

# REACTIVE REALTIME for fun and profit

@wolframhempel | deepstream.io



5!

**#1**

**A SINGLE  
SOURCE OF TRUTH**

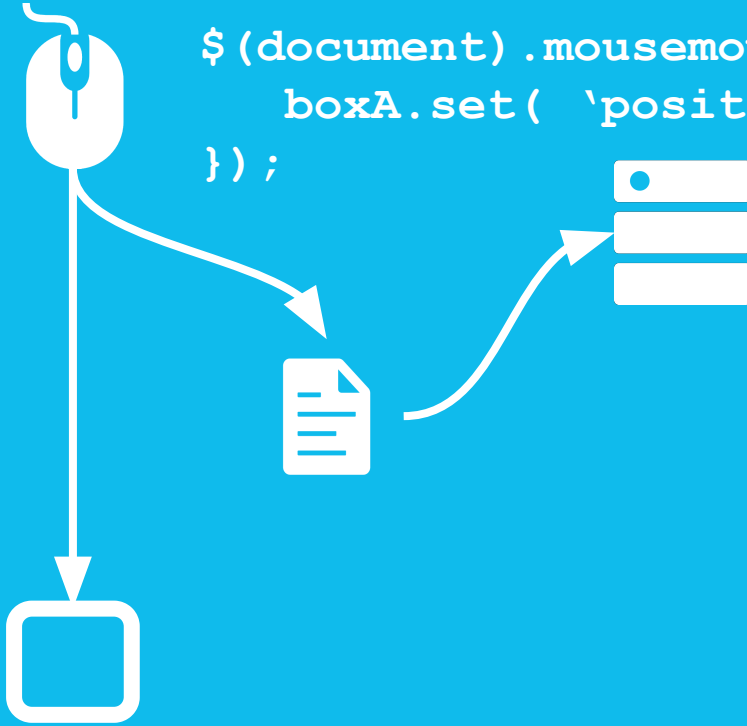






```
boxA = ds.record.getRecord( 'boxA' );
```

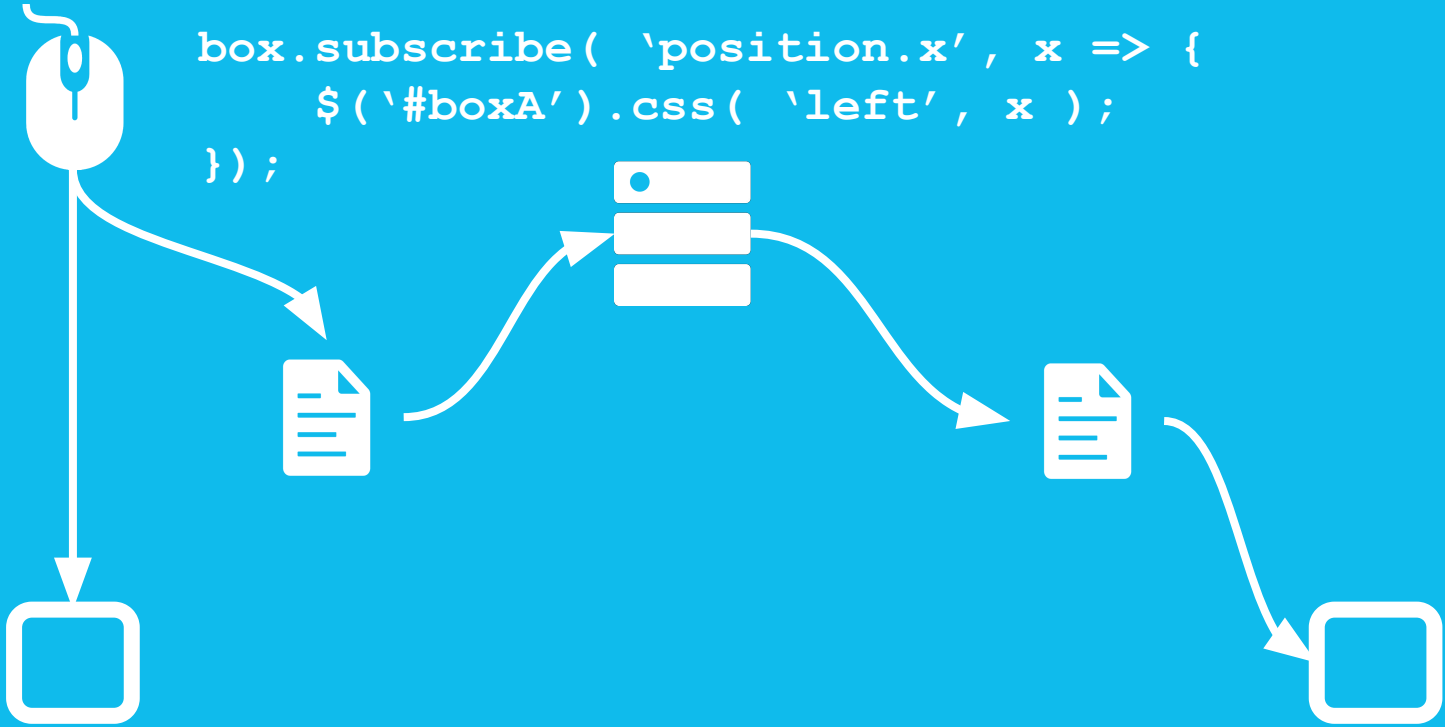
```
$(document).mousemove( event => {  
    boxA.set( 'position.x', event.clientX );  
});
```

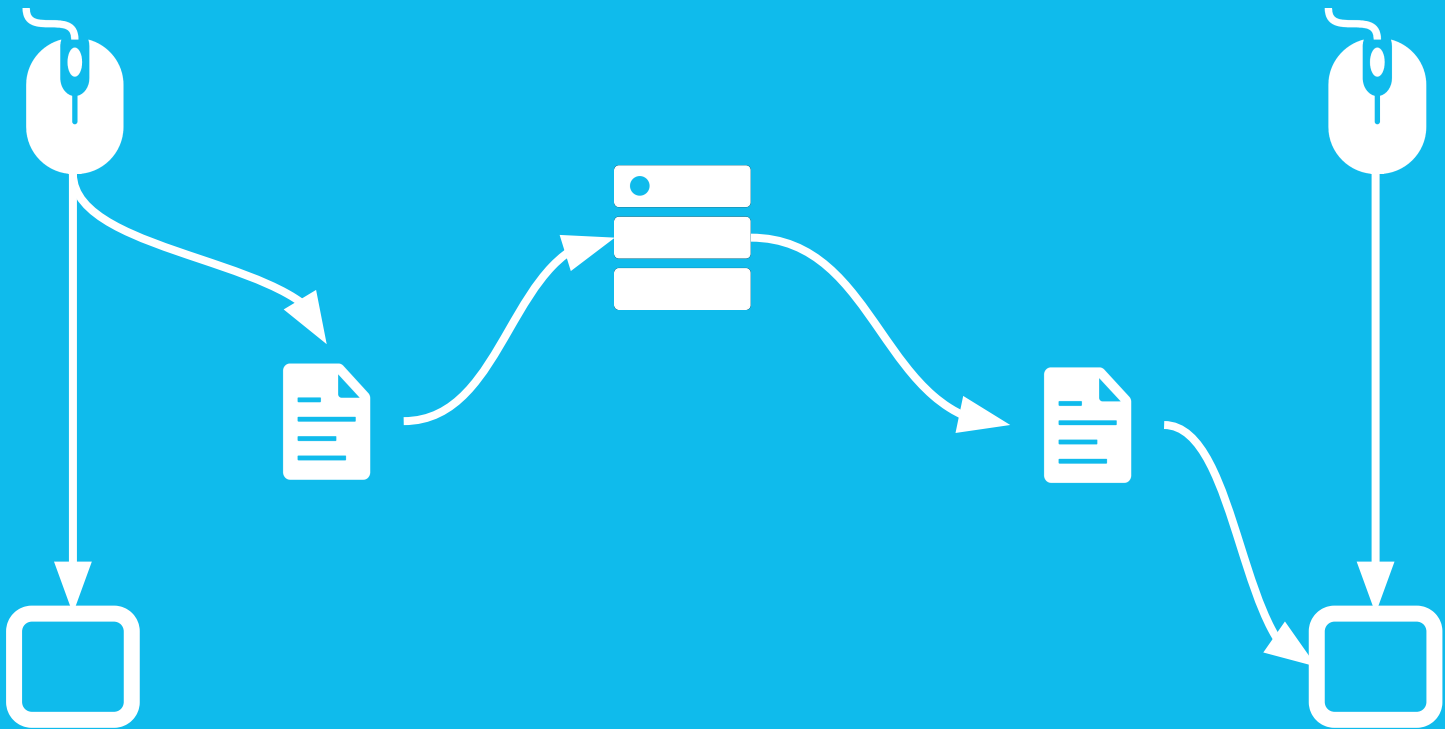


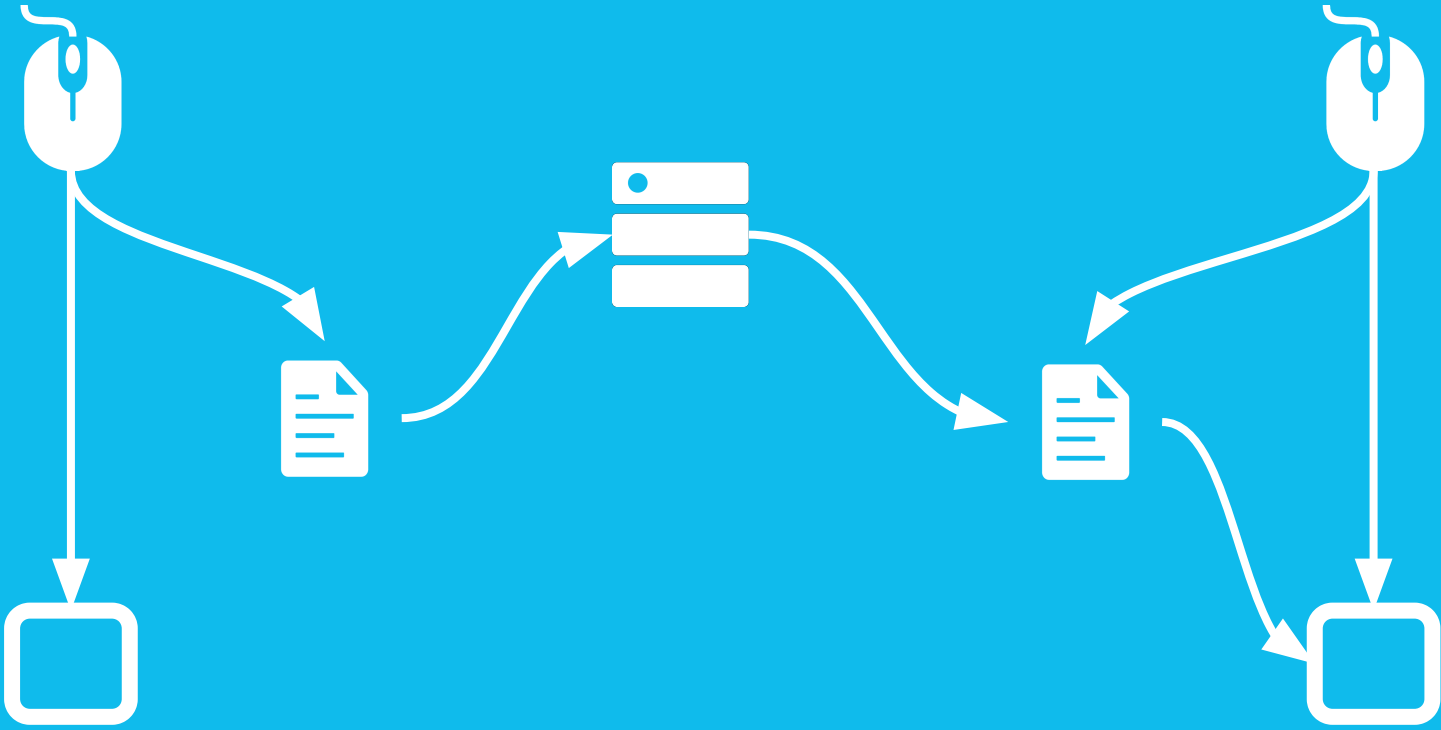


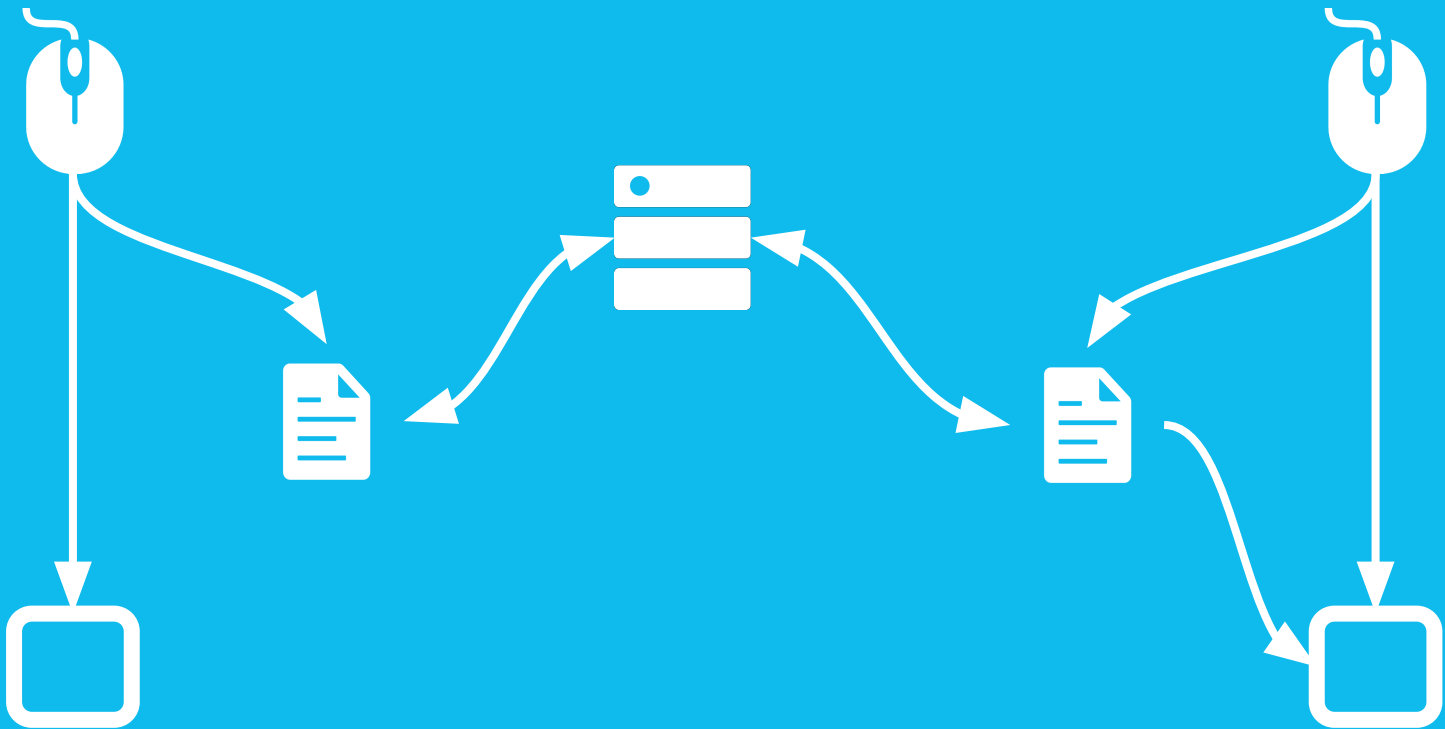
```
boxA = ds.record.getRecord( 'boxA' );
```

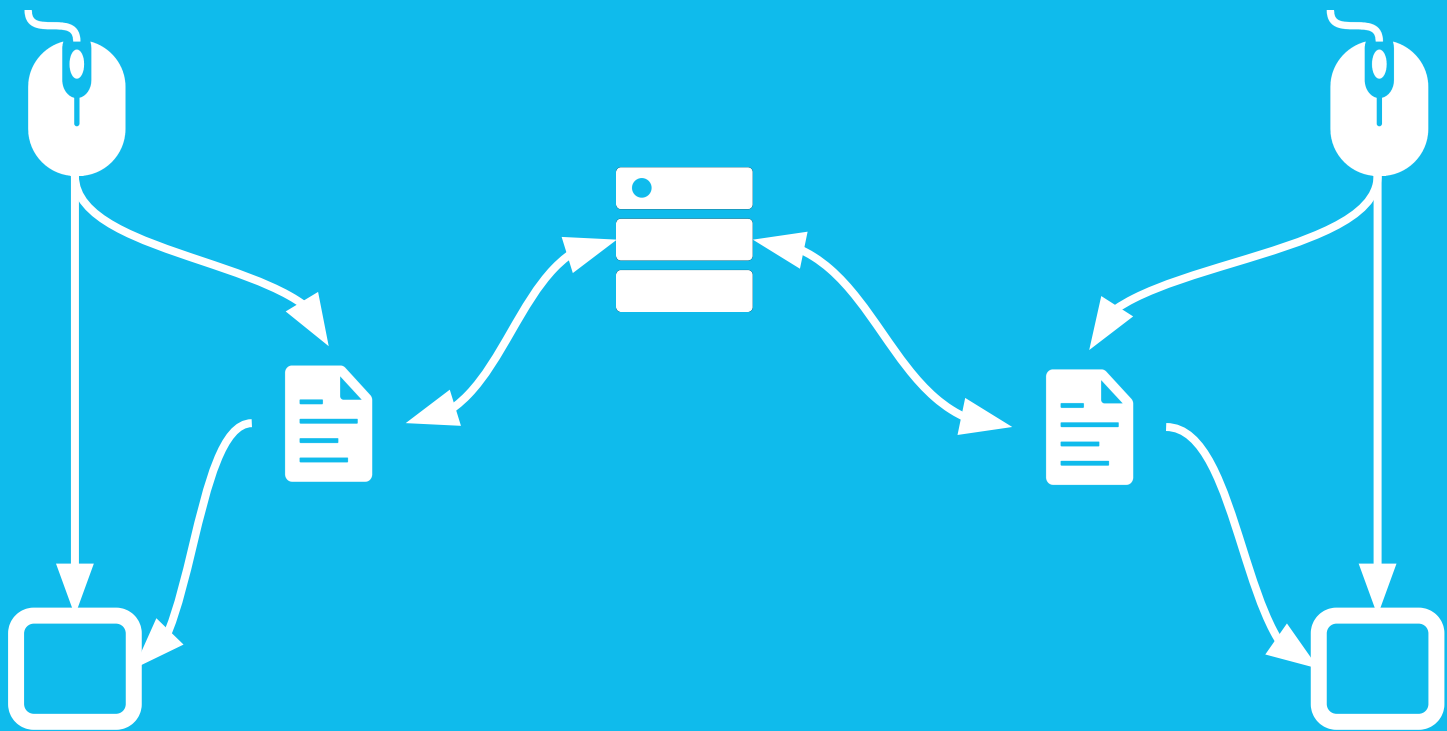
```
box.subscribe( 'position.x', x => {  
  $('#boxA').css( 'left', x );  
});
```







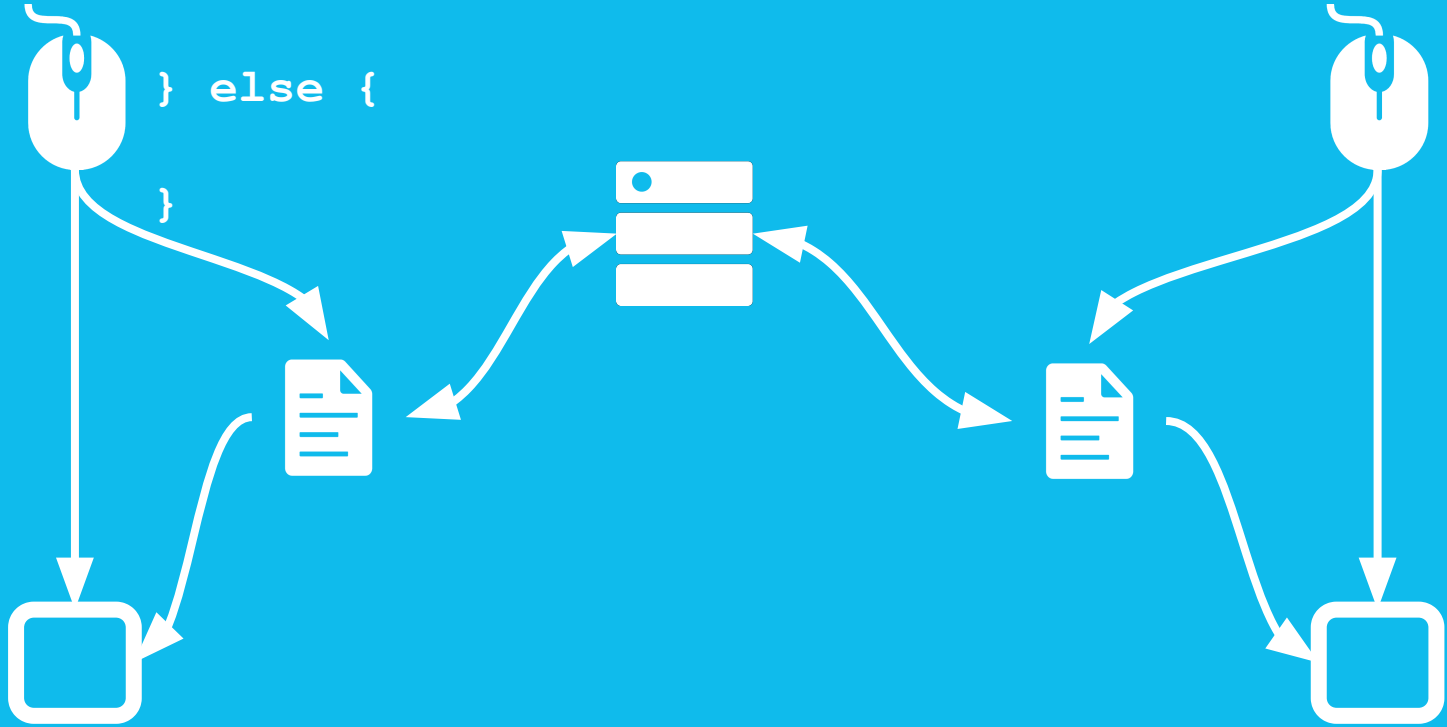




```
if( localChange === true && mouseEvent ) {
```

```
  } else {
```

```
  }
```



```
if( localChange === true && mouseEvent ) {
```

```
} else {
```

```
}
```

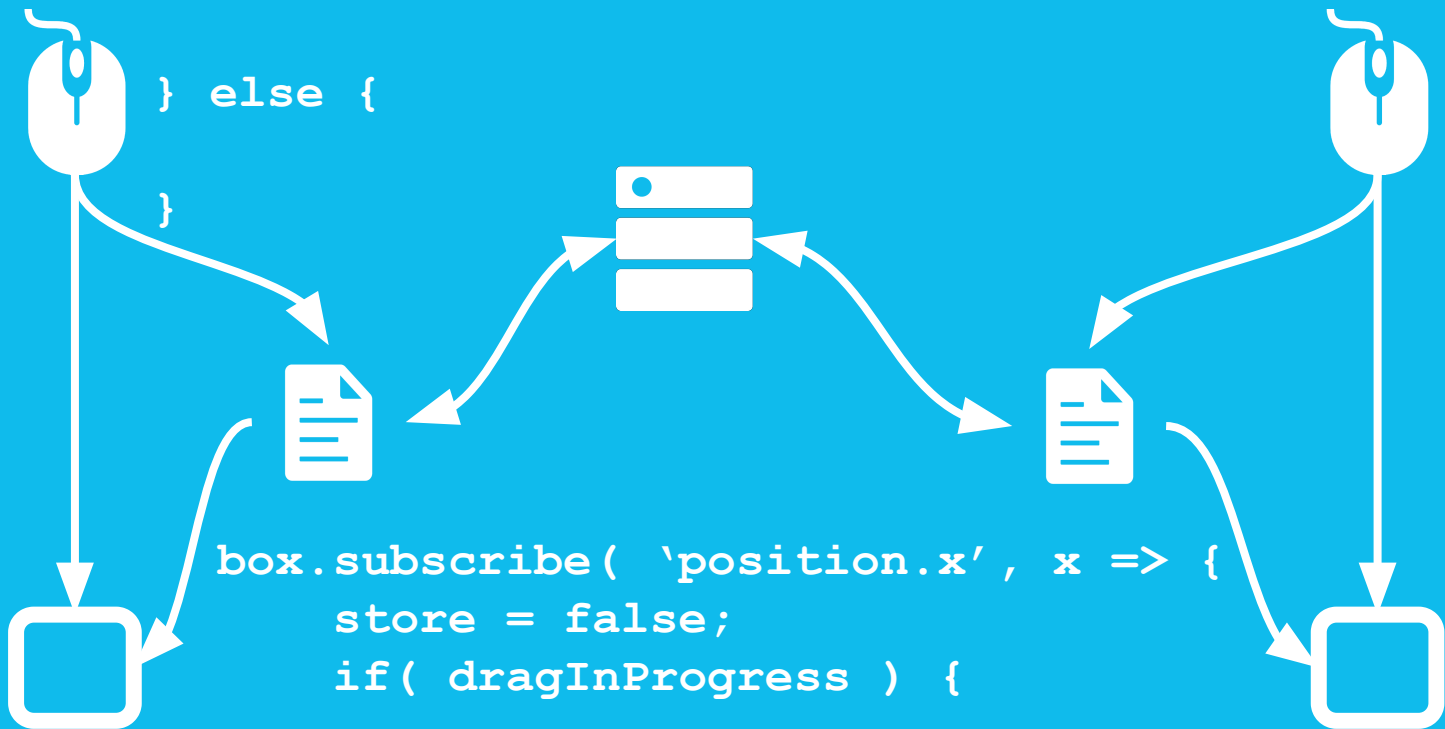
```
box.subscribe( 'position.x', x => {
```

```
  store = false;
```

```
  if( dragInProgress ) {
```

```
  }
```

```
});
```



```
if( localChange === true && mouseEvent ) {
```

```
} else {
```

```
  if( store === true && mousedown ) {
```

```
    doStore = true;
```

```
  } else {
```

```
    doStore = false;
```

```
  }
```

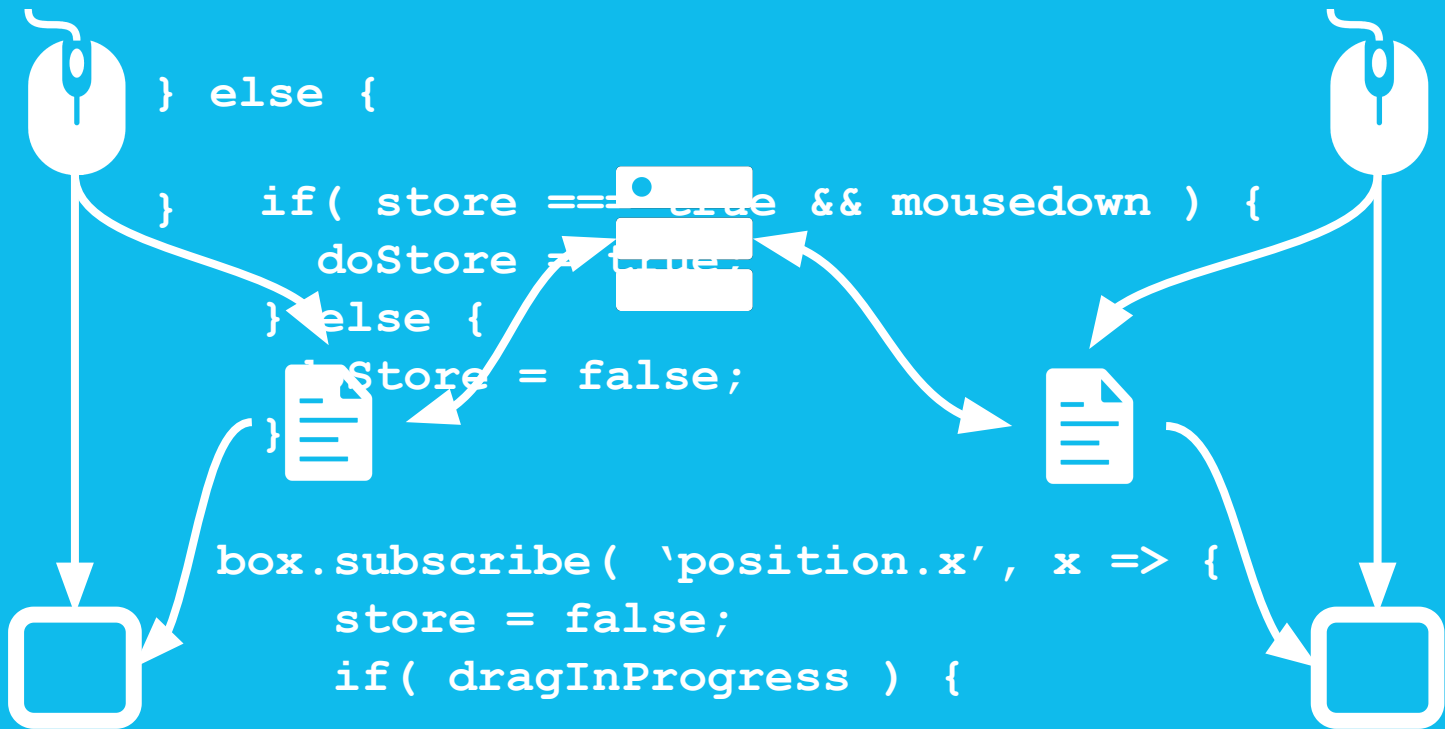
```
box.subscribe( 'position.x', x => {
```

```
  store = false;
```

```
  if( dragInProgress ) {
```

```
  }
```

```
});
```





```
if( localChange === true && mouseEvent ) {
```

```
} else
```

```
} if( localChange === true && mouseEvent.button === 0 ) {
```

```
doStore = true;
```

```
} else {
```

```
doStore = false;
```

```
}
```

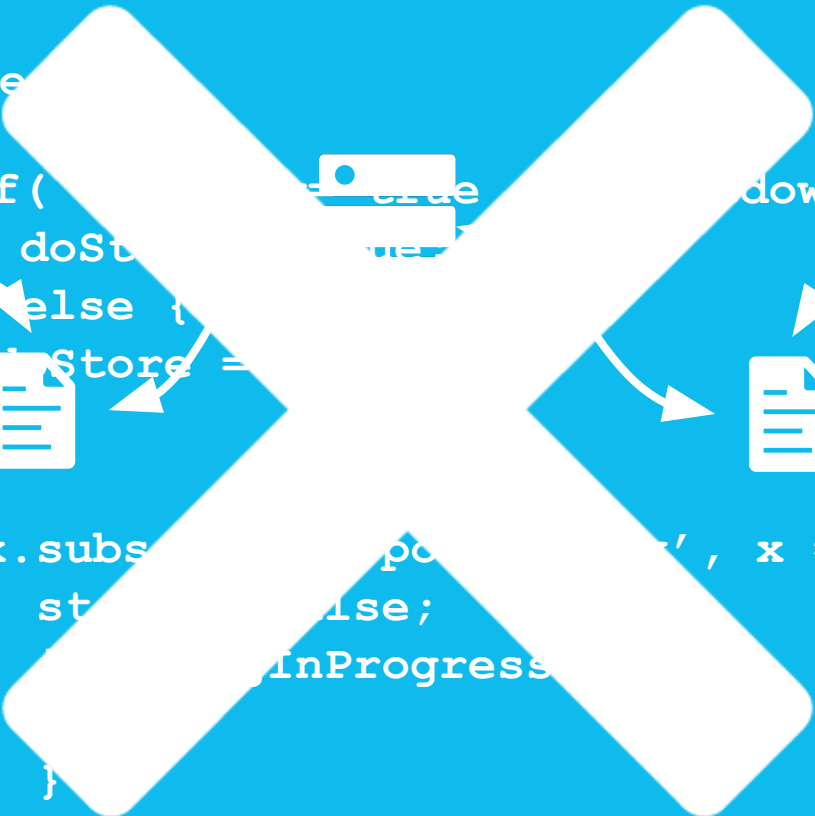
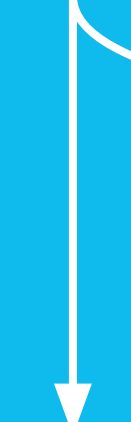
```
box.subscribe('position', x => {
```

```
store = false;
```

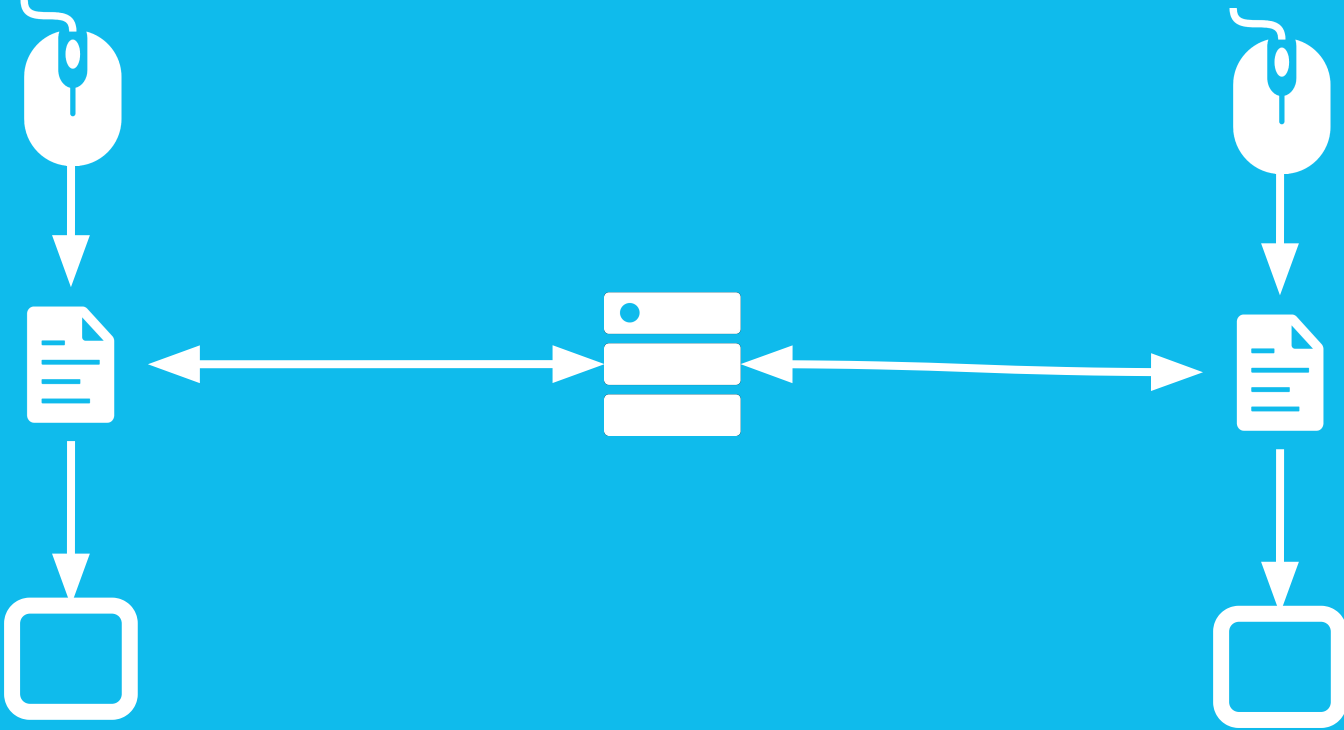
```
isInProgress = true;
```

```
}
```


```
});
```







**#2**

if === 

**GBPUSD**
Cancel Quote
✕

---

Account  
Acc64
Trading Type  
FWD
Amount  
1,000,000.00 GBP
Settlement  
13/07/2015

CLIENT	MARGIN	TRADER	BID	ASK	TRADER	MARGIN	CLIENT
◀ 1.59164 ▶	2.4	1.59188	SPOT		1.59206	2.0	1.59226
◀ -13.57 ▶	1.10	-12.47	1M		-12.37	1.00	-11.37
◀ 1.590283 ▶	3.50	1.590633	ALL IN RATE		1.590823	3.00	1.591123

1,590,283.00 USD
CONTRA
1,591,123.00 USD

---

USD
 ESTIMATED PROFIT
300.00 USD

BANK BUYS GBP

1.59 02 83

Unlock Rate

ALL-IN MARGIN

0 3.00 3.50

BANK SELLS GBP

1.59 11 23

Lock Rate

TIME OUT IN 113s ⌂



**BUSINESS ANALYST**



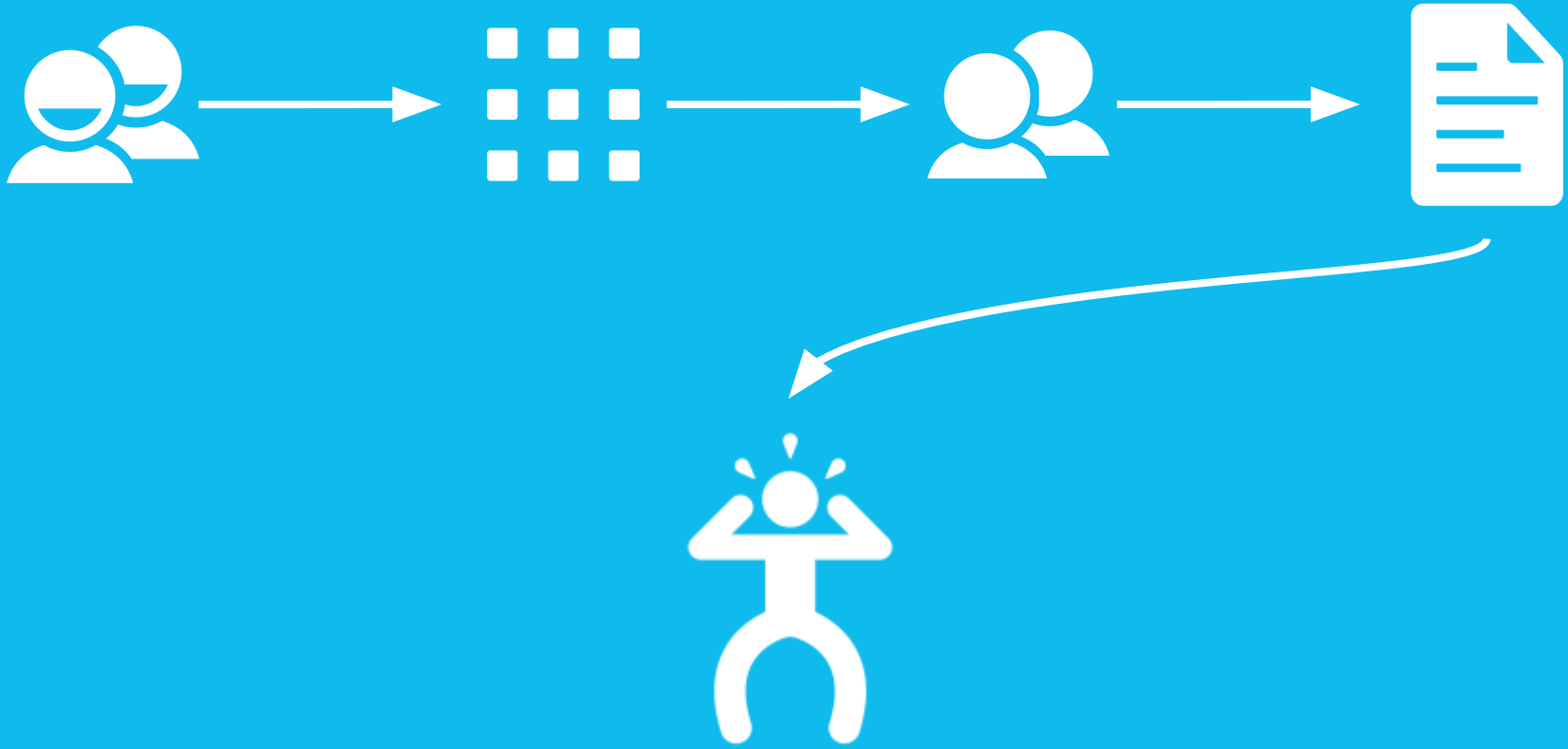
**BUSINESS ANALYSTS**











```
if (...
```



1. Identify your datastreams



GBPUSD Cancel Quote

Account: 1,000,000.00 BP Settlement: 13/07/2015

CLIENT	MARGIN	TRADER	BID	ASK	TRADER	MARGIN	CLIENT
1.59164	2.4	1.59188	SPOT	1.59206	2.0	1.59226	
-13.3	1.10	2.47	1M	-12.37	1.00	-11.37	
1.590283	3.50	1.590633	ALL IN RATE	1.590823	3.00	1.591123	

1,590,283.00 USD CONTRA 1,591,123.00 USD

360.00 USD ESTIMATED PROFIT 300.00 USD

BANK BUYS GBP 1.59 02 83 ALL-IN MARGIN 3.50 BANK SELLS GBP 1.59 11 23

Unlock Rate Lock Rate

TIME OUT IN 113s



1. Identify your datastreams
2. Set them up as pipelines



Reactive  
Logic

View  
Binding /  
MVVM

GBPUSD Cancel Quote

Account Acc64 Trading Type FWD Amount 1,000,000.00 GBP Settlement 13/07/2015

CLIENT	MARGIN	TRADER	BID	ASK	TRADER	MARGIN	CLIENT
1.59164	2.4	1.59188	SPOT	1.59206	2.0	1.59226	
-13.5	1.10	-12.47	1M	-12.37	1.00	-11.37	
1.590283	3.50	1.590633	ALL IN RATE	1.590823	3.00	1.591123	

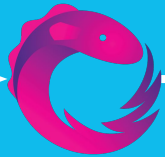
1,590,283.00 USD CONTRA 1,591,123.00 USD

360.00 USD ESTIMATED PROFIT 300.00 USD

BANK BUYS GBP 1.59 02 83 ALL-IN MARGIN 3.50 BANK SELLS GBP 1.59 11 23

Unlock Rate Lock Rate

TIME OUT IN 113s



RxJS



KnockoutJS

GBPUSD Cancel Quote X

Account Acc64 Trading Type FWD Amount 1,000,000.00 GBP Settlement 13/07/2015

CLIENT	MARGIN	TRADER	BID	ASK	TRADER	MARGIN	CLIENT
1.59164	2.4	1.59188	SPOT	1.59206	2.0	1.59226	
-13.5	1.10	-12.47	1M	-12.37	1.00	-11.37	
1.590283	3.50	1.590633	ALL IN RATE	1.590823	3.00	1.591123	

1,590,283.00 USD CONTRA 1,591,123.00 USD

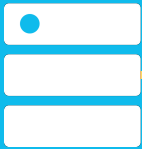
360.00 USD ESTIMATED PROFIT 300.00 USD

BANK BUYS GBP 1.59 02 83 ALL-IN MARGIN 3.50 BANK SELLS GBP 1.59 11 23

Unlock Rate Lock Rate

TIME OUT IN 113s

1. Identify your datastreams
2. Set them up as pipelines
3. Establish junctions



GBPUSD Cancel Quote X

Account: FWD Amount: 1,000,000.00 GBP Settlement: 13/07/2015

CLIENT	MARGIN	TRADER	BID	ASK	TRADER	MARGIN	CLIENT
1.59164	2.4	1.59188	SPOT	1.59206	2.0	1.59226	
-1.57	1.0	-1.47	1M	-12.37	1.00	-11.37	
1.59283	3.50	1.590633	ALL IN RATE	1.590823	3.00	1.591123	

300.00 USD CONTRA 1,591,123.00 USD

ESTIMATED PROFIT 300.00 USD

BANK BUYS GBP 1.59 02 83

ALL-IN MARGIN 3.50

BANK SELLS GBP 1.59 11 23

Unlock Rate Lock Rate

TIME OUT IN 113s

1. Identify your datastreams
2. Set them up as pipelines
3. Establish junctions
4. Put your logic in them



GBPUSD Cancel Quote

Account: 1,000,000.00 GBP Settlement: 13/07/2015

CLIENT	MARGIN	TRADER	BID	ASK	TRADER	MARGIN	CLIENT
1.59164	2.4	1.59188	SPOT	1.59206	2.0	1.59226	
-1.57	1.0	-1.47	1M	-12.37	1.00	-11.37	
1.59283	3.50	1.590633	ALL IN RATE	1.590823	3.00	1.591123	

300.00 USD CONTRA 1,591,123.00 USD

ESTIMATED PROFIT 300.00 USD

BANK BUYS GBP 1.59 02 83

ALL-IN MARGIN 3.50

BANK SELLS GBP 1.59 11 23

Unlock Rate Lock Rate

TIME OUT IN 113s



GBPUSD Cancel Quote

Account: 1,000,000.00 USD BP Settlement: 13/07/2015

CLIENT	MARGIN	TRADER	BID	ASK	TRADER	MARGIN	CLIENT
1.59164	2.4	1.59188	SPOT	1.59206	2.0	1.59226	
-1.57	1.0	-1.47	1M	-12.37	1.00	-11.37	
1.59283	3.50	1.590633	ALL IN RATE	1.590823	3.00	1.591123	

300.00 USD CONTRA 1,591,123.00 USD

ESTIMATED PROFIT 300.00 USD

**BANK BUYS GBP**  
1.59 **02 83**  
Unlock Rate

ALL-IN MARGIN 3.50

**BANK SELLS GBP**  
1.59 **11 23**  
Lock Rate

TIME OUT IN 113s



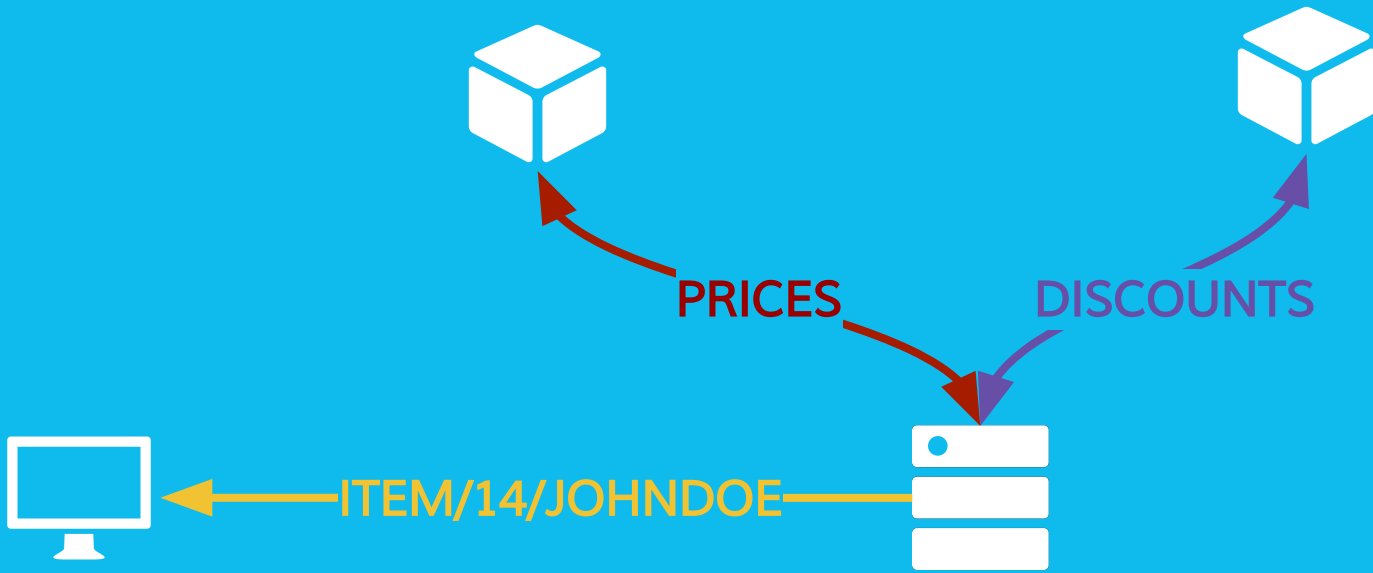
**#3**

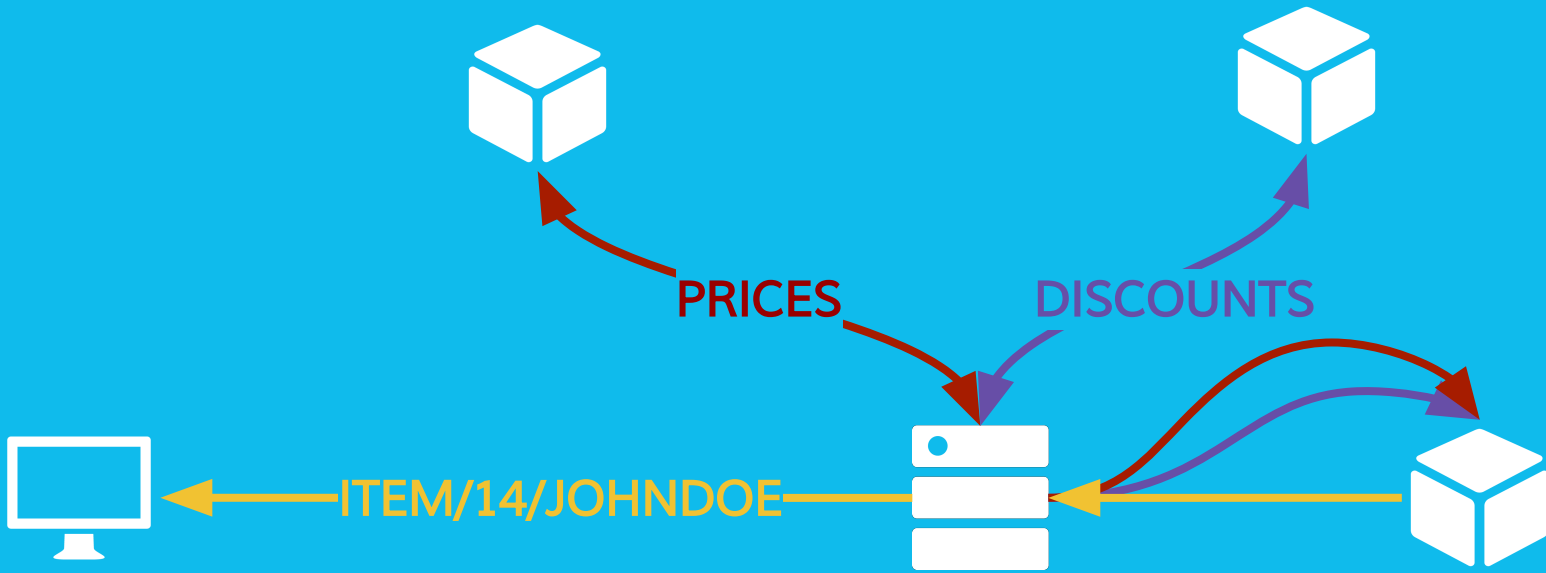
# TRANSFORMING DATA ON THE FLY

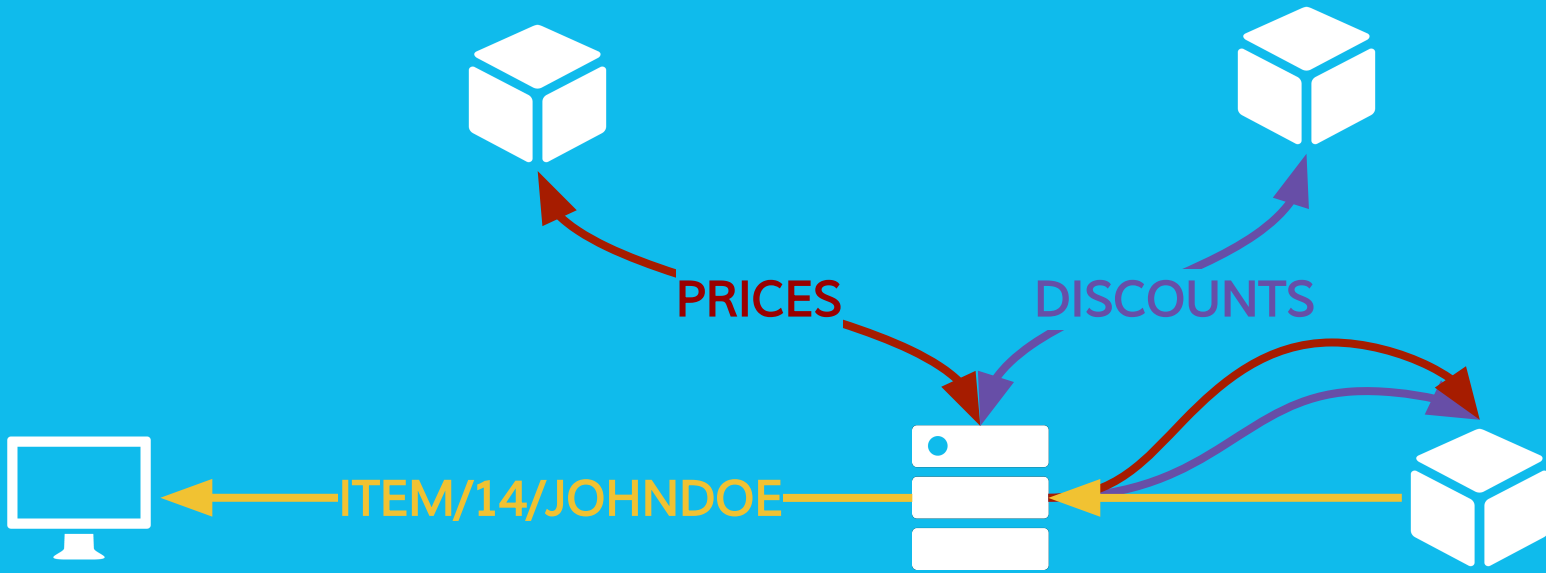


ITEM/14/JOHNDOE

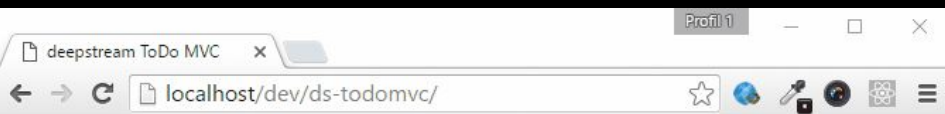








**#4**



# todos

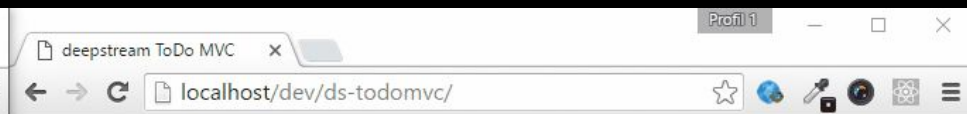
▼ *What needs to be done?*

stuff

1 item left

All Active Completed

Double-click to edit a todo  
deepstream.io ToDoMVC demo



# todos

▼ *What needs to be done?*

stuff

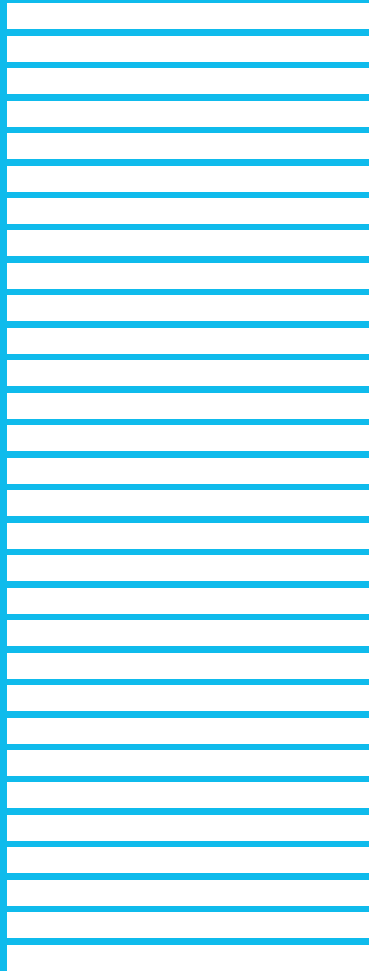
1 item left

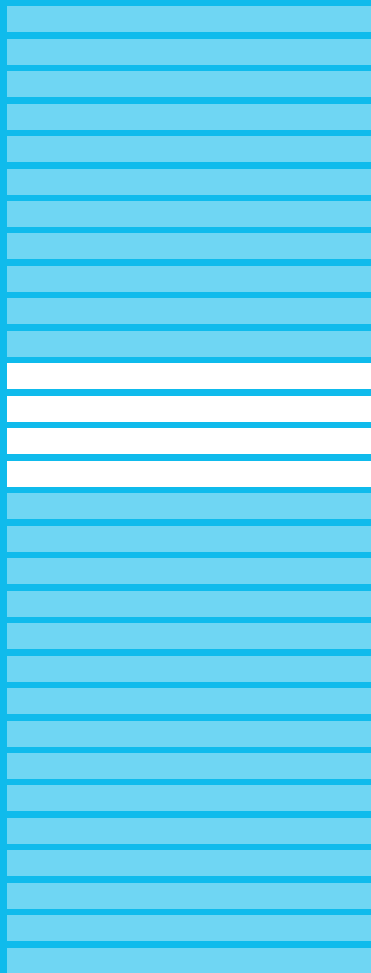
All Active Completed

Double-click to edit a todo  
deepstream.io ToDoMVC demo



**VIRTUALIZE**





# todos

The image shows a screenshot of a 'todos' application. At the top, there is a header with a checkmark icon and the text 'What needs to be done?'. Below this, there are three list items, each with a radio button and text: 'Stuff', 'More Stuff', and 'Even more Stuff'. To the left of the list, a bracket labeled 'todos' spans the three items. To the right, three separate brackets link each item to a unique ID: 'todo/ikfndidw-1973pnhmyk7' for 'Stuff', 'todo/ikfndiqx-43jddj23bsdf' for 'More Stuff', and 'todo/ikfndidt-5sdk3zag354' for 'Even more Stuff'. At the bottom of the list, there is a status bar showing '3 items left' and three filter buttons: 'All' (which is highlighted), 'Active', and 'Completed'.

todos

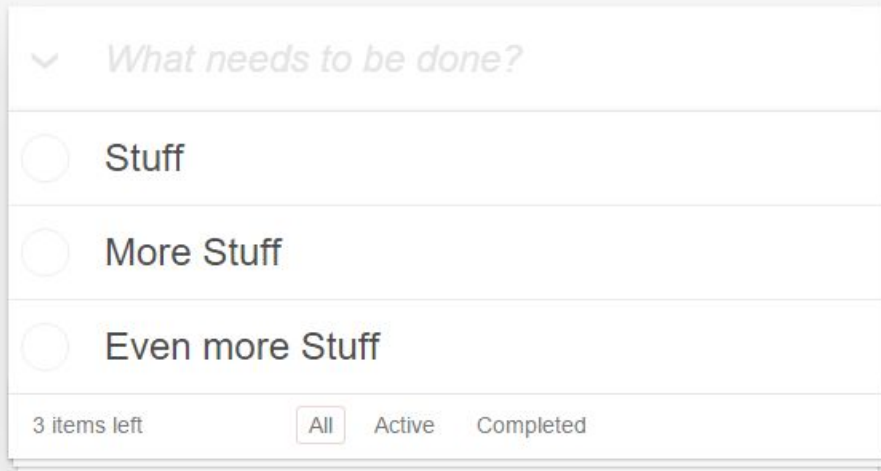
What needs to be done?

- Stuff todo/ikfndidw-1973pnhmyk7
- More Stuff todo/ikfndiqx-43jddj23bsdf
- Even more Stuff todo/ikfndidt-5sdk3zag354

3 items left   All   Active   Completed

Double-click to edit a todo  
deepstream.io TodoMVC demo

# todos



```
{
```

```
  title: 'more stuff',  
  completed: false
```

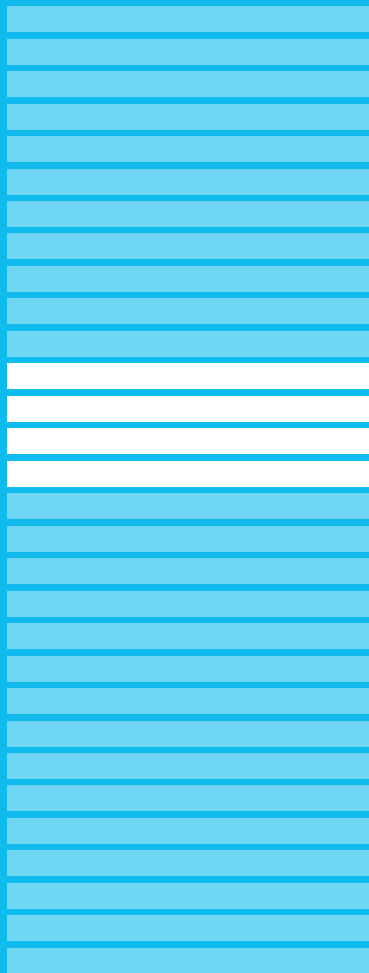
```
}
```

todo/ikfndidw-1973pnhmyk7

todo/ikfndiqx-43j dj23bsdf

todo/ikfndidt-5sdk3zag354

Double-click to edit a todo  
deepstream.io TodoMVC demo

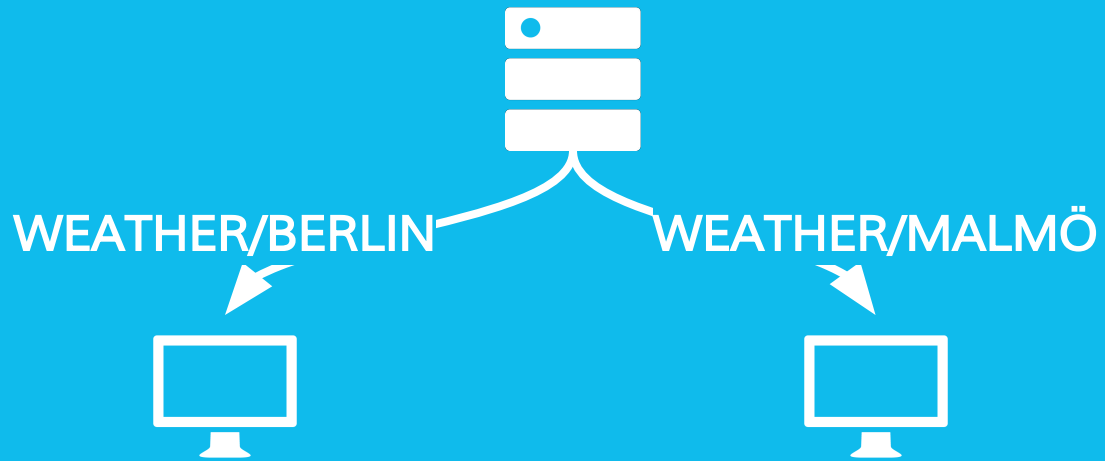


**#5**

**LISTENING/  
ACTIVE SUBSCRIPTIONS**



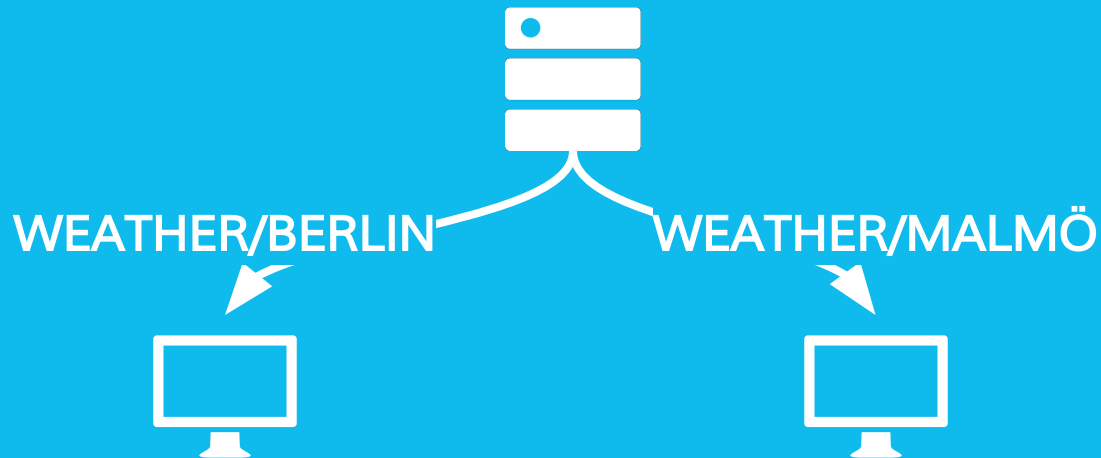


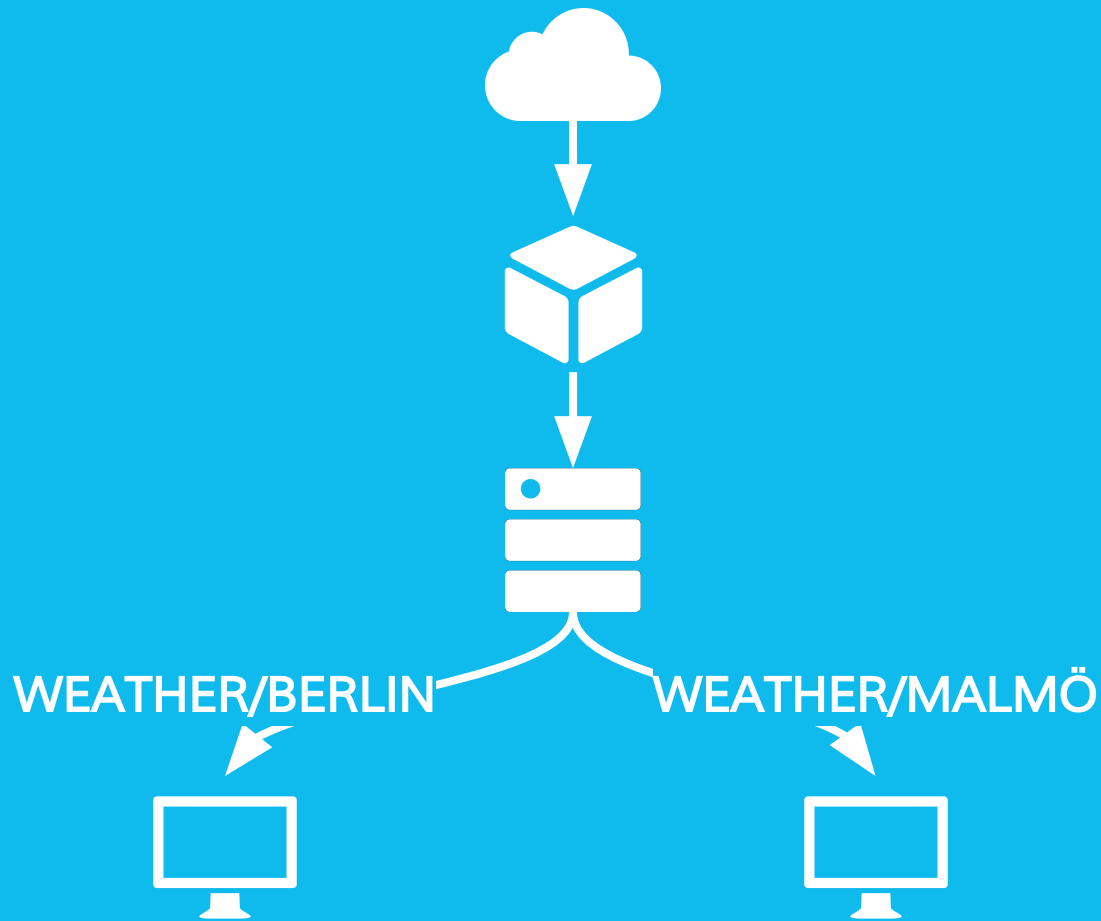


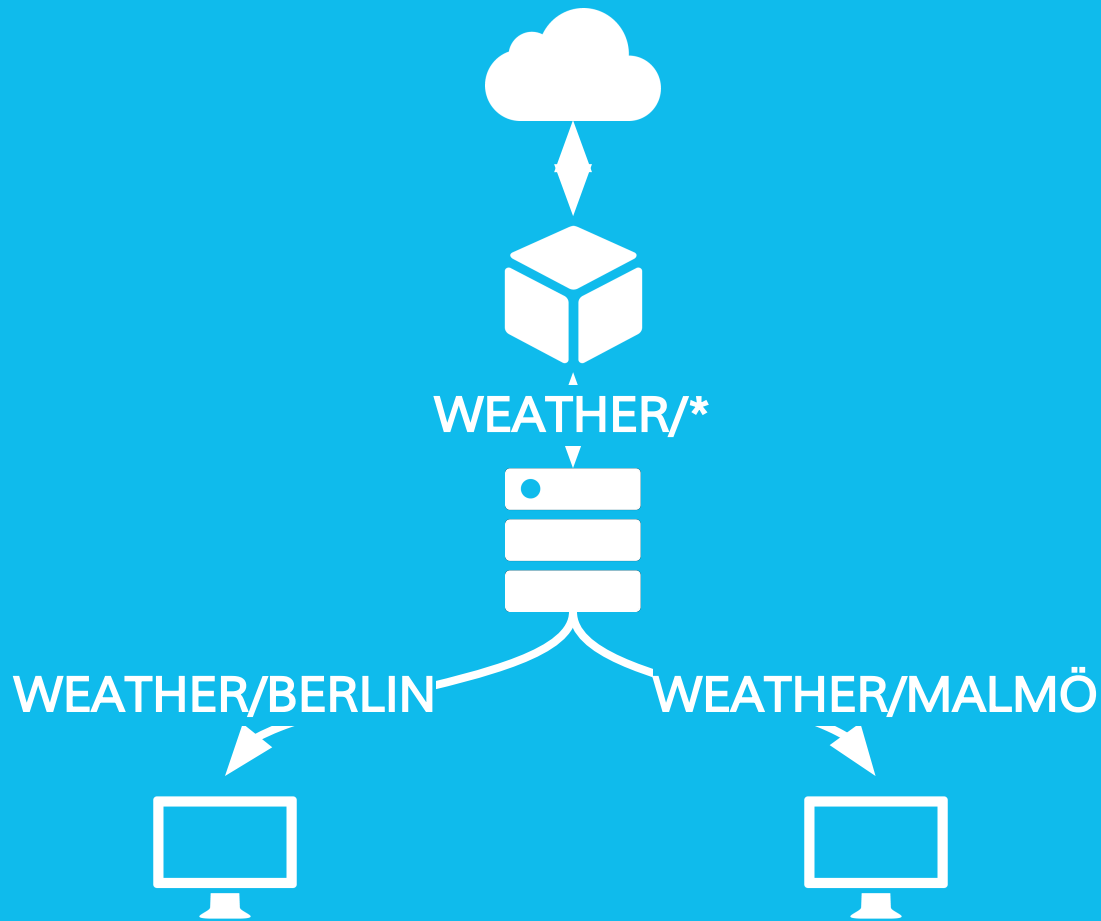


WEATHER/BERLIN

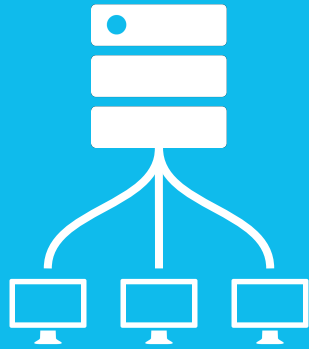
WEATHER/MALMÖ

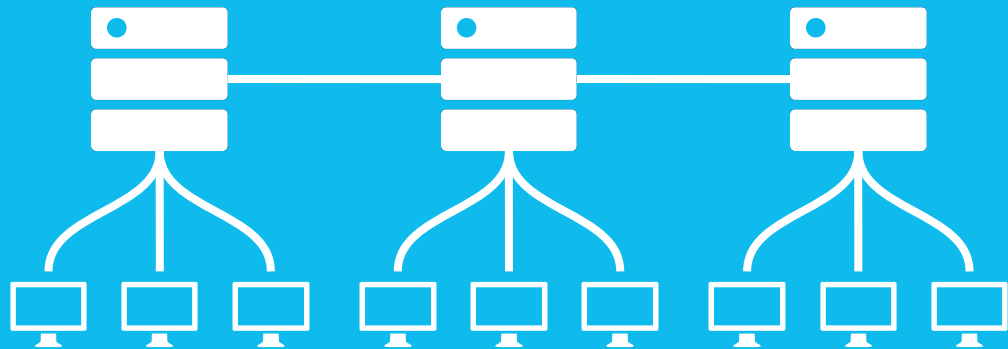




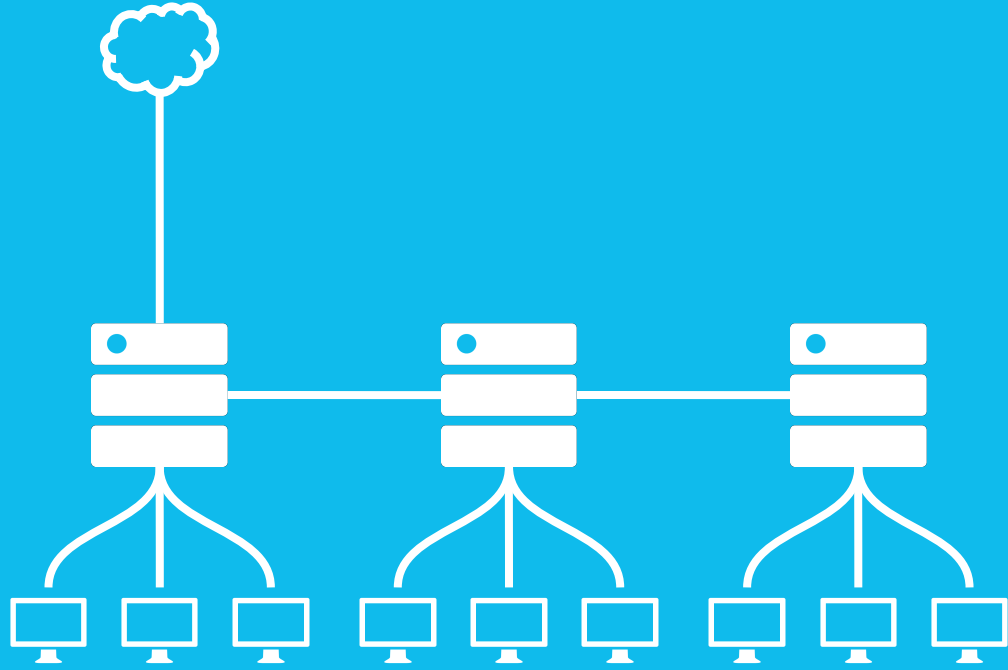


**PUTTING IT ALL  
TOGETHER**









Slack - deepstream.io

File Edit View Window Help

deepstream.io  
● wolframhempel

CHANNELS (3)

- # general
- # random
- # slack-integration

DIRECT MESSAGES (46)

- ♥ slackbot
- ahmadel-banna
- gmchaturvedi
- 🔗 netoperatorwibby
- 🔗 petemill
- rajan
- sudhh
- svenskunganka
- 🔗 tyler
- yasserf

#slack-inte  
1 member | Ad

Today

wolframhempel 9:59 AM  
added an integration to this channel: *incoming-webhook*

wolframhempel 10:02 AM  
added an integration to this channel: *outgoing-webhook*

incoming-webhook BOT 10:03 AM  
more

wolframhempel 10:03 AM  
ToDo stuff

incoming-webhook BOT 10:21 AM  
more stuff  
even more stuff

wolframhempel 10:21 AM  
well

10:21 ☆ ToDo much more stuff

+ [input field] 😊

deepstream ToDo MVC

localhost/dev/ds-todomvc/

# todos

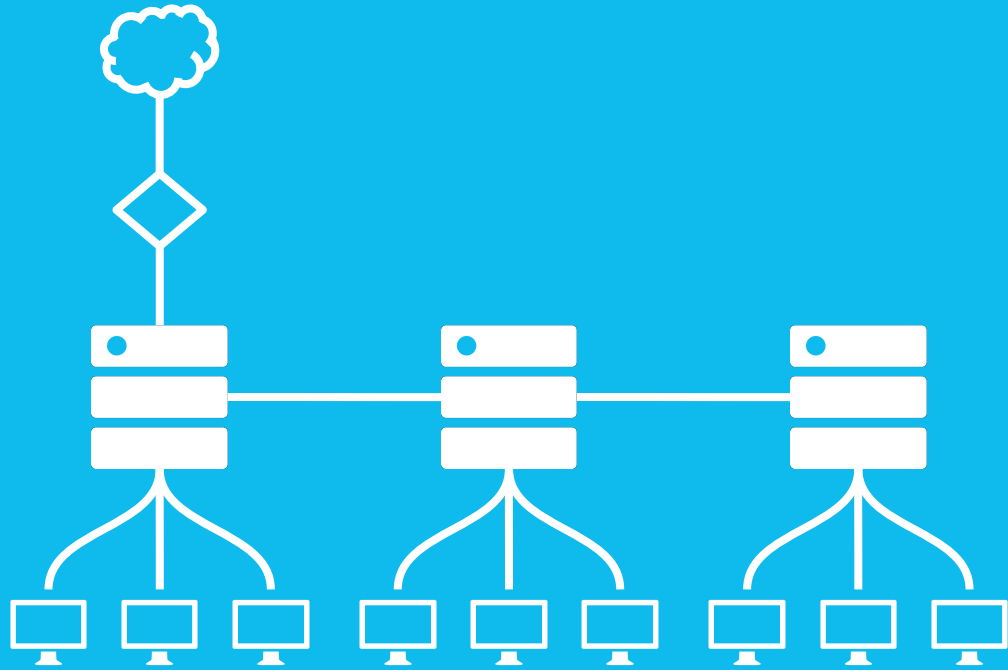
What needs to be done?

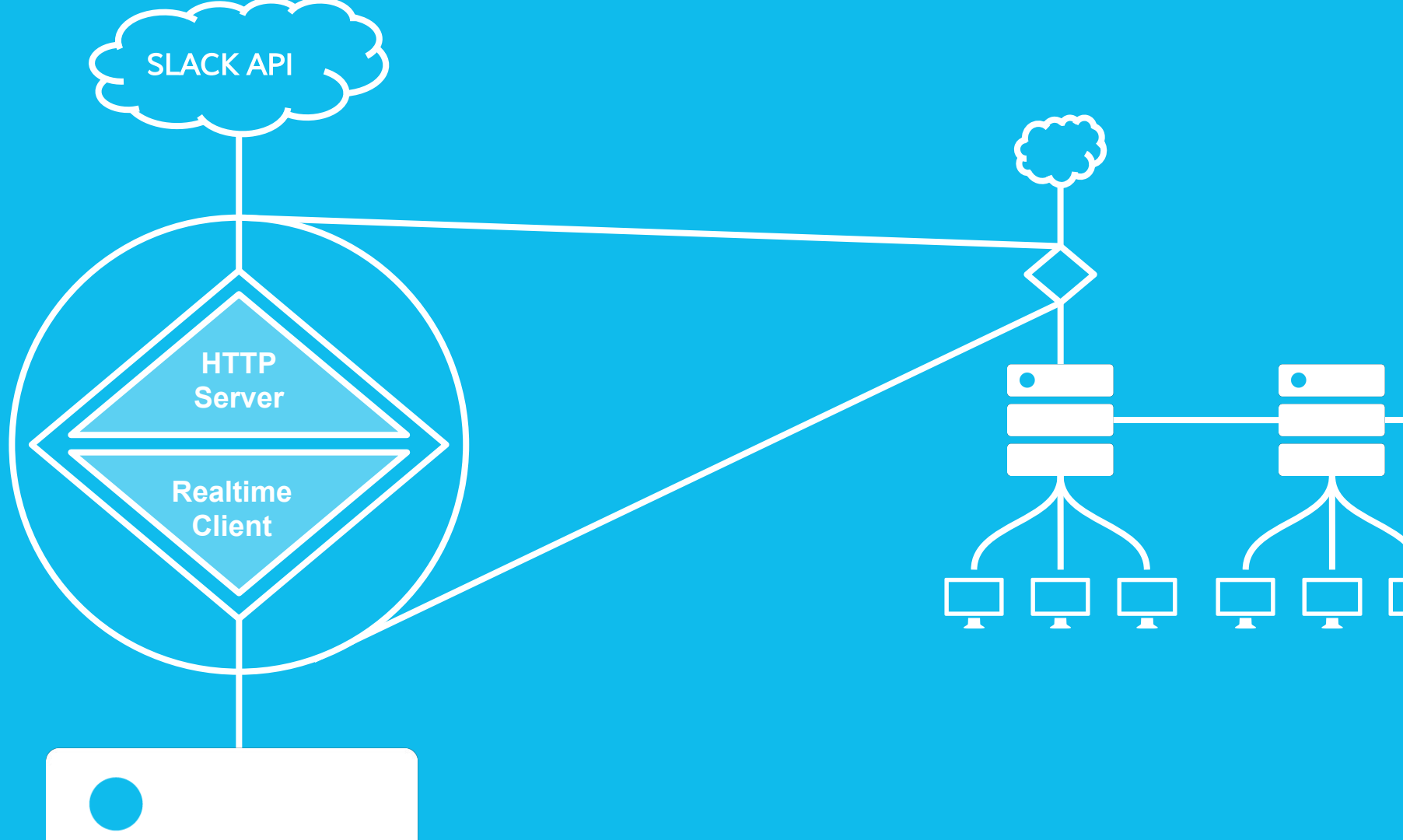
- stuff

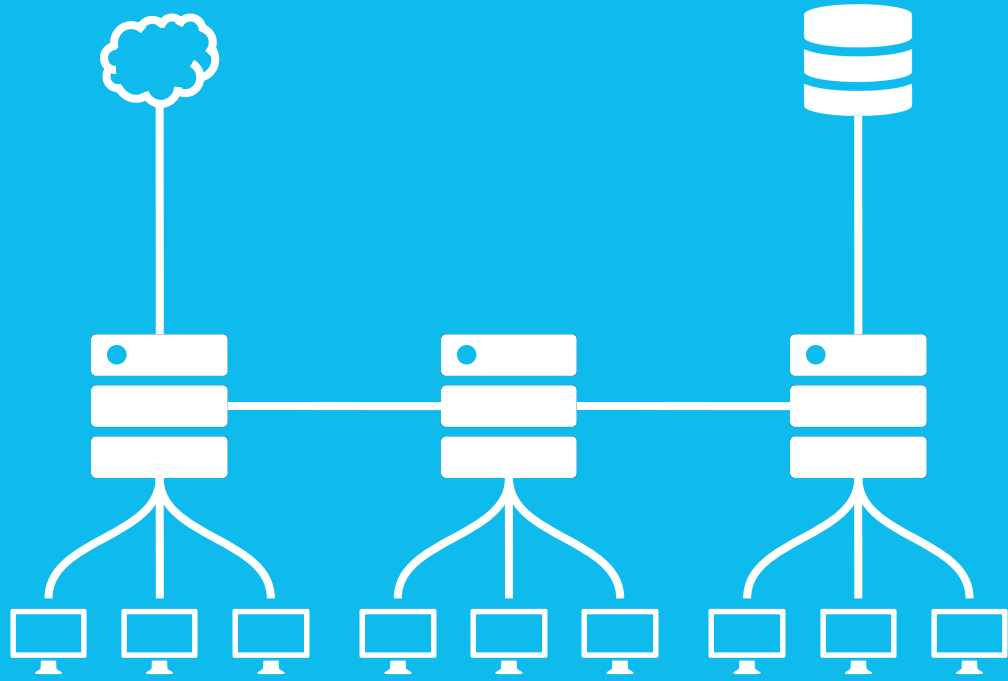
1 item left

All Active Completed

Double-click to edit a todo  
deepstream.io TodoMVC demo







Car Search Backend

localhost/dev/deepstreamhub-tests/car-sea

Mercedes C 180 convertible	X
Mercedes C 300 Coupe convertible	X
Fiat 500	X
Mercedes A Class	X
<b>+ add car</b>	

Car Details

Brand  
Mercedes

Model  
C 180

Price  
38000

Is Convertible

Car Search Frontend

localhost/dev/deepstreamhub-tests/car-search

Search

Brand  
-

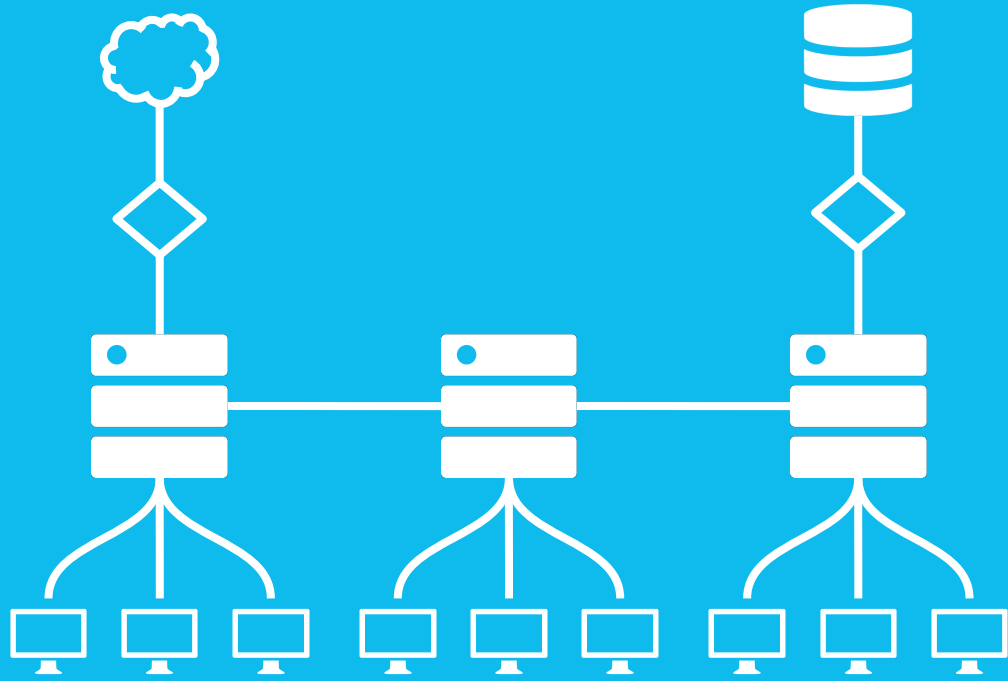
Model

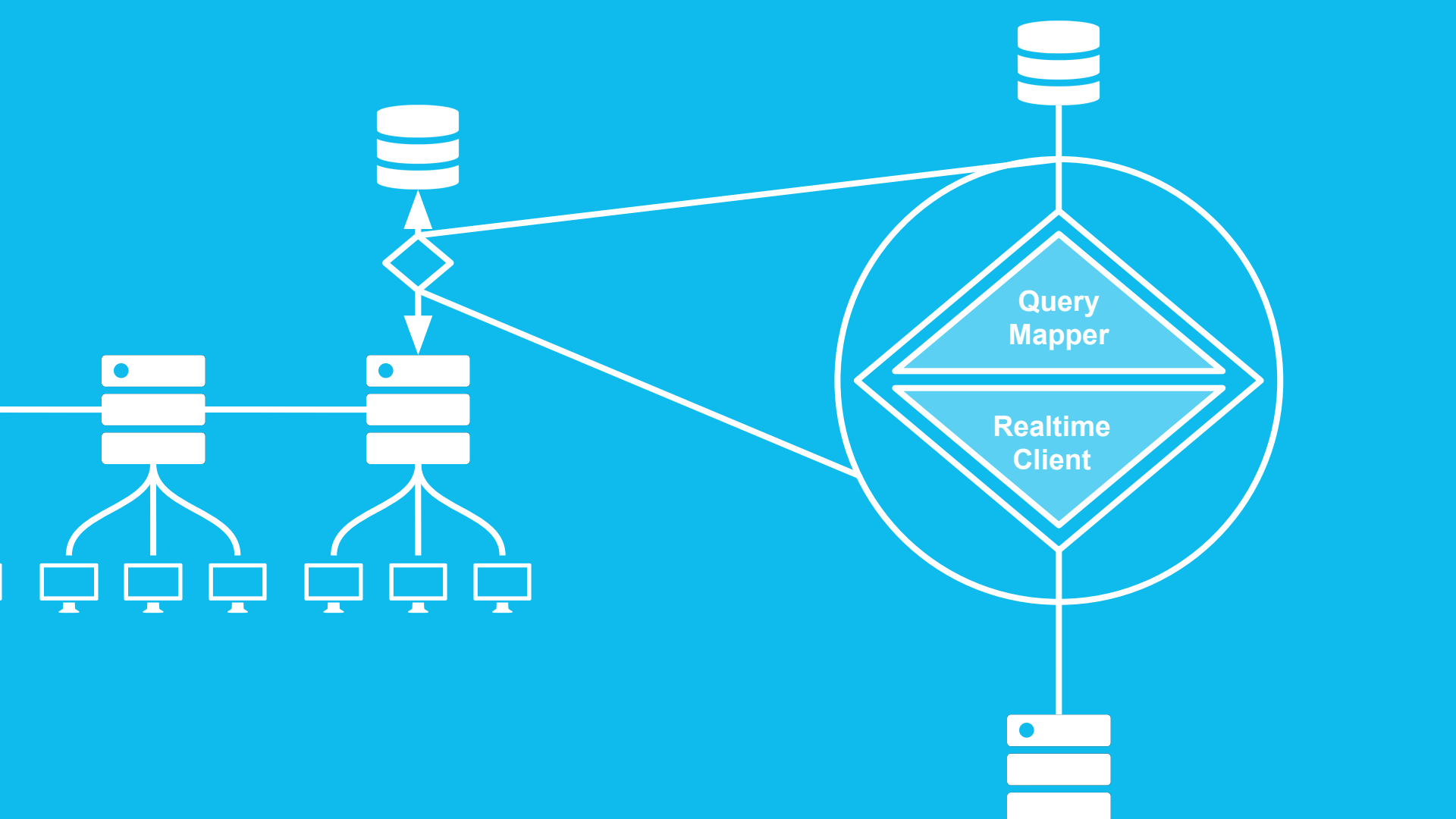
Price

Is Convertible

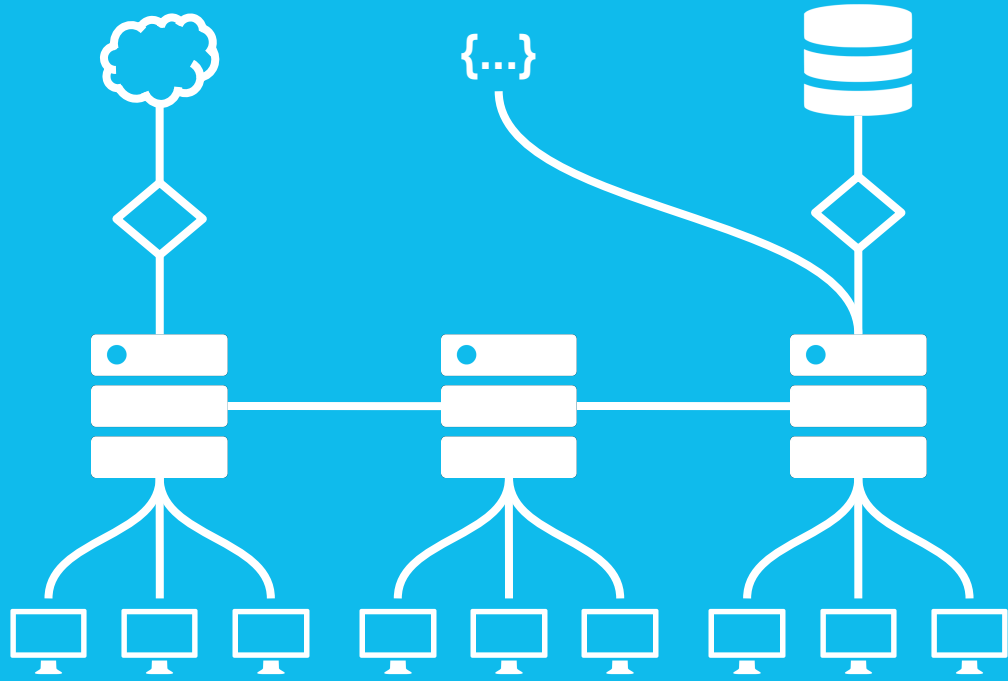
Search

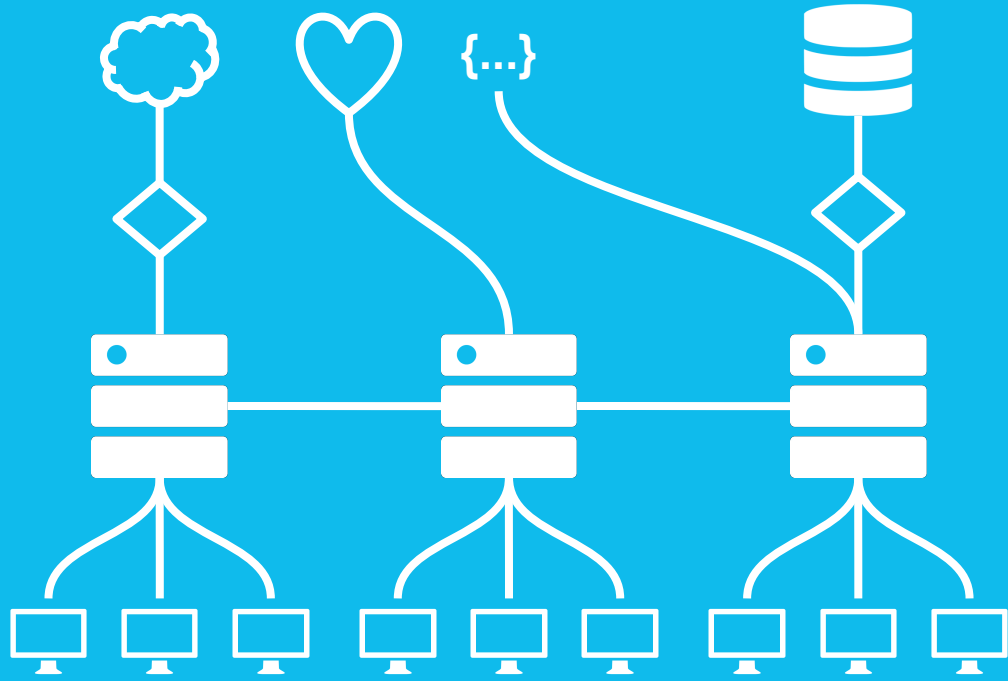
Mercedes C 180 - convertible Price: 38000
Mercedes C 300 Coupe - convertible Price: 44000
Fiat 500 Price: 16000
Mercedes A Class Price: 28000













DID ANY OF THIS  
MAKE ANY SENSE?