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Mutate a value stored in an enum in a Vec

Asked 8 years, 1 month ago

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The following code fails to compile with the error below:

```
enum Test {
    C(i32),
}

fn main() {
    let mut v = Vec::new();

    v.push(Test::C(0));

    if let Some(Test::C(ref mut c)) = v.last_mut() {
        *c = *c + 1;
    }
}
```

```
  error[E0308]: mismatched types
   --> src/main.rs:10:17
    |
10  |      if let Some(Test::C(ref mut c)) = v.last_mut() {
    |                  ^^^^^^^^^^^^^^^^^^ expected &mut Test, found enum `Test`
    |
    = note: expected type `&mut Test`
               found type `Test`
```

`last_mut()` returns a mutable reference, and I'm taking the `i32` as a mutable reference. I've tried making the mutability even more clear as follows, but I get the same compiler error.

```
if let Some(ref mut e) = v.last_mut() {
    if let Test::C(ref mut c) = e {
        *c = *c + 1;
    }
}
```

Why doesn't this work?

- [rust](#)

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You just need to match exactly what the error message says. It expects a `&mut Test`, so you should match on that:

```
if let Some(&mut Test::C(ref mut c)) = v.last_mut() {
    //        ^^^^^^
    *c = *c + 1;
}
```

Here [it is running in the playground](#).

As of [Rust 1.26](), your original code works as-is and the explicit `ref` and `ref mut` keywords are no longer required:

```
if let Some(Test::C(c)) = v.last_mut() {
    *c = *c + 1;
}
```

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Tim

[Tim]() [Over a year ago]()

Grr, I can't believe I missed that. Why is it that the second form with the 2 if statements doesn't work?

2017-11-08T02:32:44.84Z+00:00

0

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DK.

[DK.]() [Over a year ago]()

@Tim: Because it has the same problem. In the second example, `e` is of type `&mut &mut Test`. The issue is that you're ignoring the borrows when writing the patterns; you can't do that.

2017-11-08T03:39:19.89Z+00:00

2

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Shepmaster

[Shepmaster]() [Over a year ago]()

Normally, you'd write `if let Some(Test::C(ref mut c)) = *v.last_mut() {`. I think this is also covered by [RFC 2005](), which will allow `if let Some(Test::C(ref mut c)) = v.last_mut() {` to work.

2017-11-08T13:46:56.58Z+00:00

1

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Shepmaster

[Shepmaster]() [Over a year ago]()

Errr. disregard my point about the version with `*v.last_mut()`, not sure what I was thinking ^_^. The point about RFC 2005 stands (I hope).

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