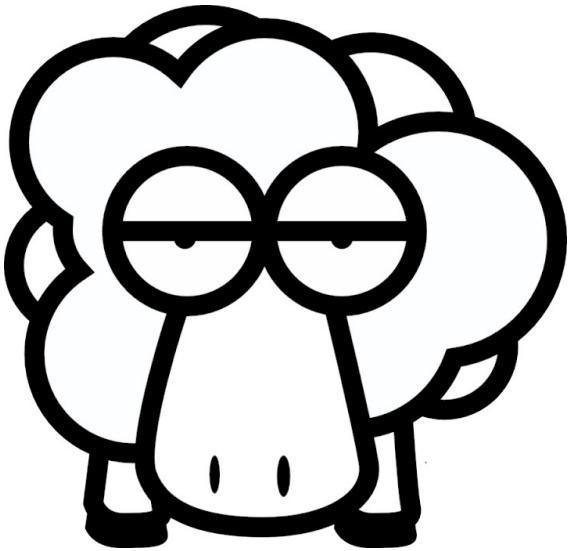


# Realtà aumentata e WebApp

Luciano Giuseppe x LinuxDay Avellino 2018

# Apps Cache

**HTML5 possiede un meccanismo di application caching che permette alle applicazioni web-based di funzionare anche offline.**

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

**L'attributo manifest fa riferimento ad un cache manifest, un file di testo che elenca tutte le risorse (files) che il browser deve memorizzare per la tua applicazione.**

```
CACHE MANIFEST
# v1 - 2011-08-13
# This is a comment.
http://www.example.com/index.html
http://www.example.com/header.png
http://www.example.com/blah/blah
```

**I browser aggiornano  l'application cache solo se il file manifest viene modificato.**

**Funziona solo con HTTPS da Chrome 70 e Firefox 62**

# Progressive Web Apps

**Smartphon e Desktop!**

**Obbligatori**

**- Il manifest è un JSON**

```
<!doctype>
<html>
<title>Racer 3K</title>
<!-- Startup configuration -->
<link rel="manifest" href="manifest.webmanifest">
```

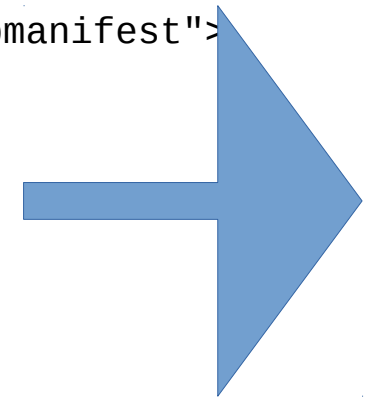
**- Protocoll HTTPS**

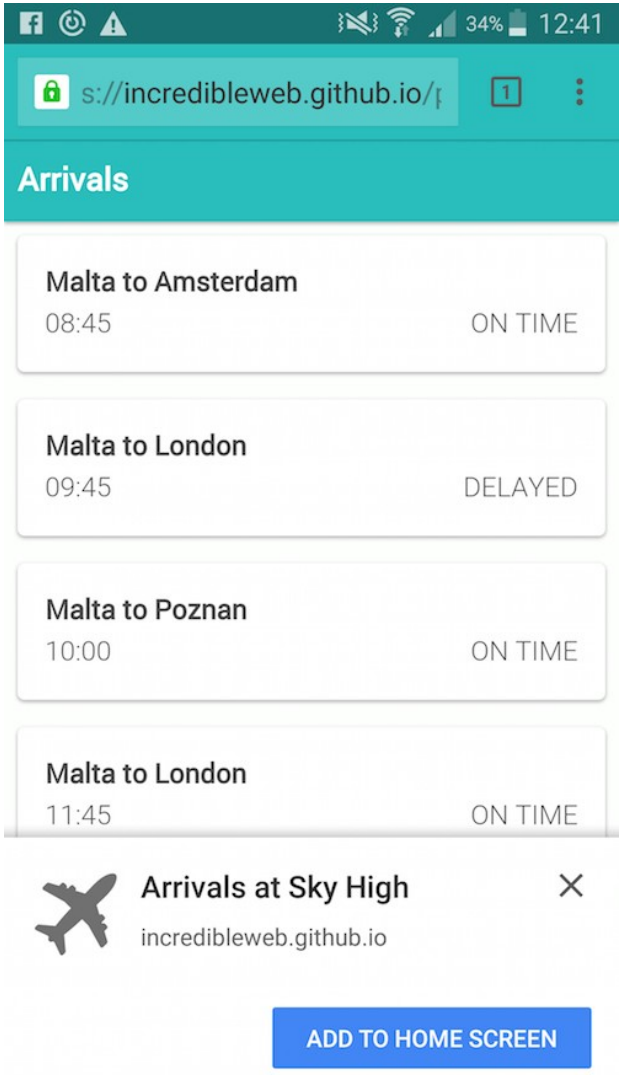
**- Service Worker**

**Altre funzionalità:**

**- Push API**

**- IndexedDB e WebStorage**





# AFrame

**“A web framework for building virtual reality experiences” basato su Three.js**

**https://aframe.io/examples/showcase/helloworld/**

**https://aframe.io/examples/showcase/animation/**

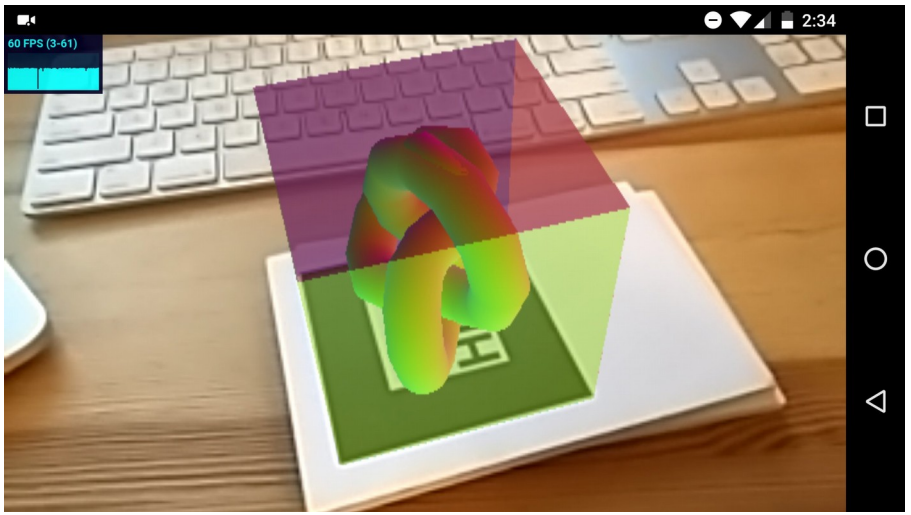
```
<html>
  <head>
    <script src="https://aframe.io/releases/0.8.0/aframe.min.js"></script>
  </head>
  <body>
    <a-scene>
      <a-box position="-1 0.5 -3" rotation="0 45 0" color="#4CC3D9"></a-box>
      <a-sphere position="0 1.25 -5" radius="1.25" color="#EF2D5E"></a-sphere>
      <a-cylinder position="1 0.75 -3" radius="0.5" height="1.5" color="#FFC65D"></a-cylinder>
      <a-plane position="0 0 -4" rotation="-90 0 0" width="4" height="4" color="#7BC8A4"></a-
plane>
      <a-sky color="#ECECEC"></a-sky>
    </a-scene>
  </body>
</html>
```

**Ctrl + Alt + i : Visual Inspector**

# AR.js - Augmented Reality for the Web

**AR.js è basato su:**

- **Aframe <-->Three.js**
- **Artoolkit: "The ARToolKit video tracking libraries calculate the real camera position and orientation relative to physical markers in real time."**
  - *emscripten* e *asm.js*:con cui compilare Artoolkit in js



# AR.js - Augmented Reality for the Web

```
<!doctype HTML>
<html>
<script
src="https://aframe.io/releases/0.6.1/aframe.min.js"></script>
<script
src="https://cdn.rawgit.com/jeromeetienne/AR.js/1.5.0/aframe/build/af
rame-ar.js"> </script>
  <body style='margin : 0px; overflow: hidden;'>
    <a-scene embedded arjs>
        <a-marker preset="hiro">
            <a-box position='0 0.5 0' material='color: black;'>
            </a-box>
        </a-marker>
        <a-entity camera></a-entity>
    </a-scene>
  </body>
</html>
```

Si possono caricare anche oggetti 3D sfruttando Three.js con Aframe-extra

# WebApp + AR.js

**Tocca a noi!**

**Demo: https://irlug.it/ar/**

# LINK

- https://developer.mozilla.org/it/docs/Web/HTML/utilizzare_application_cache
- https://w3c.github.io/manifest/
- https://www.smashingmagazine.com/2016/08/a-beginners-guide-to-progressive-web-apps/
- https://medium.com/@akashkuttappa/using-3d-models-with-ar-js-and-a-frame-84d462efe498