Shared Borrows

Borrowing: Shared Borrows

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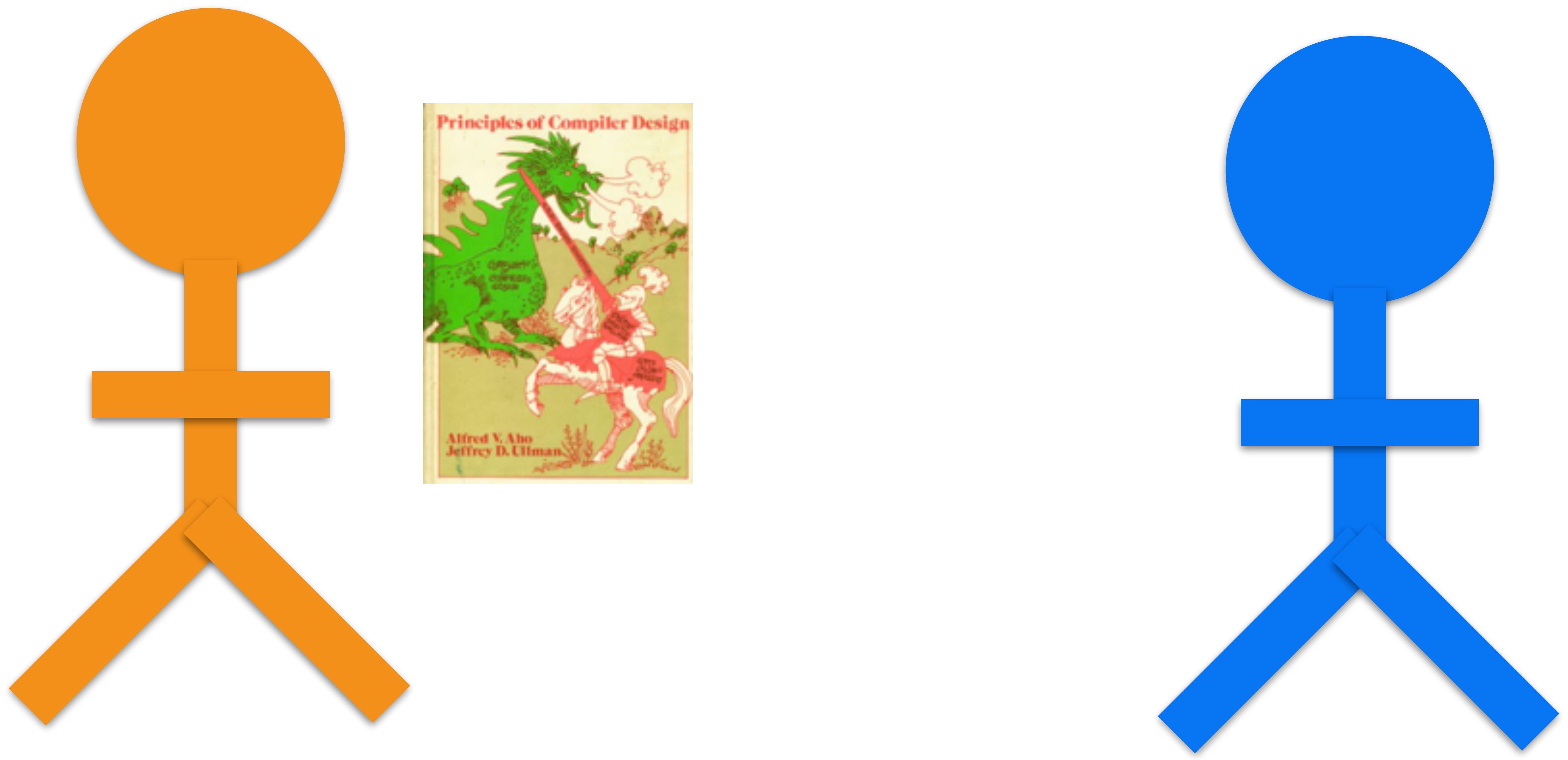

Borrowing: Shared Borrows

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fn main() {
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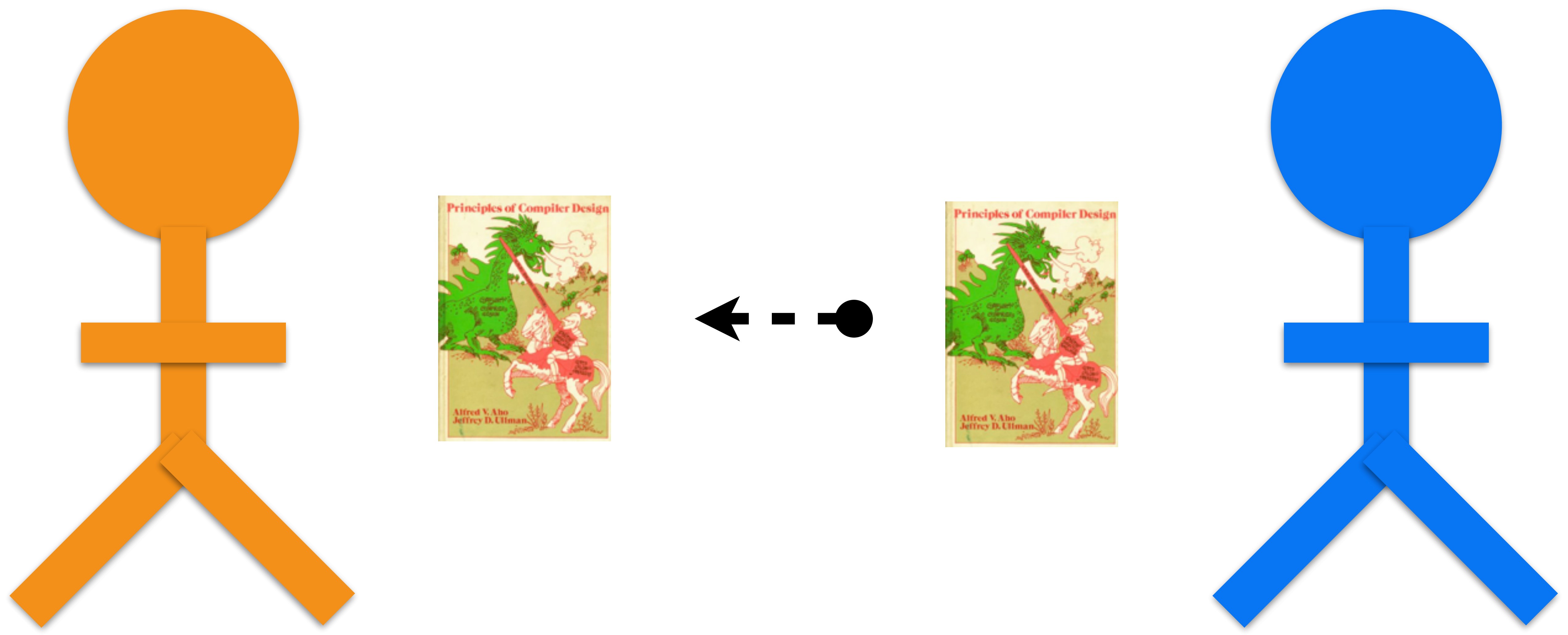

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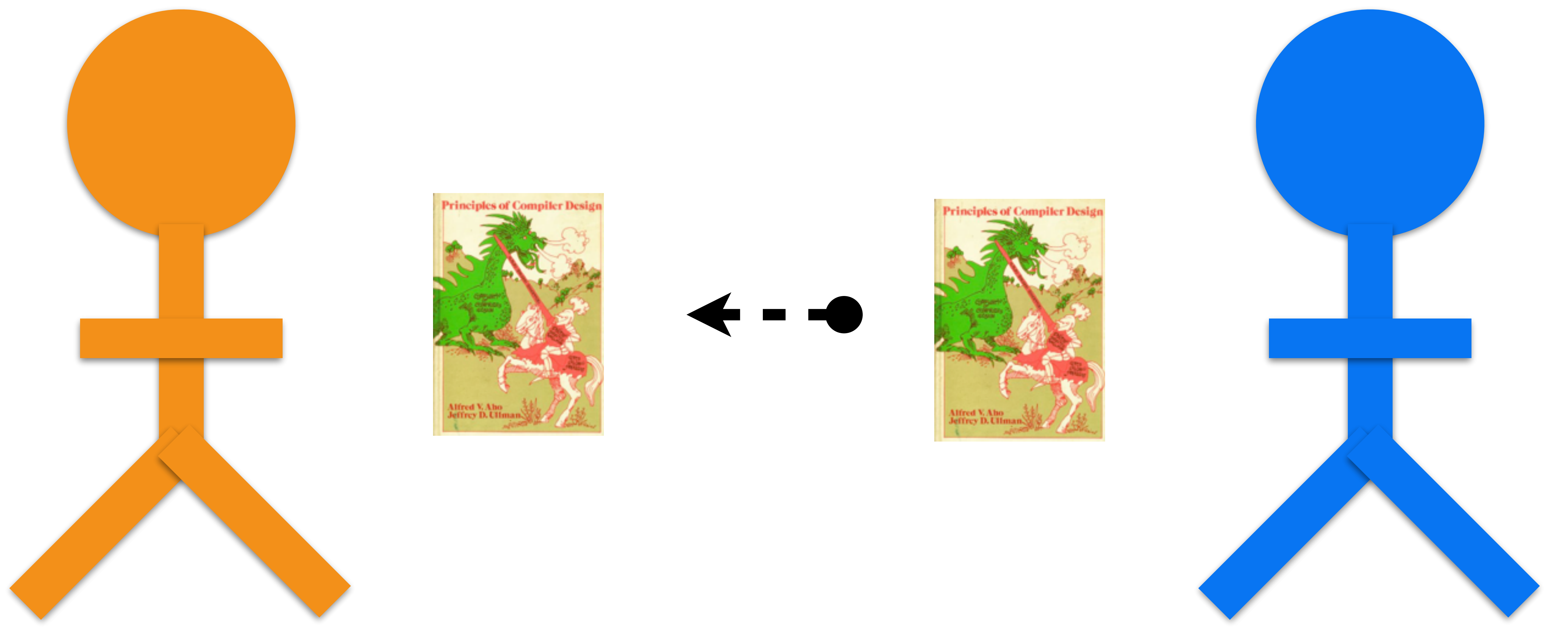

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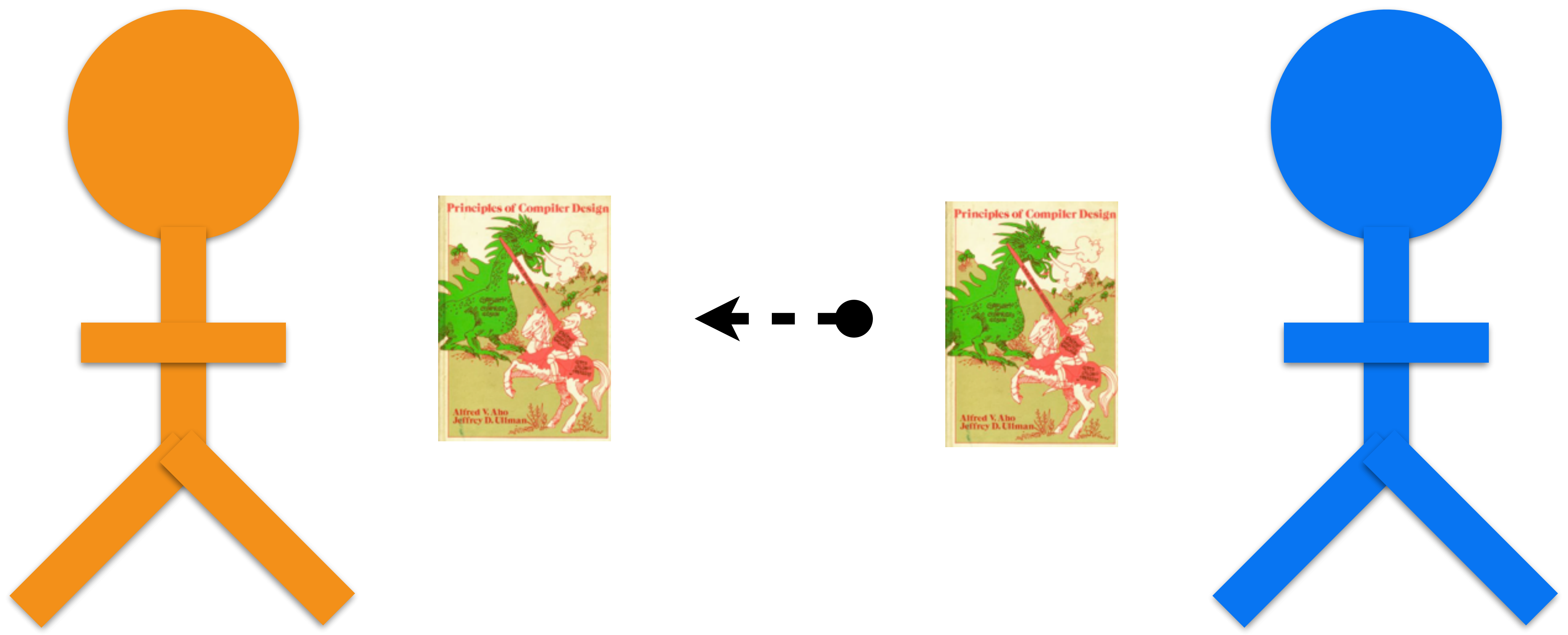

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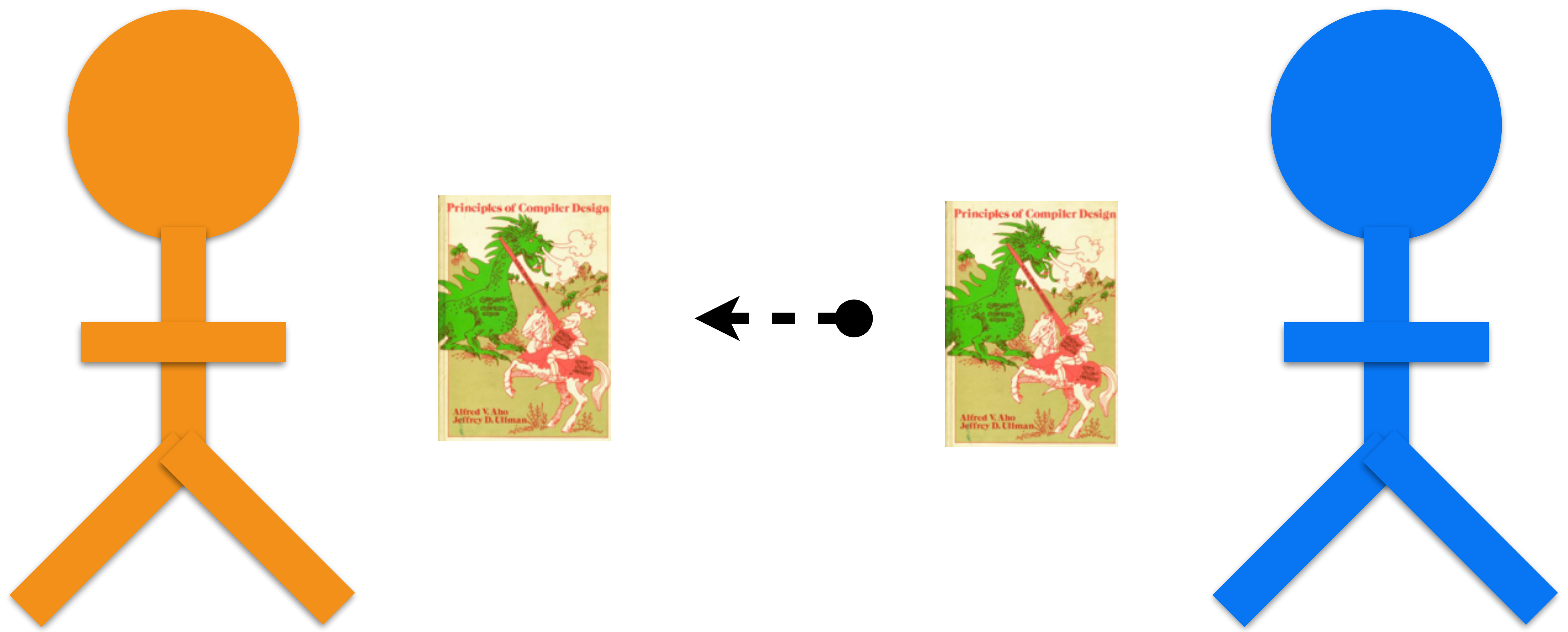

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Shared borrow

Shared == Immutable

```
fn helper(name: &String) {
  println!(“{}”, name);
}

fn helper(name: &String) {
  name.push(‘x’);
}
```

Shared == Immutable

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OK. Just reads.

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error: cannot borrow immutable borrowed content `*name`
       as mutable
    name.push_str("s");
    ^^^^
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* **Actually:** mutation only in **controlled circumstances**.

Play time

Waterloo, Cassius Coolidge, c. 1906

http://is.gd/no0tTH

```
fn main() {
  let name = format!(“…”);
  helper(&name[1..]);
  helper(&name);
}
```

```
fn helper(name: &str) {
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Looks like other languages:

- Python: name[1:]
- Ruby: name[1..-1]

But no copying at runtime.

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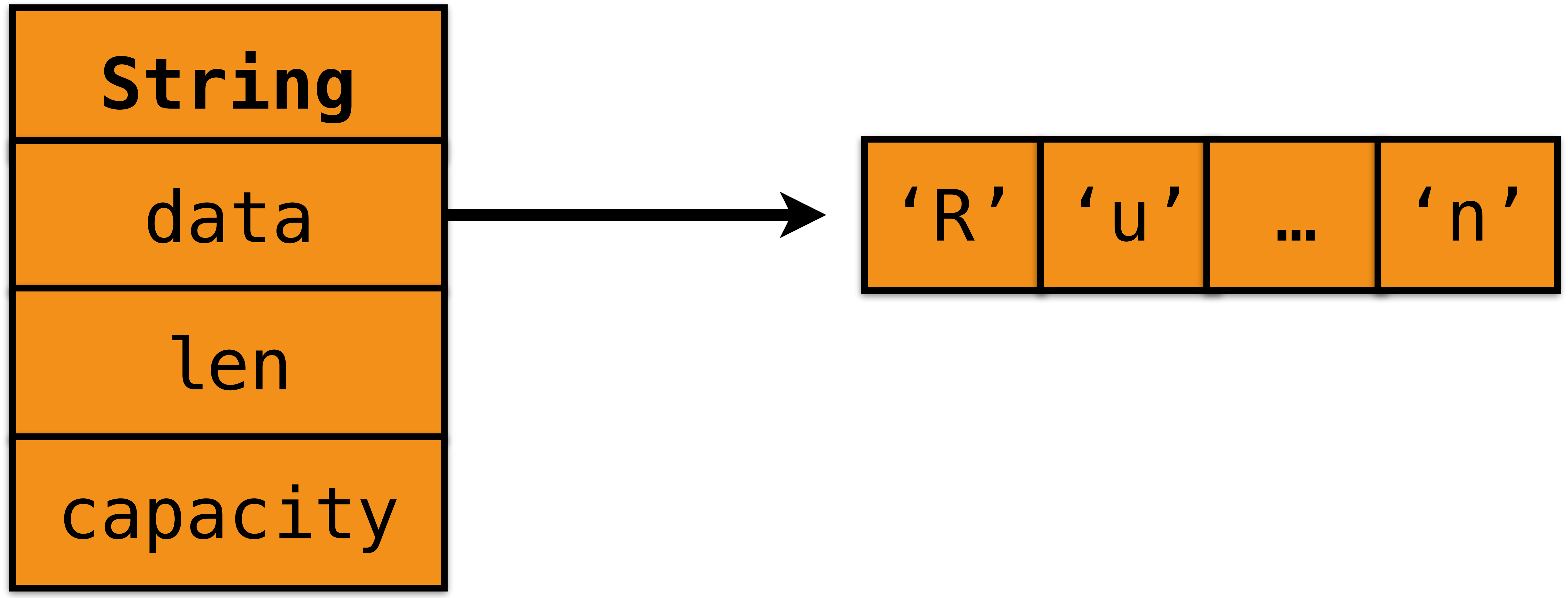

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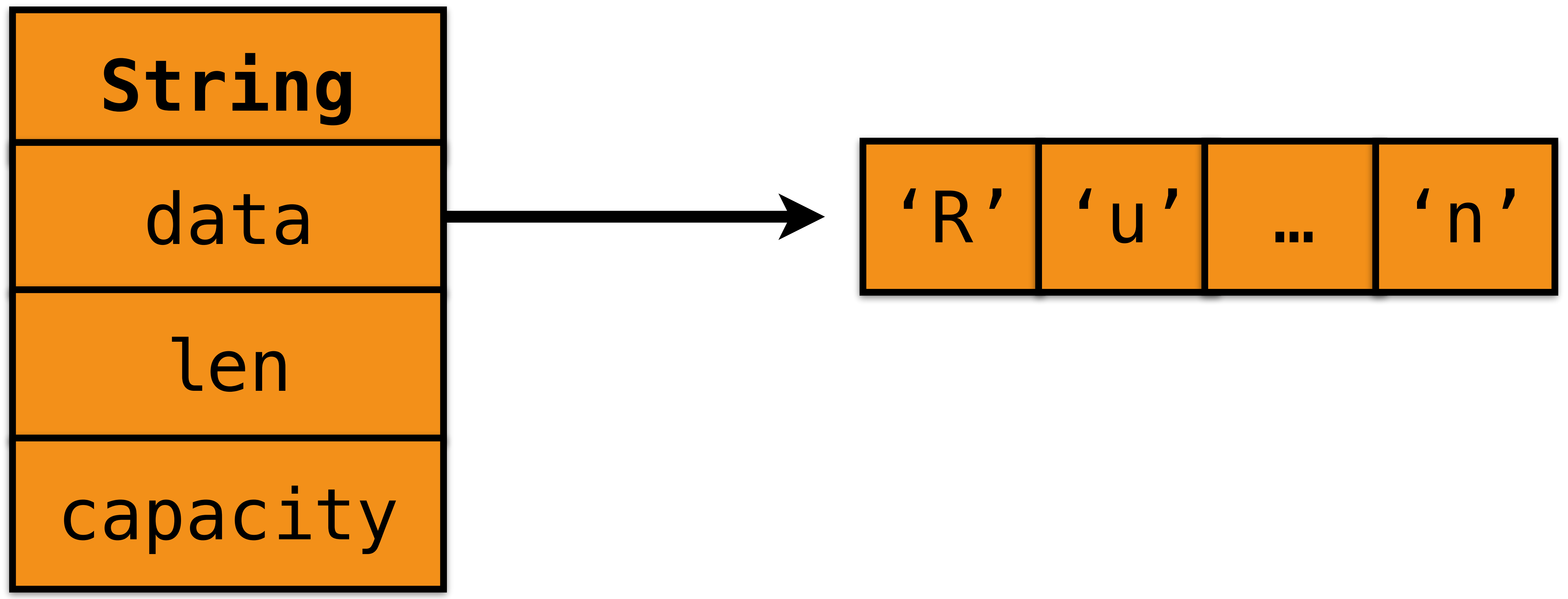

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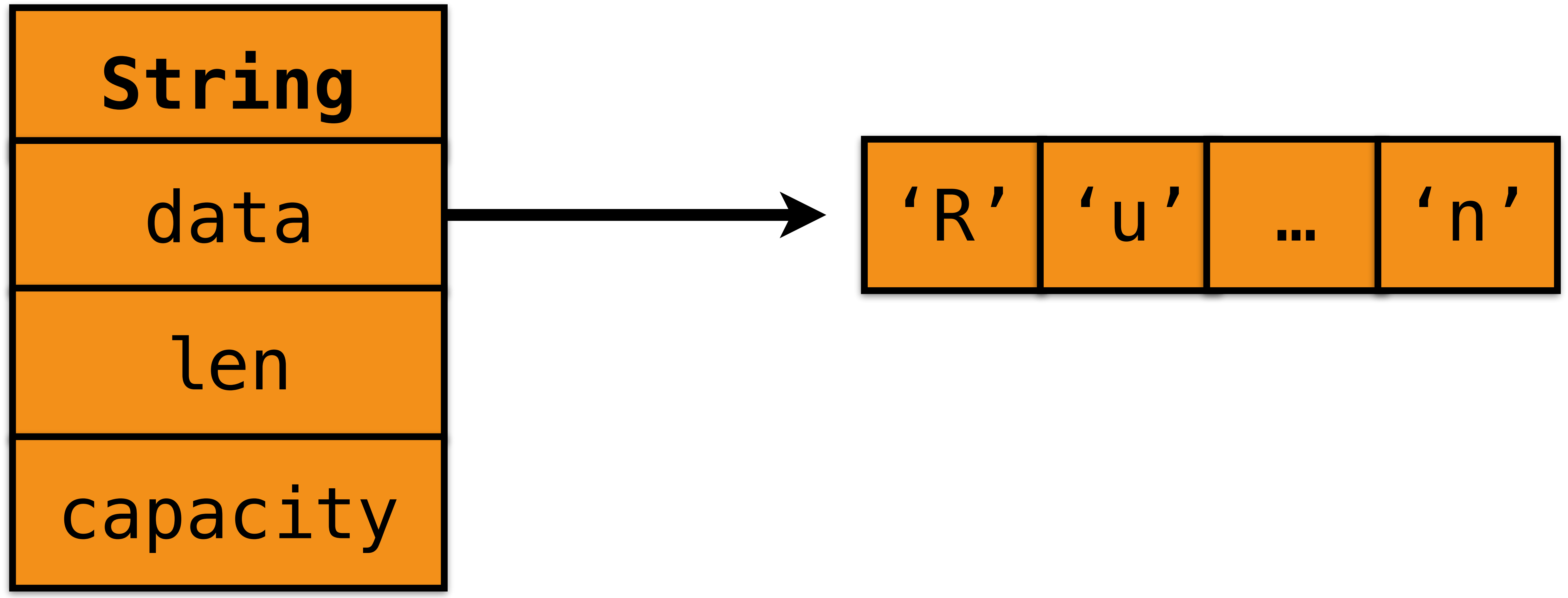
Change type from `&String` to a **string slice**, `&str`



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Lend some of the string

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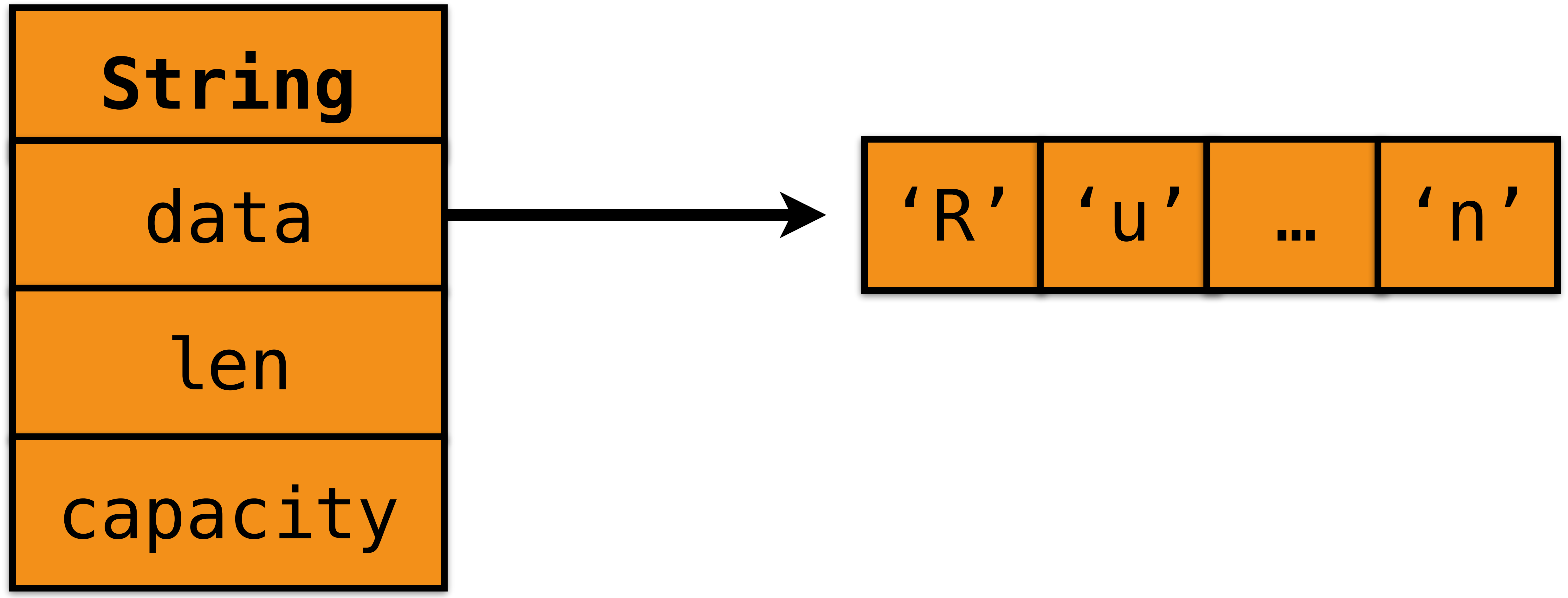

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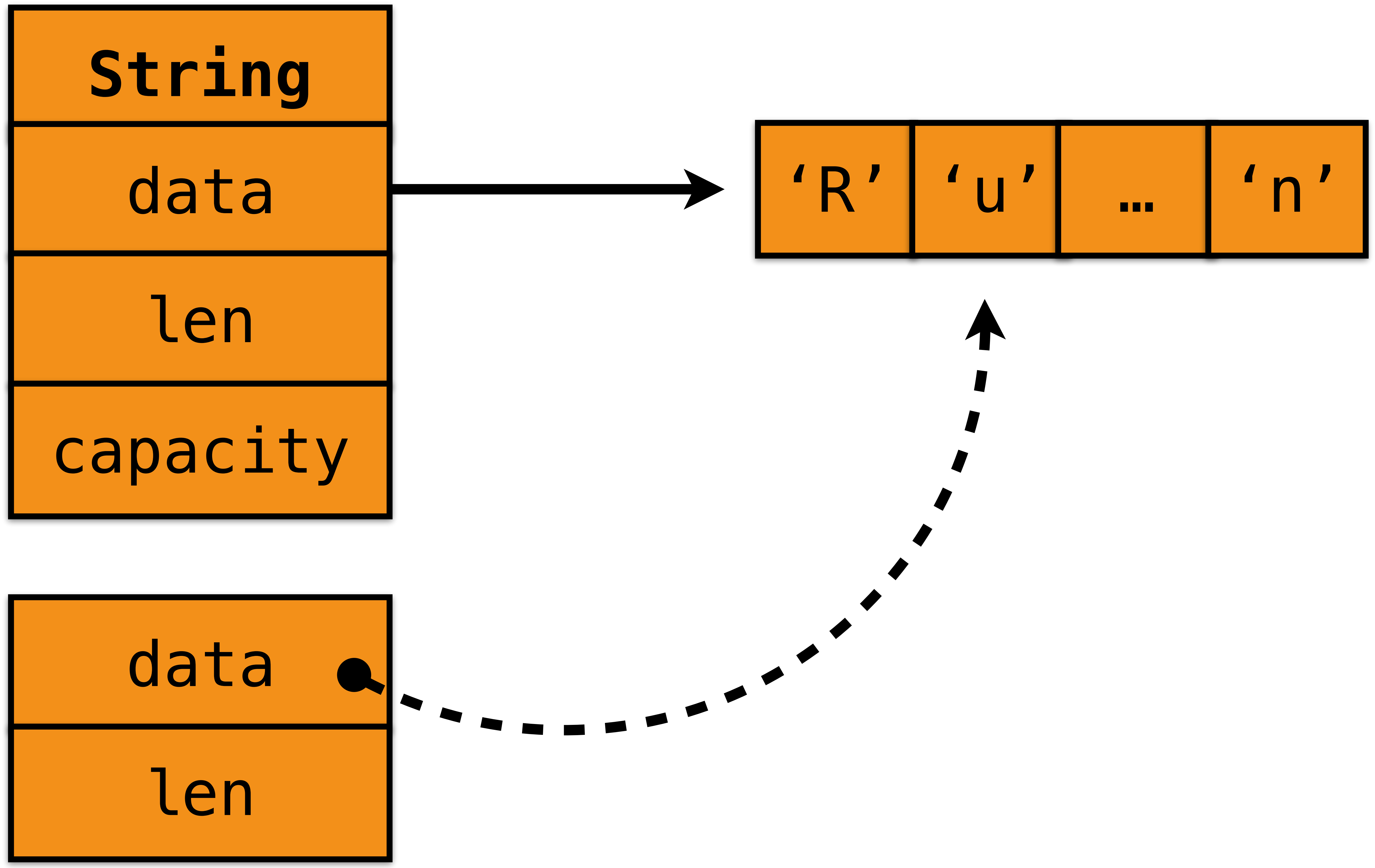

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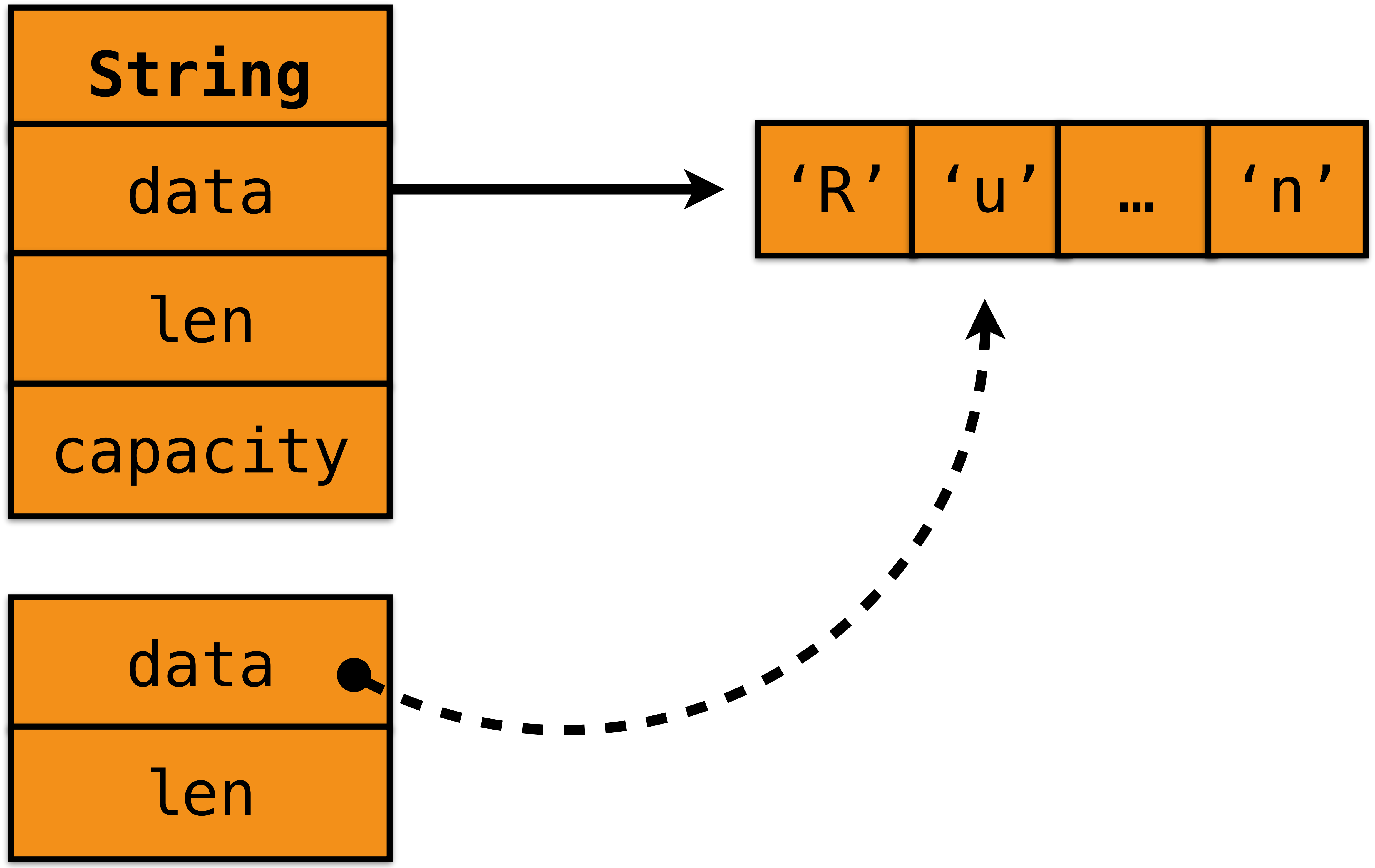

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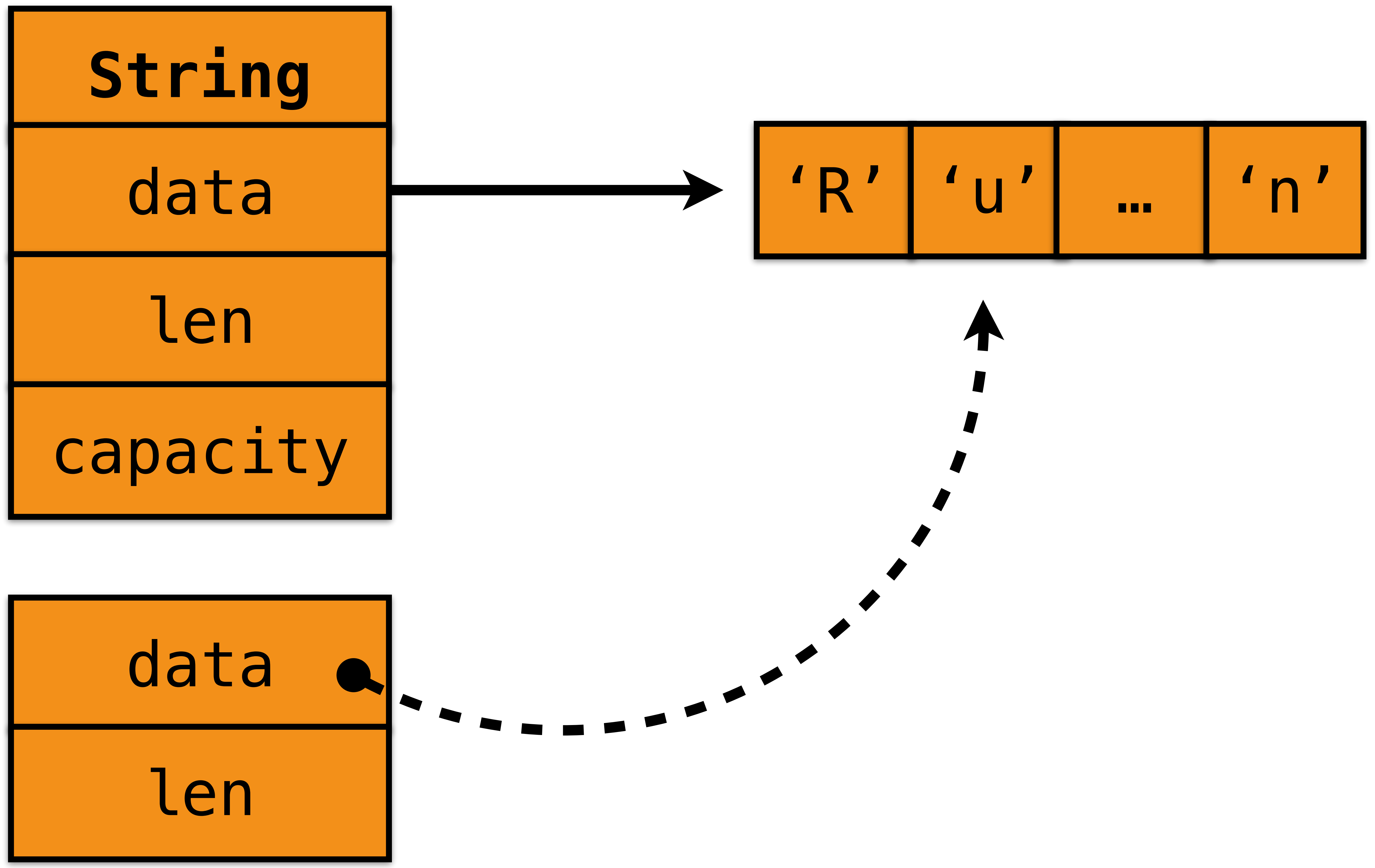

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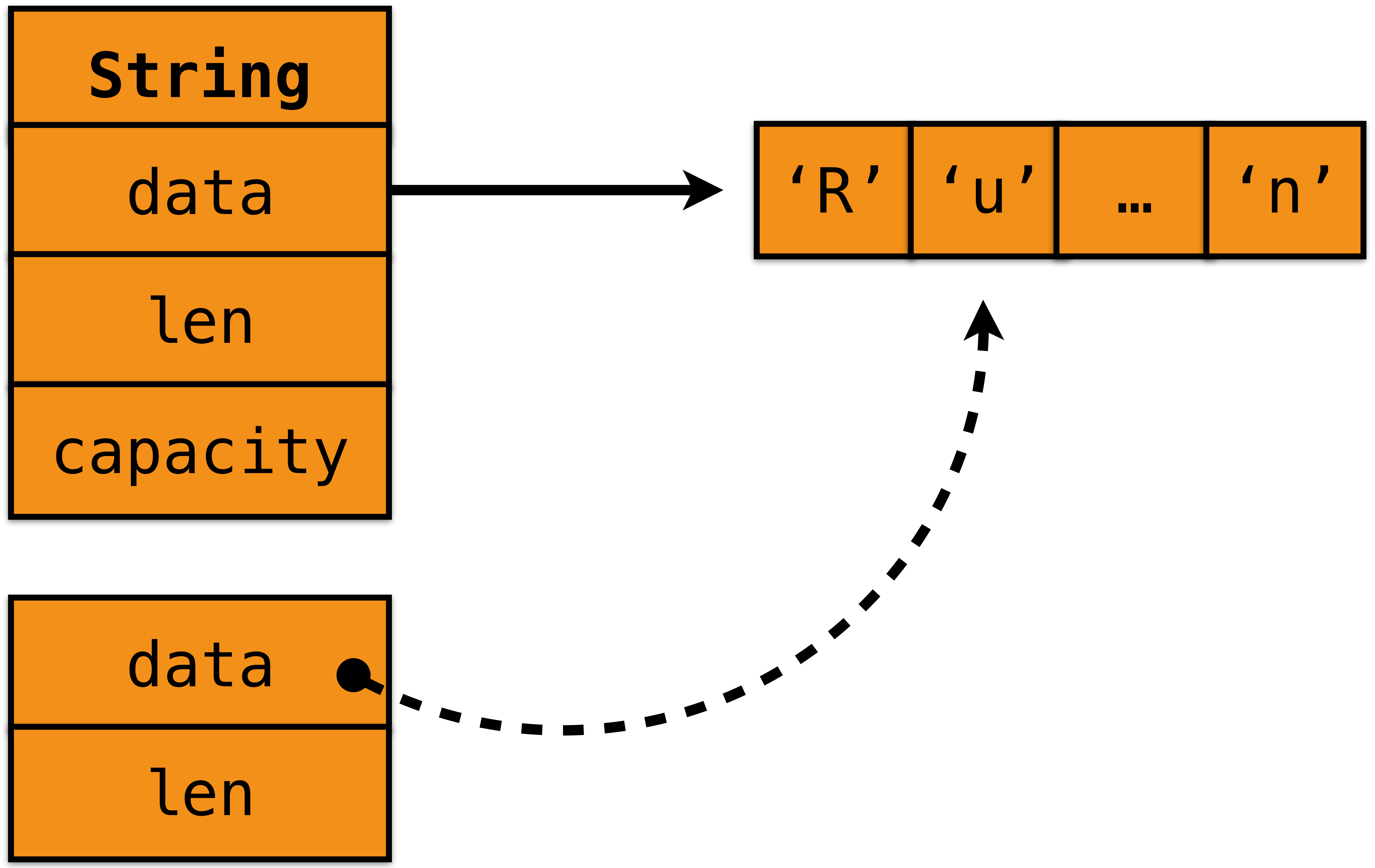

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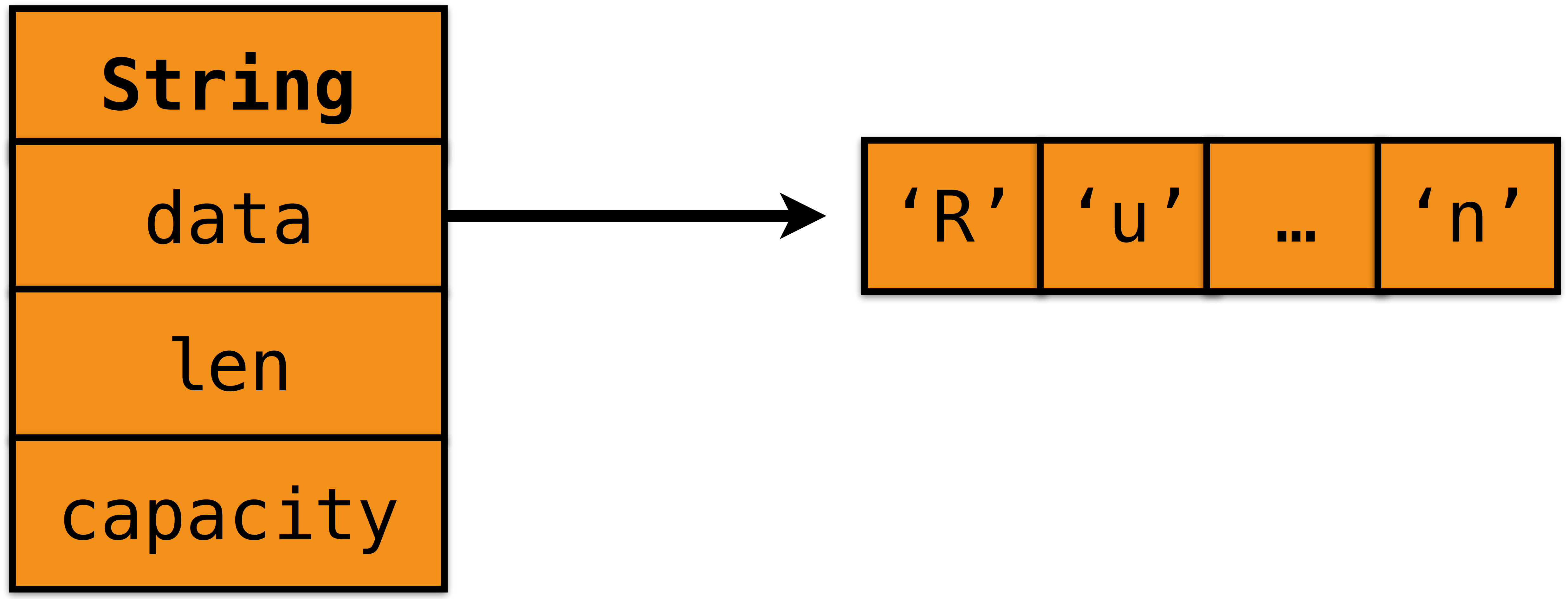

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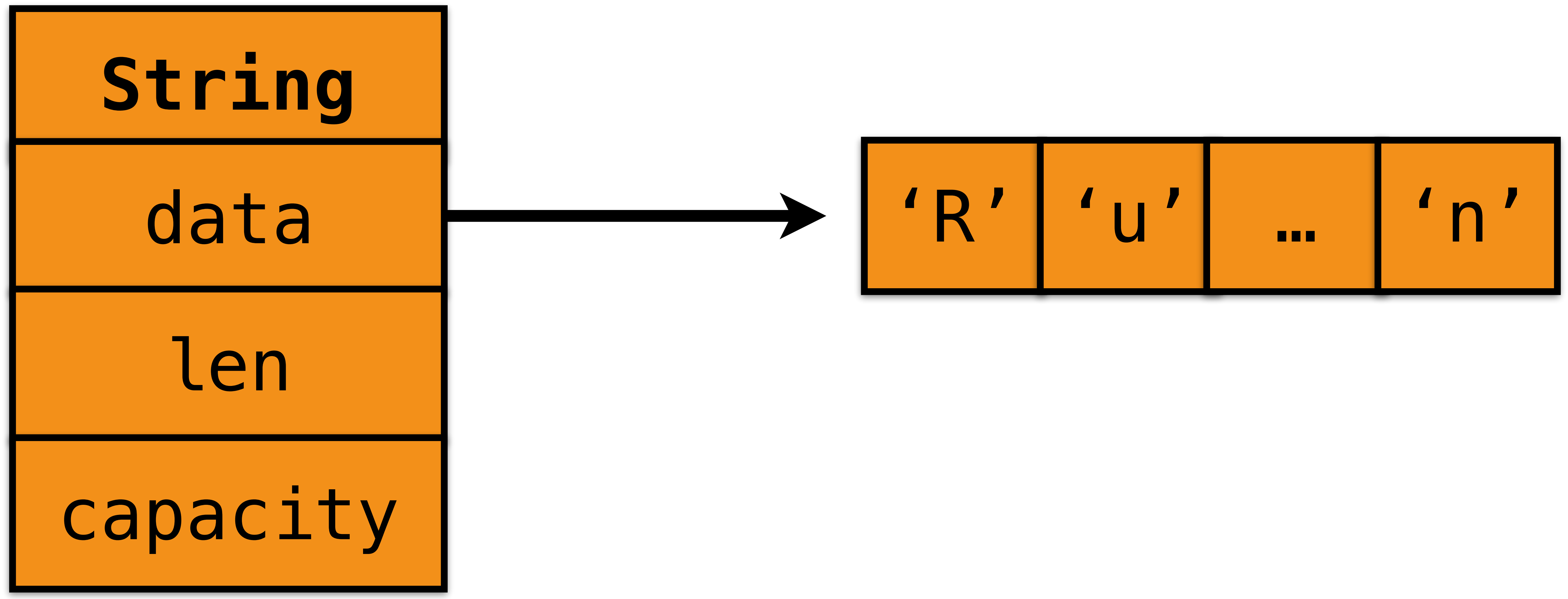

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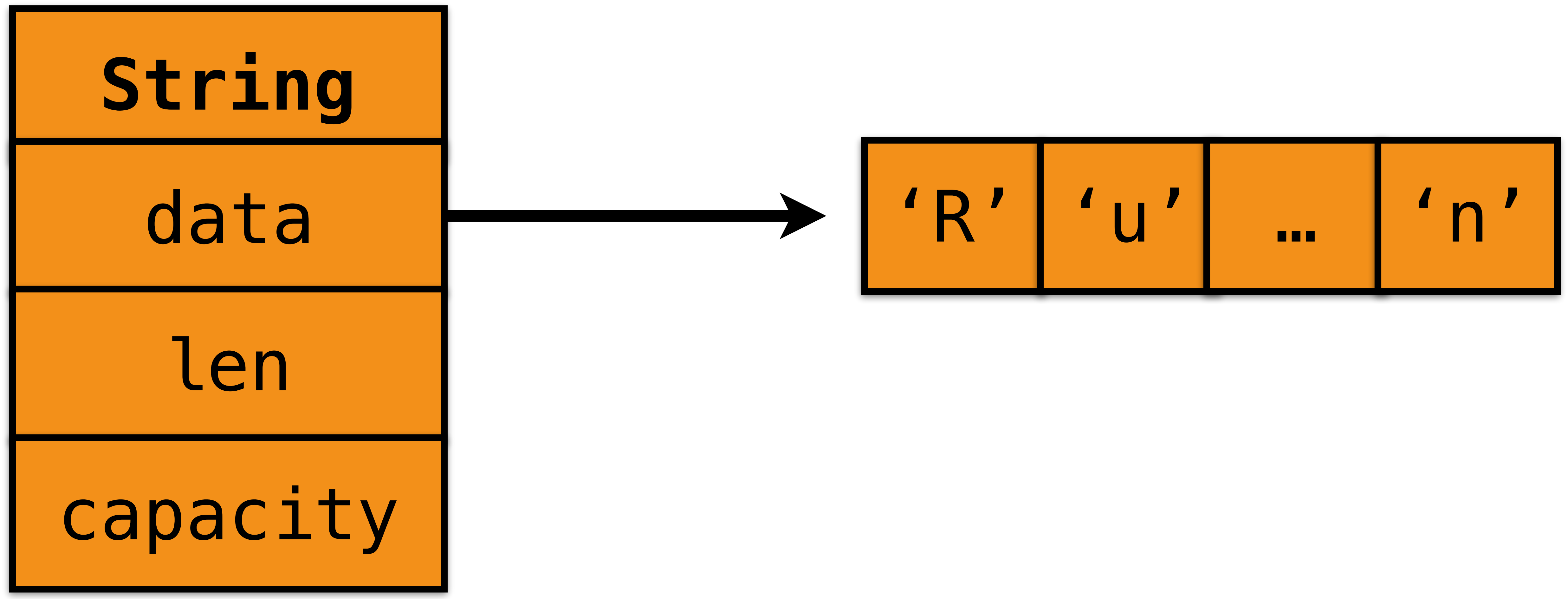

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High-level code, low-level efficiency

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for word in line.split(' ') {
    sum += word.len();
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No copying, no allocations.

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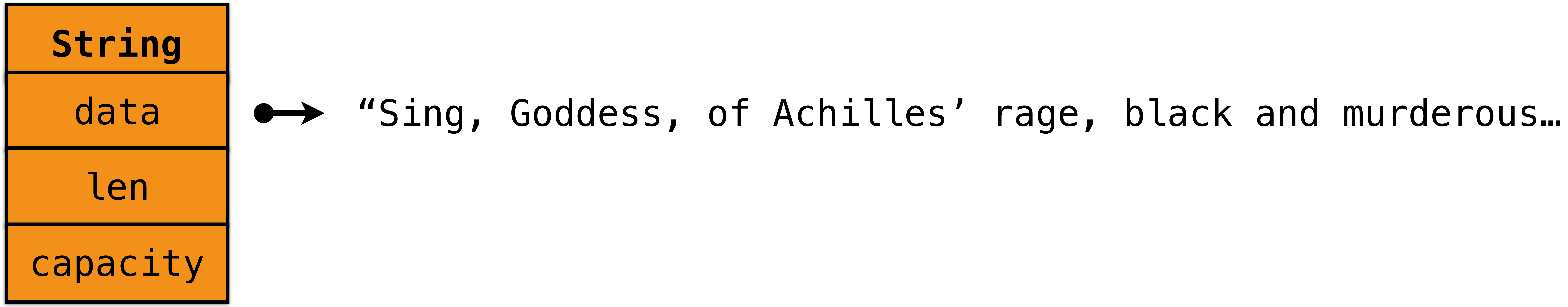

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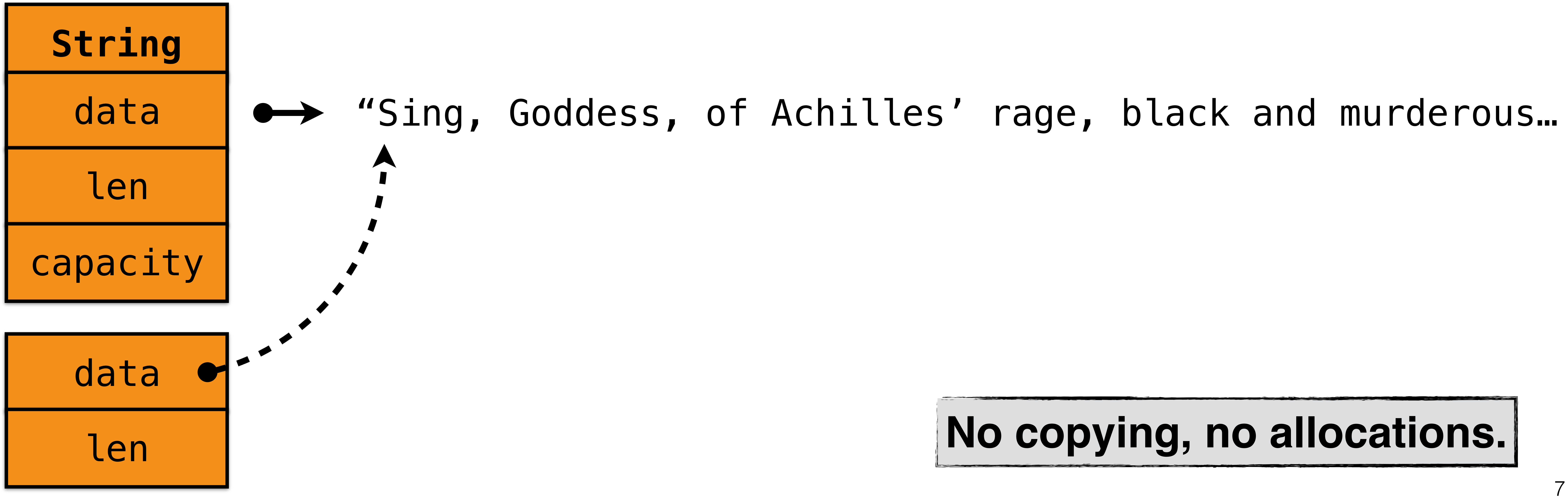

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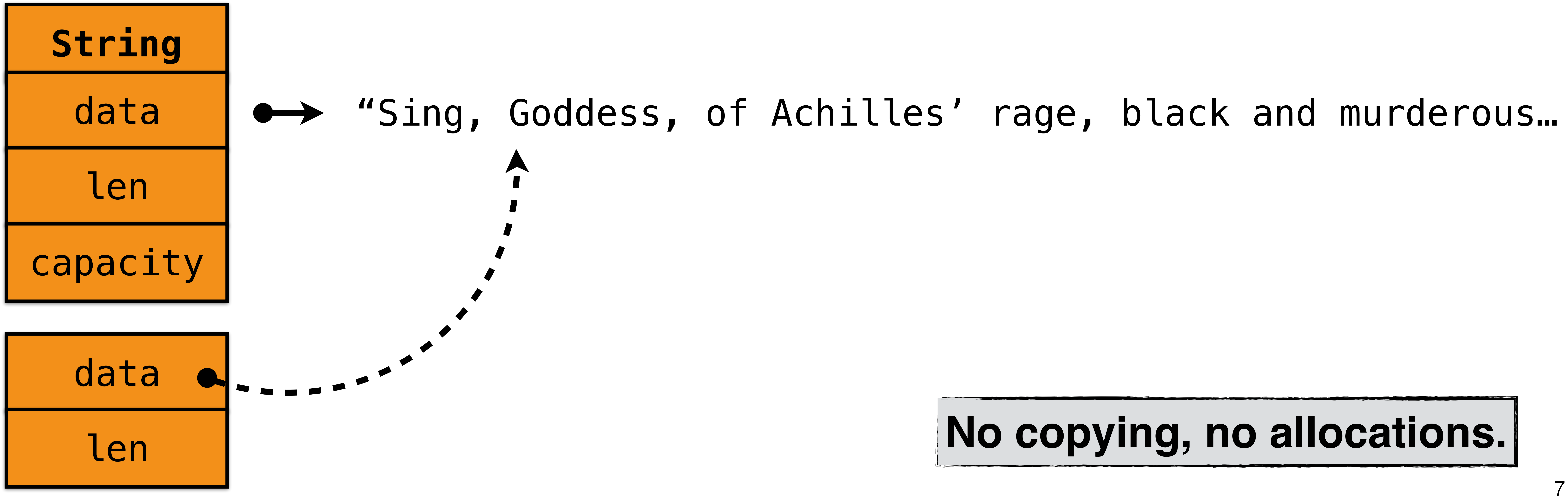

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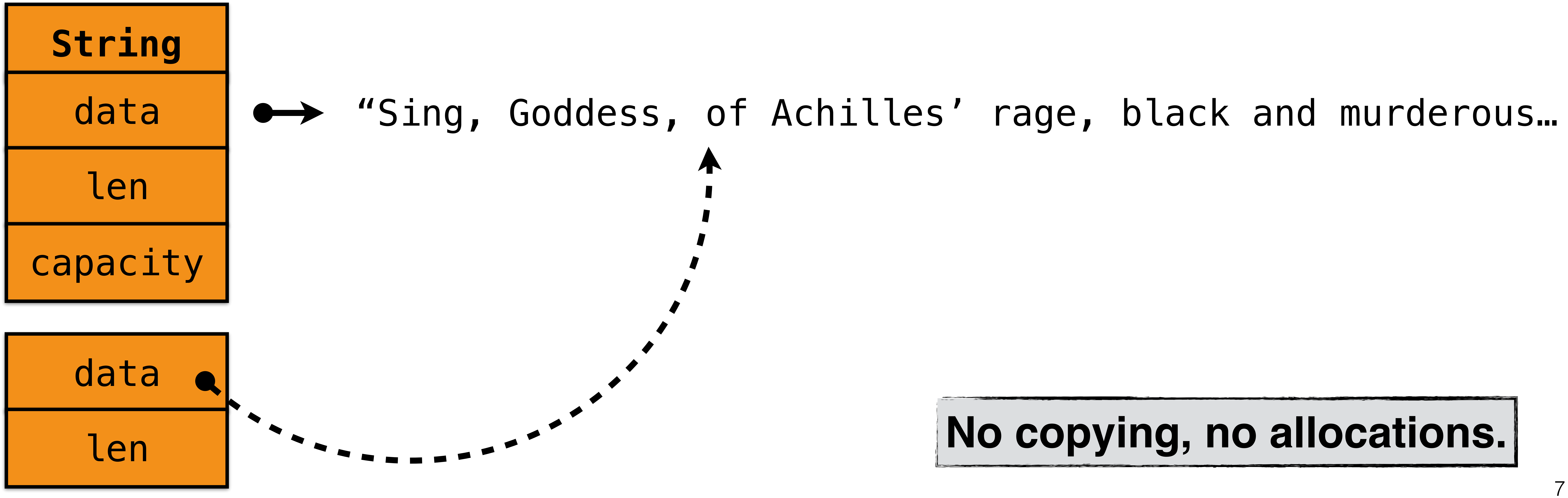

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Exercise: **shared borrow**

http://rust-tutorials.com/RustConf17

Cheat sheet:

```
&String        // type of shared reference
&str           // type of string slice

fn greet(name: &String) {..}

&name          // shared borrow
&name[x..y]    // slice expression
```

http://doc.rust-lang.org/std