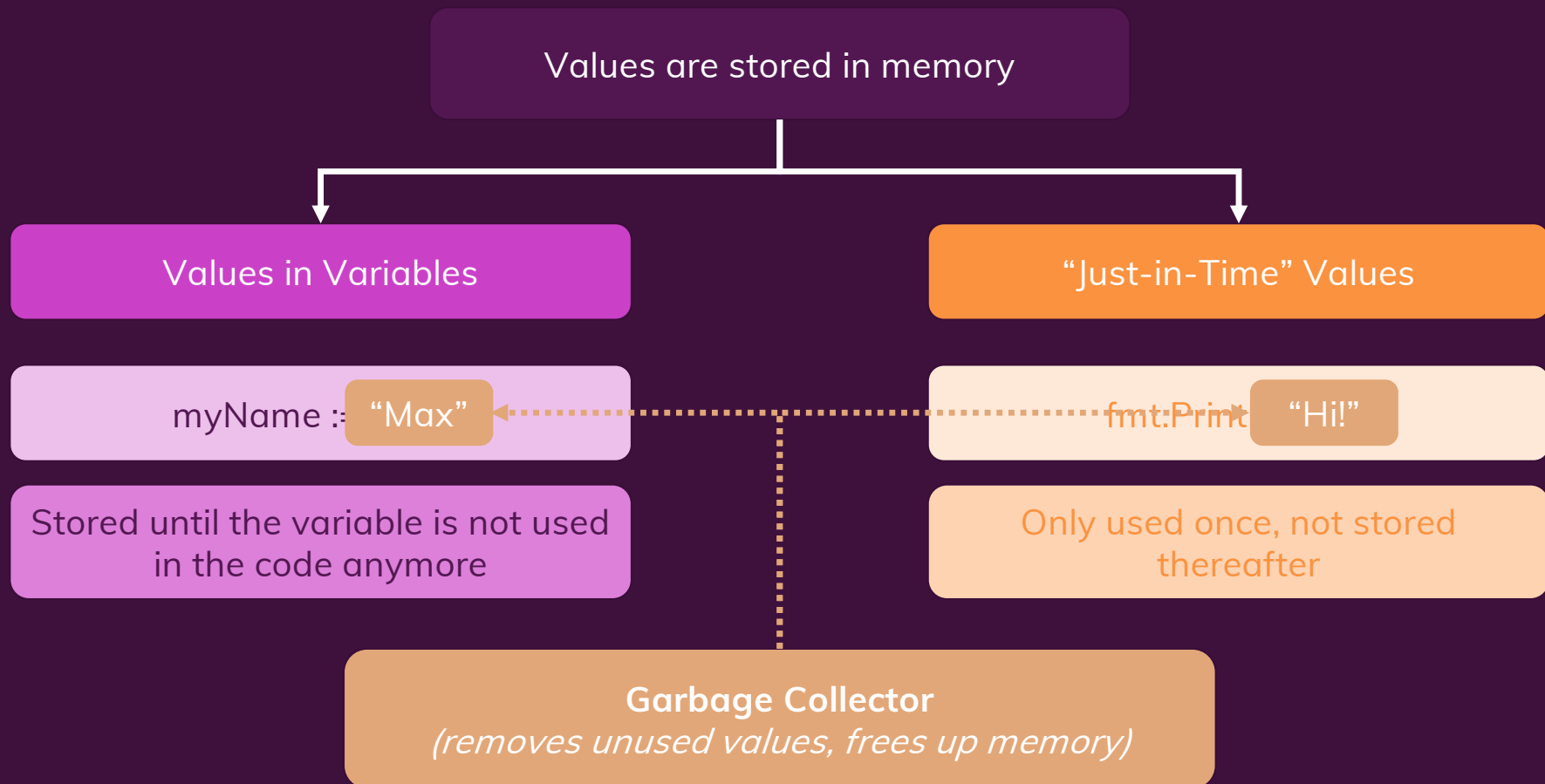


# How Data (Values) Are Stored



## A Closer Look At Values Stored In Memory

### Values & Variables

myName := "Max"

age := 32

Variables know the address of the value and get the value from there when needed

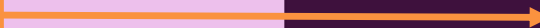
### Computer Memory

Offers various "storage slots" with individual addresses

0xc0000018050

0xc0110020011

0xc0000011012



# Understanding Pointers

## Values & Variables

myName := "Max"

age = 32

## Computer Memory

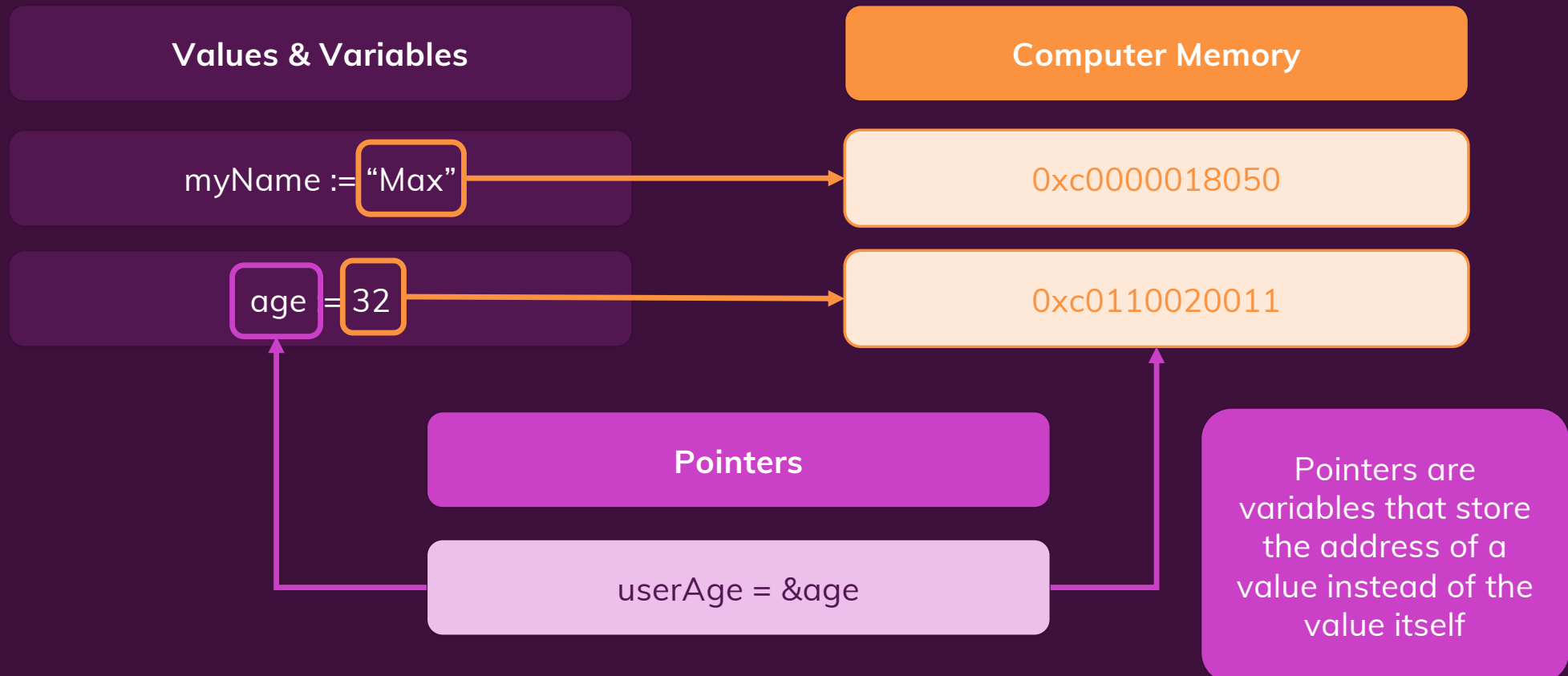
0xc0000018050

0xc0110020011

## Pointers

userAge = &age

Pointers are variables that store the address of a value instead of the value itself



# Why Do We Have Pointers?

Pointers offer various potential advantages over “plain values”

```
graph TD; A[Pointers offer various potential advantages over “plain values”] --> B[When passed as to functions (as parameters), unnecessary value copies can be avoided]; A --> C[Functions may directly work with / on an input value (e.g. change it)]; A --> D[... and more!];
```

When passed as to functions (as parameters), unnecessary value copies can be avoided

Functions may directly work with / on an input value (e.g. change it)

... and more!