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How to access the BufReader twice?

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1



Trying to access the variable `sentences` for a second time causes `value used here after move`, I want to understand how to store the total without causing this problem.

I tried to copy the iterator but I can't find a way to make it work or how is the correct way to do it.

```
extern crate regex;

use std::fs::File;
use std::path::Path;
use std::io::{BufReader, BufRead};

fn main() {
    let sentences_path = Path::new("csv/testSentences.csv");
    let sentences = BufReader::new(File::open(&sentences_path).unwrap());

    let total = sentences.lines().count();

    for (index, sentence) in sentences.lines().enumerate() {
        let line = sentence.unwrap();
        println!("Processed {} of {}, {}", index, total, line);
    }

    println!("Total {}", total);
}
```

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asked Jun 16 '19 at 15:32



[Daniel Dobiado](#)

1,814 • 14 • 21

The two answers this question have, are both trade off, you don't have a lot of memory or your file is really big, read it twice ? Or your file size is small and you have enough memory, stock the whole file.

— [Stargateur](#)

Jun 17 '19 at 3:24

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6



You can not access the value if the ownership is moved previously. However you can inspect over your lines with [inspect](#) without changing the inner lines but only updating the count.

After you find out the `count` by iterating the Lines, you can iterate it again and do the logic as you wish.

The main reason why you are getting this compiler error is: [count](#) function consumes the Lines you use and you can not access your variable again since it is already consumed.

Here is the solution:

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```

use std::fs::File;
use std::io::{BufRead, BufReader, Write};

fn main() {
    let path = "lines.txt";

    let mut output = File::create(path).unwrap();
    write!(output, "Rust'n Fun").unwrap();

    let input = File::open(path).unwrap();
    let buffered = BufReader::new(input);

    let lines: Vec<_> = buffered.lines().collect();
    let total = lines.len();

    for (index, sentence) in lines.into_iter().enumerate() {
        let line = sentence.unwrap();
        println!("Processed {} of {}, {}", index, total, line);
    }

    println!("Total {}", total);
}

```

[Playground](#)

With this way, you do not need to read the file twice. You read the file, put it into memory then only iterate it twice.

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edited Oct 25 at 11:13

answered Jun 16 '19 at 20:01



[Akiner Alkan](#)

4,689 • 22 • 52

You need to mention the fact that with this solution all the File is put in memory when you collect lines

– [Riccardo Casatta](#)

Oct 21 at 9:25

1

Updated as the file put into memory

– [Akiner Alkan](#)

Oct 25 at 11:13

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3



You can't. You need to read the file twice. First to count total lines. And second to process each line. So you need two BufReader :

```

extern crate regex;

use std::fs::File;
use std::io::{BufRead, BufReader};
use std::path::Path;

fn get_file_reader(path: &Path) -> impl BufRead {
    BufReader::new(File::open(path).unwrap())
}

fn main() {
    let sentences_path = Path::new("csv/testSentences.csv");
    let sentences = get_file_reader(&sentences_path);

    let total = get_file_reader(&sentences_path).lines().count();

    for (index, sentence) in sentences.lines().enumerate() {
        let line = sentence.unwrap();
        println!("Processed {} of {}, {}", index, total, line);
    }

    println!("Total {}", total);
}

```

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answered Jun 16 '19 at 19:25



[antage](#)

1,080 • 7 • 11

With this implementation you are reading the whole file to the memory twice which is not memory efficient

– [Akiner Alkan](#)

Jun 16 '19 at 19:30

3

@Websterix memory efficient mean less memory use, this solution use less memory than your solution where you stock the whole file in memory.

– Stargateur
Jun 17 '19 at 3:21

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-1



`sentences.lines()` is an iterator. You can borrow it instead of consuming by calling `.by_ref()` :

```
let mut lines = sentences.lines();
let total = lines.by_ref().count();
for (index, sentence) in lines.enumerate() {
    // ...
}
```

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answered Jun 17 '19 at 3:06



Lancy

1,359 ● 6 ● 5

This simply doesn't work, `by_ref()` will not clone the iterator, it will just do a mutable borrow.

– Stargateur

Jun 17 '19 at 3:19

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