



The Matcher Trait: Code Companion

Reference code for the The Matcher Trait lecture. Sections correspond to the lecture document.

Section 1: What This File Does

```
/*!  
This crate provides an interface for regular expressions, with a focus on line  
oriented search. The purpose of this crate is to provide a low level matching  
interface that permits any kind of substring or regex implementation to power  
the search routines provided by the  
[`grep-searcher`](https://docs.rs/grep-searcher)  
crate.  
  
The primary thing provided by this crate is the [`Matcher`] trait. The trait  
defines an abstract interface for text search. It is robust enough to support  
everything from basic substring search all the way to arbitrarily complex  
regular expression implementations without sacrificing performance.  
  
A key design decision made in this crate is the use of *internal iteration*,  
or otherwise known as the "push" model of searching. In this paradigm,  
implementations of the Matcher trait will drive search and execute callbacks  
provided by the caller when a match is found.  
*/
```

The module-level documentation establishes the crate's purpose and explicitly calls out the internal iteration design choice—a crucial architectural decision explained in the lecture.

Section 2: The Match Type - A Better Range

