

Debugging

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

Call unicorn

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

Python 3.8+

```
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 Unicorn 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:

```
main.py - vscode debugger fastapi - Visual Studio Code
File Edit Selection View Go Debug Terminal Help
DEBUG Python: Current File (Integrated Terminal)
main.py
1 from fastapi import FastAPI
2 import uvicorn
3
4 app = FastAPI()
5
6 @app.get("/")
7 def root():
8     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)

CALL STACK
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
r/.vscode/extensions/ms-python.python-2019.1.0/pythonFiles/ptvsd_launcher.py --default --client --host localhost --port 39307 /home/user/code/vscodedebugfastapi/main.py
-/code/vscodedebugfastapi
vscodedebugfastapi-6a51y0LB > pipenv shell
Shell for /home/user/.local/share/virtualenvs/vscodedebugfastapi-6a51y0LB already activated.
NO action taken to avoid nested environments.

CODE DEBUGGING
To install, run: pip install email-validator
INFO:uvicorn:Starting server process [8517]
INFO:uvicorn:Waiting for application startup.
INFO:uvicorn:Uvicorn running on http://0.0.0.0:8000 (Press CTRL+C to quit)
INFO:uvicorn:(127.0.0.1, 58574) - "GET / HTTP/1.1" 200
[]

Ln 9, Col 1 Spaces: 4 UTF-8 LF Python
```

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:

The screenshot shows the PyCharm IDE interface with the following details:

- Project:** pycharmdebugfastapi
- File:** main.py
- Code Editor:** The code for `main.py` is displayed, showing a simple FastAPI application. A breakpoint is set at line 9, and the line `a = "a" + a` is highlighted.
- Breakpoint:** A red dot indicates a breakpoint at line 9.
- Variables:** In the bottom-left panel, the variable `a` is shown with the value `'a'`.
- Frames:** In the bottom-right panel, the stack trace shows the current frame is at `root, main.py:9`, which is highlighted in blue.
- Toolbars:** Standard PyCharm toolbars for file operations, search, and navigation are visible.
- Status Bar:** Shows Python 3.6 (pycharmdebugfastapi-9cdjtyrg-py3.6) and the current file path.

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<https://fastapi.tiangolo.com/tutorial/debugging/>

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