

PyData Global  
2024

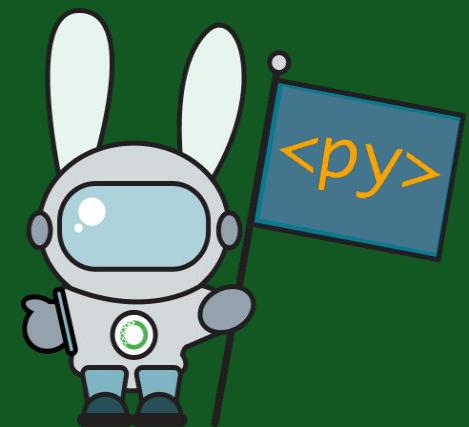
Chris  
Laffra

# PyScript

## Writing a Python application in the browser

December 4, 2024  
19:30–21:00 (UTC)  
General Track

*Let's do this!*



# Today's Roadmap

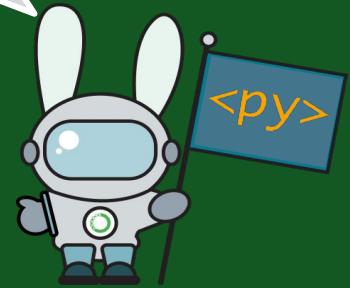
Why?

Where?

# Write an App

Deep Dive

Yeah!



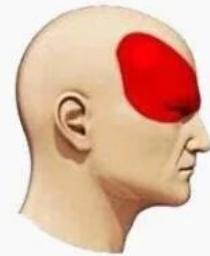
90 min

# Why PyScript?

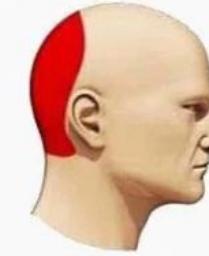
Web/JS  
Development  
Has a Steep  
Learning Curve

## Types of Headaches

Migraine



Hypertension



Stress



**It has to work in  
every Browser**

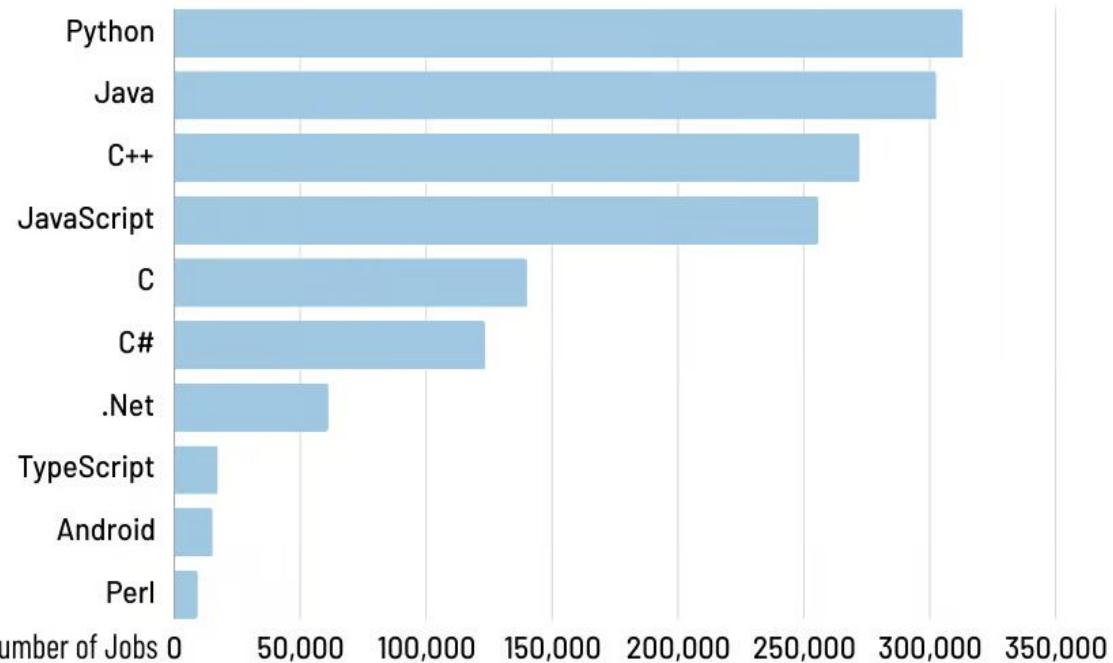


# Why PyScript?

Python  
Has Become  
Immensely  
Popular

## Most in-demand programming languages of 2024

Based on LinkedIn job postings in the US



# Why PyScript?

So Many  
Batteries  
to Choose  
From...

## Data Manipulation



## Data Visualization



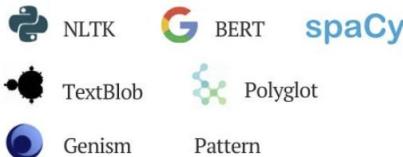
## Statistical Analysis



## Machine Learning



## Natural Language Processing



## Database Operations



## Time Series Analysis



## Web Scraping



Alex Wang

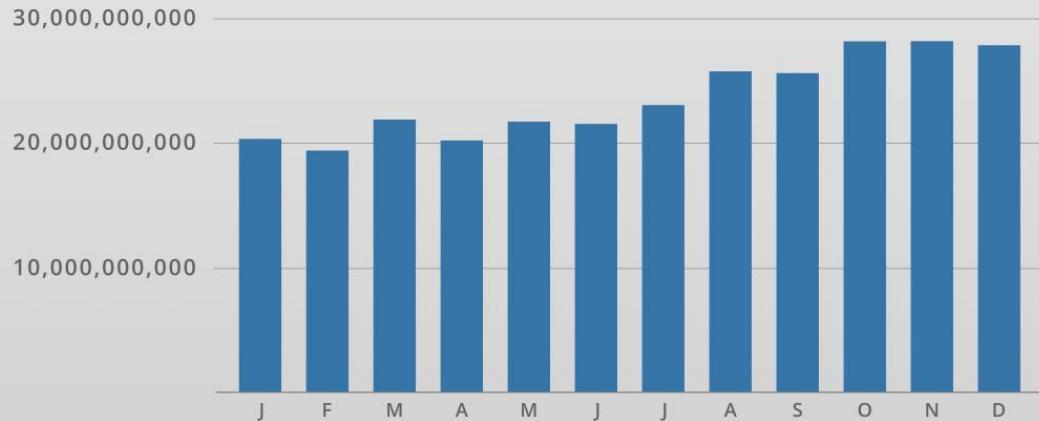
# Why PyScript?

So Many  
Batteries  
to Choose  
From...

**607+ petabytes**  
of packages served  
(that's equivalent to about  
65,000 years of video content)

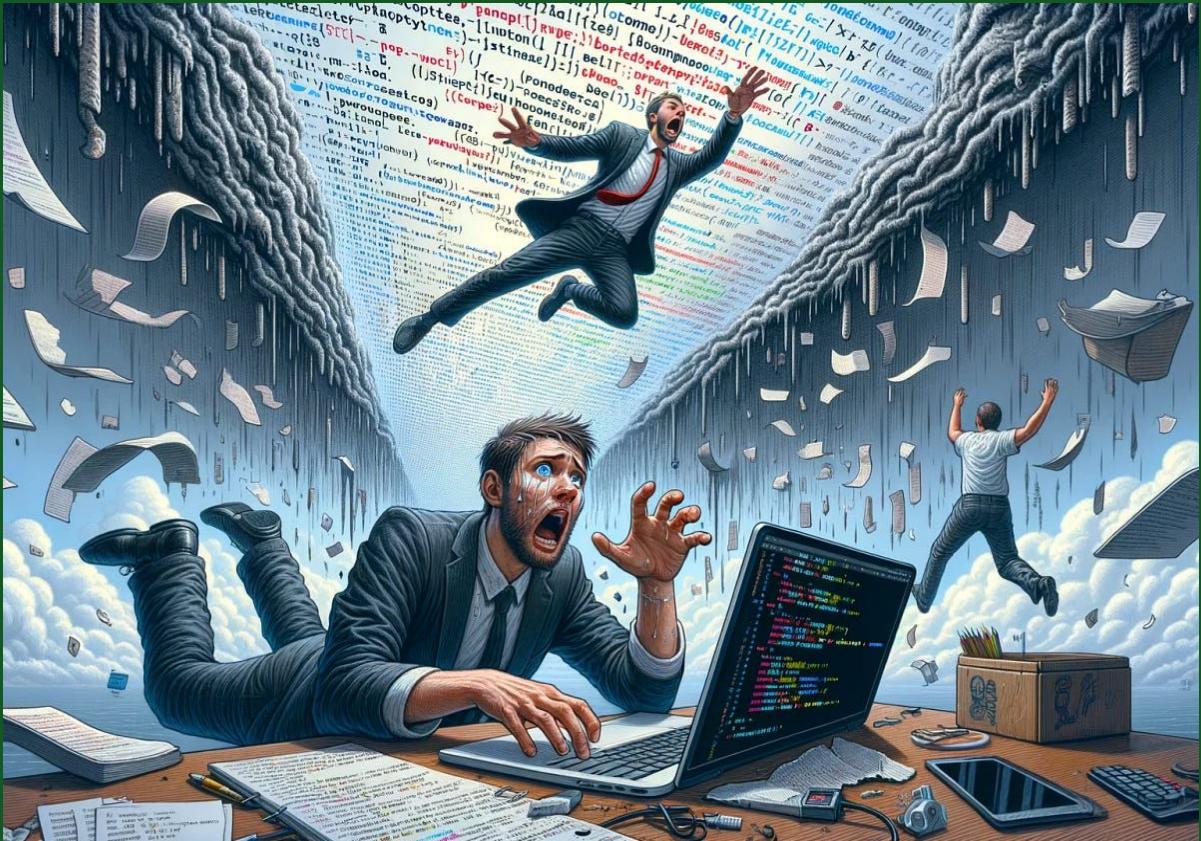
**OVER 1.2 TRILLION**  
requests flowed through our  
**Fastly-sponsored CDN,**  
averaging ~36k requests per second

**284+ BILLION DOWNLOADS** for the  
half million projects on PyPI (over 10 million files!)



# Why PyScript?

However,  
Python  
Installation  
Is a Pain



# Why PyScript?

Installers  
Fight  
Only Over  
Performance

Hynek Schlawack  
@hynek.me

+ Follow

The home of the Python community is wherever people fight over Python packaging ;)

November 27, 2024 at 1:13 PM · Everybody can reply

16 reposts · 3 quotes · 358 likes

16 · 19 · 358 · ...

Write your reply

Cory Zue @coryzue.com · 6h

Did we not all agree to use uv from now on?

4 · 16 · ...

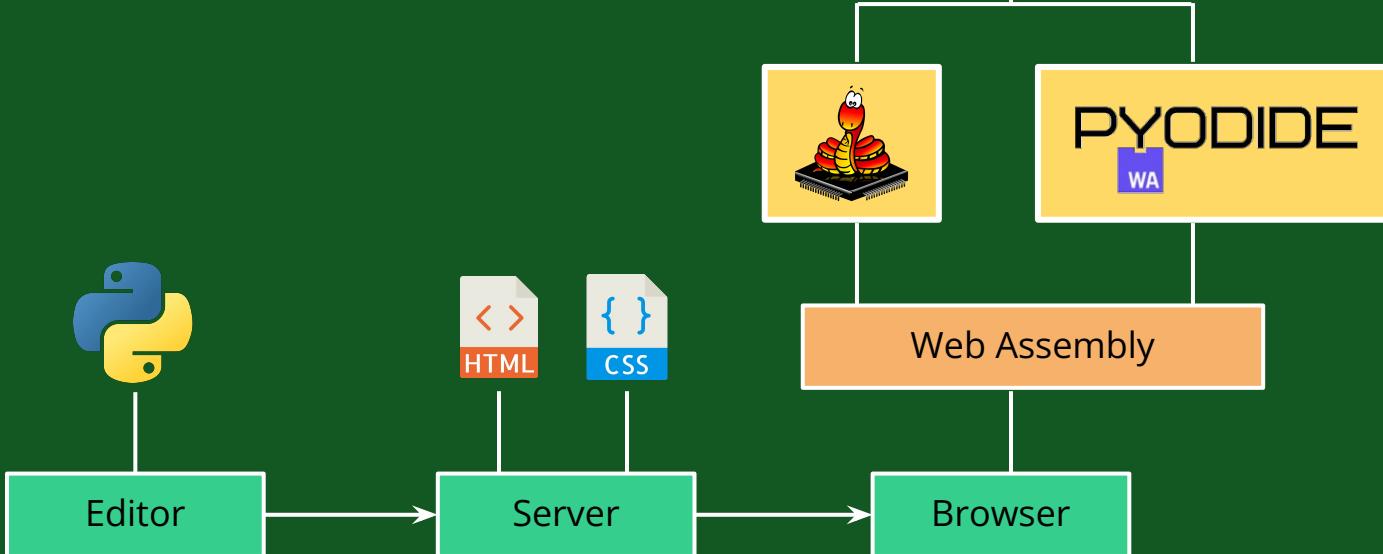
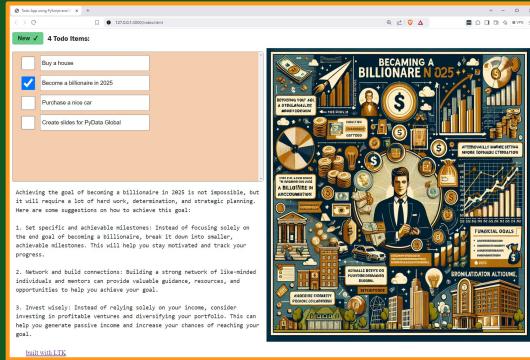
# Why PyScript?

Python  
Everywhere  
Without  
Installers!



# PyScript

Fast & Easy  
Zero Install  
Python Apps  
In The  
Browser



# First, Some Examples



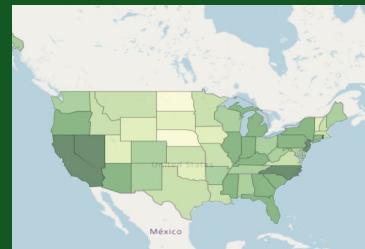
XMas 

Animation



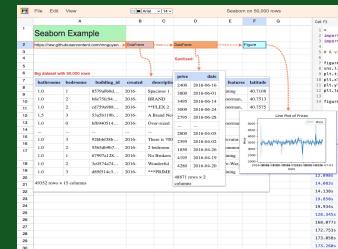
WebGL

JavaScript



Folium

Python



PySheets

Web Worker

# PyScript Community

The screenshot shows the PyScript website with a dark background. At the top is a large yellow logo consisting of three nested brackets: <, py, >. Below the logo, the text "PyScript is an open source platform for *Python in the browser*." is displayed. A code editor window shows a MicroPython session:

```
MicroPython v1.24.0 on 2024-10-26; JS with Emscripten
Type "help()" for more information.
>>> print("Hello, from PyScript!")
Hello, from PyScript!
>>> # Your turn...
>>>
```

At the bottom of the page are four buttons:

- Try it out!** PyScript.com is free and easy.
- Documentation** For beginners and advanced users.
- Examples** See what PyScript can do.
- Community** Connect with other PyScript users.

pyscript.net

The screenshot shows the PyScript channel in a Discord server. The left sidebar lists various channels: Events, Channels & Roles, SERVER, rules, links, member-logs, ANNOUNCEMENTS, updates, announcements, GENERAL, pycat-core, chat, pycat-docs, pycat-help, python-help, tech-cross-chat, pycat-collective, pycat-bugs, invent-framework, pycat-dot-com, pycat-ltk, community-calls, and SERVER DUMP. The main chat window shows messages from users like ntoll, zobi, and Chris Laffra. A message from ntoll says: "Does anybody knows if Pyscript will become a regular python package (with pip) ? It will help to test python code in a regular python environment". Another message from zobi asks about getting a main.py function to javascript. Chris Laffra has posted a link to a social media post about a tutorial. On the right side, the server details show 2 members online, 5 maintainers, and 4 bots. The status bar at the bottom indicates 127 online users.

Discord

# Code

## Option 1.

### VS Code

+

### Python

+

### Live Preview

The screenshot shows a Microsoft VS Code interface with the following components:

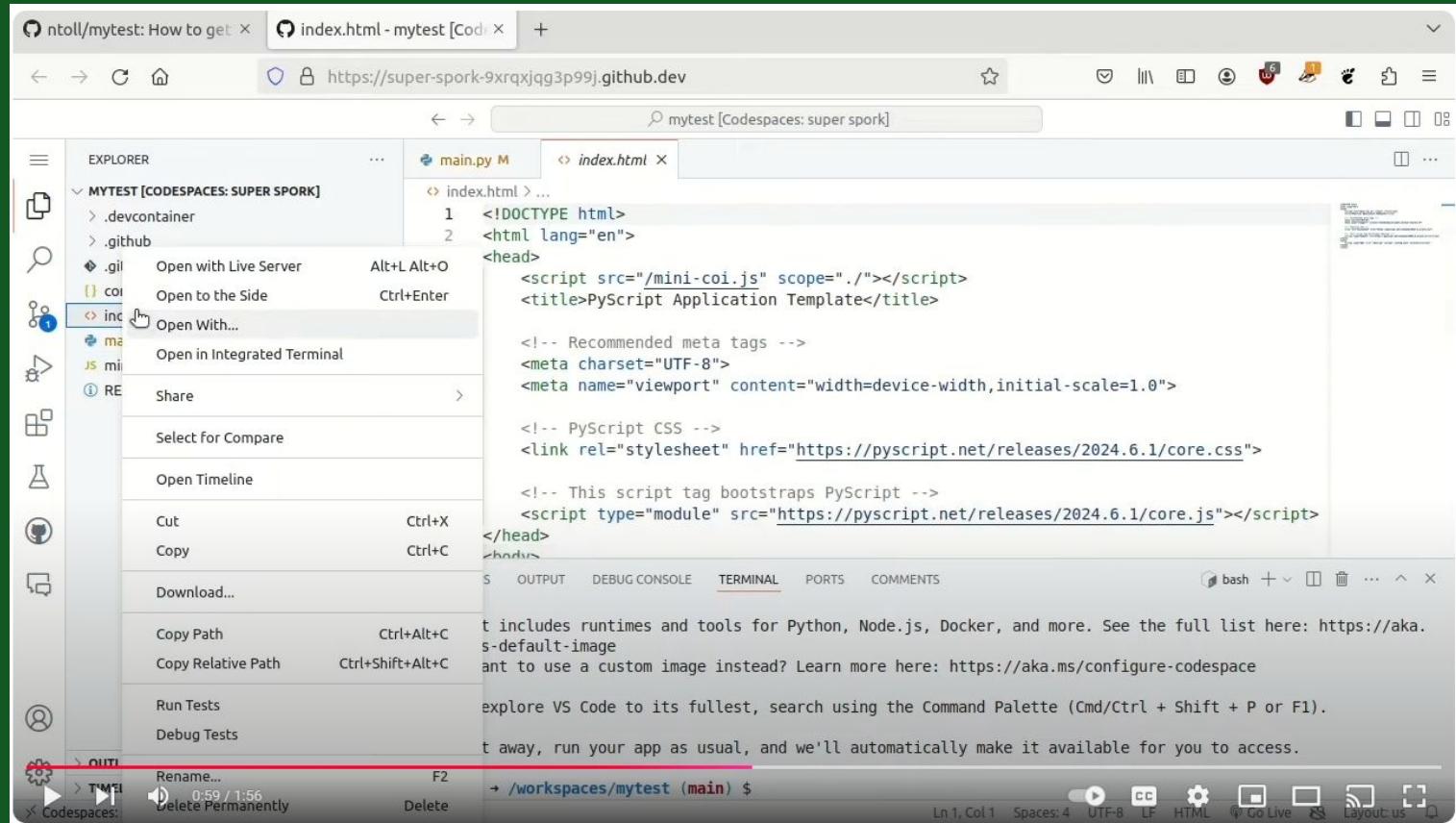
- Explorer View:** Shows a file tree with files like `model.py`, `view.py`, `ui.py`, and `todo.html`.
- Code Editors:** Two code editors are open:
  - `model.py`: Contains a class `TodoModel` that extends `localStorageModel`. It includes methods for adding, updating, and deleting todo items.
  - `view.py`: Contains a class `TodoView` that extends `HBox`. It defines a method `create(item, focus=False)` which creates a new todo item view.
- Terminal:** Shows command-line output related to the application's build process.
- Output:** Shows logs from the application's execution.
- Live Preview:** A sidebar panel titled "New ✓ 2 Todo Items:" displays a list of two items: "Get Milk" and "Whole wheat". The "Whole wheat" item has a checked checkbox.
- Preview Area:** A large preview area on the right shows a grocery store refrigerator with a "GET MILK" sign. Inside the refrigerator, there are milk containers and a hand reaching for one.
- Bash Terminal:** A terminal window at the bottom labeled "bash - Microsoft VS Code" shows the command `python todo.py` being run.

# Code

## Option 2.

# GitHub

# Code Spaces



[youtube.com/watch?v=dmIWFcJ2UTI](https://youtube.com/watch?v=dmIWFcJ2UTI)

# Code

## Option 3.

### pyscript.com

PyScript

pyscript.com/@laffra/todo-app/latest?files=todo/model.py.todo/view.py.index.html.ai.py.todo.css.todo.toml.ui.py

### ToDo App

latest

FILES

- todo
- model.py
- view.py
- ai.py
- index.html
- todo.css
- todo.toml
- ui.py

Save Run

```
1 """
2 The model for todo items.
3 """
4
5 import ltk
6
7 class TodoModel(ltk.LocalStorageModel):
8     """ A reactive todo item model. """
9
10    note: str = ""
11    completed: bool = False
12    suggestion: str = ""
13
```

Keyboard Shortcuts

Mode: Python

PREVIEW https://laffra.pyscriptapps.com/todo-app/latest/

New ✓ 1 Todo Items:

Get Milk

To achieve the goal of getting milk, it is important to first determine the best time and place to purchase the milk. This could involve checking the store's hours, location, and availability of the specific type of milk needed. It may also be helpful to make a list of any other items needed from the store to avoid multiple trips. Once at the store, it is important to [built with LTK](#)



Made on pyscript.com | View Code

# Code

Option 4.

Any Editor

+

Web Server

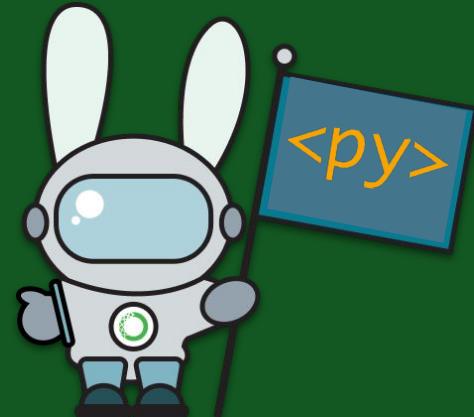
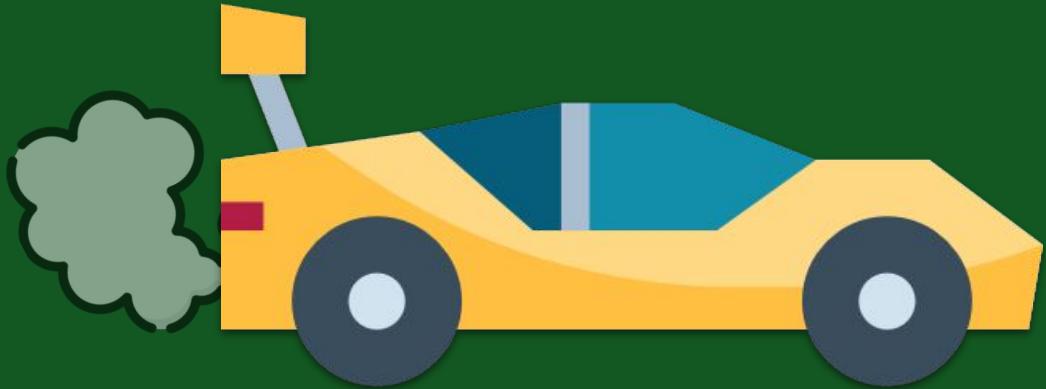


/code/  
?



python  
  
web server

# Enough talking... Let's write an App!



Buy a house

LTK

Become a billionaire in 2025

Create slides for PyData Global

Purchase a nice car

To achieve the goal of buying a house, it is important to start by setting a realistic budget and creating a savings plan. This will help you determine how much you can afford to spend and how long it will take to reach your goal. It is also important to research different neighborhoods and types of houses to find the best fit for your needs and budget. Consider working with a real estate agent to help you navigate the buying process and negotiate a good deal. Additionally, make sure to get pre-approved for a mortgage to have a better understanding of your financial capabilities. This goal is achievable and measurable as you can track your progress towards saving for a down payment and actively searching for a house within your budget.

Alternative goals could include saving for a down payment on a smaller or less expensive house, or exploring the option of renting instead of



# Today's Roadmap

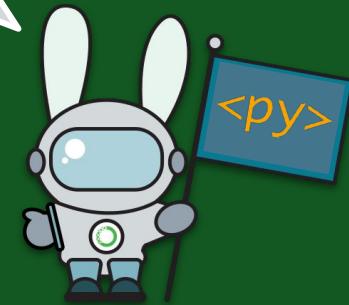
Why?

Where?

Write an App



Done!



90 min

Deep Dive

# Deep Dive

- The specifics of
  - <script>
  - Toml Config
  - JavaScript
  - Workers
  - Performance



'When you want to know how things really work,  
study them when they're coming apart.'

- William Gibson, Zero History



# Summary

Why?

All Done!

Where?

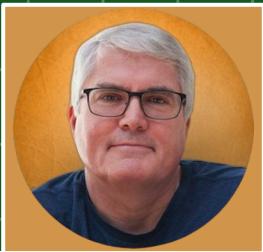


Deep Dive

---

90 min

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2024



Chris  
Laffra

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# PyScript

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Questions?

