

# 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**.

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## 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 ( <code>Cmd+Shift+B</code> )
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.