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# Modify fixed Array of a Struct by function

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I want to create a struct that have an array and that struct should have a function to modify that array by some parameters. Like I have a white paper and I want to draw a line in a specific direction over that paper, but after one call, I get the error: value used here after move .

I understand what the problem is, but I don't understand why this is a problem and how to solve that generally. I think I have not understood that principle behind that compiler error.

My second question is, is there a faster way to change a set of values by index in the fixed size array? In numpy I would write `arr[x1,0:y] = newVal` .

Here is the not-working example:

```
const N: usize = 4;

fn main() {
    println!("Hello, world!");
    let bebalcken = [[false; N]; N];
    let stuetzen = [[true; N]; N];

    let mut f= Feld {
        abst: [[0; N]; N],
        bebalcken: &bebalcken,
        stuetzen: &stuetzen,
        balken: [[0; N]; N],
    };

    f.balken_einfugen(0, 0, 1, 4, 1);
    f.balken_einfugen(1, 0, 1, 4, 1);
}

struct Feld<A> {
    abst: [[u8; N]; N],
    bebalcken: &A [[bool; N]; N],
    stuetzen: &A [[bool; N]; N],
    balken: [[u8; N]; N],
}

impl Feld<'_> {
    pub fn balken_einfugen<A>(mut self, x: usize, y: usize, dir: u8, r: u8, connBar: u8) {
        let imax: usize = N;

        if dir == 1 {
            for i in 0..imax {
```

And here the full compiler error:

```
error[E0382]: use of moved value: `f`
  --> src/main.rs:19:5
   |
10 |   let mut f= Feld {
   |     ----- move occurs because `f` has type `Feld<'_>`, which does not implement the `Copy` trait
   |
...
18 |   f.balken_einfugen(0, 0, 1, 4, 1);
   |   ----- `f` moved due to this method call
19 |   f.balken_einfugen(1, 0, 1, 4, 1);
   |   ^ value used here after move
   |
note: this function consumes the receiver `self` by taking ownership of it, which moves `f`
  --> src/main.rs:35:36
35 |   pub fn balken_einfugen<A>(mut self, x: usize, y: usize, dir: u8, r: u8, connBar: u8) {
   |                               ^^^^^
```

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edited Feb 21 at 13:13



pretzelhammer

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Methods which take `self` as an argument take ownership of the struct they're called on. This means you can only call the method once since it consumes the struct.

If you'd like maintain ownership of the struct, and call the method multiple times, you have to write the method so that it mutably borrows the struct instead of taking ownership, i.e. `&mut self` instead of `mut self`.

Once you make this change in your code it compiles:

```
const N: usize = 4;

fn main() {
    let bebalcken = [[false; N]; N];
    let stuetzen = [[true; N]; N];

    let mut f = Feld {
        abst: [[0; N]; N],
        bebalcken: &bebalcken,
        stuetzen: &stuetzen,
        balken: [[0; N]; N],
    };

    f.balken_einfugen(0, 0, 1, 4, 1);
    f.balken_einfugen(1, 0, 1, 4, 1);
}

struct Feld<A> {
    abst: [[u8; N]; N],
    bebalcken: &A [[bool; N]; N],
    stuetzen: &A [[bool; N]; N],
    balken: [[u8; N]; N],
}

impl Feld<'a> {
    // 'mut self' changed to '&mut self' here
    pub fn balken_einfugen<'a>(&mut self, x: usize, y: usize, dir: u8, r: u8, connBar: u8) {
        let imax: usize = N;

        if dir == 1 {
            for i in 0..imax {
                self.balken[x + i][y] = connBar;
            }
        }
    };
}
```

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answered Jan 24 at 16:59



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thank you very much. I think I understand the differences better now since I struggled at the beginning. thanks again.

— users178150

Jan 26 at 20:45

@343nps if my answer helped you please consider upvoting it (by clicking the up arrow above the answer score) and accepting it (by clicking the gray checkmark underneath the answer score), thanks!

— [pretzelhammer](#)

Jan 26 at 20:52



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