

Mobile offline capabilities thanks to HTML5 and JavaScript

Morten Nielsen

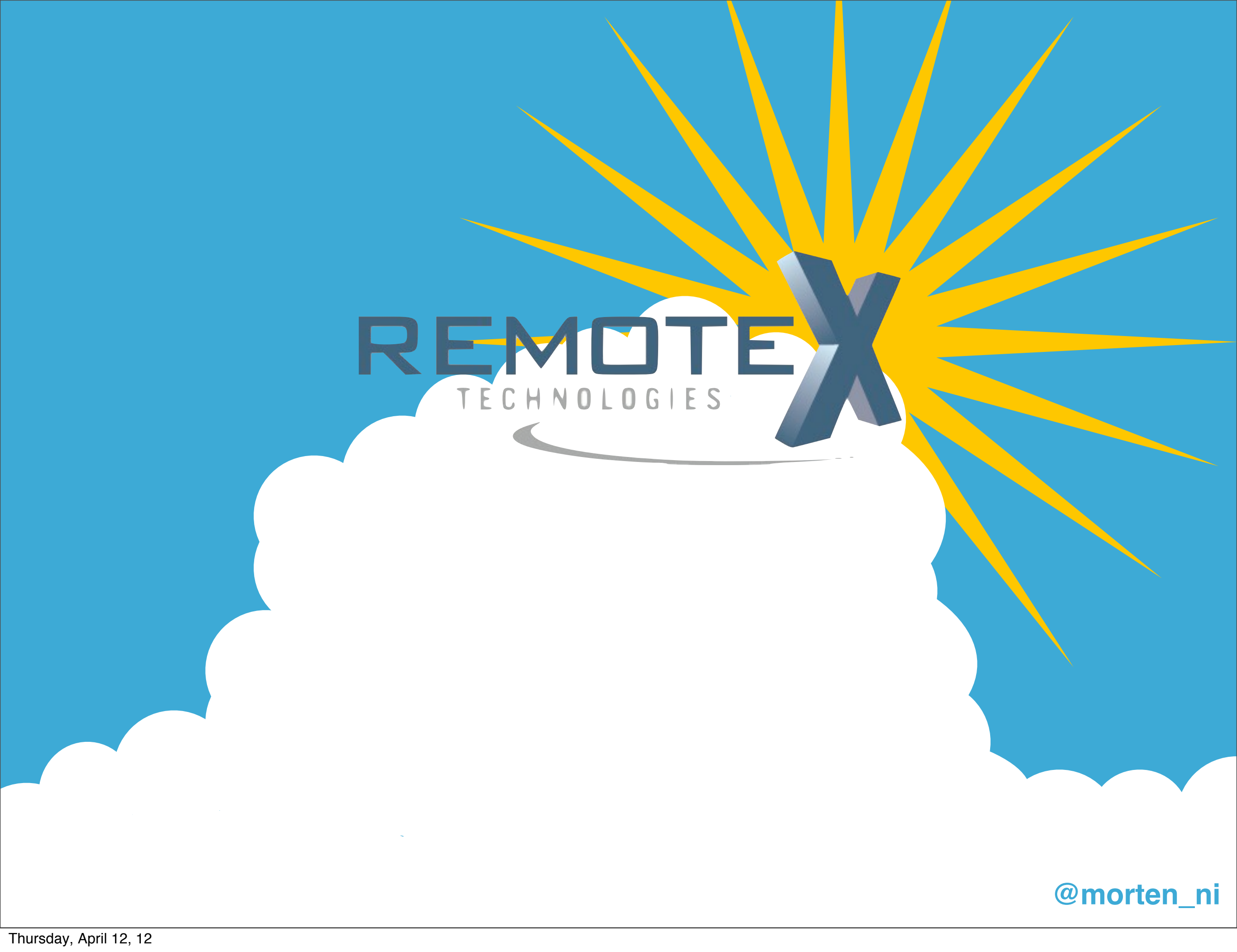


@morten_ni

www.morkeleb.com

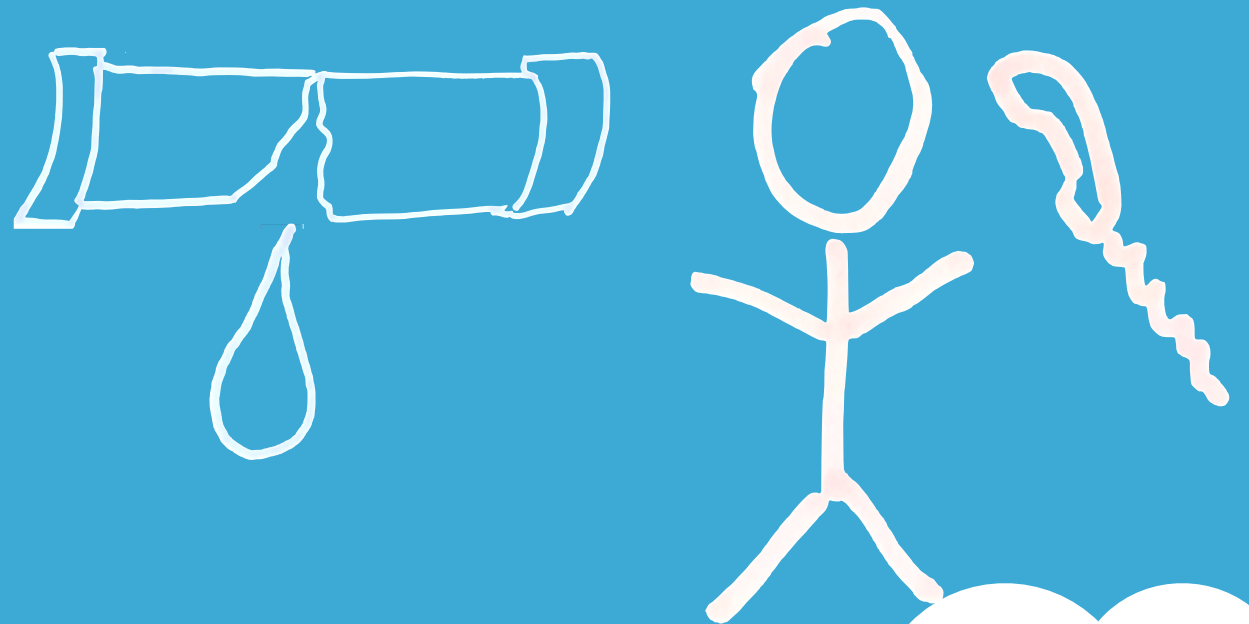
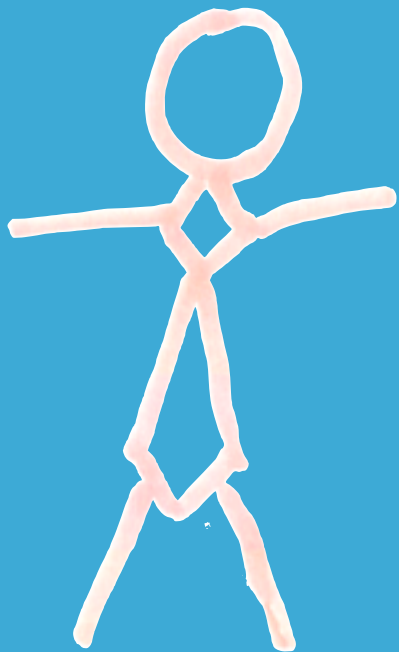
<https://github.com/morkeleb>

@morten_ni

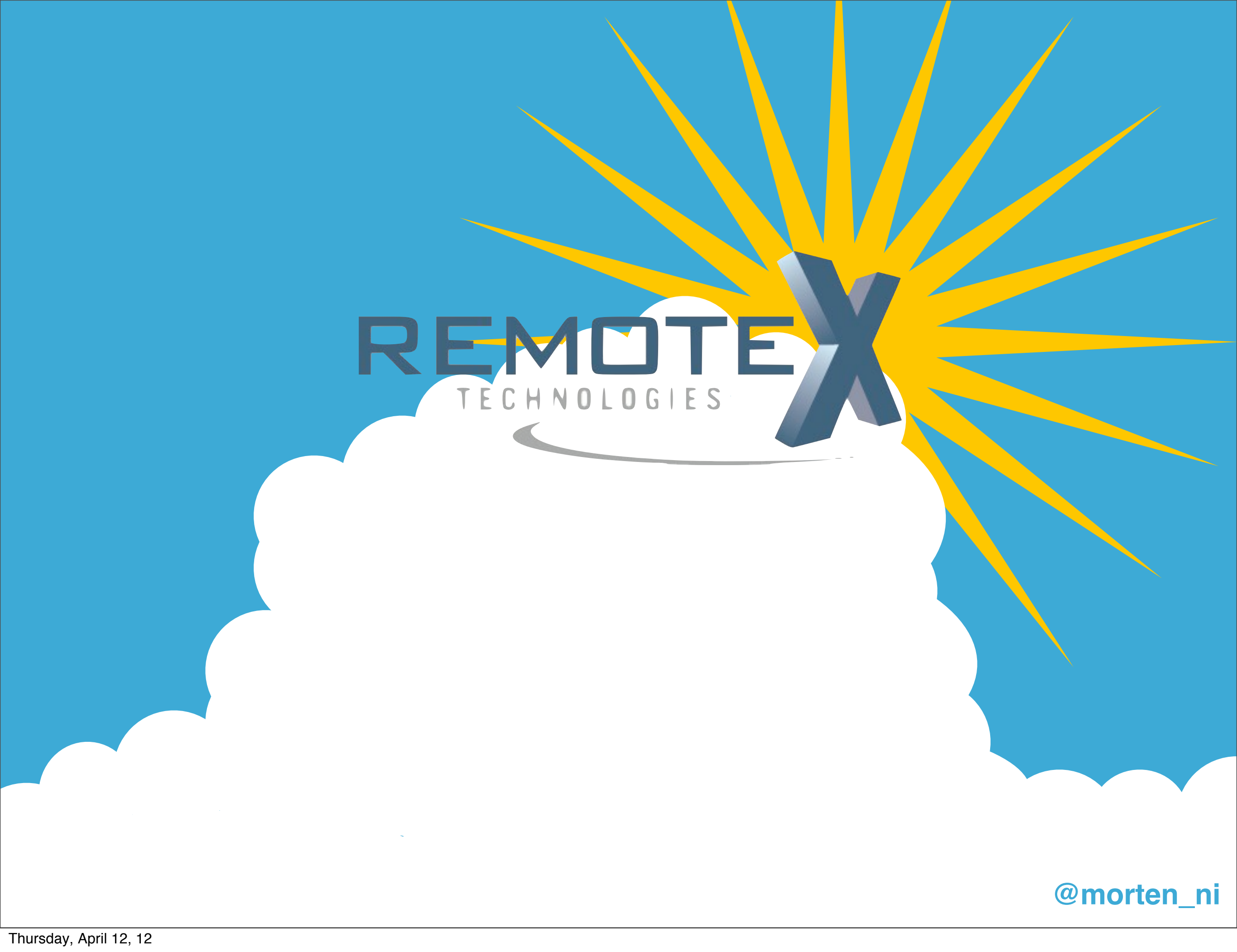


REMOTE
TECHNOLOGIES

@morten_ni



@morten_ni



REMOTE
TECHNOLOGIES

@morten_ni

2001-2010

@morten_ni

2000



2006



2007





@morten_ni



@morten_ni

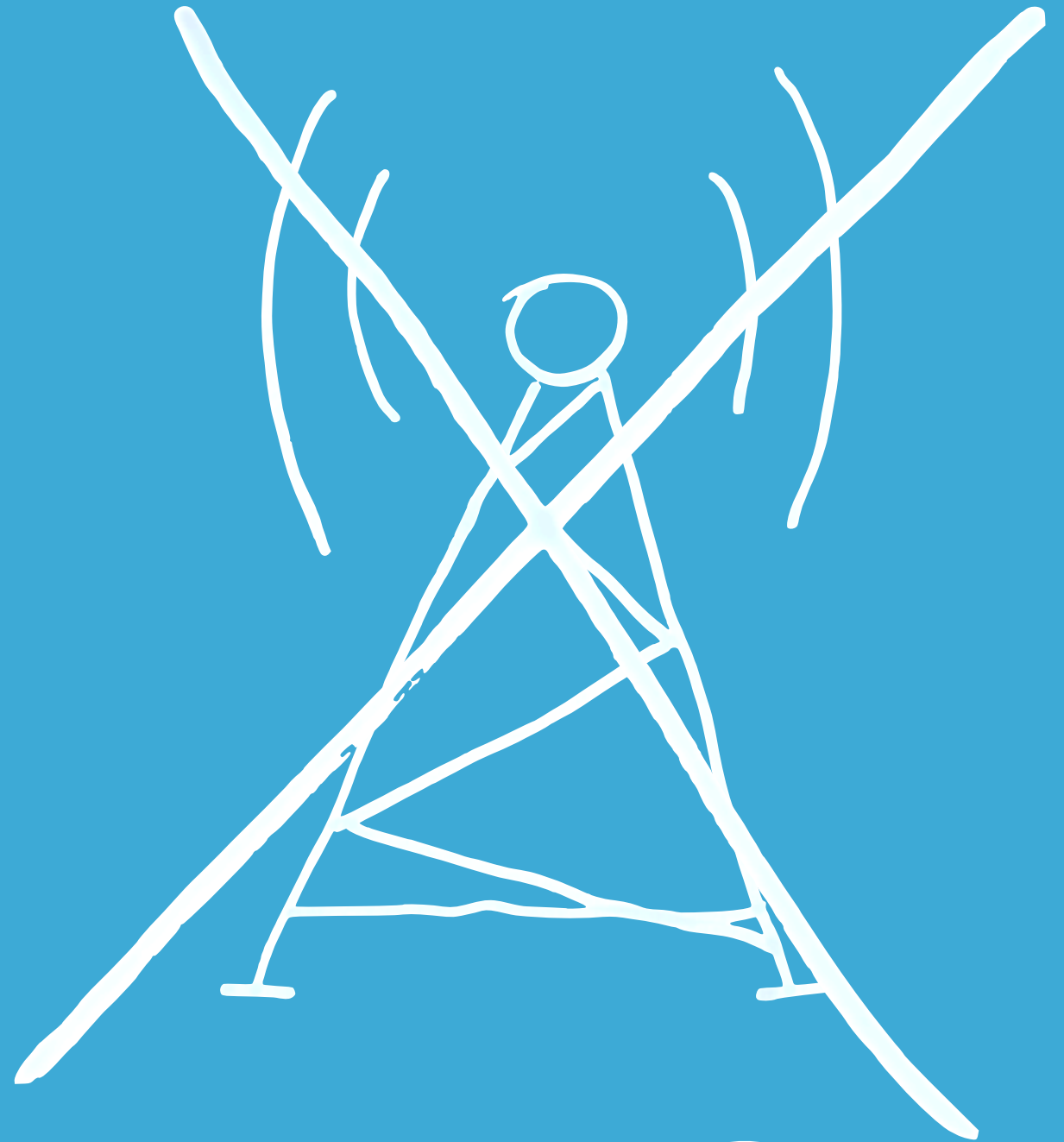
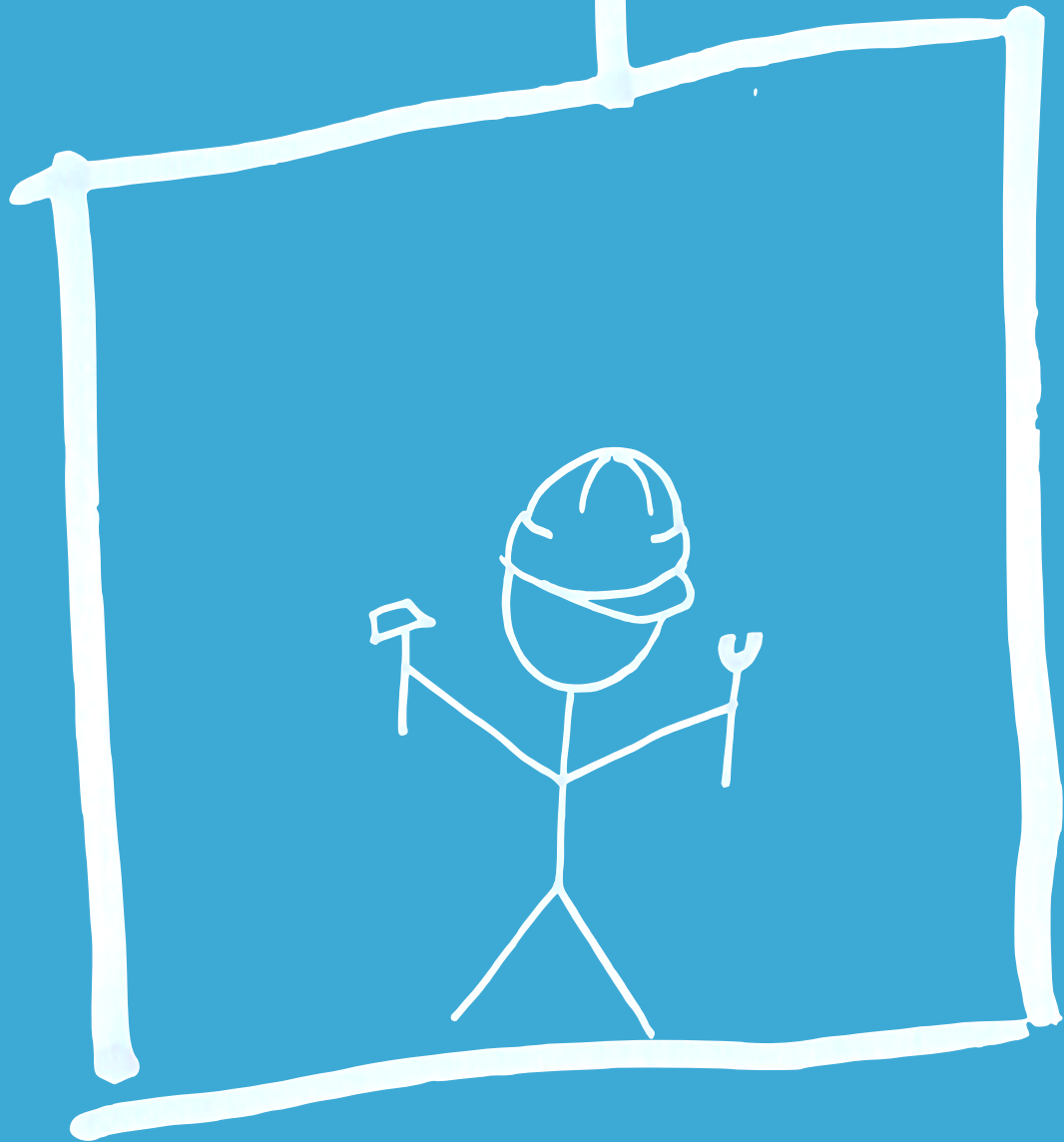


@morten_ni

HTML5



@morten_ni



@morten_ni

Two things



@morten_ni

Run locally

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

Store data



@morten_ni

Run locally

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

AppCache

A white, stylized cloud graphic with multiple rounded peaks, positioned in the bottom right corner of the slide.

@morten_ni

<http://www.w3.org/TR/html5/offline.html>

@morten_ni

The manifest



@morten_ni

```
<html manifest="app.appcache">  
  ...  
</html>
```

CACHE MANIFEST

NETWORK:

comm.cgi

CACHE:

style/default.css

images/sound-icon.png

images/background.png

```
var appCache = window.applicationCache;

switch (appCache.status) {
    ...
}

appCache.update();

...

if (appCache.status == window.applicationCache.UPDATEREADY) {
    appCache.swapCache();
}
```

Tips

@morten_ni

Generate it



@morten_ni

#generation date

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

Don't put the manifest in the manifest

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

text/cache-manifest

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

UTF-8



@morten_ni

<http://manifest-validator.com/>

@morten_ni

cache content & Ajax

A white, stylized cloud graphic with multiple rounded peaks, positioned in the bottom right corner of the slide.

@morten_ni

Don't rush!

@morten_ni

Storing data

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

2 different choices

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

localStorage

@morten_ni

Stores strings



@morten_ni

Very simple



@morten_ni

```
localStorage[ 'myKey' ] = "my data"  
localStorage[ 'myKey' ]
```

localStorage.clear()

2.5 Mb

[http://dev-test.nemikor.com/web-storage/
support-test/](http://dev-test.nemikor.com/web-storage/support-test/)



@morten_ni

webSql

A white, stylized cloud graphic with multiple rounded peaks, positioned in the bottom right corner of the slide.

@morten_ni

More than 2.5 Mb



@morten_ni

```
var db = openDatabase('mydb', '1.0', 'my database', 2 * 1024 * 1024);

db.transaction(function (tx) {
    tx.executeSql('SELECT * FROM foo', [], function (tx, results) {
        console.dir(results);
    });
});
```

<http://persistencejs.org/>

@morten_ni

Schemas

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni



@morten_ni

Indexdb

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

	IE	Firefox	Chrome	Safari	Opera	iOS Safari	Opera Mini	Opera Mobile	Android Browser
13 versions back			4.0						
12 versions back			5.0						
11 versions back		2.0	6.0						
10 versions back		3.0	7.0						
9 versions back		3.5	8.0						
8 versions back		3.6	9.0		9.0				
7 versions back		4.0 moz	10.0		9.5-9.6				
6 versions back		5.0 moz	11.0 webkit		10.0-10.1				
5 versions back		6.0 moz	12.0 webkit		10.5				
4 versions back	5.5	7.0 moz	13.0 webkit	3.1	10.6			10.0	
3 versions back	6.0	8.0 moz	14.0 webkit	3.2	11.0	3.2		11.0	2.1
2 versions back	7.0	9.0 moz	15.0 webkit	4.0	11.1	4.0-4.1		11.1	2.2
Previous version	8.0	10.0 moz	16.0 webkit	5.0	11.5	4.2-4.3		11.5	2.3 3.0
Current	9.0	11.0 moz	17.0 webkit	5.1	11.6	5.0	5.0-6.0	12.0	4.0
Near future	10.0 ms	12.0 moz	18.0 webkit	6.0	12.0				

<http://caniuse.com/indexeddb>

@morten_ni

Now what?

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

Synchronization

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

It's personal



@morten_ni

Know the data

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

Feel the data

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

Let the data flow too you



@morten_ni

Versions

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

Size

@morten_ni

Conflicts

@morten_ni

logical clocks

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

CQS/CQRS

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

General pattern of mobile synchronization

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

1. Send your changes to the server

2. Ask for updates

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

**3. If possible, clean
up your mess**

Google Analytics

@morten_ni


```
function saveTime(e, jqxhr, settings) {  
    settings.startTime = new Date().getTime();  
}  
  
function registerTime(e, jqxhr, settings) {  
    _gaq.push(['_trackEvent', 'AjaxResponseTime',  
settings.type, settings.url.split('?')[0],  
    (new Date().getTime() - settings.startTime)]);  
}  
  
$(document).ajaxSend(saveTime);  
$(document).ajaxComplete(registerTime);
```


native vs. html5 development

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

nginx



@morten_ni

Data alignment



@morten_ni

Testing

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

Jasmine

@morten_ni

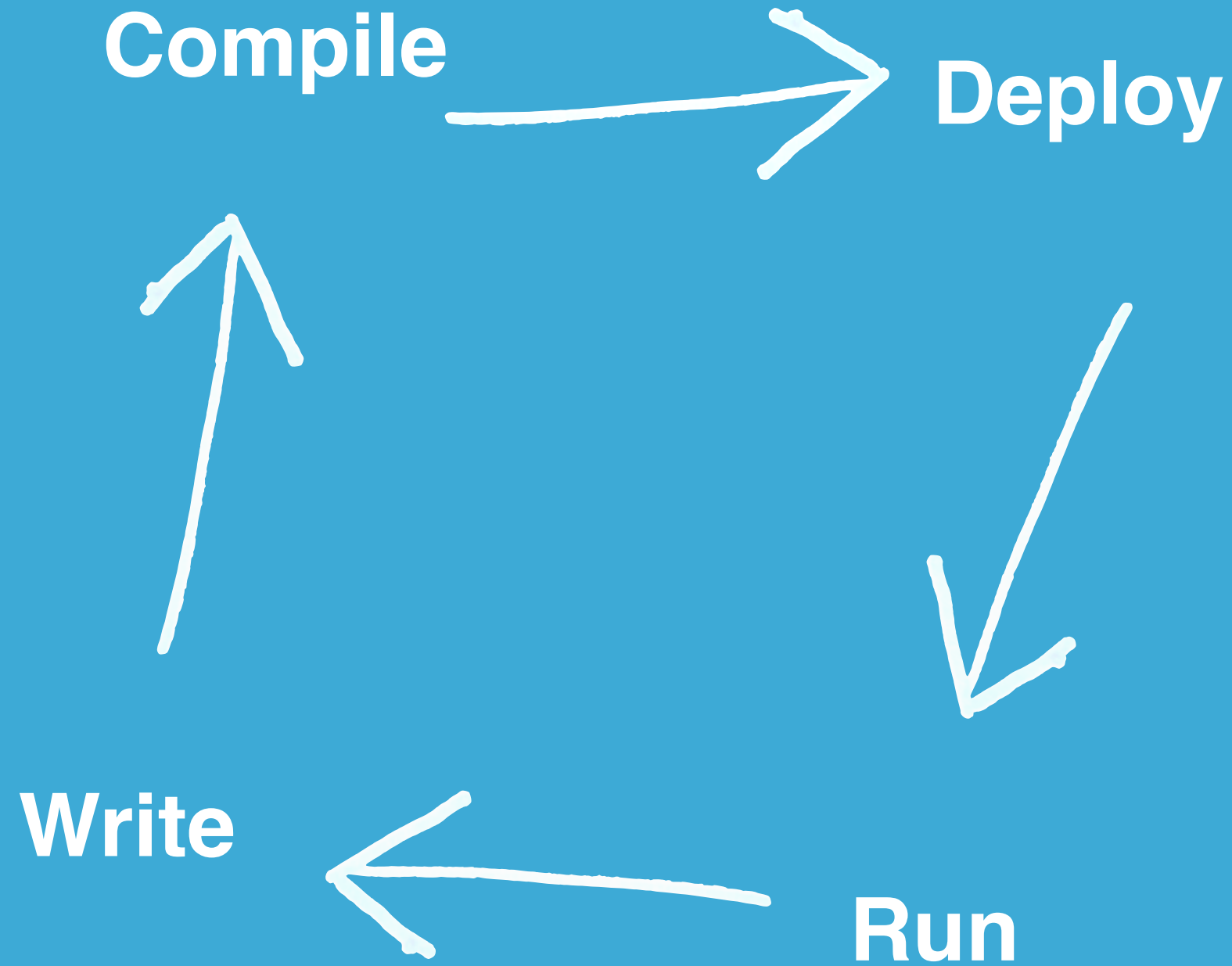
Selenium



@morten_ni

Feedback cycle

@morten_ni



Write



Run

Browsers are fast



@morten_ni

Browsers are getting faster

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

Demo

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

JQuery



@morten_ni

Knockout.js

A white, stylized cloud graphic with multiple rounded peaks, positioned in the bottom right corner of the slide.

@morten_ni

MVVM

@morten_ni

JQuery UI

A white cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

How far can you go?



@morten_ni

Photo and file access

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

PhoneGap

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

Ending

A white, stylized cloud graphic with multiple rounded, overlapping shapes, positioned in the bottom right corner of the slide.

@morten_ni

**Works on both
major players
and possibly more**



@morten_ni

This is a viable option



@morten_ni