

What's New in Python

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Slides: <https://github.com/micktwomey/neurosoc-lightning-talk-2022>

I ❤️ Python

Python 3.10: Better Errors

<https://docs.python.org/3/whatsnew/3.10.html#better-error-messages>

```
File "example.py", line 1
    expected = {9: 1, 18: 2, 19: 2, 27: 3, 28: 3, 29: 3, 36: 4, 37: 4,
                ^
SyntaxError: '{' was never closed
```

(Thanks Elm!)

Python 3.10: Pattern Matching

<https://docs.python.org/3/whatsnew/3.10.html#pep-634-structural-pattern-matching>

```
class Point:
    x: int
    y: int

def location(point):
    match point:
        case Point(x=0, y=0):
            print("Origin is the point's location.")
        case Point(x=0, y=y):
            print(f"Y={y} and the point is on the y-axis.")
        case Point(x=x, y=0):
            print(f"X={x} and the point is on the x-axis.")
        case Point():
            print("The point is located somewhere else on the plane.")
        case _:
            print("Not a point")
```

(Thanks ML languages!)

I ♥ tools

VisiDATA

Docs

Releases

Credits

Blog

GitHub

Install →

Data exploration at your fingertips.

VisiData is an interactive multitool for tabular data. It combines the clarity of a spreadsheet, the efficiency of the terminal, and the power of Python, into a lightweight utility which can handle millions of rows with ease.

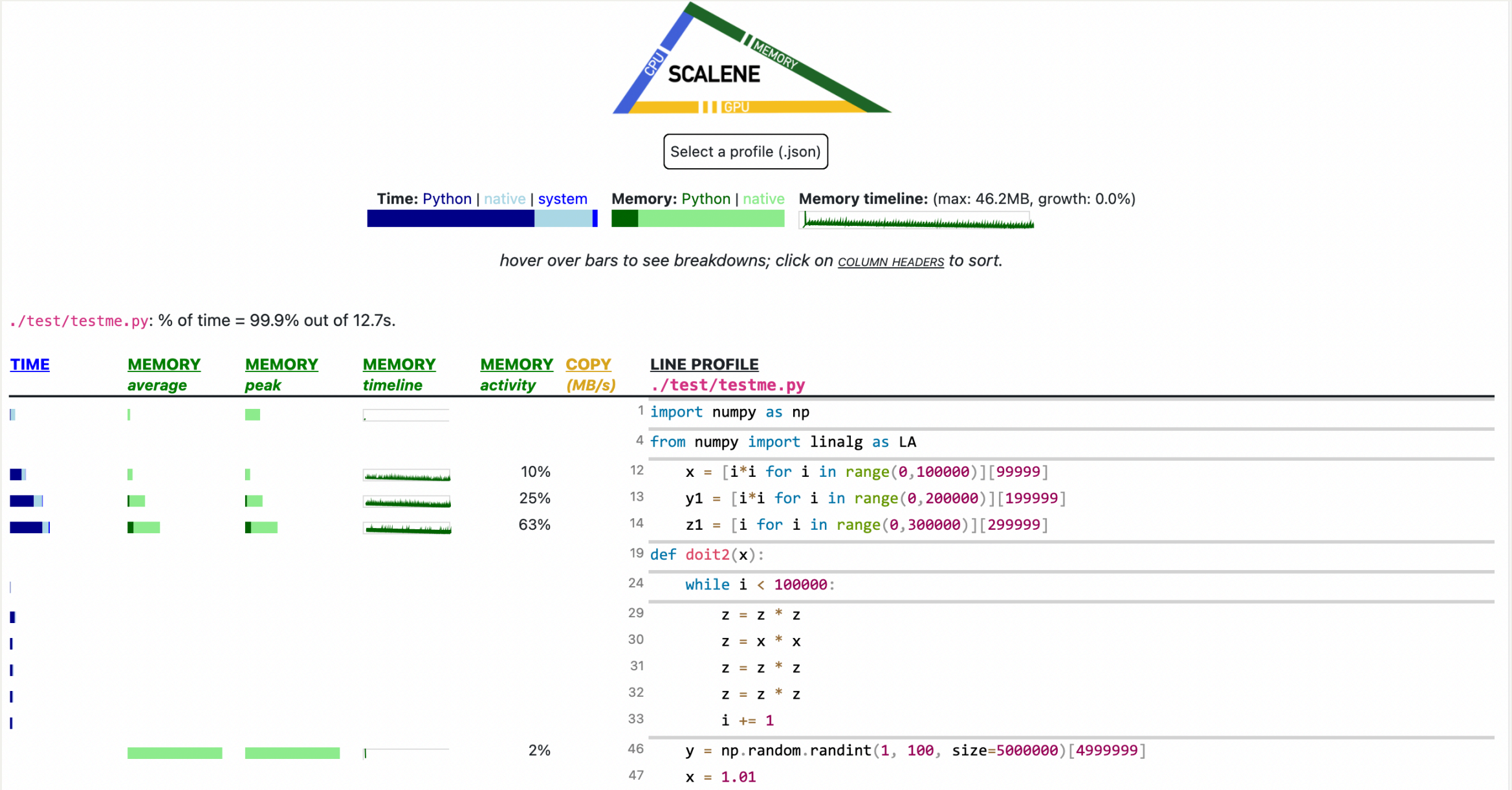
Install →

Tutorial

name	<county	job_title	grade #	base_salary \$	aw>
ALVAREZ, JUAN M	FRESNO	GENERAL EDUCATION ...	12	68,809.00	750
BOYD, CLAUDE A	DISTRICT OF COLUMB...	OFC AUTOMATION CLE...	4	31,471.00	0
BRITT, ROBERT E	DISTRICT OF COLUMB...	MISCELLANEOUS CLER...	5	34,075.00	0
CASTRO, JESSICA	DISTRICT OF COLUMB...	ADMIN AND OFFICE S...	7	42,209.00	750
CHASTANG, LINDA EAR...	DISTRICT OF COLUMB...	MISCELLANEOUS ADMI...	14	136,771.00	0
CHAVEZ, CHRISTINE	DISTRICT OF COLUMB...	MISCELLANEOUS ADMI...	13	89,033.00	0
CLIFFORD, CAROL L	DISTRICT OF COLUMB...	MISCELLANEOUS ADMI...	0	129,394.00	0
CORTEZ, SANDRA A	DISTRICT OF COLUMB...	GENERAL EDUCATION ...	13	94,969.00	0
DE LA GARZA, RUBY S	HIDALGO	GENERAL EDUCATION ...	12	68,809.00	750
DIAZ, VLADIMIR A	MIAMI-DADE	GENERAL EDUCATION ...	12	80,085.00	11...
DOUGLAS, WALTER W	LEXINGTON	MISCELLANEOUS ADMI...	14	125,695.00	0
FLORES, MARILOU	DISTRICT OF COLUMB...	MISCELLANEOUS ADMI...	12	87,350.00	0
GARDNER, KURT J	MADISON	MISCELLANEOUS ADMI...	13	97,015.00	0
GOLDBERG, MARIA	DISTRICT OF COLUMB...	MISCELLANEOUS ADMI...	15	152,635.00	20...
GONZALEZ, ROBERTO JR	IMPERIAL	GENERAL EDUCATION ...	12	82,570.00	11...
GUY, DWIGHT N	LOGAN	MISCELLANEOUS ADMI...	13	95,459.00	750
HARTSFIELD, LARRY D	GUILFORD	MISCELLANEOUS ADMI...	13	92,732.00	12...
HODGE, HORACE D	WALLER	MISCELLANEOUS ADMI...	12		750
JAMES, KRISTEN	DISTRICT OF COLUMB...	MISCELLANEOUS CLER...	4	30,456.00	0
JOHNSON, ALLISON C	EAST BATON ROUGE	MISCELLANEOUS ADMI...	13	87,278.00	750
KOZISKI, STEPHANIE ...	DISTRICT OF COLUMB...	MANAGEMENT AND PRO...	13	109,807.00	14...
MARTIN, KARLA A	DISTRICT OF COLUMB...	MISCELLANEOUS ADMI...	14	105,211.00	21...
MC LAREN, ANTONIO A	PETERSBURG	MISCELLANEOUS ADMI...	13	91,826.00	12...
MILLER, PIA M	DISTRICT OF COLUMB...	GENERAL BUSINESS A...	12	87,350.00	0

FederalEmployeeSalaries-2012| # 1350593 rows

Scalene: <https://github.com/plasma-umass/scalene>



I ♥ libraries

tqdm

Not new but I just discovered it plugs into Jupyter

```
[*]: mini_df["minutes"] = mini_df.progress_apply(lambda row: pandas.date_range(sta  
mini_df
```

89%  924819/1041108 [03:33<00:24, 4666.76it/s]

(Works in Visual Studio Code notebook editor too!)

FastAPI and pydantic

```
from typing import Optional
```

```
from fastapi import FastAPI
from pydantic import BaseModel
```

```
app = FastAPI()
```

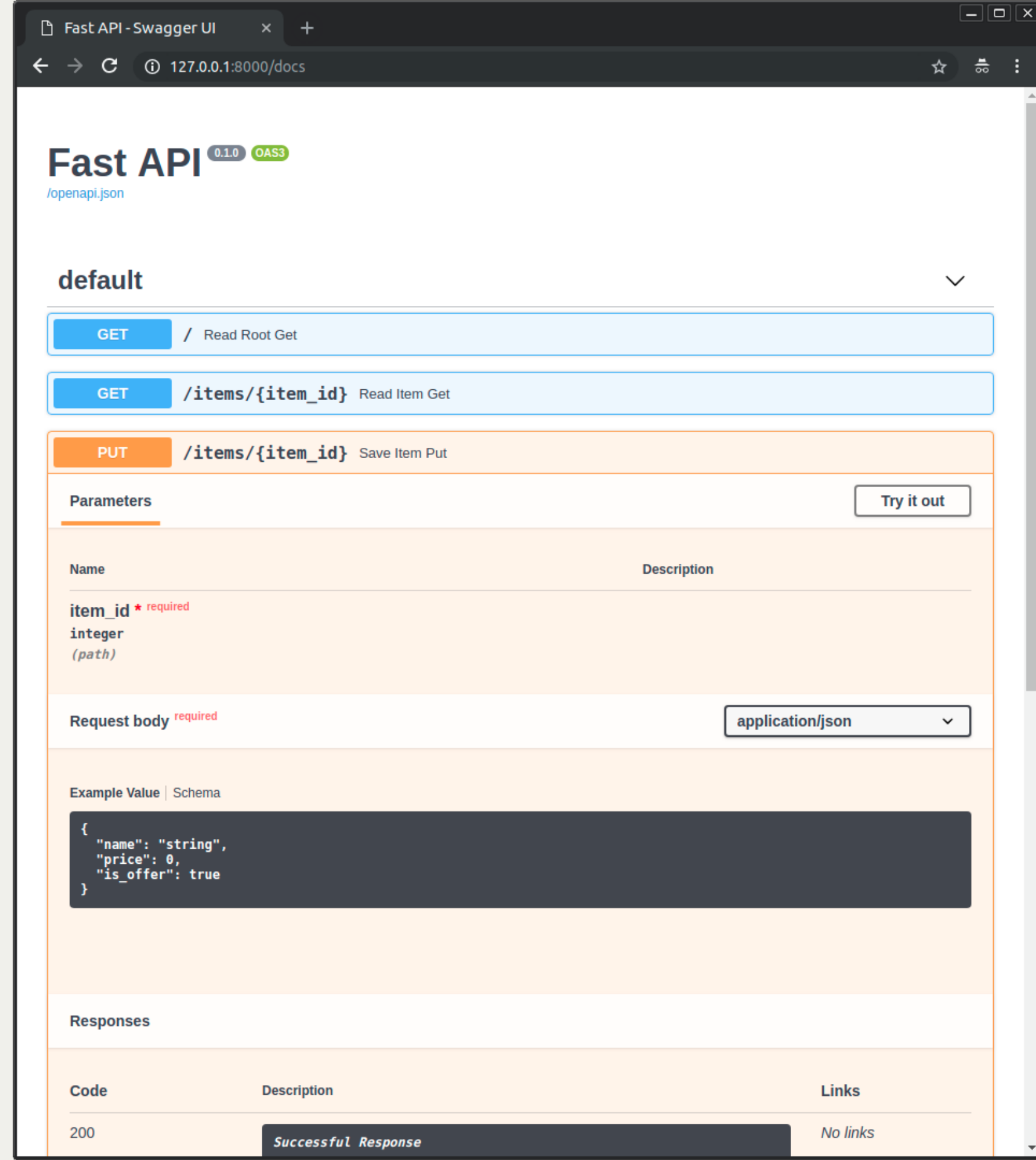
```
class Item(BaseModel):
    name: str
    price: float
    is_offer: Optional[bool] = None
```

```
@app.get("/")
def read_root():
    return {"Hello": "World"}
```

```
@app.get("/items/{item_id}")
def read_item(item_id: int, q: Optional[str] = None):
    return {"item_id": item_id, "q": q}
```

```
@app.put("/items/{item_id}")
def update_item(item_id: int, item: Item):
    return {"item_name": item.name, "item_id": item_id}
```

<https://bit.ly/3vFnQYj>



Fast API 0.1.0 OAS3

/openapi.json

default

GET / Read Root Get

GET /items/{item_id} Read Item Get

PUT /items/{item_id} Save Item Put

Parameters Try it out

Name Description

item_id * required
integer
(path)

Request body required application/json

Example Value | Schema

```
{
  "name": "string",
  "price": 0,
  "is_offer": true
}
```

Responses

Code	Description	Links
200	Successful Response	No links

Sources of Info

How do I keep up?

Email Newsletters

- <https://www.pythonweekly.com>
- <https://tldr.tech/>

News Sites

- <https://lobste.rs>
- <https://hckrnews.com> AKA <https://news.ycombinator.com>

Python Info

- <https://realpython.com>
- <https://pythonspeed.com/>
- <https://docs.python.org/3/whatsnew/index.html>

Slides: <https://bit.ly/3vFnQYj>

<https://github.com/micktwomey/neurosoc-lightning-talk-2022>

