

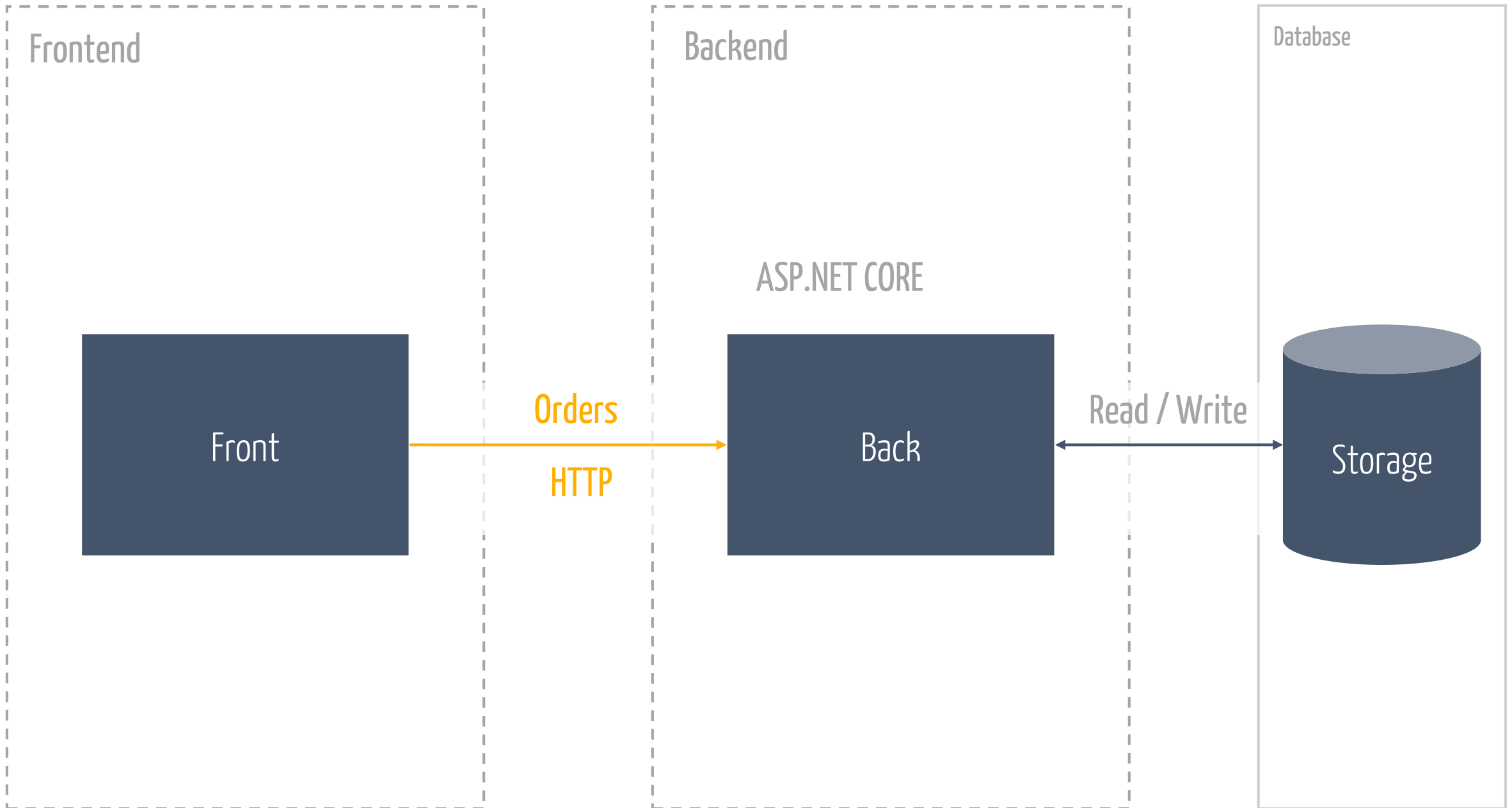
Knock. Knock. Who's there?

A message from the future



Hiding Inconsistencies

Multi user
collaboration

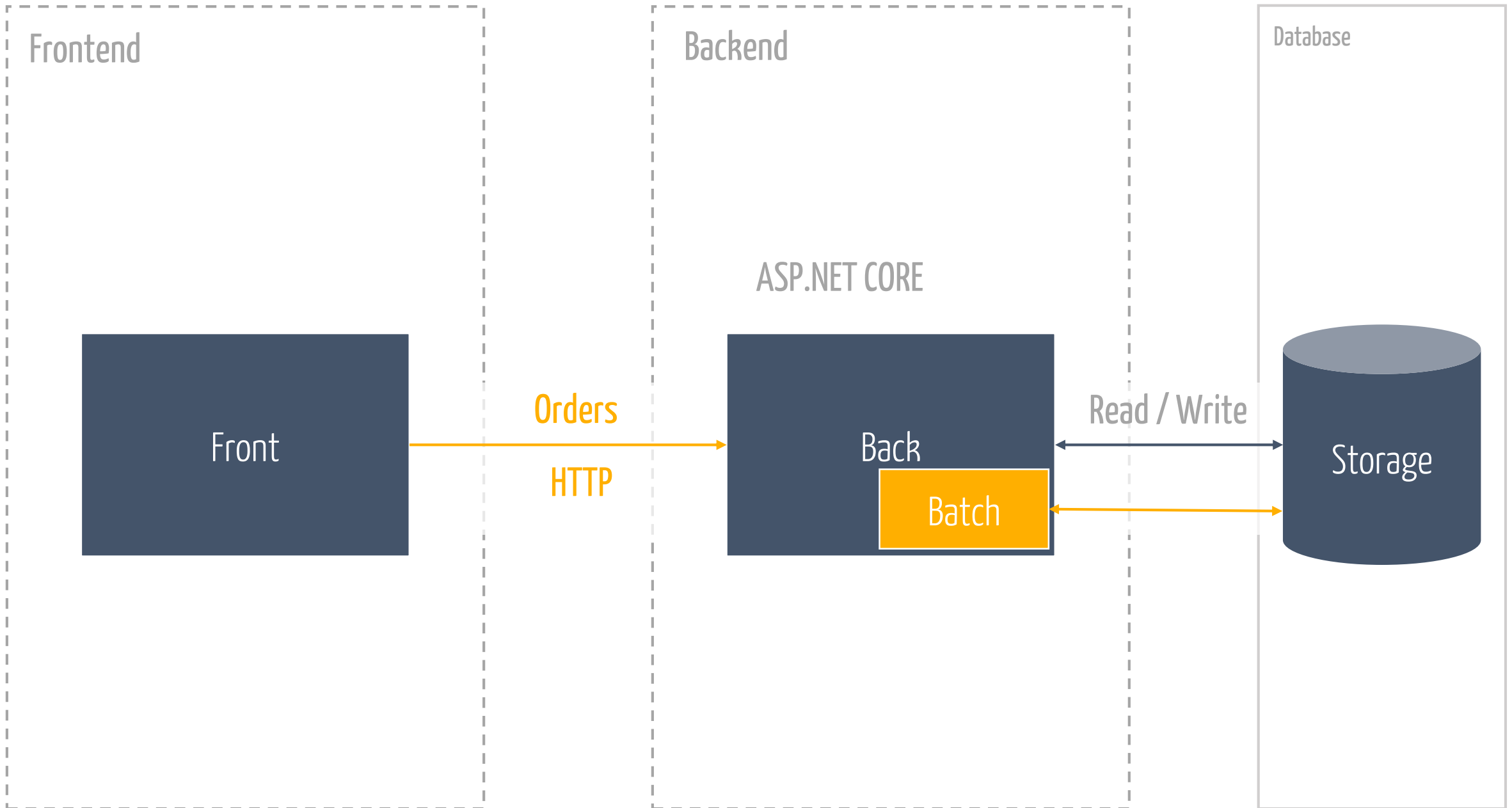


And then the customer
walks into your office



Concurrency and latency in collaborative domains can lead to incorrect application of business rules even in safe architectures

Batch Jobs

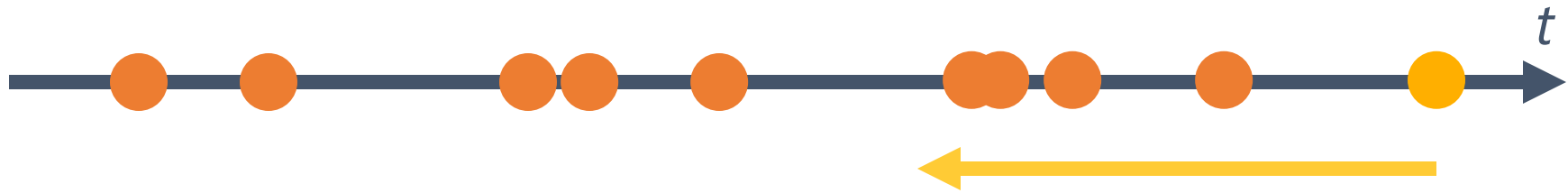


Batch Jobs increase the window of
consistency problems

Batch Jobs for time based business rules
are the **worst enemy** for growth

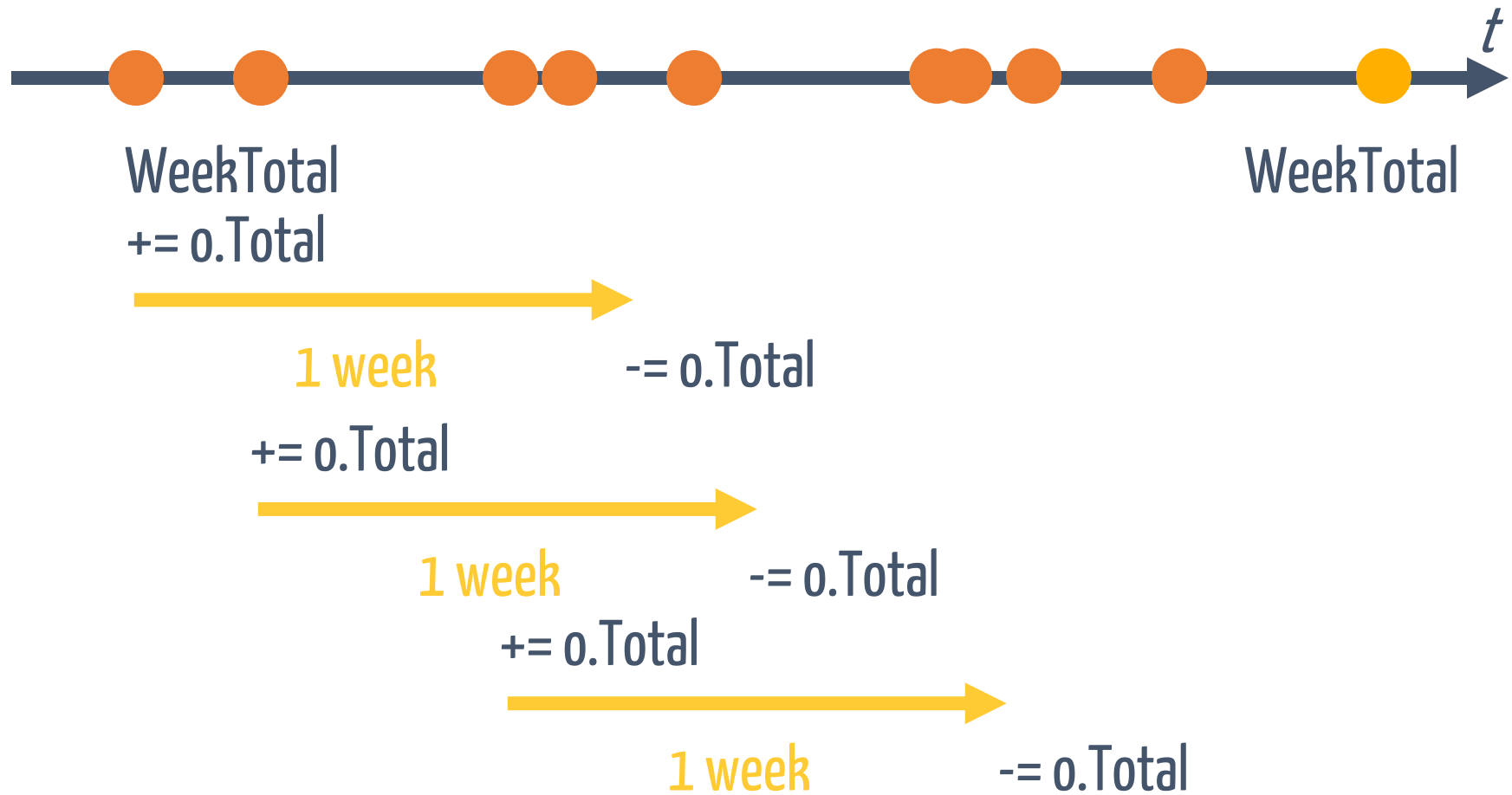
The background of the image consists of several overlapping clock faces in various shades of gray. Some clock faces show Roman numerals, while others show Arabic numerals. The clocks are arranged in a way that they appear to be layered on top of each other, creating a sense of depth and complexity. The central text is superimposed on this background.

Rethink time



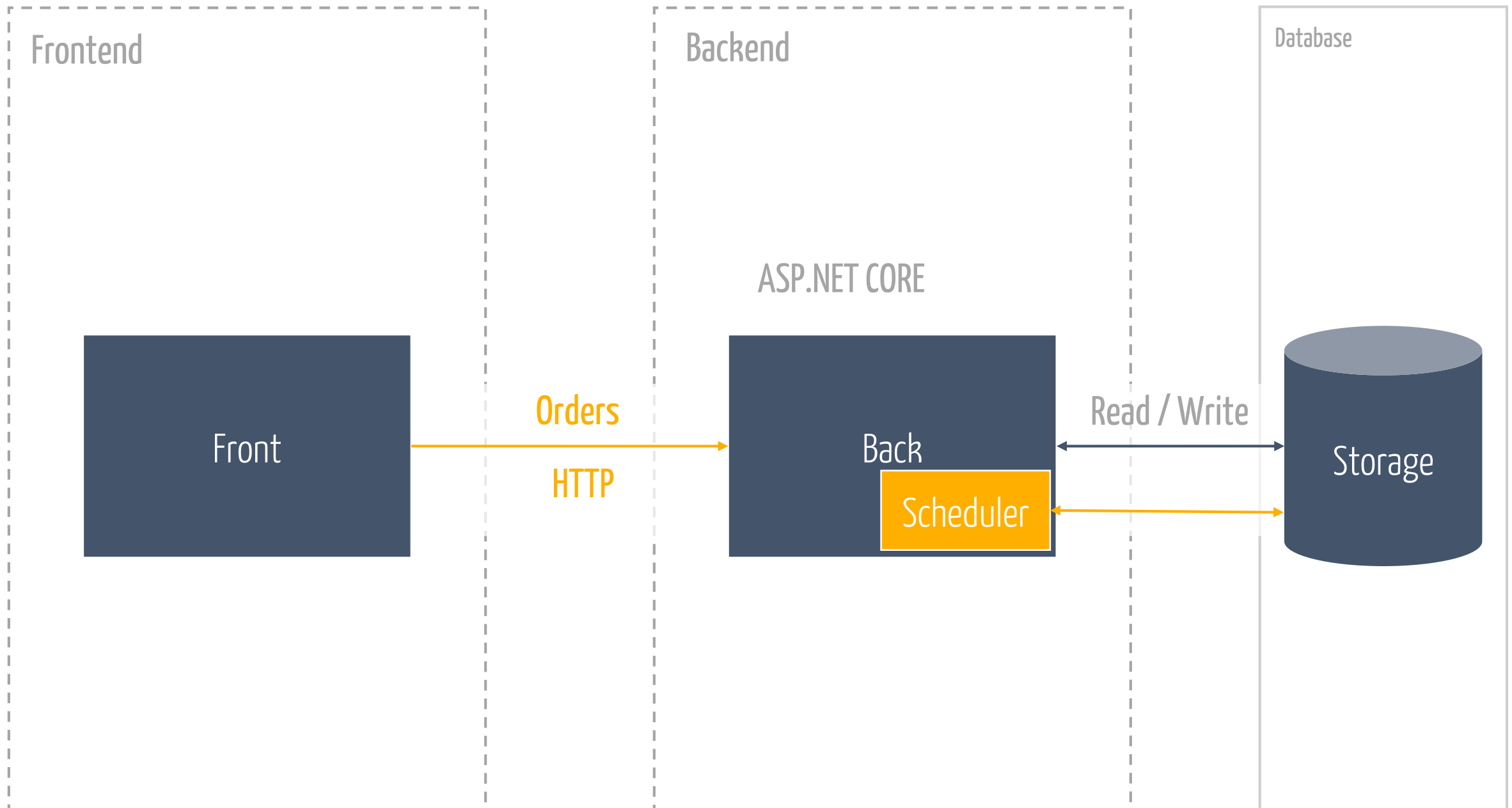
1 week

$\text{Sum}(o \Rightarrow o.\text{Total})$



A close-up photograph of a person's hand holding a white smartwatch. The watch screen displays the time 4:42, the location Montréal, and a weather forecast for Monday, Tuesday, and Wednesday. The background is a blurred image of a person's arm and a light blue fabric.

Program *time*



Durable **scheduling** introduces **reliability** on the server side

Resilient HTTP introduces some reliability but **doesn't survive** restarts

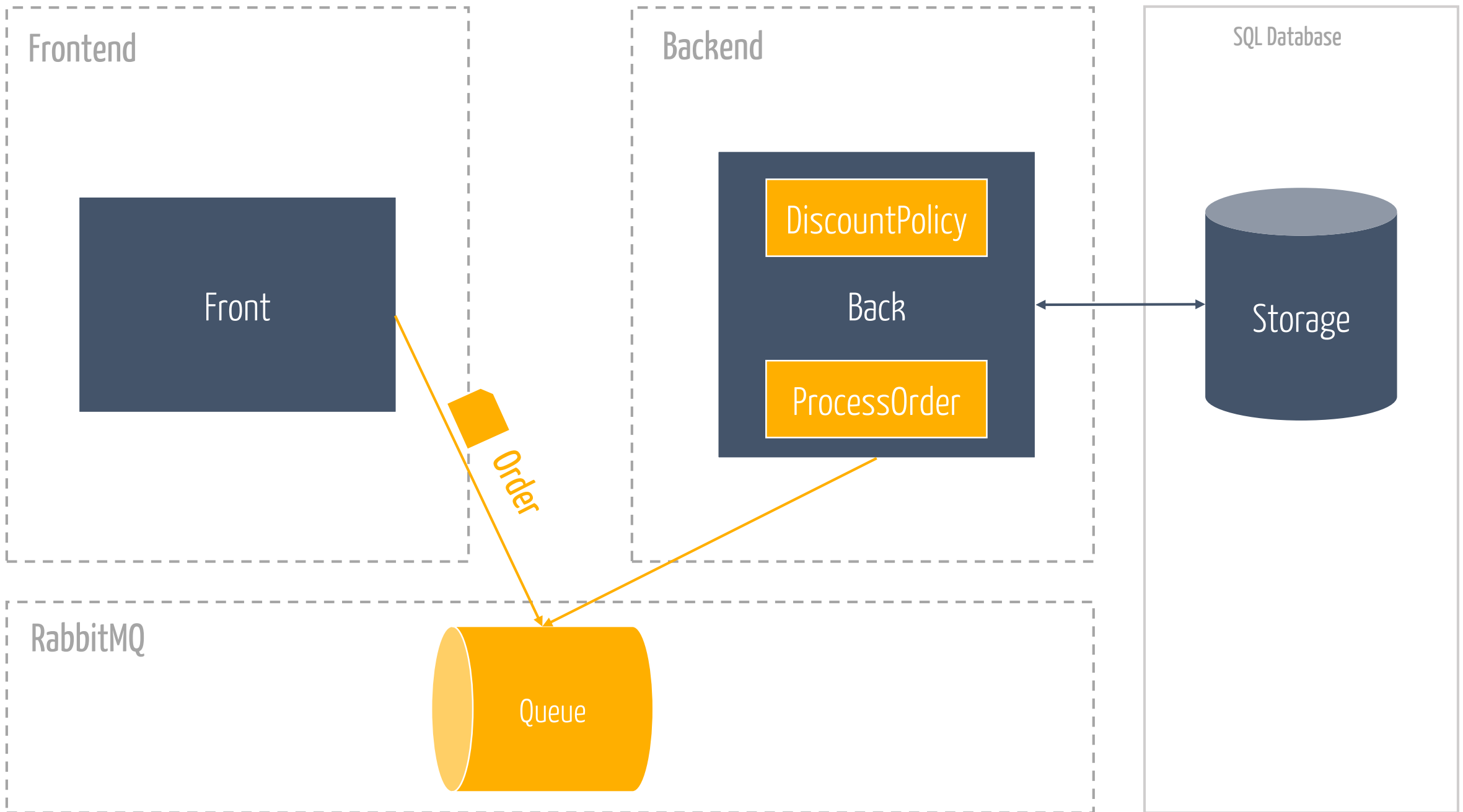
Client side **retries** help to resolve transient failures but **increase the latency**

Orders are ideal to

Fire & forget

from the frontend perspective

Sagas





*Roads? Where we're going, we don't
need roads.*

AmazonSQS

600 s



2,800 s



900
(1,900)



900
(1,000)



900
(100)



100 s

RabbitMQ

42₁₀ seconds

101010₂ seconds

(42_{10})

32 s  1

16 s  0

8 s  1

4 s  0

2 s  1

1 s  0

Exchange: nsb.delay-level-00

► **Overview**

▼ Bindings

From	Routing key	Arguments	
nsb.delay-level-01	*****.0.#		Unbind

[illegible]

Exchange: nsb.delay-level-01

► **Overview**

▼ Bindings

From	Routing key	Arguments	
nsb.delay-level-02	*****.0.#		Unbind

[illegible][illegible]

28 queues

2^{28} seconds

268,435,456 seconds

8.5 years



Sender

Destination-delay.fifo

Destination

`NServiceBus.AmazonSQS.DelaySeconds = delay`

loop

[every 900sec]

`NServiceBus.AmazonSQS.DelaySeconds = remaining delay`

[remaining delay <= 900sec]

`DelaySeconds = remaining delay`

docs.particular.net/transports/sqs/delayed-delivery

Exchange: nsb.delay-level-00

► **Overview**

Exchange: nsb.delay-level-01

► Overview

docs.particular.net/transport/rabbitmq/delayed-delivery

[illegible]

To	Routing key	Arguments
nsb.delay-level-000.#	Unbind
nsb.delay-level-011.#	Unbind

[illegible]

Messaging introduces **reliability**

Retries resolve consistency issues
automatically

Sagas on top of a robust middleware allow to
focus on the business logic and stay **reactive**

Thanks

A man with glasses and a dark jacket over a checkered shirt is pointing his right hand towards a whiteboard. The whiteboard contains several handwritten diagrams. On the left, a box labeled '1.01' contains 'RoomTypeId, Capacity', 'Dates', and 'ReservationId'. An arrow labeled '1.0 Publish' points from this box to a central box labeled '<Event, Client>' which contains 'RoomTypeIds Available' and 'Ids, Dates'. Below this central box is another box labeled '1.02' containing 'RoomTypeIds Available' and 'ReservationId'. To the right of the man, another box contains 'RoomTypeId' and 'Name'.

Long Running Processes

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go.particular.net/techorama19

Slides, Links...

github.com/danielmarbach/KnockKnock

Q & A



Software Engineer
Enthusiastic Software Engineer
Microsoft MVP

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planetgeek.ch

Thanks