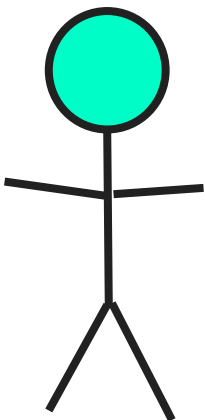
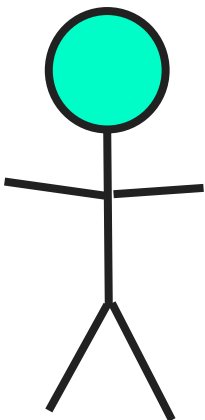


# UNLEASHING PYTHON ON TO THE BROWSER

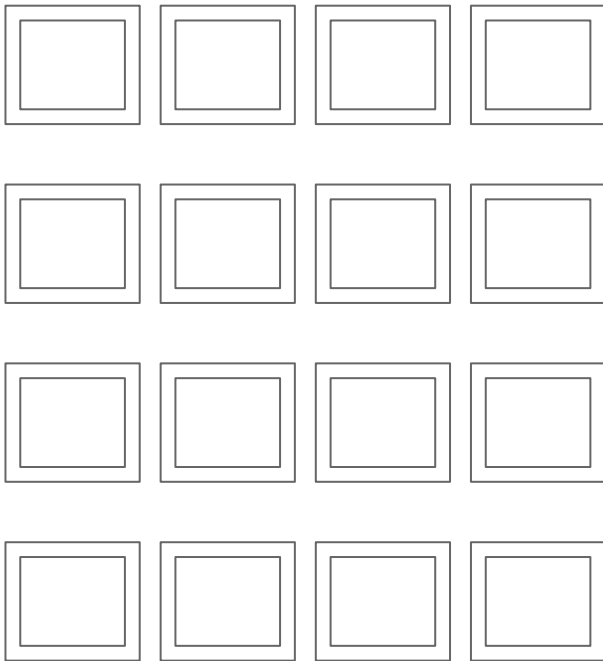
This is Bob!



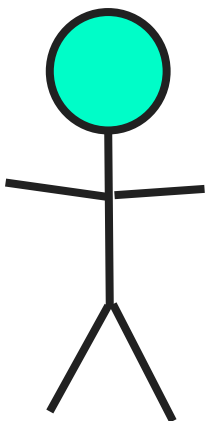
This was our  
company!



## Data Analytics Company



I am Speed!

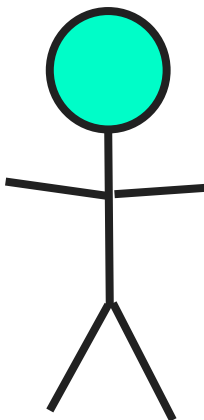


## Data Analytics Company

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>



BRRRRR!



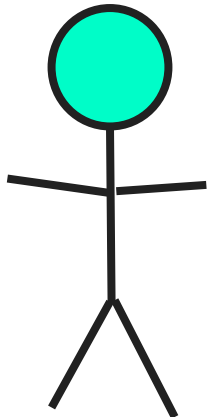
Data Analytics  
Company

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



A simple stick figure with a red circular head and a black outline. It has two horizontal arms and two diagonal legs. A light gray speech bubble with a black outline is positioned above its head, pointing towards the figure. The text "However..." is written inside the speech bubble.

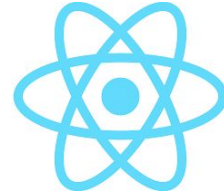
However...

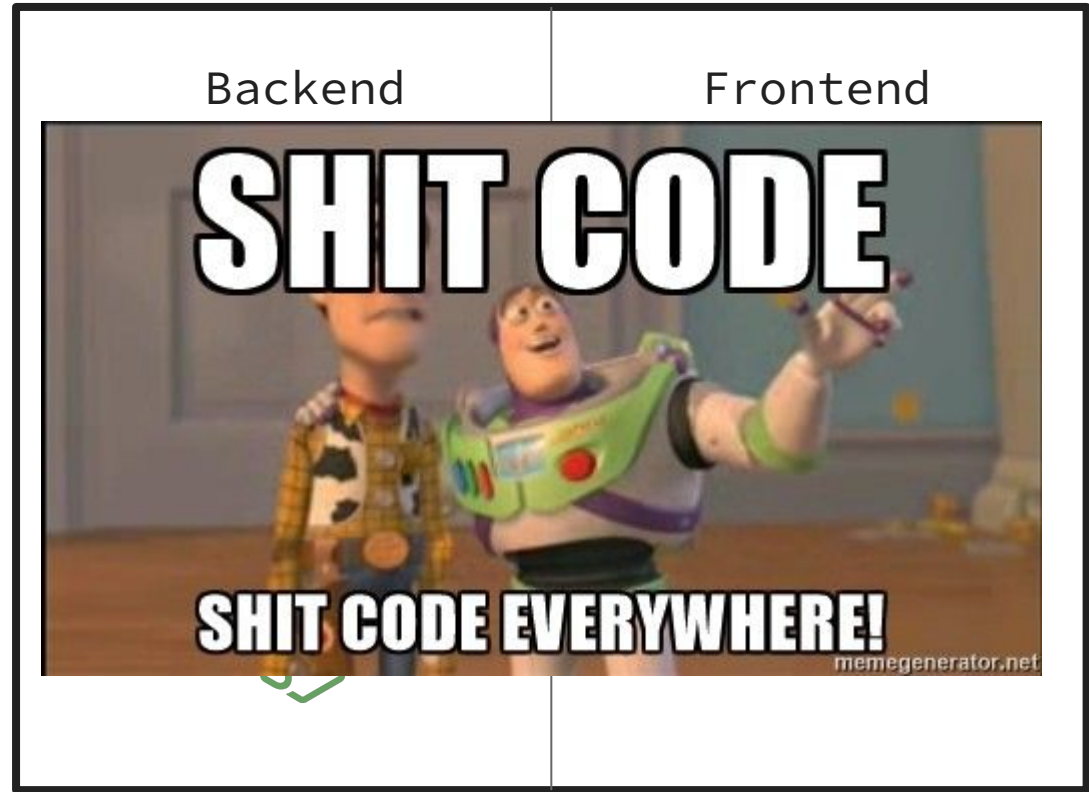
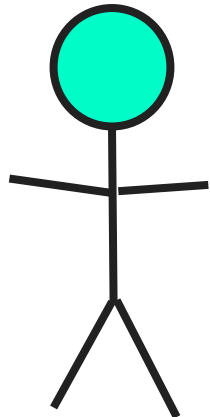


Backend



Frontend





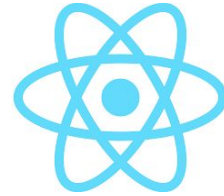


The Problem

Backend

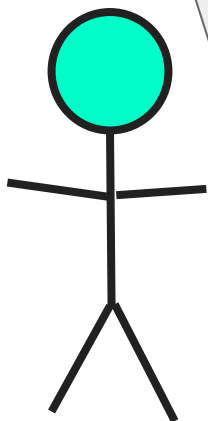


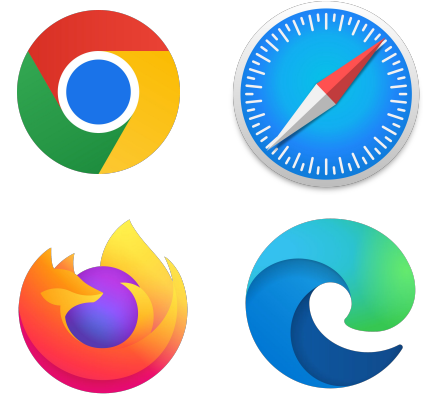
Frontend



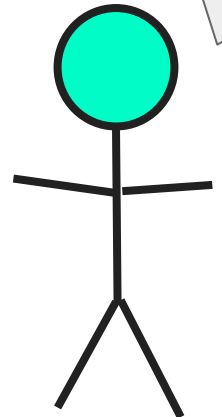


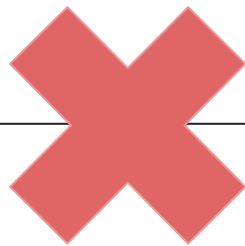
Too  
Expensive



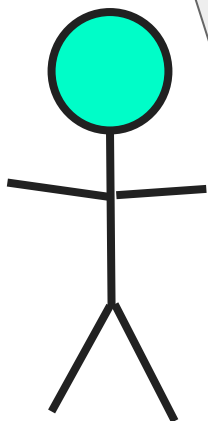


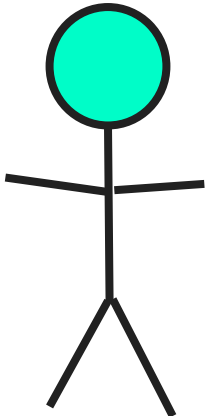
Run it in  
the  
Browser?!





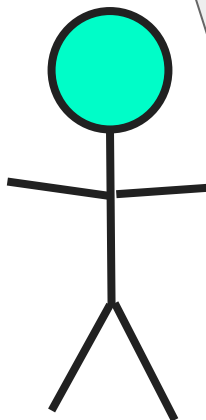
Thought so...

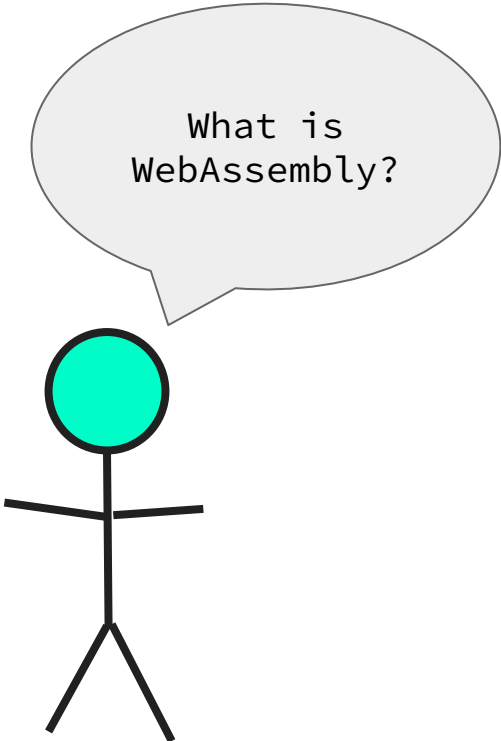






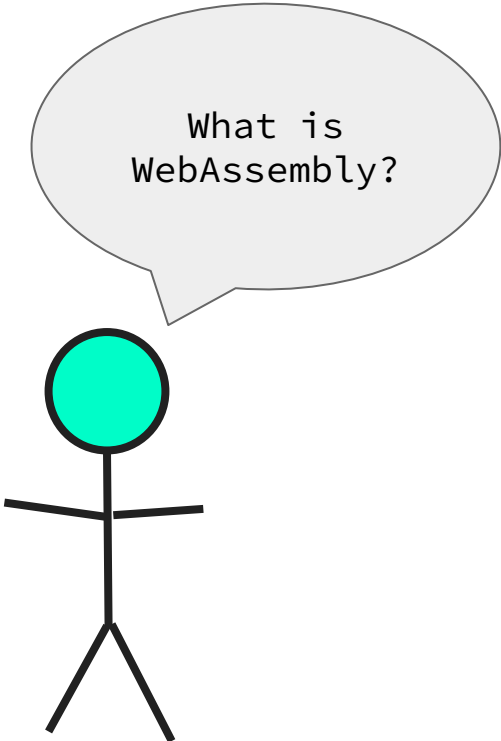
?!



A simple stick figure with a red circular head and a black outline. It has two horizontal arms and two diagonal legs. A light gray speech bubble with a black outline is positioned above its head, containing the text "What is WebAssembly?".

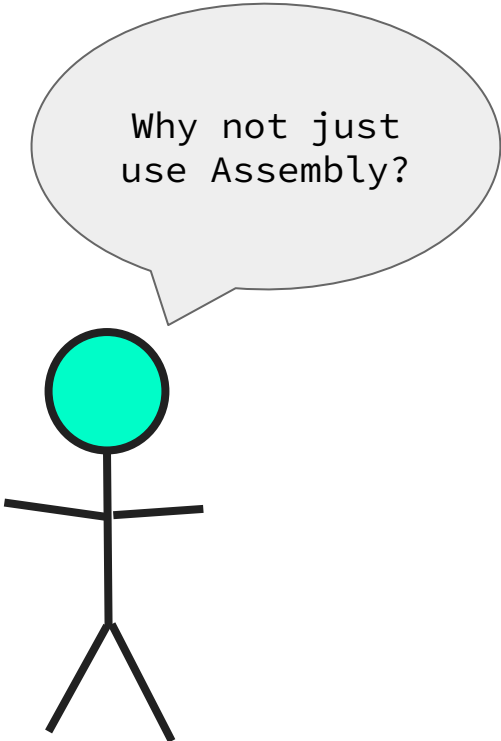
What is  
WebAssembly?

WebAssembly is a low-level assembly-like language with a compact binary format that runs with near-native performance and provides languages such as C/C++, C# and Rust with a compilation target so that they can run on the web.

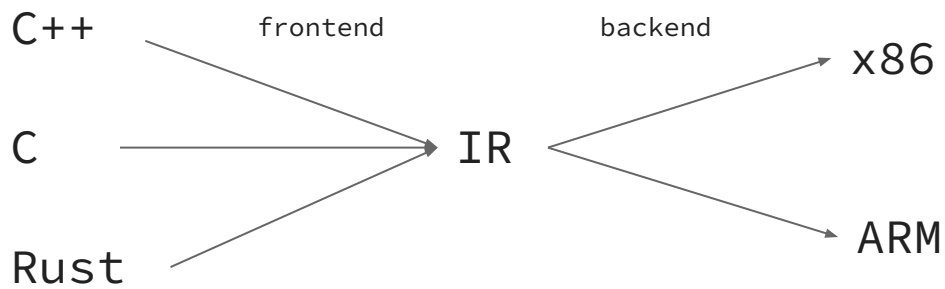
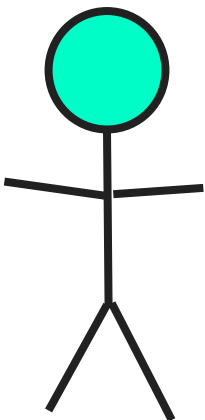
A simple stick figure with a red circular head and a black outline. A light gray speech bubble with a black outline is positioned above the figure's head, containing the text "What is WebAssembly?".

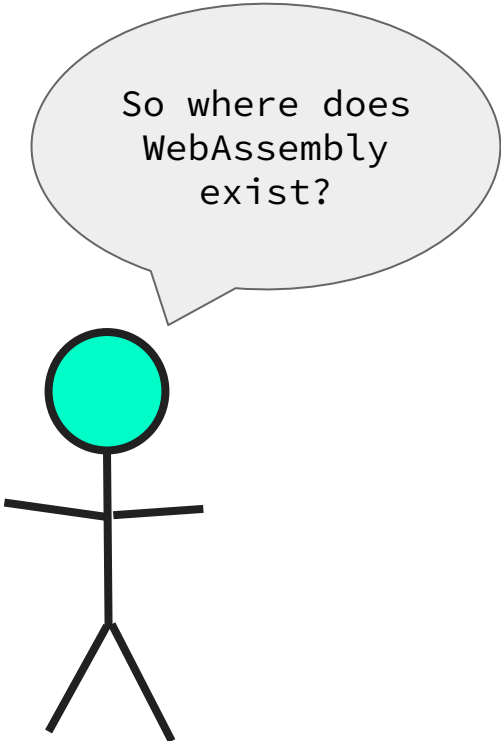
What is  
WebAssembly?



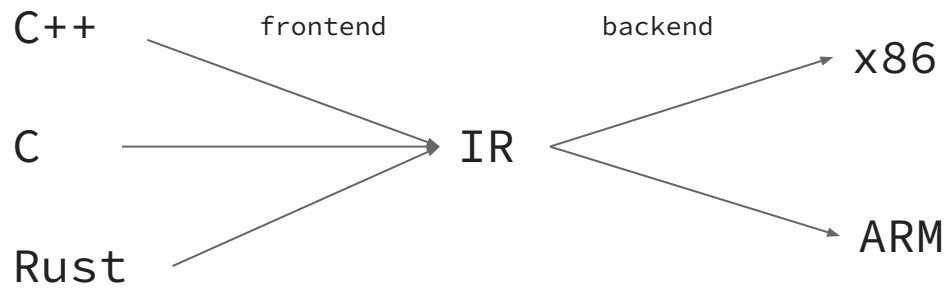
A simple stick figure with a red circular head and a black outline. It has two horizontal arms and two diagonal legs. A light gray speech bubble with a black outline is positioned above its head, containing the text "Why not just use Assembly?".

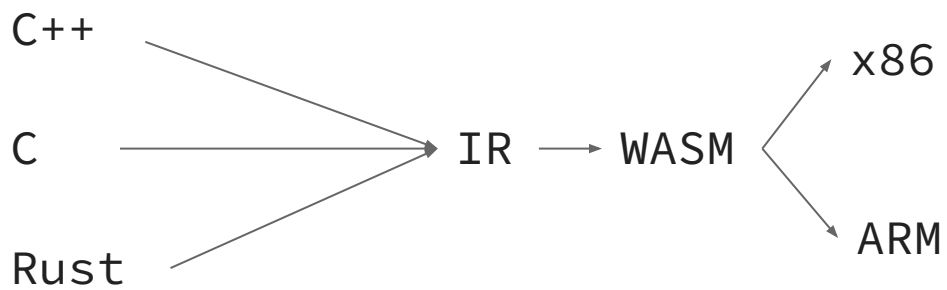
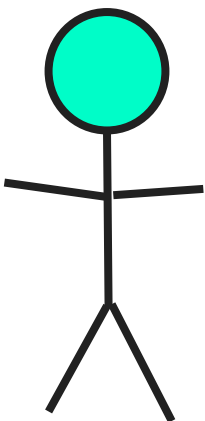
Why not just  
use Assembly?

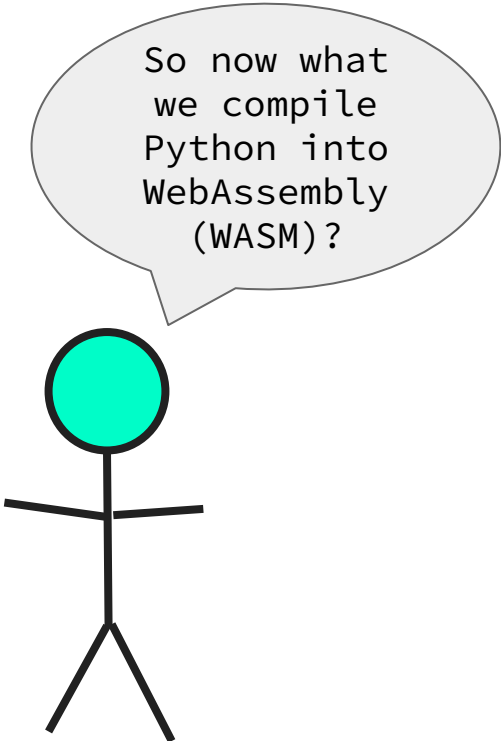




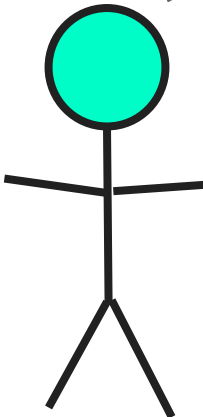
So where does  
WebAssembly  
exist?





A simple stick figure with a red circular head and a black outline. It has two horizontal arms and two diagonal legs. A light gray speech bubble with a black outline is positioned above its head, containing text.

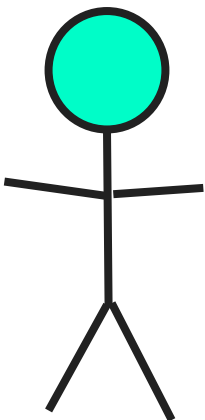
So now what  
we compile  
Python into  
WebAssembly  
(WASM)?



So now what  
we compile  
Python into  
WebAssembly  
(WASM)?

NO!

## Features of WASM



Portable

Secure

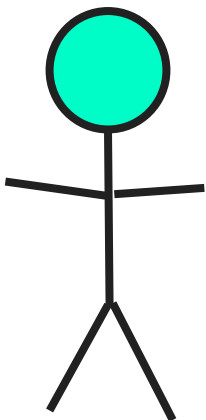
Fast

Size-efficient

Flexible

WASM imports

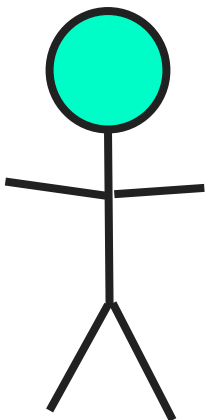
Functions

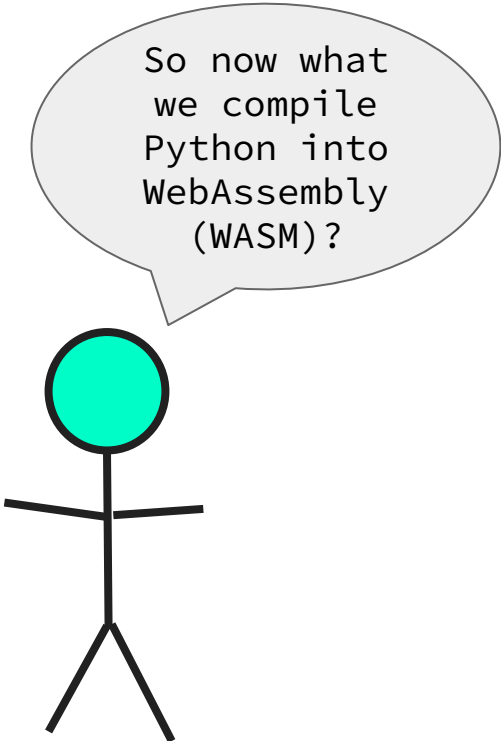




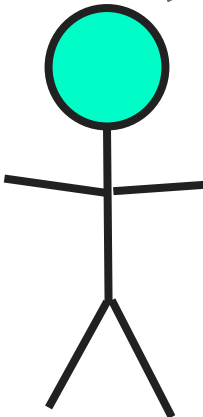


***emscripten***



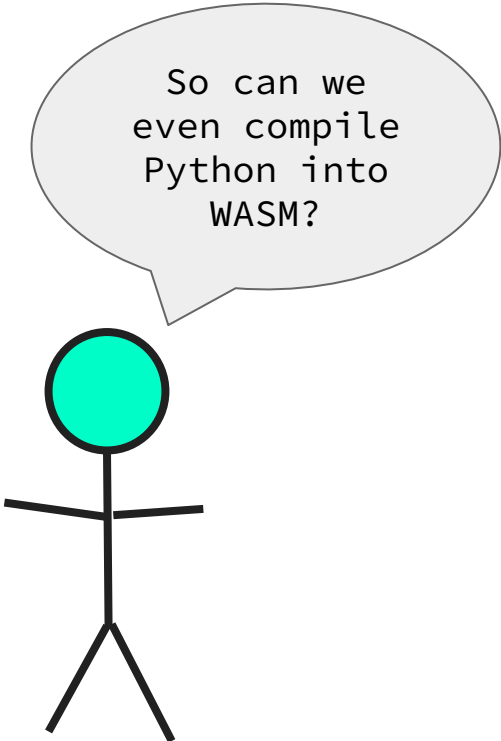
A simple stick figure with a red circular head and a black outline. It has two horizontal arms and two diagonal legs. A light gray speech bubble with a black outline is positioned above its head, containing text.

So now what  
we compile  
Python into  
WebAssembly  
(WASM)?

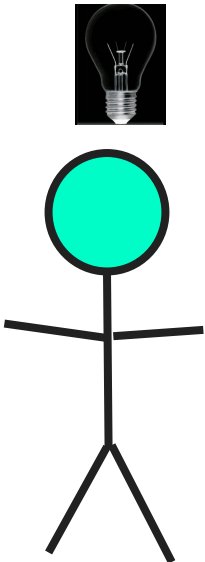


So now what  
we compile  
Python into  
WebAssembly  
(WASM)?

NO!

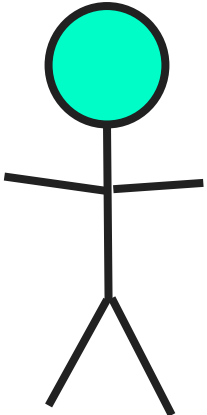
A simple stick figure with a red circular head and a black outline. It has two horizontal arms and two diagonal legs. A light gray speech bubble with a black outline is positioned above its head, pointing towards the figure. The speech bubble contains the text "So can we even compile Python into WASM?".

So can we  
even compile  
Python into  
WASM?



We take **PythonC** and  
convert the whole  
interpreter to WASM

# PYODIDE



# PYODIDE

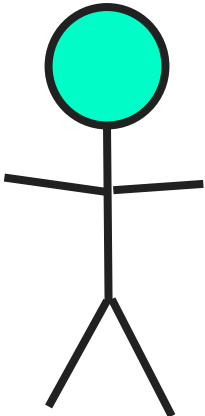


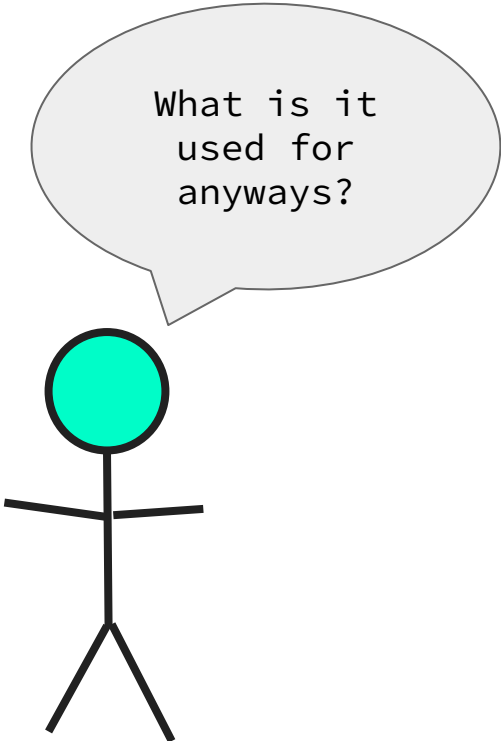
**Setup:** <https://cdn.jsdelivr.net/pyodide/v0.25.0/full/pyodide.js>



**Run:**

```
async function main() {  
  let pyodide = await loadPyodide();  
  console.log(pyodide.runPython(`  
    import sys  
    sys.version  
  `));  
};  
main();
```



A simple stick figure with a red circular head and a black outline. It has two horizontal arms and two diagonal legs. A light gray speech bubble with a black outline is positioned above its head, containing the text "What is it used for anyways?".

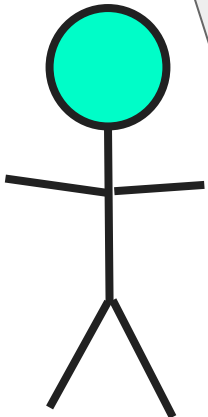
What is it  
used for  
anyways?

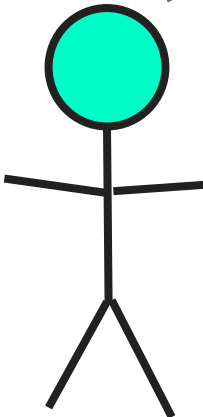
1. JupyterLite
2. PyScript
3. Sandbox Environment





So what do  
we do?



A simple stick figure with a red circular head and black lines for arms and legs.

Thank You!