Debugging

You can connect the debugger in your editor, for example with Visual Studio Code or PyCharm.

Call `uvicorn`

In your FastAPI application, import and run `uvicorn` directly:

Python 3.8+

```python
import uvicorn
from fastapi import FastAPI

app = FastAPI()


@app.get("/")
def root():
    a = "a"
    b = "b" + a
    return {"hello world": b}


if __name__ == "__main__":
    uvicorn.run(app, host="0.0.0.0", port=8000)
```

About `__name__ == "__main__"`

The main purpose of the `__name__ == "__main__"` is to have some code that is executed when your file is called with:

```
$ python myapp.py
```

but is not called when another file imports it, like in:

```
from myapp import app
```

More details

Let's say your file is named `myapp.py`.

If you run it with:

```
$ python myapp.py
```

then the internal variable `__name__` in your file, created automatically by Python, will have as value the string `"__main__"`.

So, the section:

```
    uvicorn.run(app, host="0.0.0.0", port=8000)
```

will run.

This won't happen if you import that module (file).

So, if you have another file `importer.py` with:

```
from myapp import app

# Some more code
```

in that case, the automatically created variable inside of `myapp.py` will not have the variable `__name__` with a value of `"__main__"`.

So, the line:

```
    uvicorn.run(app, host="0.0.0.0", port=8000)
```

will not be executed.

Info

For more information, check the official Python docs.

Run your code with your debugger

Because you are running the Uvicorn server directly from your code, you can call your Python program (your FastAPI application) directly from the debugger.

For example, in Visual Studio Code, you can:

- Go to the "Debug" panel.

- "Add configuration...".
- Select "Python"
- Run the debugger with the option " `Python: Current File (Integrated Terminal)` ".

It will then start the server with your **FastAPI** code, stop at your breakpoints, etc.

Here's how it might look:
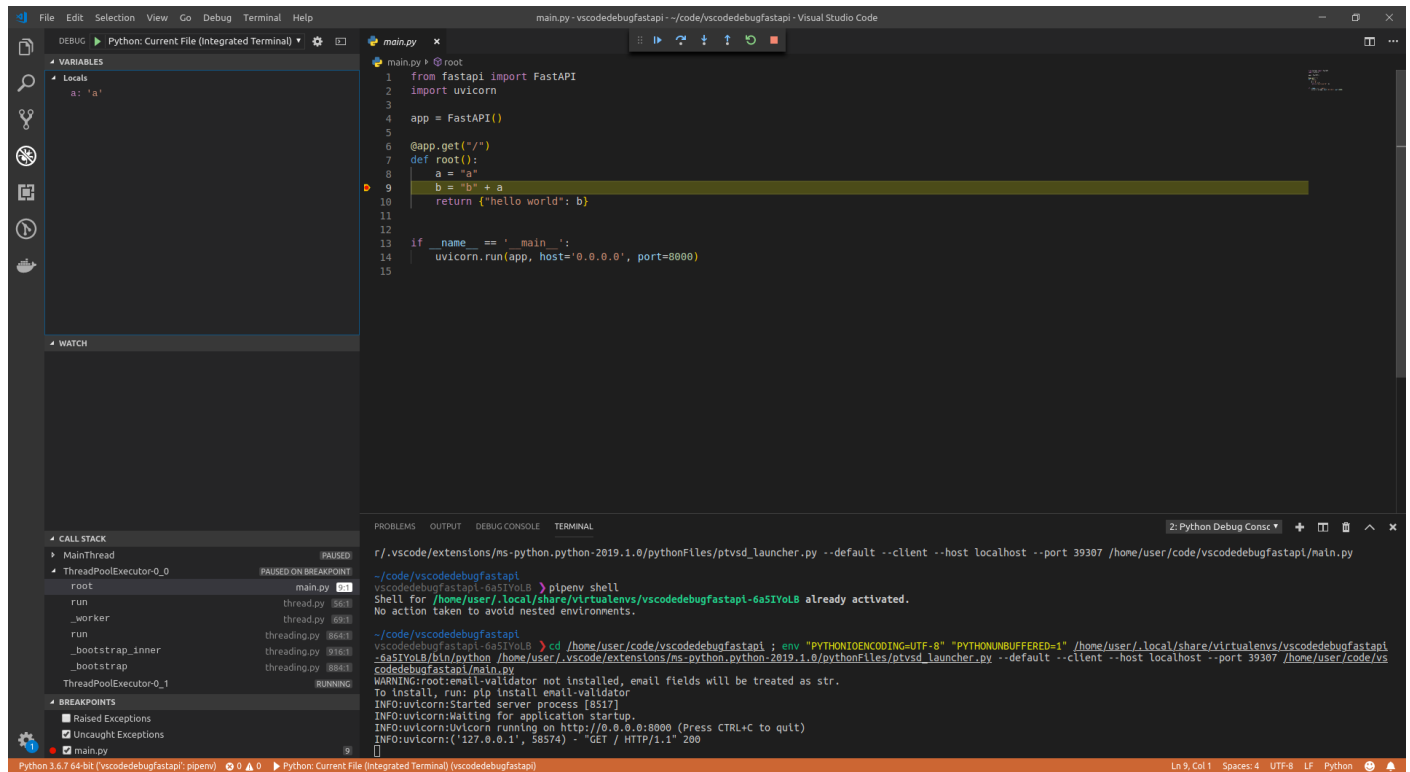
If you use Pycharm, you can:

- Open the "Run" menu.
- Select the option "Debug...".
- Then a context menu shows up.
- Select the file to debug (in this case, `main.py`).

It will then start the server with your **FastAPI** code, stop at your breakpoints, etc.

Here's how it might look:

pycharmdebugfastapi [~/code/pycharmdebugfastapi] - …/main.py - PyCharm

File Edit View Navigate Code Refactor Run Tools VCS Window Help
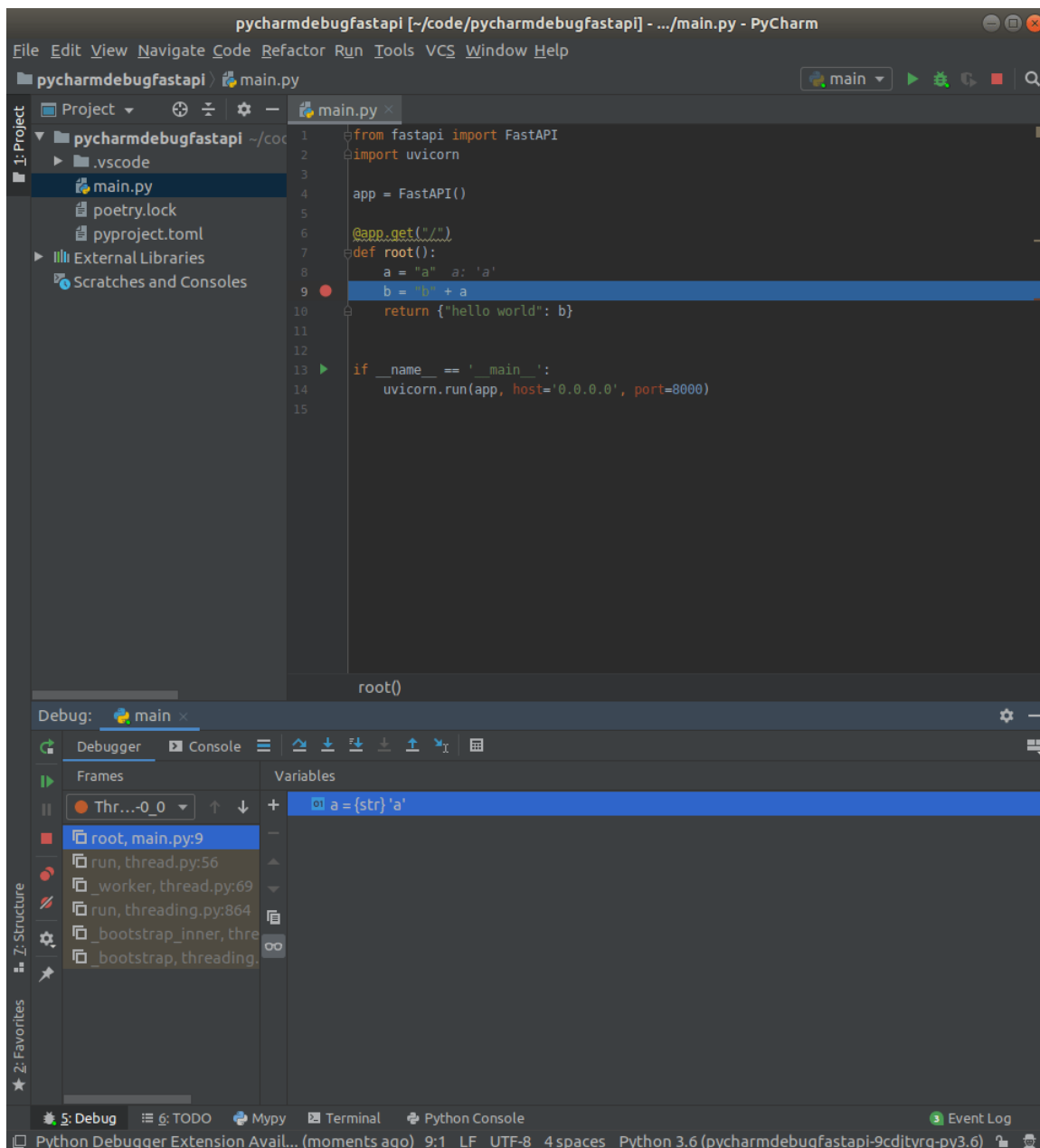
pycharmdebugfastapi ⟩ main.py   main ▾ ▶ 🐞 ⟳ ■ 🔍

Project ▾   main.py ×

▼ pycharmdebugfastapi ~/cod   1 from fastapi import FastAPI
  ▶ .vscode   2 import uvicorn
    main.py   3
    poetry.lock   4 app = FastAPI()
    pyproject.toml   5
  ▶ External Libraries   6 @app.get("/")
    Scratches and Consoles   7 def root():
                                   8   a = "a"   a: 'a'
                                   9   b = "b" + a
                                  10   return {"hello world": b}
                                  11
                                  12
                                  13 if __name__ == '__main__':
                                  14   uvicorn.run(app, host='0.0.0.0', port=8000)
                                  15

                                          root()

Debug: main ×   ⚙ —

     Debugger   ▶ Console

  Frames   Variables

  Thr...-0_0 ▾   ↑ ↓ +   a = {str} 'a'

  root, main.py:9
  run, thread.py:56
  _worker, thread.py:69
  run, threading.py:864
  _bootstrap_inner, thre
  _bootstrap, threading.

  5: Debug   6: TODO   Mypy   Terminal   Python Console   Event Log
Python Debugger Extension Avail... (moments ago) 9:1 LF UTF-8 4 spaces Python 3.6 (pycharmdebugfastapi-9cdjtyrg-py3.6)