

Development Environment Setup

This is a short step-by-step guide, which shows how to set up a development environment and run F# code. We cover three different IDEs/editors you can choose from:

- Visual Studio (recommended on Windows)
- Rider (recommended on Mac and Linux)
- Visual Studio Code (light-weight option for cheaper hardware)

Visual Studio

Visual Studio is the recommended IDE on Windows. It makes it easy to create projects and you can run your code simply by pressing a button.

Note that *Visual Studio for Mac* is strongly discouraged!

Installation

Follow these steps to install Visual Studio from scratch.

- 1) Go to <https://my.visualstudio.com/Downloads>
- 2) Download and install Visual Studio Enterprise 2022 (free with ITU login)
- 3) In the installer, check “ASP.NET and Web Development” (it includes F#)
- 4) Click Install

If you already have Visual Studio installed without F# support, do the following:

- 1) Open the “Visual Studio Installer” (already installed on your computer)
- 2) Click the Modify button for the VS version you have installed
- 3) Under “Workloads” check “ASP.NET and web development” (it includes F#)
- 4) Click Modify

Open a project/solution

You can open a project from Visual Studio like this:

- 1) Click “Open a project or solution” or go to File -> Open -> Project/Solution
- 2) Locate a solution file (.sln file) and press Open

You can also open a solution simply by double-clicking on it.


A solution is a collection of one or more projects. When you open a solution, all the projects it contains are opened.


Create a Project

To create a project on your own, follow these steps:

- 1) Inside Visual Studio, click “Create a new project” or go to File -> New -> Project
- 2) Change the language filter to “F#” and pick the “Console App” template
- 3) Choose name, location, and target framework

Run a Project

Run without debugger: click  or press CTRL + F5

Run with debugger: click  or press F5

Run code in F# Interactive

Open F# interactive: View -> Other Windows -> F# Interactive (CTRL + ALT + F)

Send code: Select code (variable, function, etc.) and press ALT + ENTER

Check the F# interactive cheat sheet for more details!

Rider

Rider is the recommended IDE for Mac and Linux users. Just like in Visual Studio, you can easily create projects and run your code without using the command line.

Installation

Follow these steps to install Rider

- 1) Download here: <https://www.jetbrains.com/rider/> (JetBrains license free through ITU)
- 2) Run the installer and pick the default settings

Open a solution/project

You can open a solution (.sln file) from Rider like this:

- 1) Inside Rider, click Open
- 2) Locate a solution (.sln file) and click Open

Create a project

To create a project on your own:

- 1) Inside Rider, Click "New Solution"
- 2) Choose the Console Application template
- 3) Set Language to F#
- 4) Pick a solution name, project name, and solution directory
- 5) Click Create

Run a project

Run without debugger: Click 

Run with debugger: Click 

Run code in F# Interactive

Open F# interactive: Click Tools -> F# Interactive -> "Start New F# Interactive Session" (CTRL + ALT + F)

Send code: Select code (variable, function, etc.) and hit ALT+ ENTER

Check the F# interactive cheat sheet for more details!

Visual Studio Code

Visual Studio Code (VS Code) is an option on both Windows, Linux, and Mac. It is a light-weight alternative but requires more from you as a programmer. We do not recommend this option unless your computer struggles with Visual Studio and Rider.

Installation

- 1) Download from <https://code.visualstudio.com>
- 2) Click download in top right
- 3) Click on desired platform to download installer
- 4) Run installer

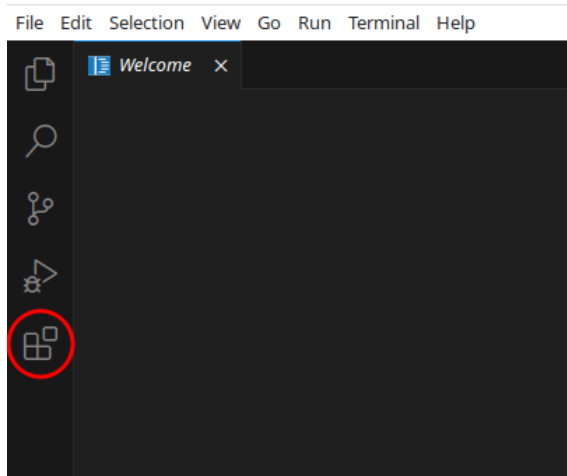
.NET Core (requirement for VSCode)

To create projects and run your code in VSCode, you need .NET Core. You will already have this if you have Visual Studio (non-code) installed.

- 1) Go to: <https://dotnet.microsoft.com/en-us/download>
- 2) Click download
- 3) Run the installer

Visual Studio Code F# Extension

- 1) Open “Extensions” tab on the left side (see image below)
- 2) Search for Ionide
- 3) Choose “Ionide for F#”
- 4) Click install



Create project via console

1) Navigate to where you want to create project

2) Run the following commands:

```
dotnet new sln -o <SolutionName>
```

```
cd <SolutionName>
```

```
dotnet new console -o <ProjectName> -lang "F#"
```

```
dotnet sln add <ProjectName>
```

Run project via console

Use the command

```
dotnet run --project <ProjectName>
```

Using the VSCode debugger

1) Go to F# tab

2) Click on the green arrow

3) It will then ask which project you want to run

- You must choose the one containing the main function

Run code in F# Interactive

Open F# interactive: `dotnet fsi`

Send code: Select code (variable, function, etc.) and press ALT/CMD + ENTER

Check the F# interactive cheat sheet for more details!

Be sure to open the right folder!

- VSCode and Ionide are very picky when it comes to what folder you have opened.
- Intellisense, debugging, and running project via UI may not work if the wrong folder has been opened.
- Easiest to just always open the folder containing the solution (sln) file