

Capable

PWAs



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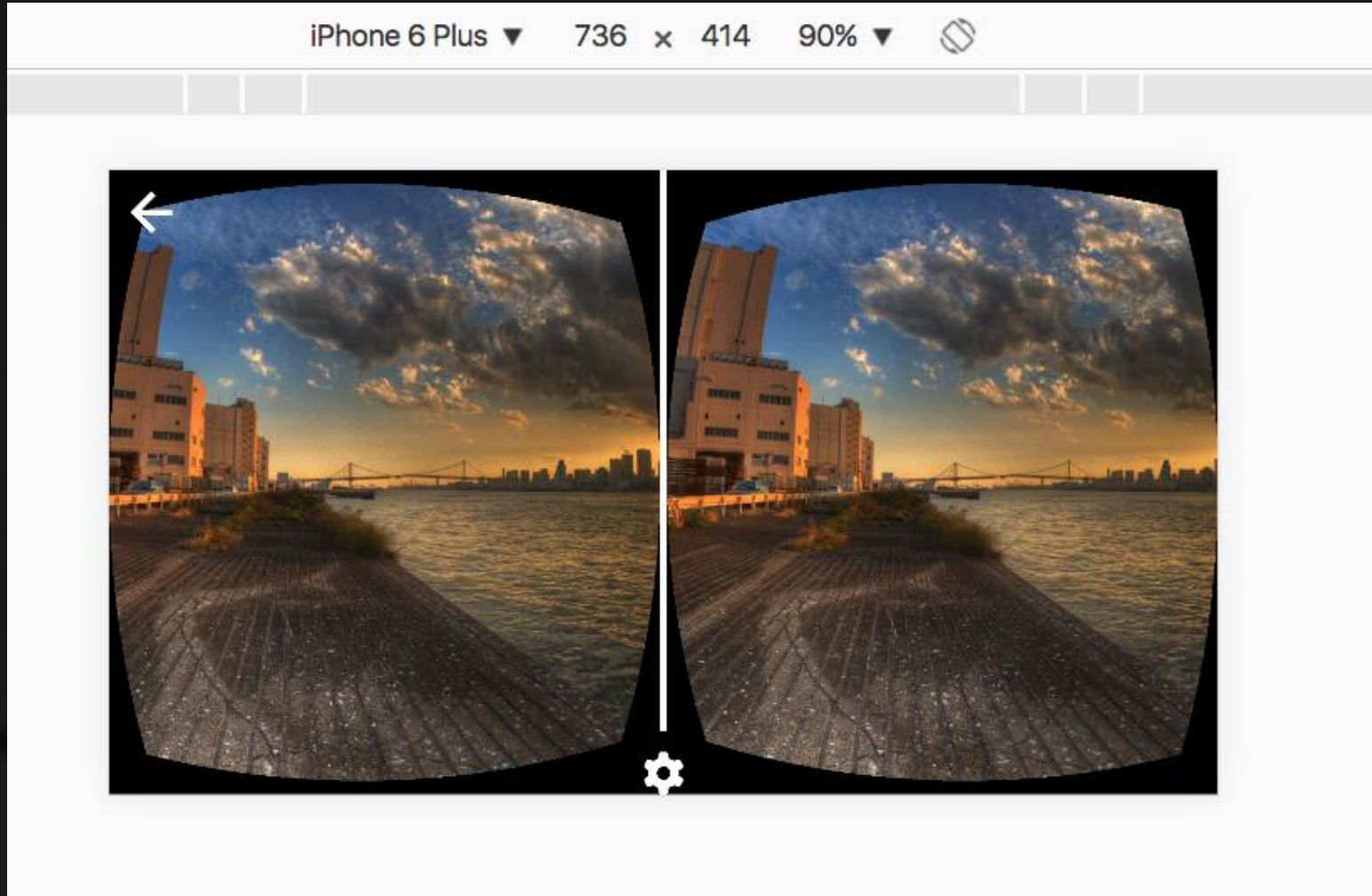
HTML 5 Canvas

<canvas>-element is used to create graphics using javascript.

- ✓ Graphs
- ✓ Photo-composition
- ✓ Animations
- ✓ Real-time games
- ✓ ...

Ex: <http://bedford.io/projects/coaltrace/>

WEBXR API



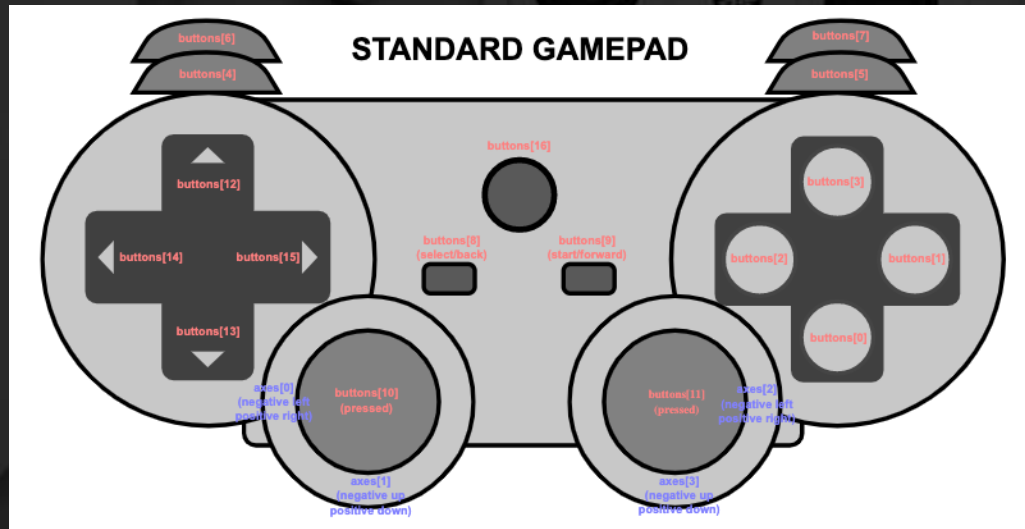
<https://www.w3.org/TR/webxr/>



Gamepad API

```
window.addEventListener('gamepadconnected', e => {  
  let index = e.gamepad.index  
  let id = e.gamepad.id  
  let nbrButtons = e.gamepad.buttons.length  
  let nbrAxes = e.gamepad.axes.length  
})
```

<https://www.w3.org/TR/gamepad/>



Communication

✓ Web Bluetooth

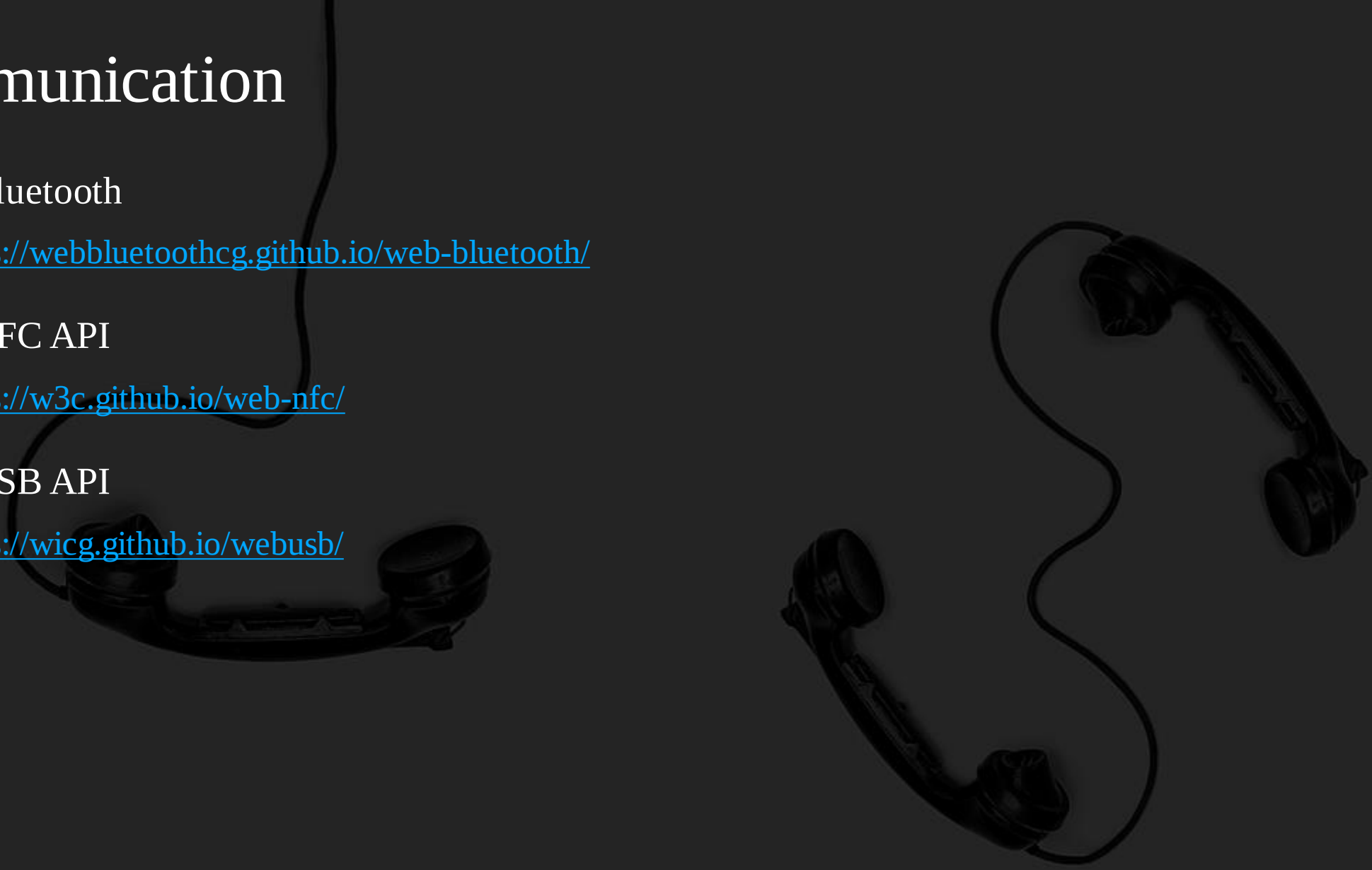
- <https://webbluetoothcg.github.io/web-bluetooth/>

✓ Web NFC API

- <https://w3c.github.io/web-nfc/>

✓ Web USB API

- <https://wicg.github.io/webusb/>





Page 1



WEBGL

WebGL is a web technology that brings hardware-accelerated 3D graphics to the browser without installing additional software.

<https://paperplanes.world/>

Payment Request API

- ✓ <https://youtu.be/wAbOyCSzIeM>
- ✓ <https://github.com/w3c/webpayments/wiki>



Web Share API

- ✓ *A way to allow websites to invoke the native sharing capabilities of the host platform*

Web Share Target API

- ✓ *Make your PWA (progressive web application) the target of a share*

Web Animation API

- ✓ *Lets you create animations that are run in the browser, as well as inspect and manipulate animations created through declarative means like CSS.*

Dynamic Typing vs Static Typing

```
public class Main {  
    public static void main(String[] args) {  
  
        String greeting = "Hello!";  
        Integer someRandomInteger = 100;  
        Double aDoubleVariable = 2.2;  
  
        greeting = 2;  
    }  
}
```

main.java

```
Main.java:16: error: incompatible types: int cannot be converted to String  
        greeting = 2; // Can not compile  
                   ^
```

1 error

Typescript

TypeScript extends JavaScript by adding types.

By understanding JavaScript, TypeScript saves you time catching errors and providing fixes before you run code.

Any browser, any OS, anywhere JavaScript runs. Entirely Open Source.

<https://www.typescriptlang.org/>



Est. 2012 by Microsoft



Native
support
in Deno

```
let fullName: string = `Bob Bobbington`;
let age: number = 37;
let sentence: string = `Hello, my name is ${fullName}.
I'll be ${age + 1} years old next month.`;
```

index.ts



\$ npx tsc index.ts



BABEL



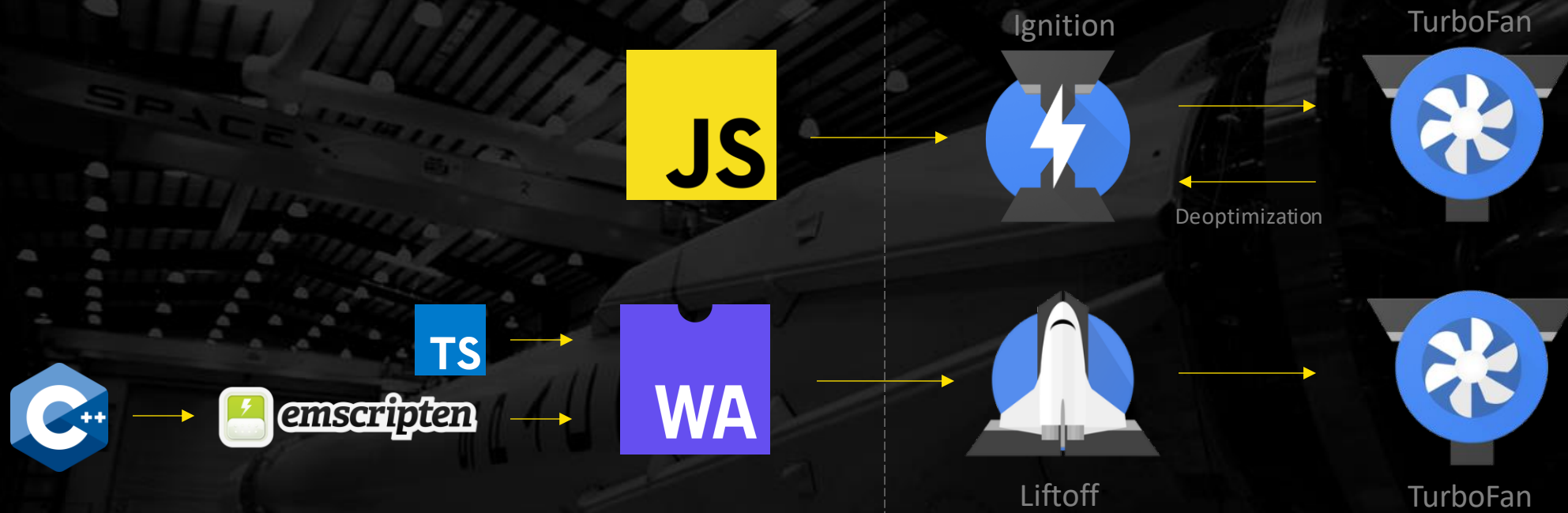
Web Assembly

- ✓ Make it possible to use libraries from other ecosystems
- ✓ When performance is really important (<https://www.google.com/earth/>)
- ✓ Cross Platform Capabilities
- ✓ Assemblyscript (TS for WA)
- ✓ Browser, Node.js ...
- ✓ <https://webassembly.org/getting-started/developers-guide/>



WA

*Est. 2017 – W3C,
Google, Apple,
Mozilla and
Microsoft*



**Example of chromium based browsers*

More...

- ✓ Geolocation API
- ✓ Battery Status (Removed in FF)
- ✓ Vibration (Removed in Webkit)
- ✓ Clipboard
- ✓ Ambient Light
- ✓ Device Orientation
- ✓ Speech Recognition API

