PLC Lecture 8, 3 Feb 2026

Stack

Heap
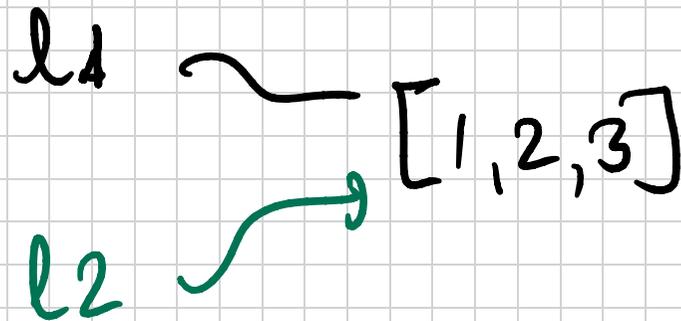
$x = y$

Python

$x = 7$

$y = x$

Copies
Immutable

$l1$

$[1,2,3]$

$l2$

$l1 = [1,2,3]$

$l2 = l1$

Aliases

Mutable

Deallocation

```
let s1 = String::from(--);
{
    let s2 = s1;

    s2..
} ⟶ space from s2 is returned to heap
```

Scope

Ownership

Every value on the heap has a single owner

Only owner can modify value

``Readers"

References

Address of a value on heap

&s   "address of s"

&s + 4

Referency &
Dereferencing

$x = \&y;$

$\boxed{*x} = 8;$

Shared variables

Reads in parallel are harmless

Any write conflicts with other operations

"Race"