

What does "borrowed data cannot be stored outside of its closure" mean?

Asked 3 years, 6 months ago Active 11 months ago Viewed 2k times



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When compiling the following code:

```
fn main() {
    let mut fields = Vec::new();
  let pusher = &mut |a: &str| {
     fields.push(a);
```

The compiler gives me the following error:

```
error: borrowed data cannot be stored outside of its closure
--> src/main.rs:4:21
3 | let pusher = &mut |a: &str| {
               ----- ...because it cannot outlive this closure
      borrowed data cannot be stored into here...
      fields.push(a);
             ^ cannot be stored outside of its closure
```

And in later versions of Rust:

```
error[E0521]: borrowed data escapes outside of closure
 --> src/main.rs:4:9
2 | let mut fields = Vec::new();
| ------- `fields` declared here, outside of the closure body
3 | let pusher = &mut |a: &str| {
| - `a` is a reference that is only valid in the closure body
        fields.push(a);

^^`a` escapes the closure body here
```

What does this error mean, and how can I fix my code?







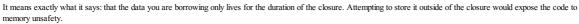
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This arises because the inferred lifetime of the closure's argument has no relation to the lifetimes stored in the $\ensuremath{\text{Vec}}$.

By clicking "A General Hypothis' isnut agrafolder in yobung experience obscious one their inglibias osains and union cirtypporitative or the classes, you can add a type to fields and remove it from the closure:

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Shara
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answered Jun 30 '18 at 20:36
Shepmaster Shepmaster
305k ● 59 ● 824 ● 1083
Oh, thank you! I would have expected an error telling me the borrowchk does not have enough info.
- Valentin Lorentz
Jun 30 '18 at 22:40
@ValentinLorentz FWIW, I've never seen this particular error before, and this is the first SO question about it. It's possible this is a brand new error. You may wish to file a bug with your case and
the error message and say that it wasn't helpful. The Rust contributors strive to have useful error messages.
- Shepmaster Jul 1'18 at 3:36
I spent a few hours misinterpreting the "and remove it from the closure" part. It's not that you can remove it if you're bored with it, you have to remove it to make this compile. — Stein
Aug 8 '20 at 19:34
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