

[[questions]]

id = "dd16401e-9f74-4c86-a6ec-da2937cb26e5"

type = "MultipleChoice"

prompt.prompt = ""

Which call to this `find_until` function will cause a runtime panic?

...

```
fn find_until(mut v: Span<u64>, n: u64, til: usize) -> Option<usize> {
```

```
    let mut i = 0;
```

```
    loop {
```

```
        if i == til {
```

```
            break Option::None;
```

```
        }
```

```
        if *v[i] == n {
```

```
            break Option::Some(i);
```

```
        }
```

```
        i += 1;
```

```
    }
```

```
}
```

...

""

prompt.distractors = [

"`find_until(array![1, 2, 3].span(), 0, 0);`",

"`find_until(array![1, 2, 3].span(), 3, 3);`",

"`find_until(array![1, 2, 3].span(), 1, 4);`",

]

answer.answer = "`find_until(array![1, 2, 3].span(), 4, 4);`"

context = ""

If `til = 4`, then for an array of length 3, the loop will attempt to index the array with `i = 3`,

which is out of bounds. This function does not panic if `n = 1` because it returns before reaching

the out-of-bounds index.

""

[[questions]]

id = "2e6570eb-8bf4-48b7-9032-5815475bc412"

type = "Tracing"

prompt.program = ""

```
fn main() {
```

```
    let mut v: Array<ByteArray> = array!["Hello "];
```

```
    let mut s = *v[0];
```

```
    s.append("@world");
```

```
    println!("{s}");
```

```
}
```

""

answer.doesCompile = false

answer.lineNumber = 3

```
context = ""
```

As Cairo's memory layout is immutable, types cannot be moved out of an array by indexing. The only

possibility is to copy the value to a new variable using the ``*`` (desnap) operator.

Therefore, as

ByteArray is not copyable, the line ``let mut s = *v[0];`` does not compile.

```
""
```

```
[[questions]]
```

```
id = "95d528ee-ae78-4892-a438-a5d97f07f52a"
```

```
type = "Tracing"
```

```
prompt.program = ""
```

```
fn main() {
```

```
    let mut v: Array<usize> = array![1, 2, 3];
```

```
    let mut i = *v[0];
```

```
    i += 1;
```

```
    println!("{}", {}, i, v[0]);
```

```
}
```

```
""
```

```
answer.doesCompile = true
```

```
answer.stdout = "2, 1"
```

```
context = ""
```

``*v[0]`` copies the value of the first element of the array to ``i``. Therefore, ``i`` is a copy of the

value of ``v[0]``, and incrementing ``i`` does not affect ``v[0]``.

```
""
```