

Using Racket with Visual Studio Code

DrRacket is the standard editor for CPSC 2010. It comes with Racket, it is the environment used in class, and it is usually the easiest place to reproduce a problem when you ask for help. If DrRacket is working well for you, there is no reason to change editors.

Some students prefer to write programs in Visual Studio Code. The short answer is that you can. VS Code edits the same `.rkt` files, while the Racket program installed on your computer still does the actual work of running them. Changing editors does not change the language, the assignment requirements, or the file you submit.

This guide shows one way to set up VS Code for the ordinary `#lang racket` files used in CPSC 2010. If an assignment or a member of the course staff gives different instructions, follow those instructions.

Installing Racket

First install the **standard Racket distribution** from the [Racket download page](#). The standard distribution includes the `racket` command, the `raco` package tool, and DrRacket. At the time this guide was updated, the current release was Racket 9.3.

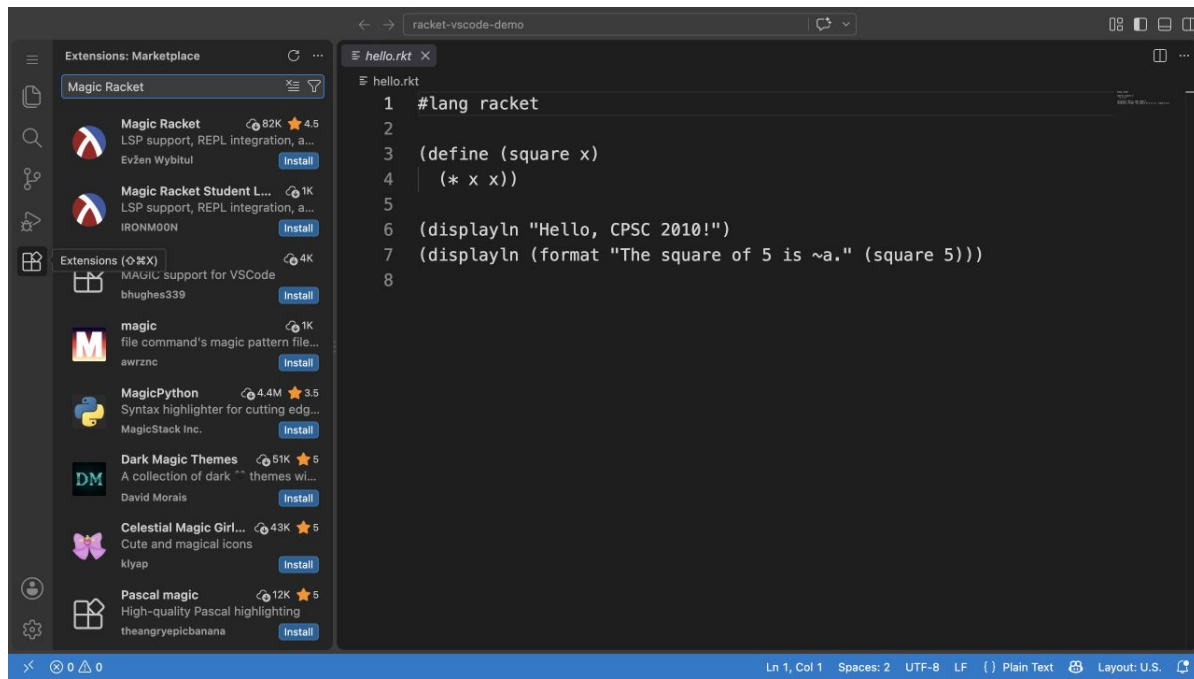
After the installation, open a terminal and type:

```
racket --version
```

You should see a Racket version number. If your computer says that it cannot find `racket`, restart VS Code. If that does not help, see the troubleshooting notes near the end of this guide.

Installing Magic Racket in VS Code

Open VS Code and click the Extensions icon on the left side of the window. It looks like four small squares. Search for **Magic Racket**, choose the extension by **Evžen Wybitul**, and click **Install**.



There is also an extension named *Magic Racket Student Language*. That extension is intended for the HtDP student languages. The examples in this guide use `#lang racket`, so install the ordinary **Magic Racket** extension shown above.

Writing a Racket file

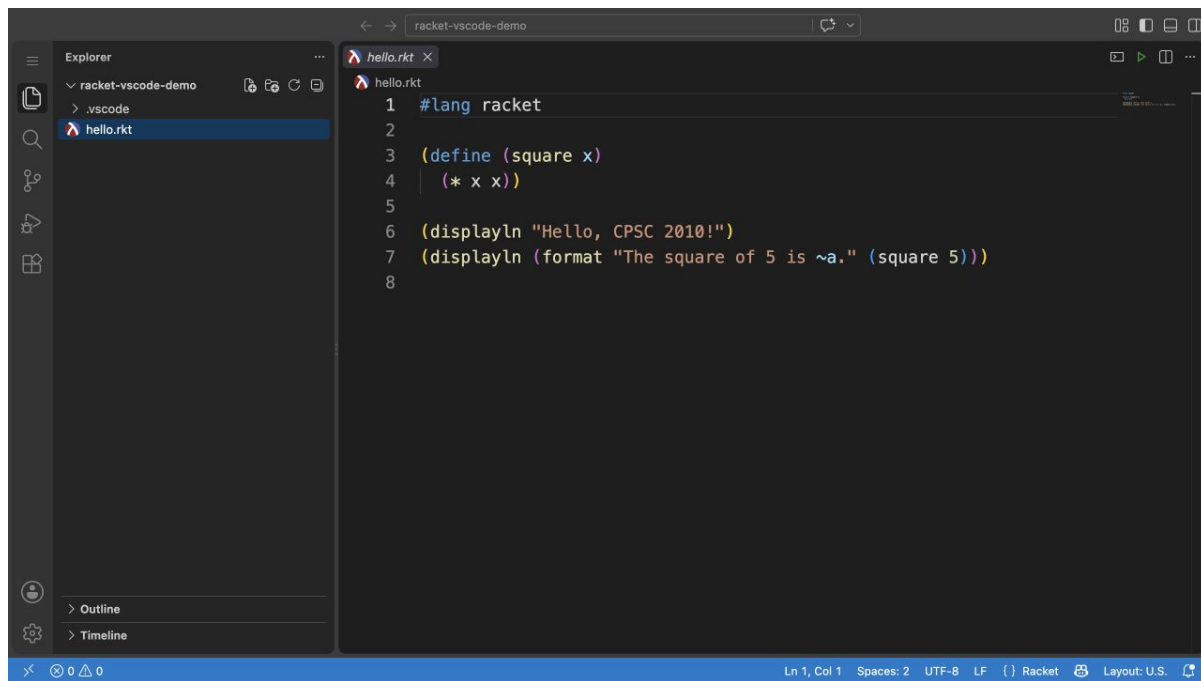
In VS Code, open a folder for your work and create a file whose name ends in `.rkt`. For example, create a file named `hello.rkt` containing the following program.

```
#lang racket

(define (square x)
  (* x x))

(displayln "Hello, CPSC 2010!")
(displayln (format "The square of 5 is ~a." (square 5)))
```

The homework files currently posted for CPSC 2010 already begin with `#lang racket`. Leave that line in place. If you create a separate `.rkt` file for practice, put the same line at the top.



When Magic Racket recognizes the file, the lower-right corner of VS Code should say **Racket**, and the program should have Racket syntax coloring. Two small Racket buttons also appear at the upper right of the editor.

Running the complete program

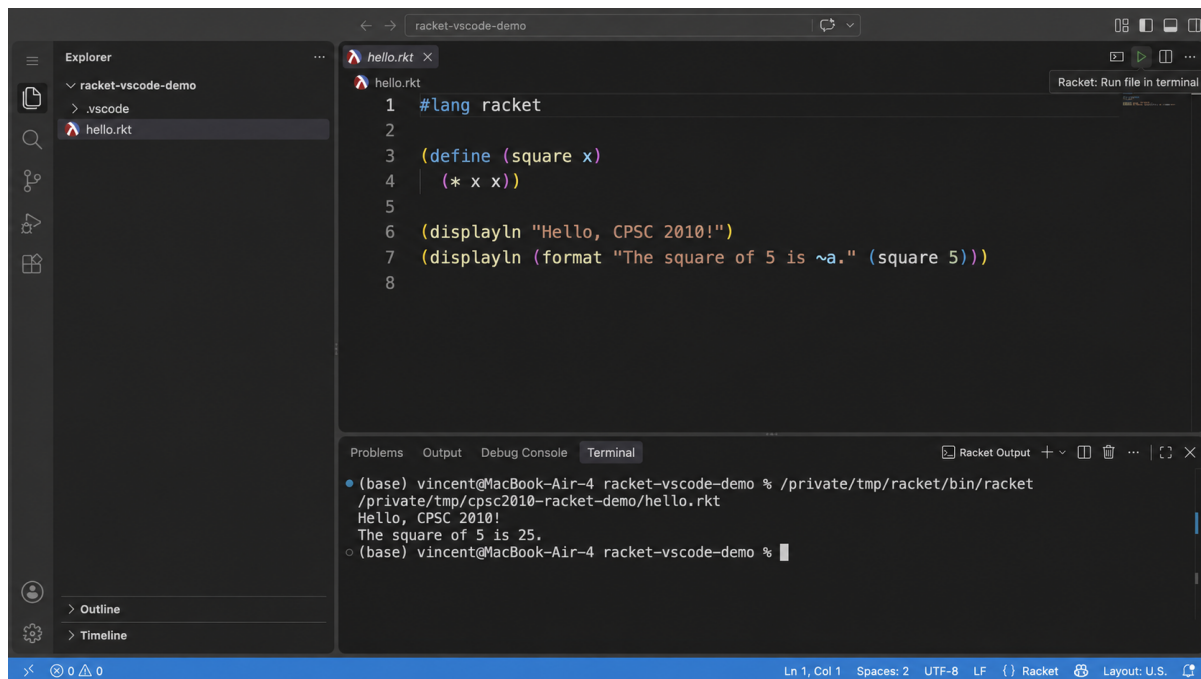
Save the file first. On a Mac, use **Command-S**. On Windows or Linux, use **Ctrl-S**.

The triangular Racket button at the upper right runs the saved file in VS Code's integrated terminal. You can also open the terminal yourself with **View > Terminal** and type:

```
racket hello.rkt
```

Both methods run the complete saved program in a fresh Racket process. For the example above, the result should be:

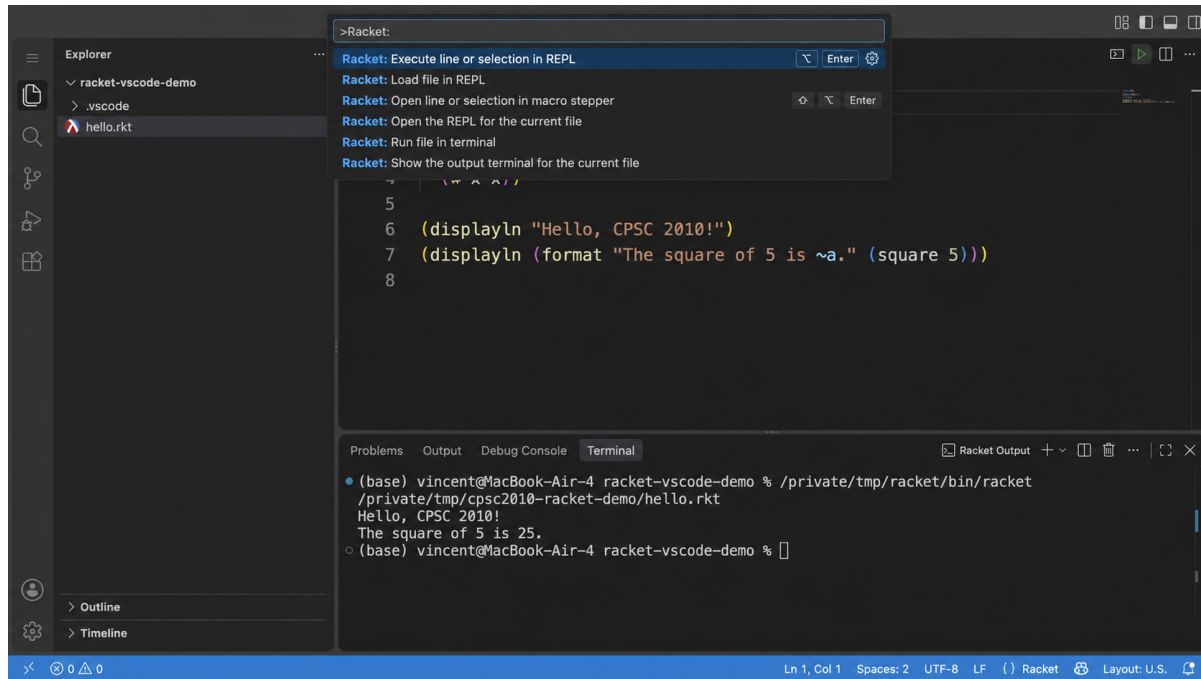
```
Hello, CPSC 2010!  
The square of 5 is 25.
```



Running the complete file is a useful final check because it is close to what happens when another person, or a grading program, runs your submission.

Finding the Magic Racket commands

VS Code keeps extension commands in the Command Palette. Open it with **Command-Shift-P** on a Mac or **Ctrl-Shift-P** on Windows and Linux, then type Racket :



The commands you are most likely to use are:

- **Racket: Run file in terminal** runs the complete saved file and then exits.
- **Racket: Load file in REPL** runs the file and leaves an interactive Racket prompt open.
- **Racket: Open the REPL for the current file** returns to that file's REPL.
- **Racket: Execute line or selection in REPL** sends one expression to the REPL.

There is no need to memorize the command names. Typing Racket : in the Command Palette is usually the quickest way to find them again.

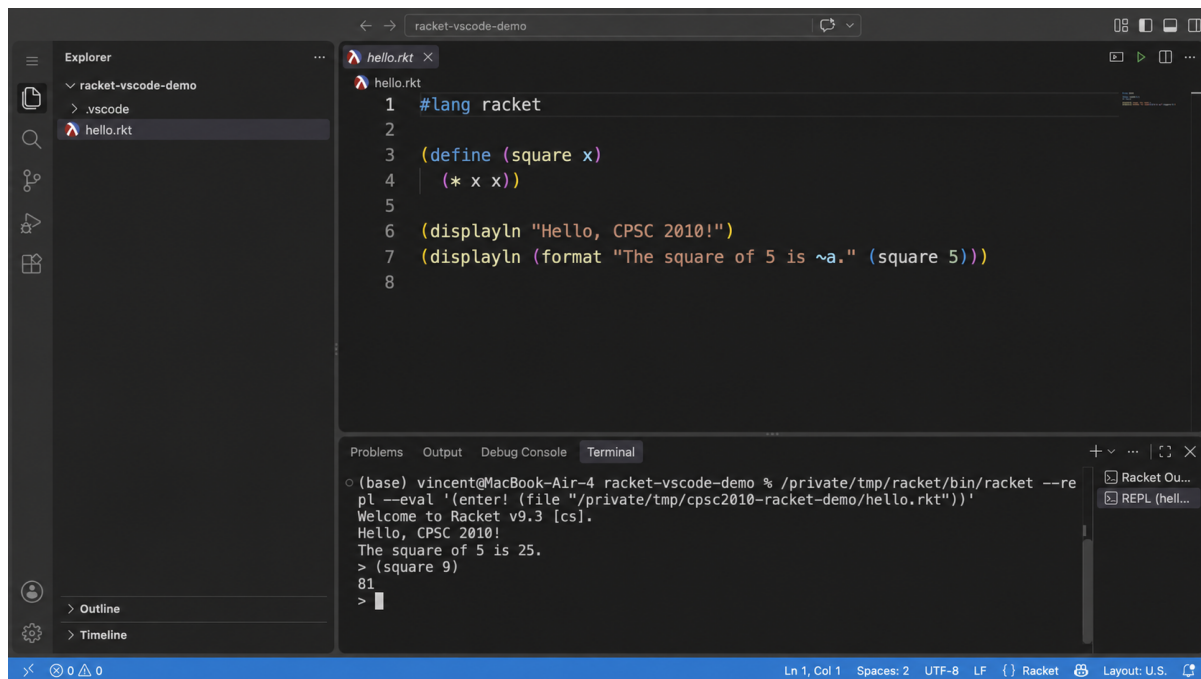
Using the REPL

REPL stands for *read-evaluate-print loop*. It reads an expression, evaluates it, prints the result, and waits for another expression. This is useful when you want to try a function on several inputs without running the whole file each time.

Save `hello.rkt`, choose **Racket: Load file in REPL**, and wait for the `>` prompt. Because the file defines `square`, you can now type:

```
(square 9)
```

Racket should print 81.



If you edit a definition, save the file and load it into the REPL again. Otherwise the REPL may still be using the older definition.

A bit of extra help from the editor

Magic Racket can use `racket -langserver` to provide error underlining, completion, hover information, formatting, and jumps to definitions. These features are convenient, but they are not required to write or run a `.rkt` file.

To install it, enter:

```
raco pkg install racket-langserver
```

Restart VS Code afterward. To update it later, enter `raco pkg update racket-langserver`. If the installation causes trouble, you can still run Racket from the terminal, use the basic Magic Racket commands, or return to DrRacket.

A few common problems

'racket: command not found'

Make sure that you installed the standard Racket distribution, then restart VS Code. On a Mac, a common location is `/Applications/Racket v9.3/bin/racket`. On Windows, Racket is commonly installed somewhere under `C:\Program Files`. You can also open VS Code Settings and search for **Magic Racket: Racket Path**.

The file has no Racket colors or run buttons

Check that the filename ends in `.rkt`. The language indicator at the lower right should say **Racket**, not **Plain Text**. Also make sure that Magic Racket is installed and enabled.

The program runs in DrRacket but not in VS Code

Save the file, then try `racket your-file.rkt` in the integrated terminal. Check that VS Code and DrRacket are using the same Racket installation. When asking for help, copy the first error message; later errors are often consequences of the first one.

The REPL does not know a function in the file

Save the file and choose **Racket: Load file in REPL** again. If necessary, close the old REPL terminal and start a new one.

Further information

The Racket Guide discusses [command-line tools and editors](#) and has a short page about [Visual Studio Code](#). The full command list is in the [Magic Racket documentation](#), and the optional language server has its own [documentation](#).