

VS Code - Build & Run Configuration for FastAPI

This document explains **which files to create in VS Code** so you can:

- Run the backend with one click
- Debug without typing commands
- Avoid remembering CLI commands

This is the **VS Code equivalent of npm scripts / nodemon setup**.

1

VS Code Tasks (Build / Run Commands)

Create the file:

```
.vscode/tasks.json
```

Example tasks.json

```
{
  "version": "2.0.0",
  "tasks": [
    {
      "label": "Run FastAPI (dev)",
      "type": "shell",
      "command": "uvicorn app.main:app --reload",
      "group": {
        "kind": "build",
        "isDefault": true
      },
      "problemMatcher": []
    },
    {
      "label": "Run Tests",
      "type": "shell",
      "command": "pytest",
      "group": "test",
      "problemMatcher": []
    },
    {
      "label": "Run Alembic Migrations",
      "type": "shell",
      "command": "alembic upgrade head",
      "problemMatcher": []
    }
}
```

```
    ]  
}
```

How to Use

- Cmd + Shift + B → runs **FastAPI dev server**
- Terminal → Run Task → choose task

2 VS Code Debug Configuration (Recommended)

Create the file:

```
.vscode/launch.json
```

Example `launch.json`

```
{  
  "version": "0.2.0",  
  "configurations": [  
    {  
      "name": "Debug FastAPI",  
      "type": "python",  
      "request": "launch",  
      "module": "uvicorn",  
      "args": [  
        "app.main:app",  
        "--reload"  
      ],  
      "jinja": true  
    }  
  ]  
}
```

How to Use

- Open **Run & Debug** panel
- Click ► **Debug FastAPI**
- Set breakpoints anywhere

This is the **best developer experience**.

3 Environment Variables (Optional but Clean)

Create:

```
.env
```

Example:

```
ENV=development
DATABASE_URL=postgresql+asyncpg://user:pass@localhost/db
JWT_SECRET=dev-secret
```

VS Code will auto-load this if Python extension is installed.

4 Recommended Folder Structure

```
.vscode/
  └── tasks.json
  └── launch.json
app/
  .env
```

5 When to Use What

Need	Use
Quick run	Tasks (Cmd+Shift+B)
Debug logic	Debug config
CI/CD	CLI commands

✓ Recommendation

- Use **tasks.json** for daily dev
- Use **launch.json** for debugging
- Keep CLI commands in your cheat sheet

This setup supports **Layer 1 → Layer 9**, including future **AI & RAG** work.