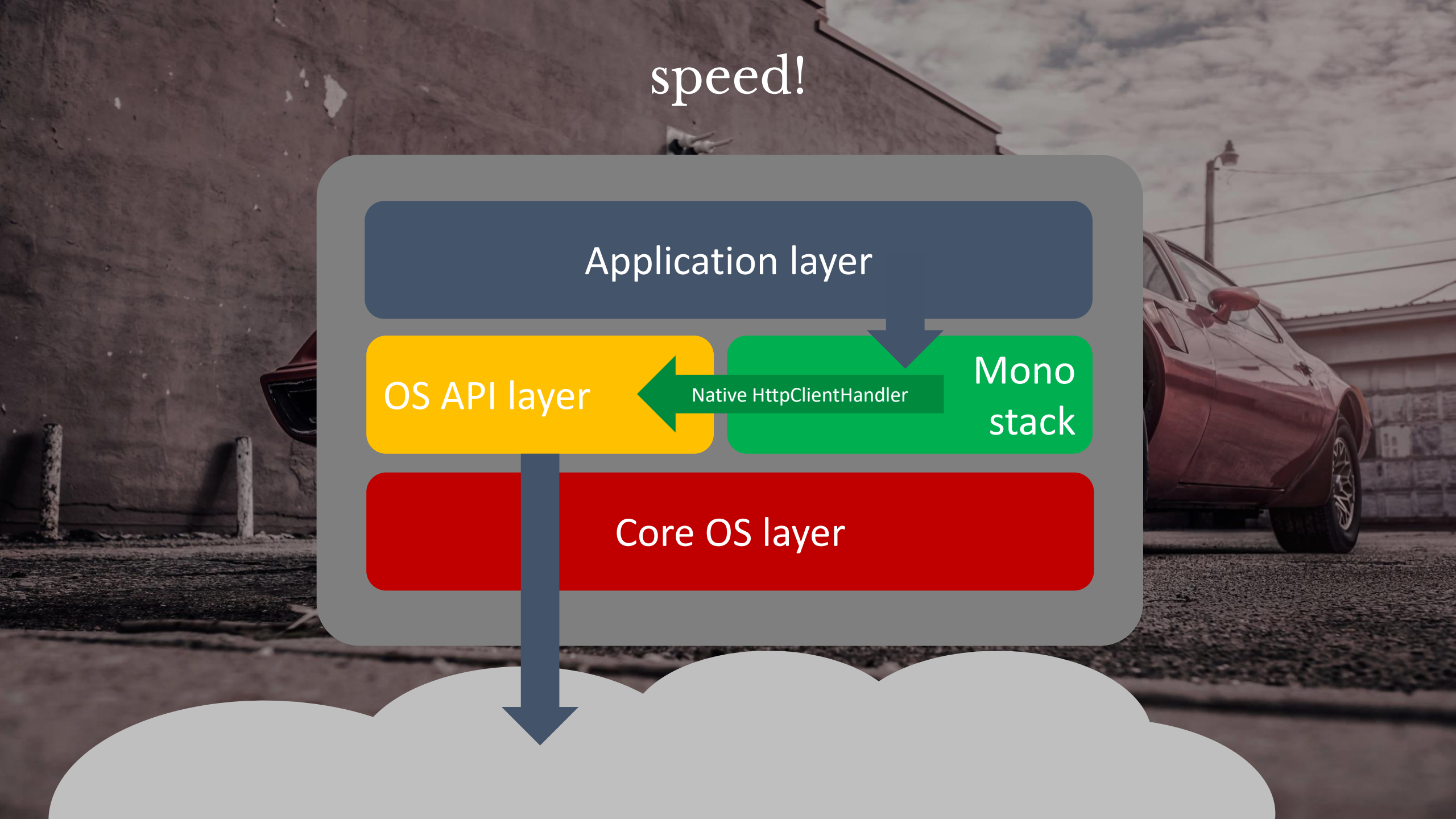

GOAL #2
speed!


speed!
STEP 1
use native stack

speed!



speed!


Application layer
OS API layer
Native HttpClientHandler
Mono stack
Core OS layer


speed!
CACHING
cache data locally


speed!
> Install-Package Akavache
(thanks again Ana Betts!)


GOAL #3
work offline

work offline

> Install-Package Xamarin.Essentials


GOAL #4
deal with errors

deal with errors

WHAT COULD POSSIBLY GO WRONG?

deal with errors

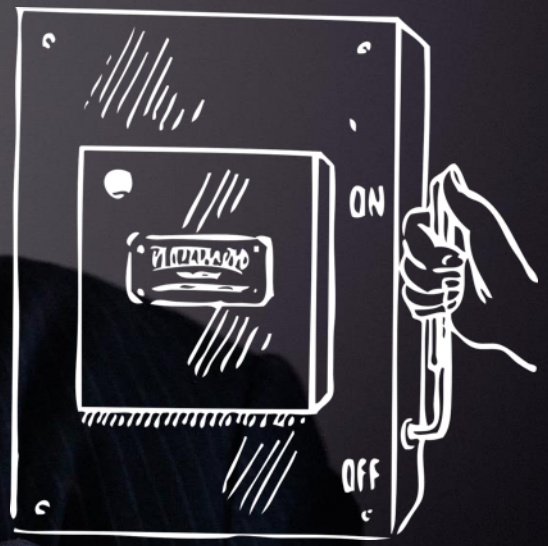
WHAT DO YOU DO?

RETRY

How often?
At what interval?
What if the server is already busy?

CIRCUIT BREAKER

Fail fast in case of downstream errors



> Install-Package Polly

(or Polly.Extensions.Http)

(thanks Michael Wolfenden & the Polly Project!)

YAY!

- ✓ Less coding: Refit
- ✓ Speed:
  - Native network stack
  - Local caching: Akavache
- ✓ Work offline: Xamarin.Essentials Connectivity
- ✓ Deal with errors: Polly

LAB

Add some resiliency to the Conference App

RECOMMENDED READING

Improving HTTP Performance in Xamarin Applications
Jonathan Peppers
http://jonathanpeppers.com/Blog/improving-http-performance-in-xamarin-applications

Disconnected Mobile Device Seminar
Frank Krueger
https://blog.xamarin.com/the-disconnected-mobile-device-seminar

Resilient Network Services with Mobile Xamarin Apps
Rob Gibbens
http://arteksoftware.com/resilient-network-services-with-xamarin

Eight Fallacies of Distributed Computing
Gareth Wilson
https://blog.fogcreek.com/eight-fallacies-of-distributed-computing-tech-talk