Variables and Types

The buildings blocks of apps

Paul Solt
iPhoneDev.tv

Coffee

+

=

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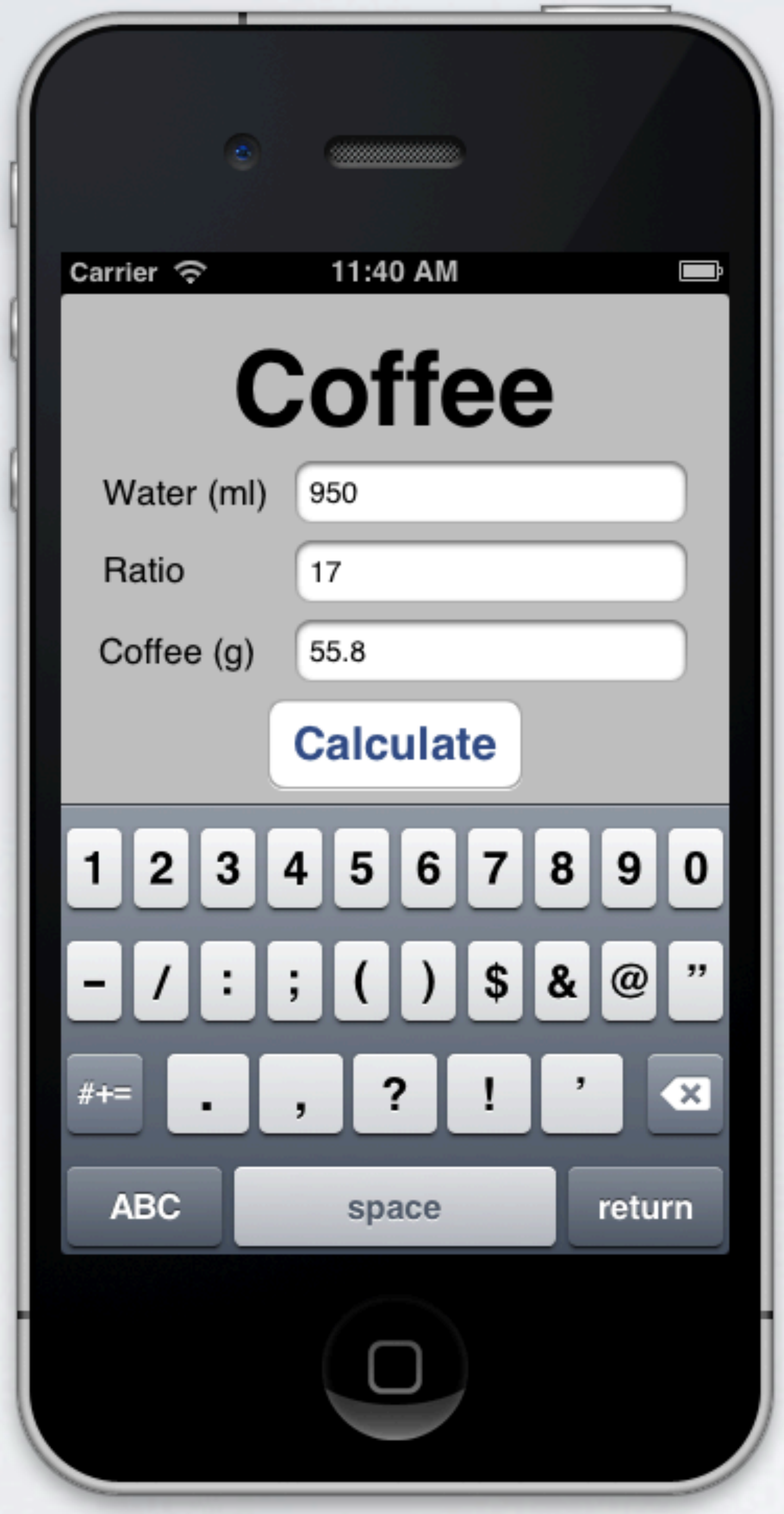
iPhoneDev.tv

Coffee



Coffee

Water (ml) 950

Ratio 17

Coffee (g) 55.8

- 17 ml water : 1 g coffee
- 950 ml water / 17 ml/g = ?
- 55.8 g coffee

Variables

Give the CPU something to remember

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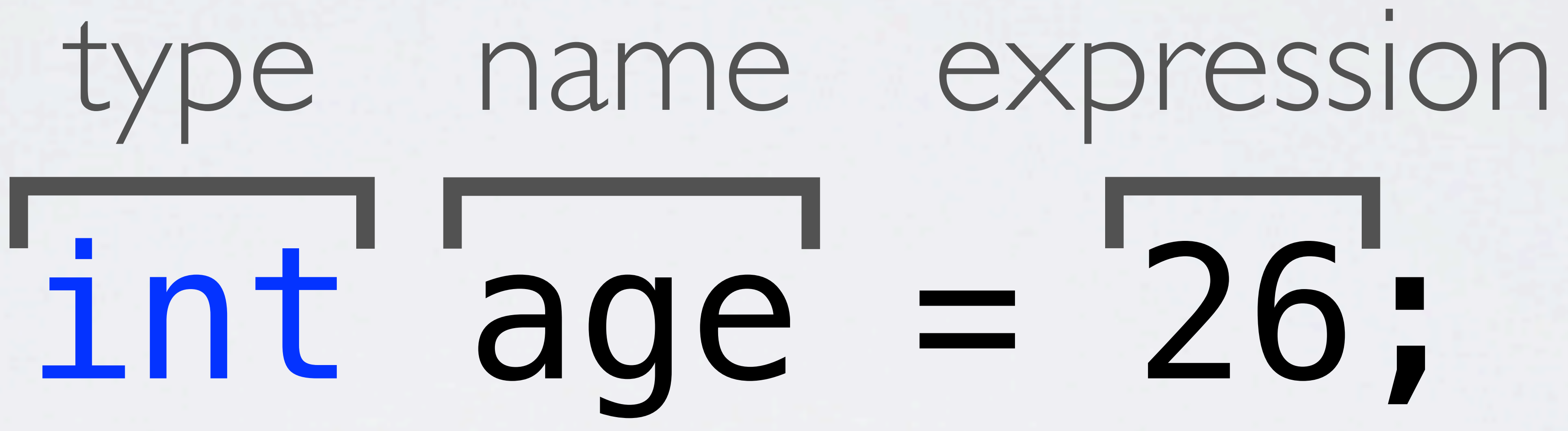
```
 // Declare a variable to store water
float water;


// Store the amount of water to use
water = 950;  // milliliters


// Display message
printf("Brew %f milliliters of coffee", water);
```

```
int age = 26;
```

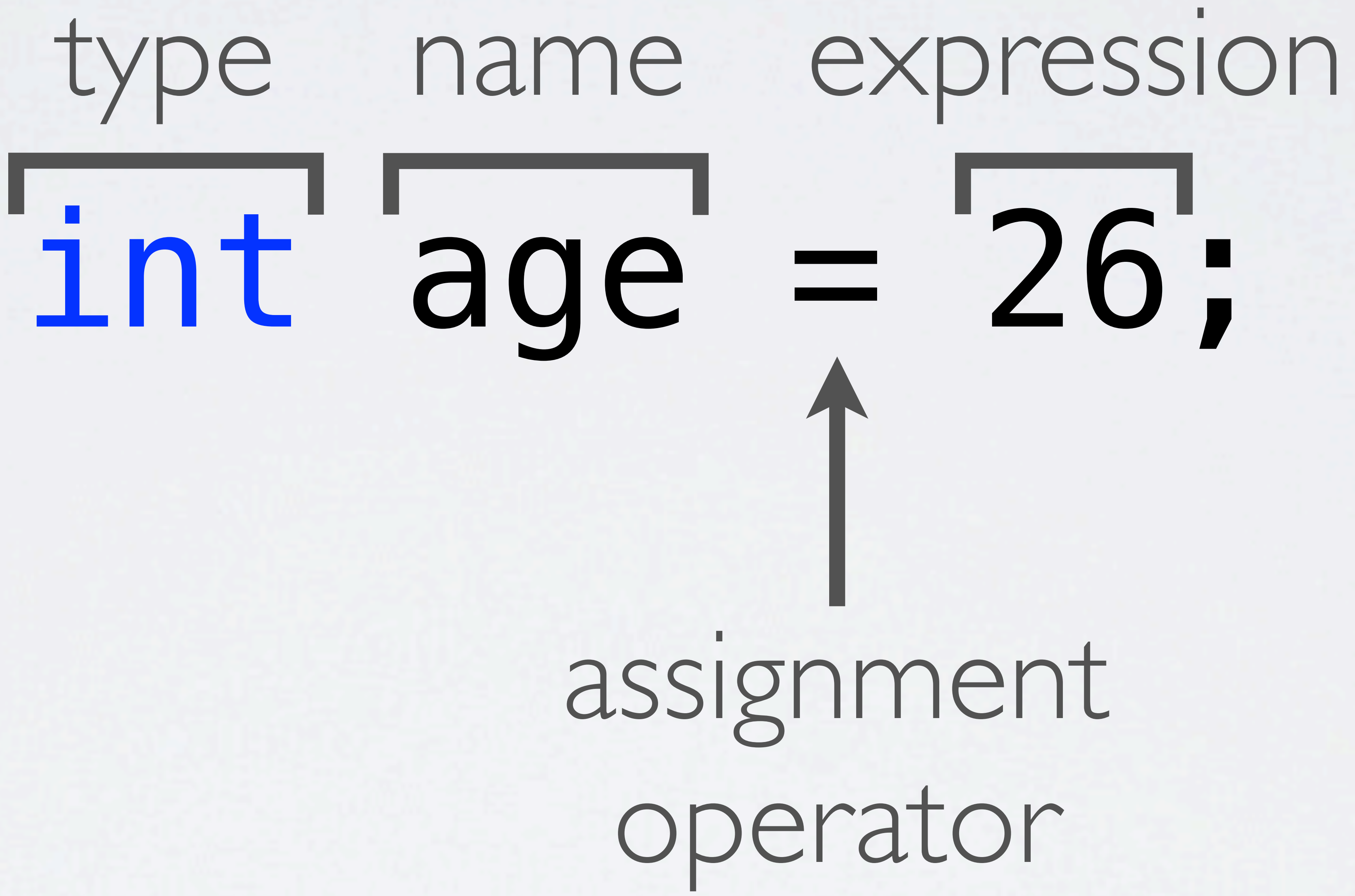
type

```
int age = 26;
```

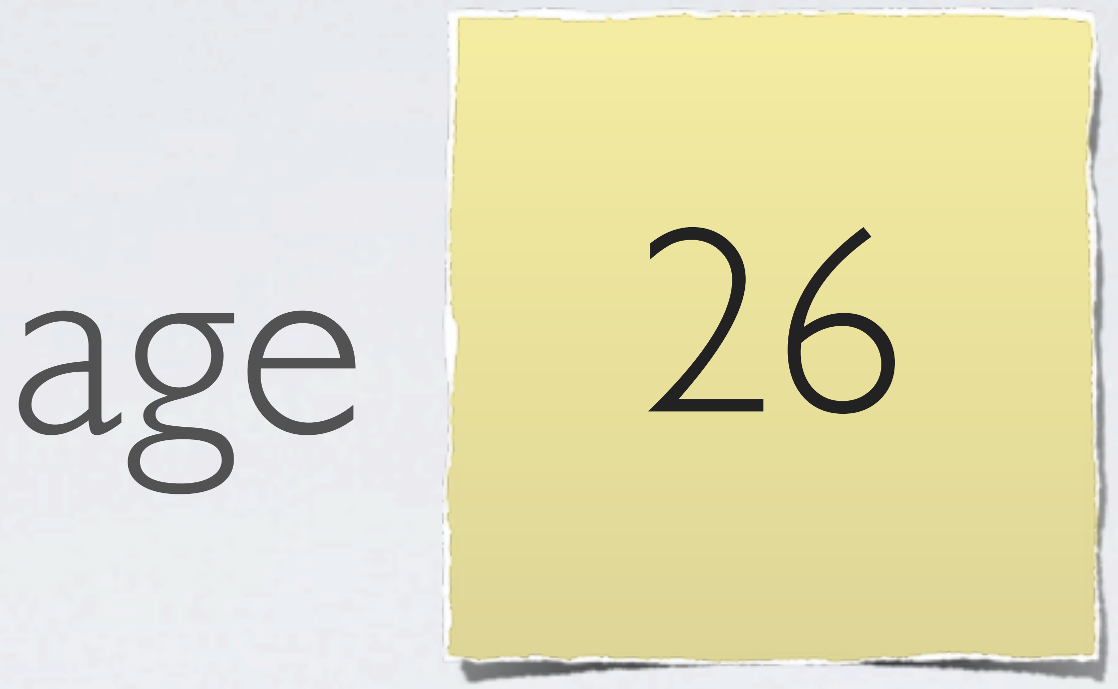
```
type  name
int   age = 26;
```



```
int age = 26;
```



```
int age = 26;
int age = 26;
```



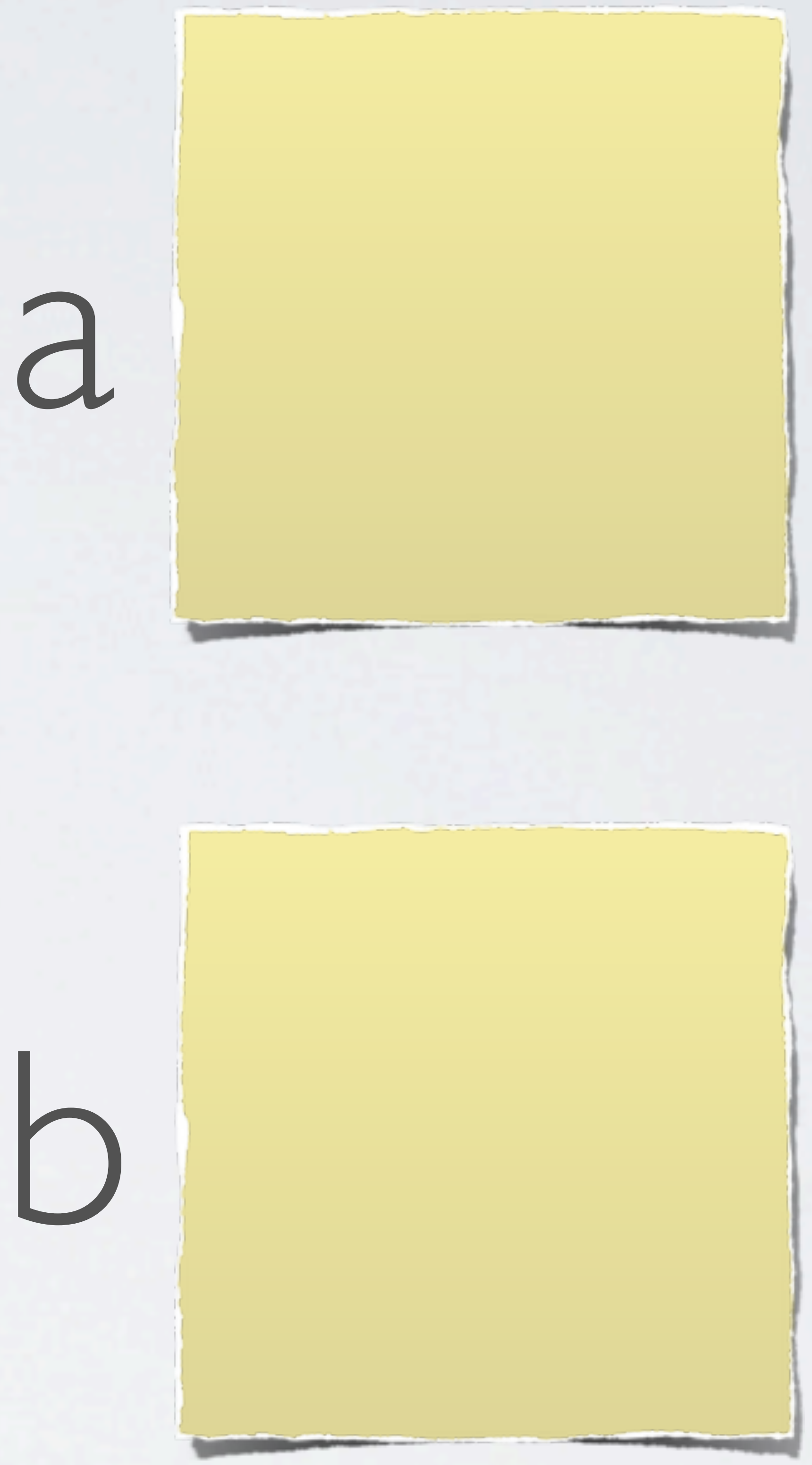
age

26

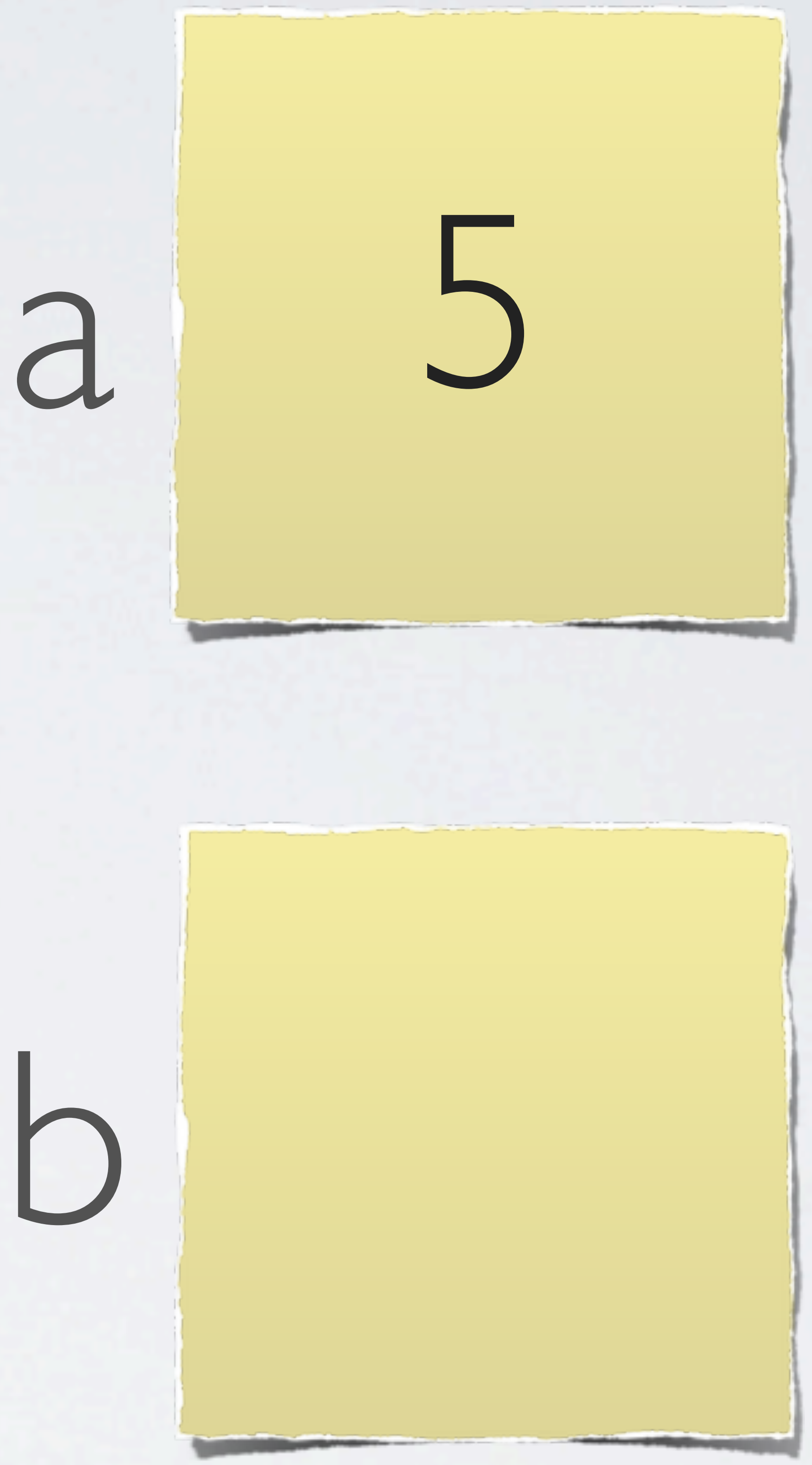
```
int age = 26;
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a – b;
```

```
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```

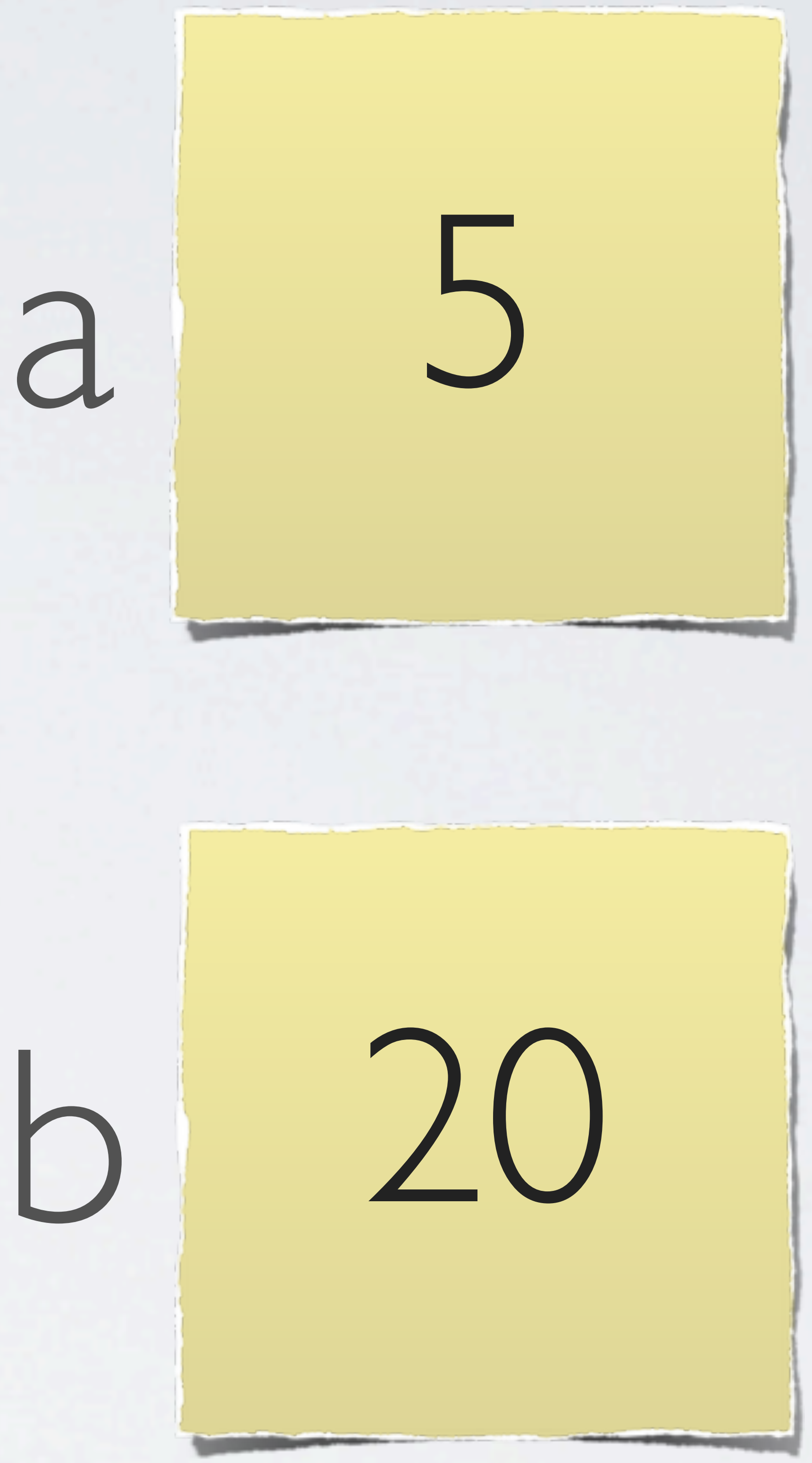
```
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```



```
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```



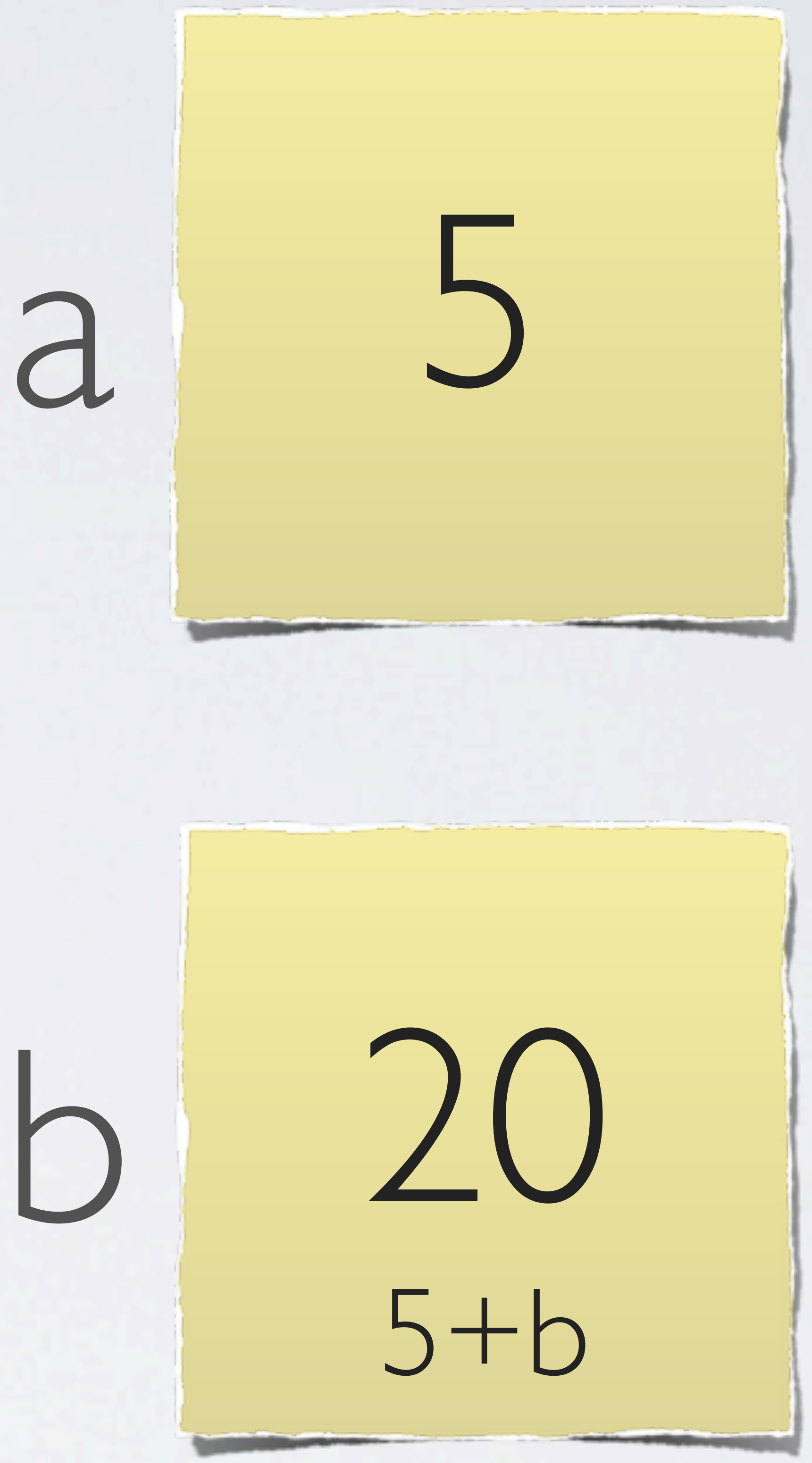
```
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```



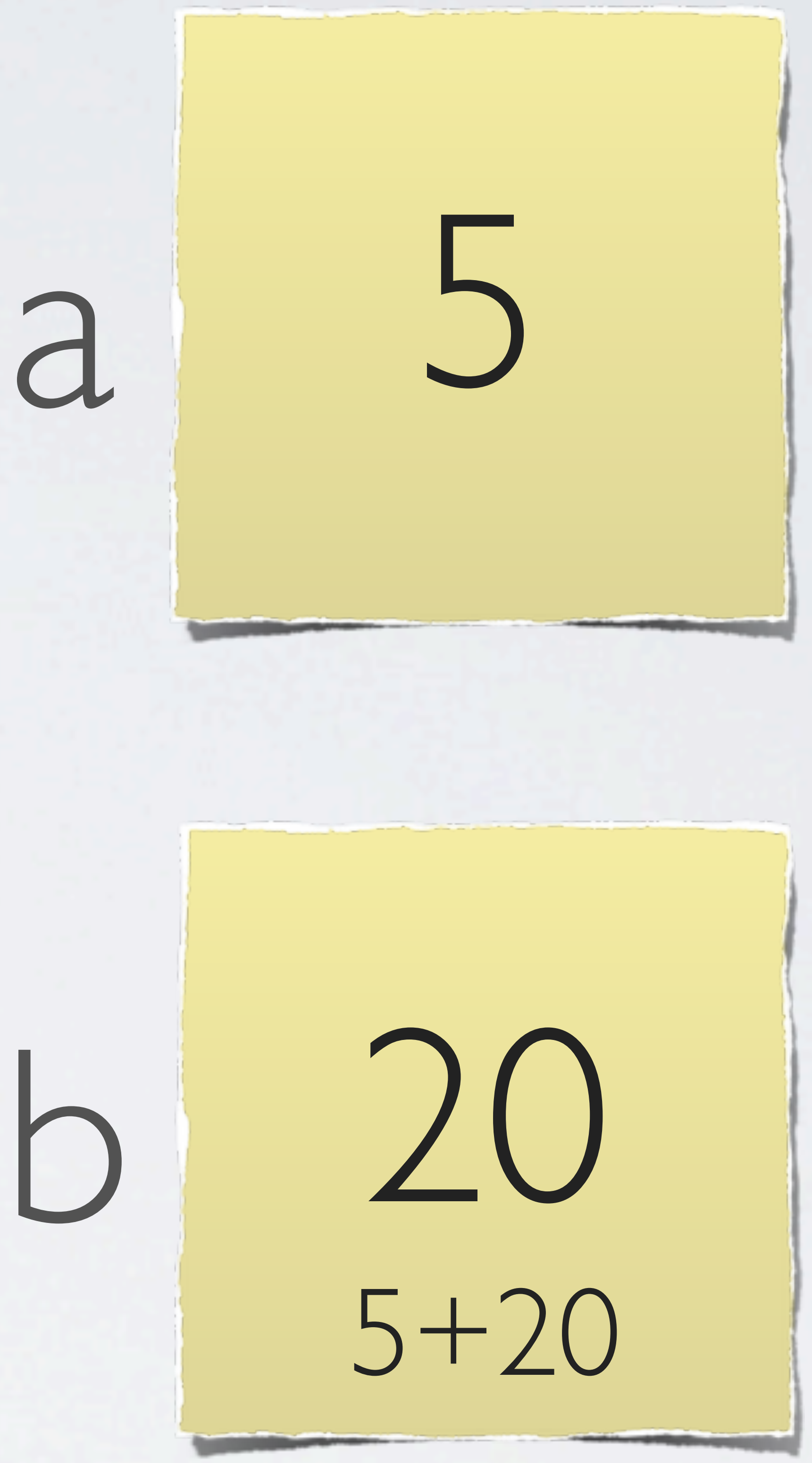
a 5

b 20

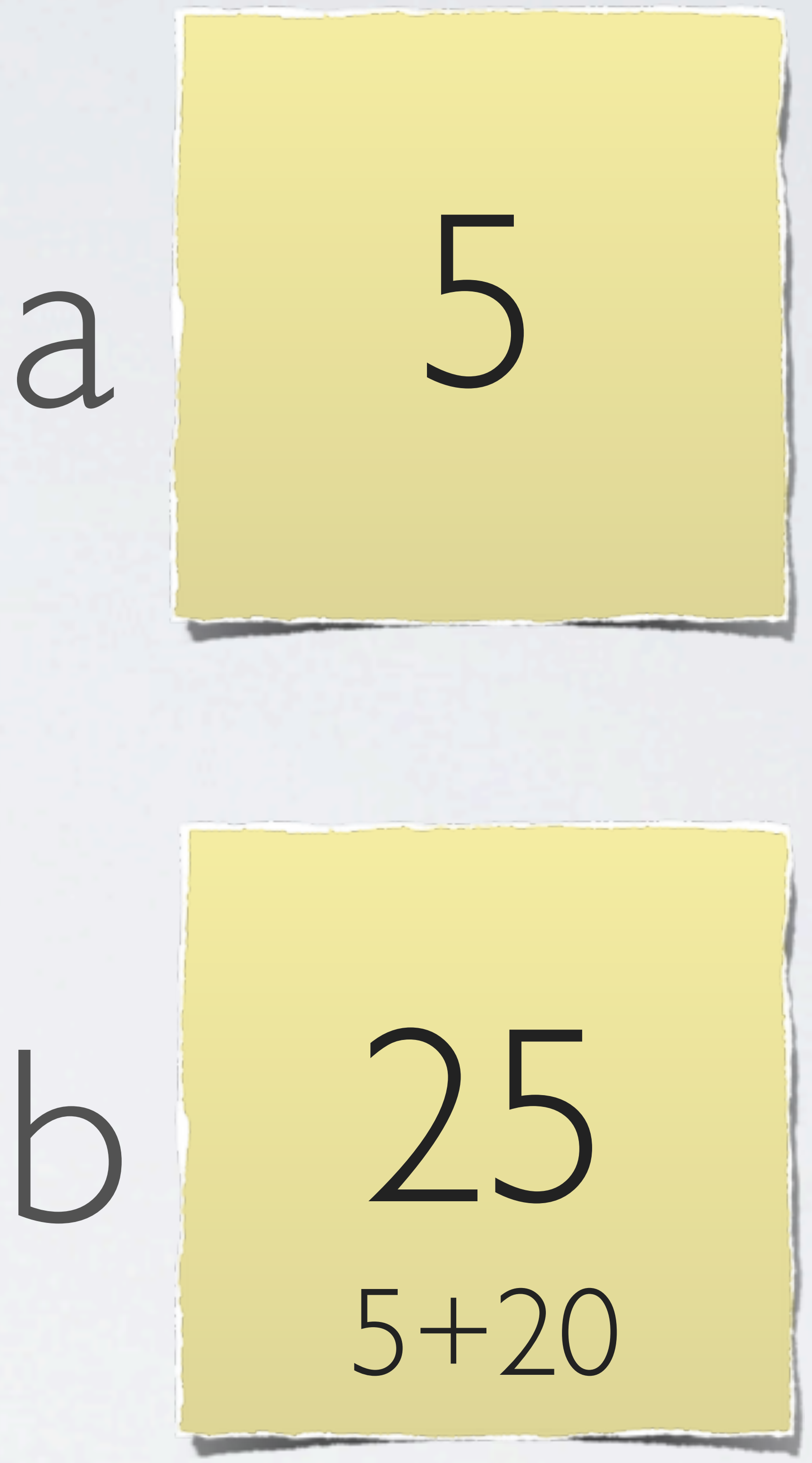
```
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```



```
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```



```
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```



a

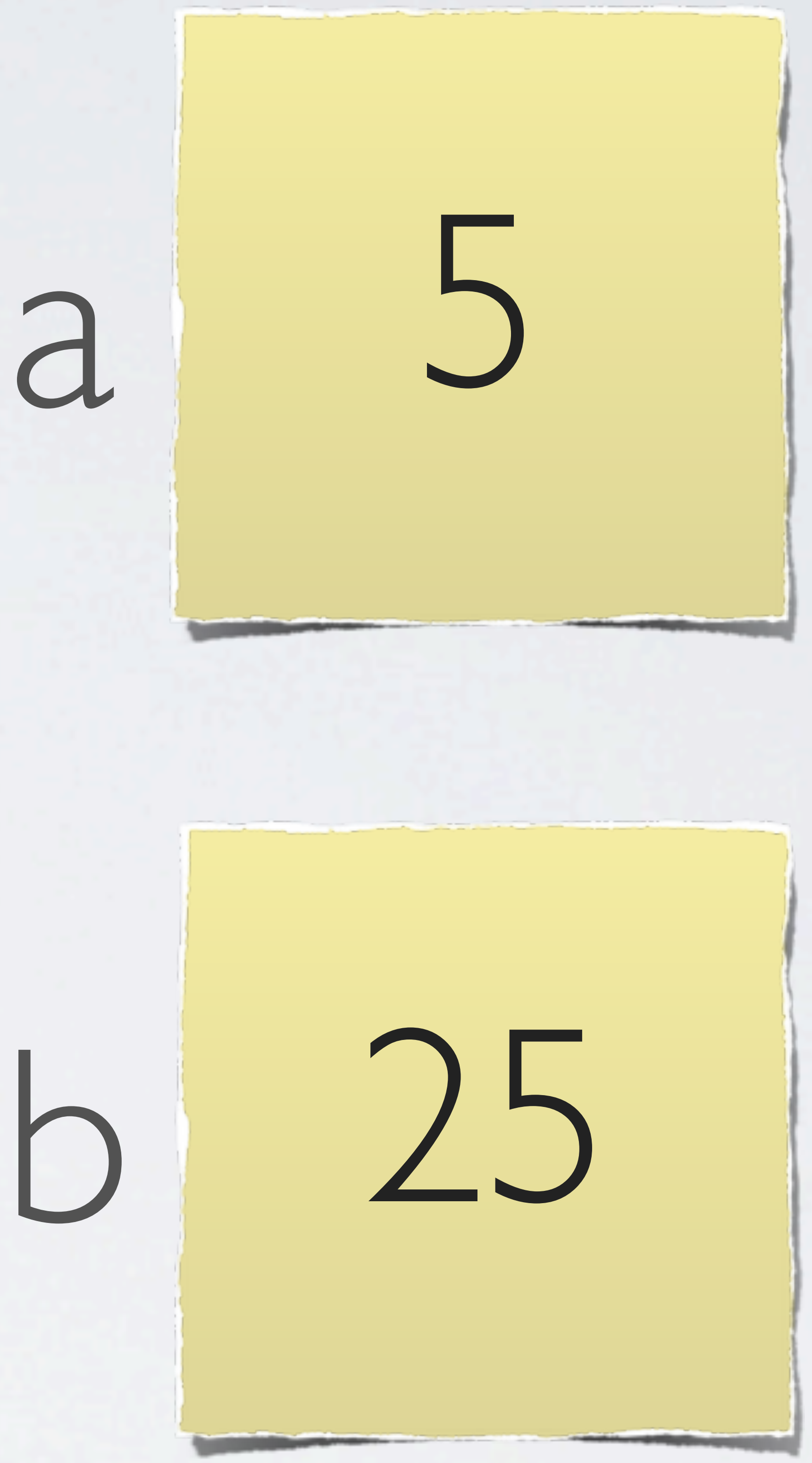
5

b

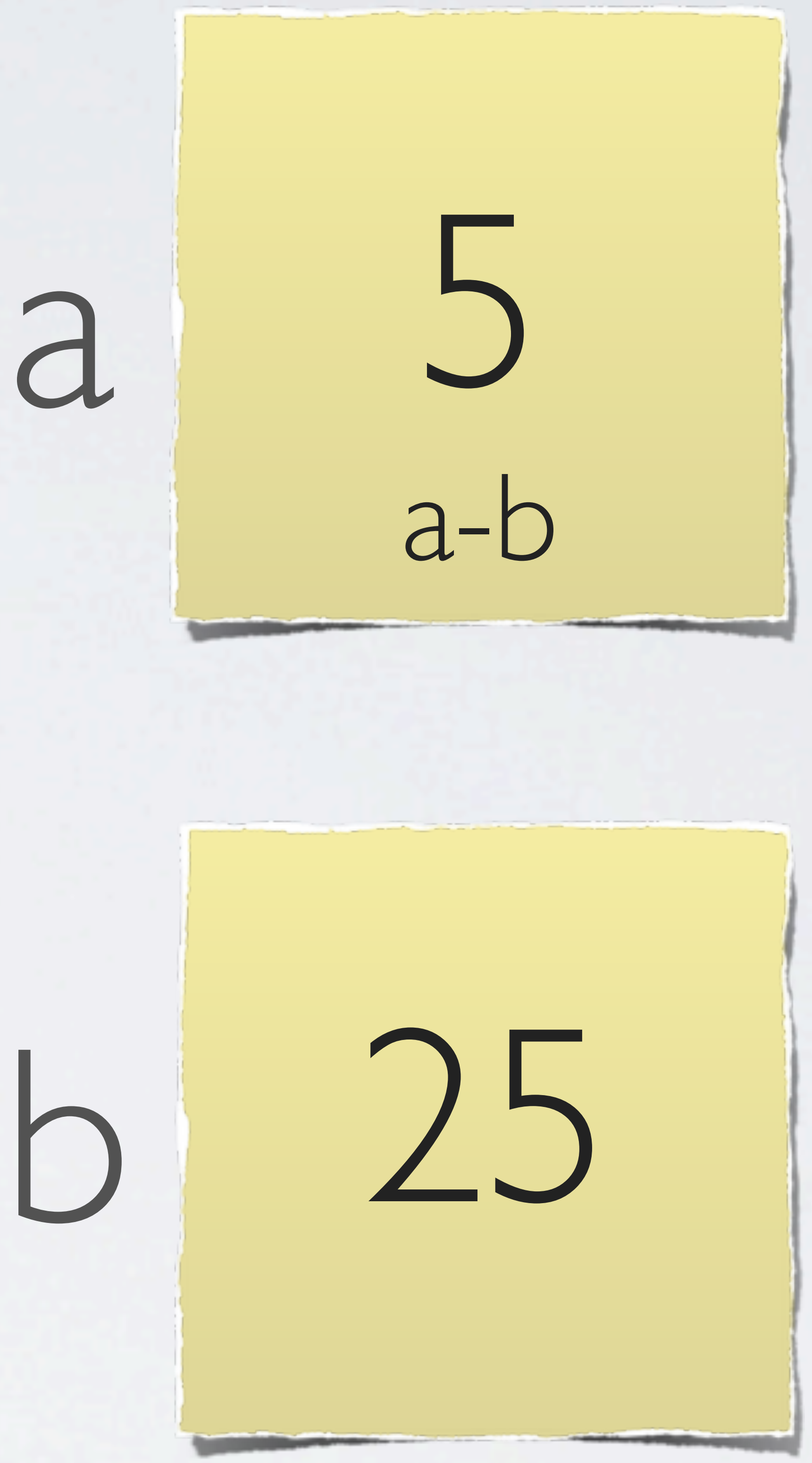
25

5+20

```
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```



```
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```



a

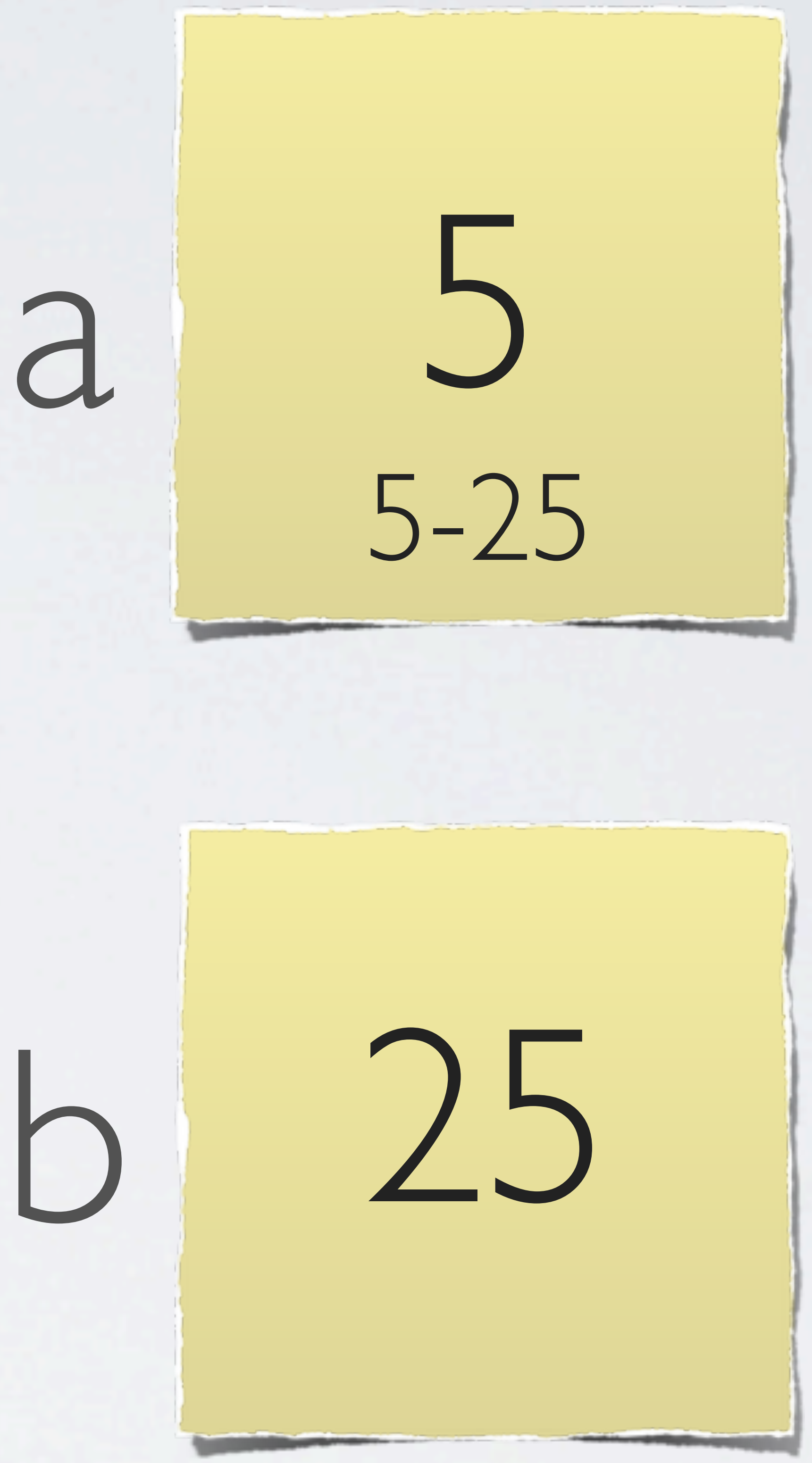
5

a-b

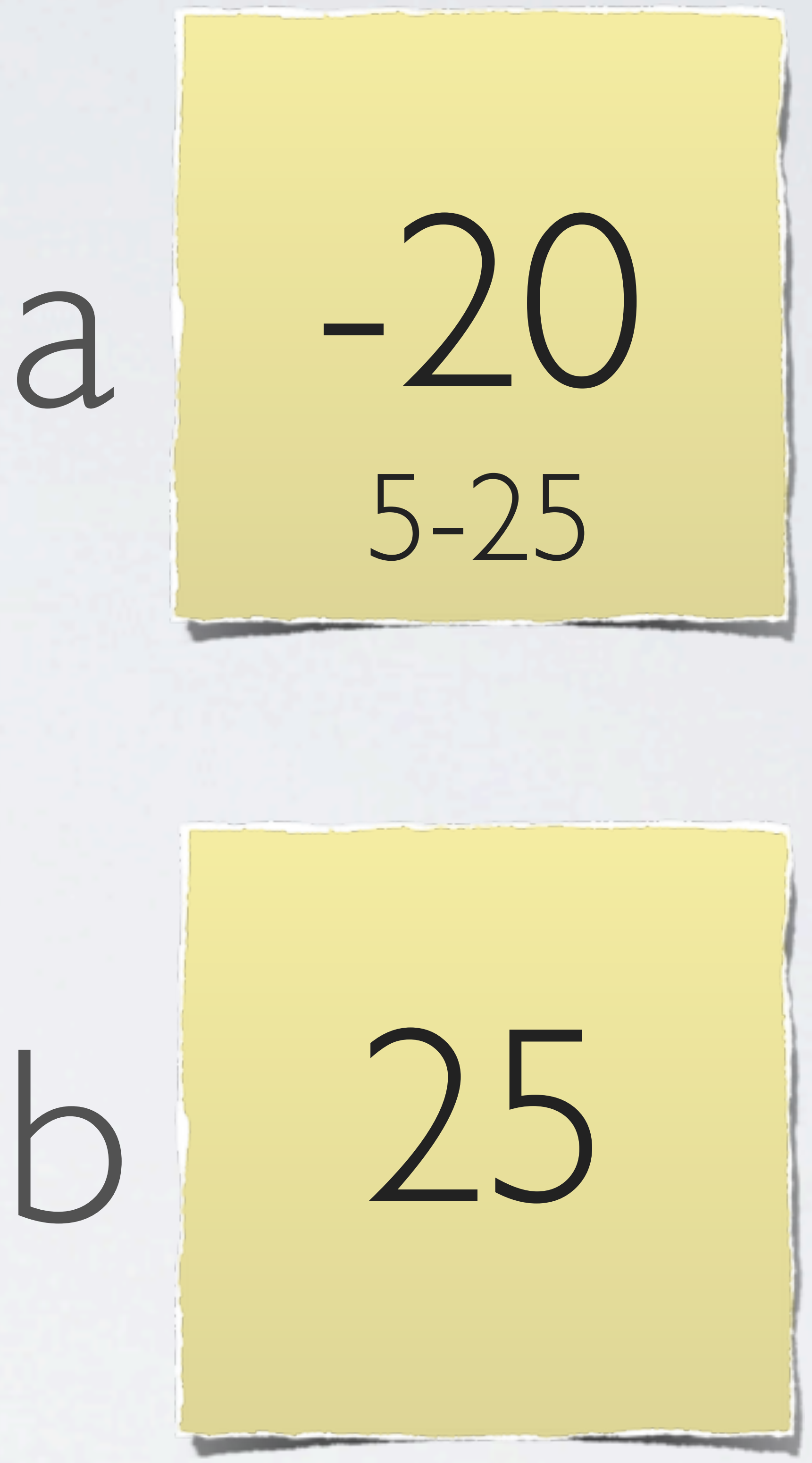
b

25

```
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```



```
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```



a

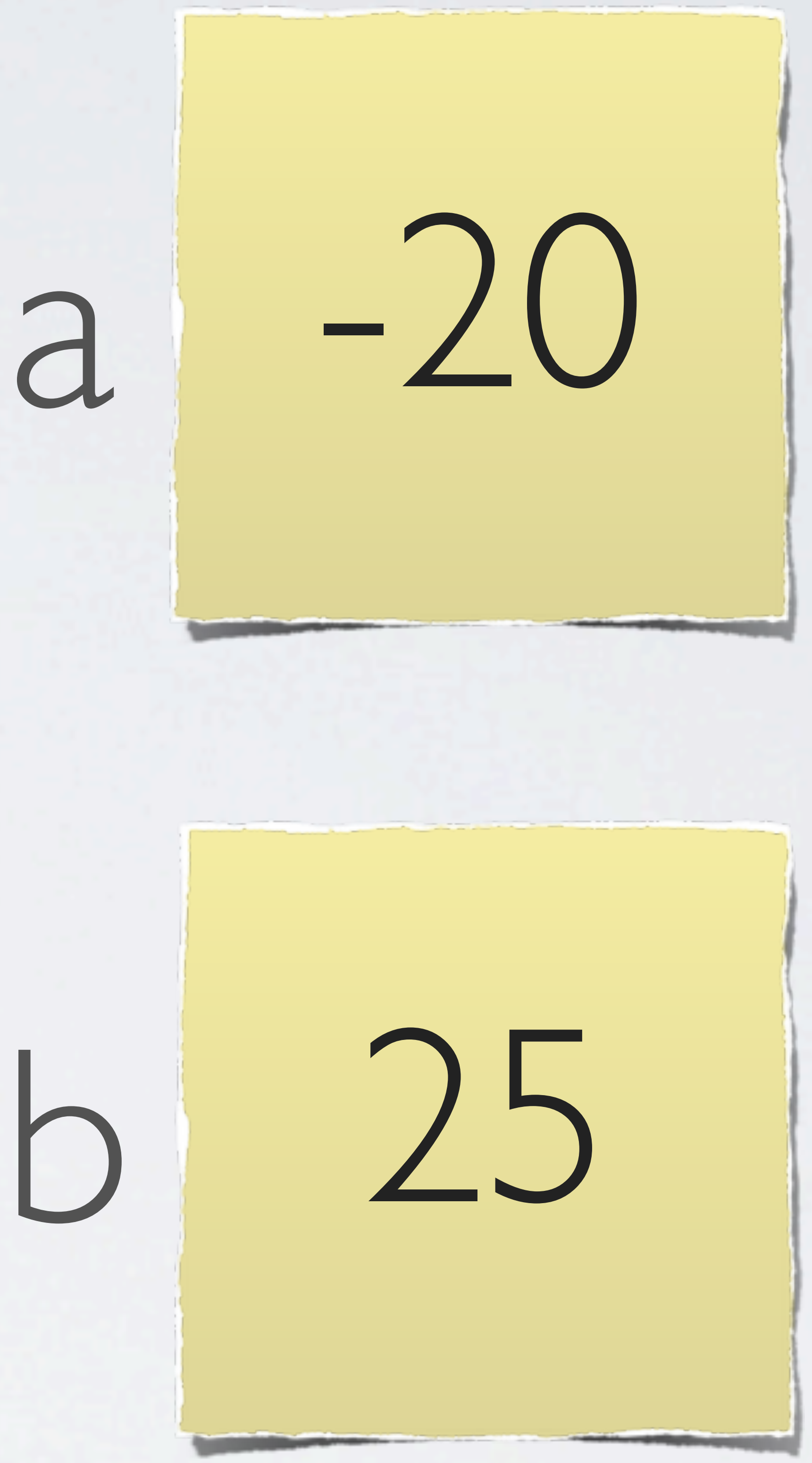
-20

5-25

b

25

```
int a;
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```



Types

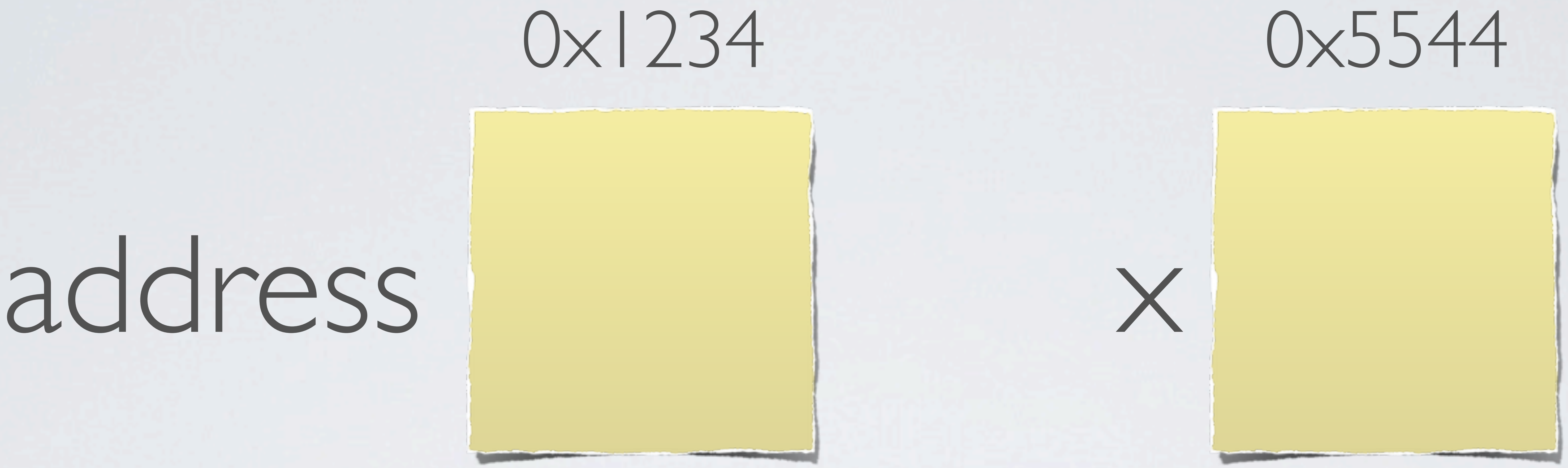
What kind of information are we storing?

- short/int/long: –1,0,1
- float/double: 3.14
- char: ‘a’, ‘b’, ‘c’
- pointers: int * (memory address)
- struct: composition (x, y)

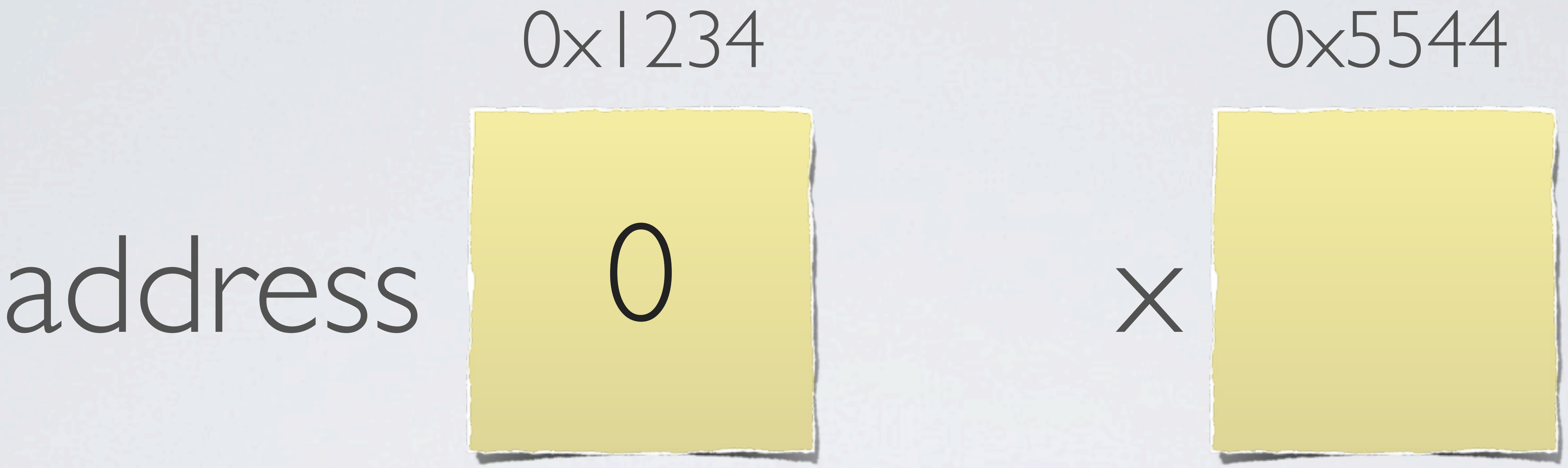
```
short small = 12;
int medium = 2000000;
long large = 90133726844735000;
```

```
float smaller = 3.14;
double larger = 3.14159265359;
```

```
char firstLetter = 'a';
char percent = '%';
```



```
int *address = 0;
int x = 18;
address = &x;
*address = 27;
```



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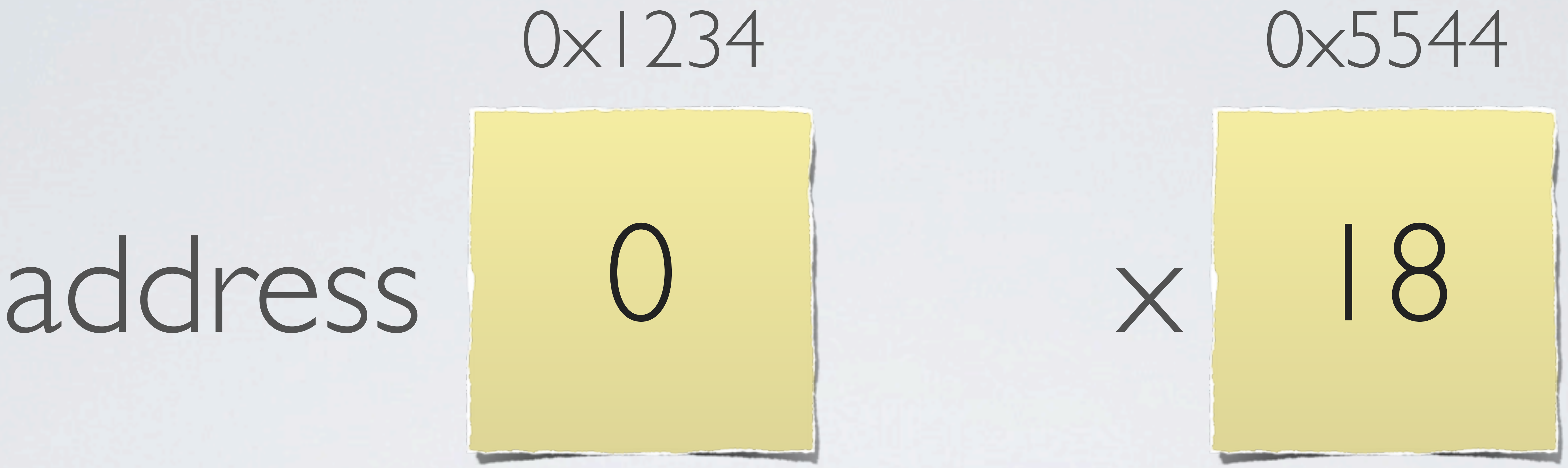
```



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int *address = 0;
int x = 18;
address = &x;
*address = 27;
```

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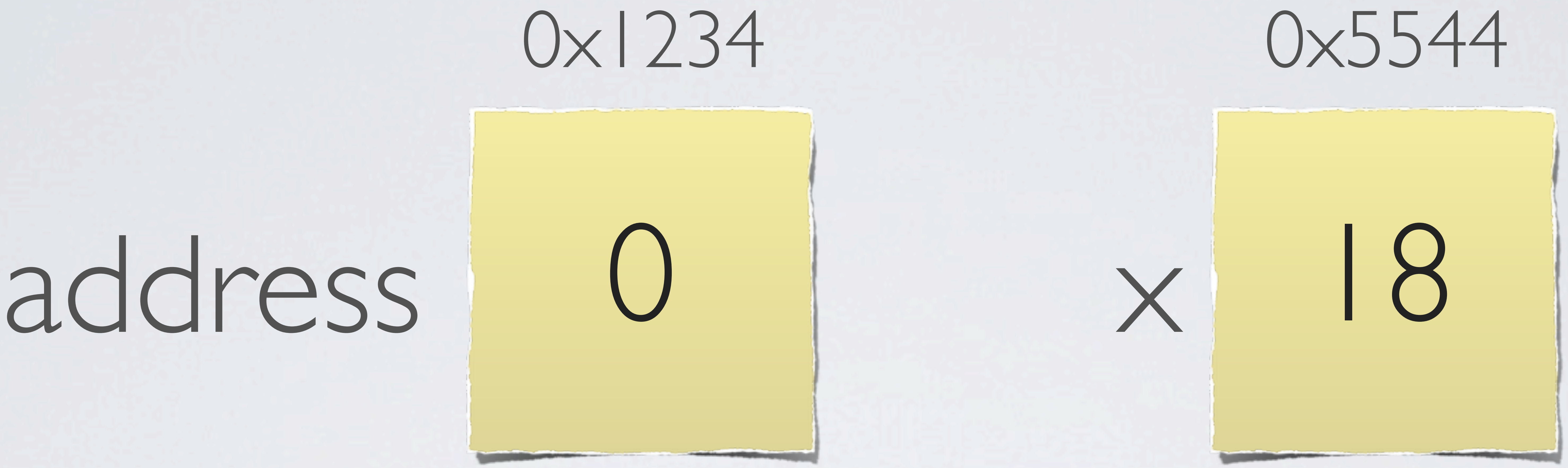

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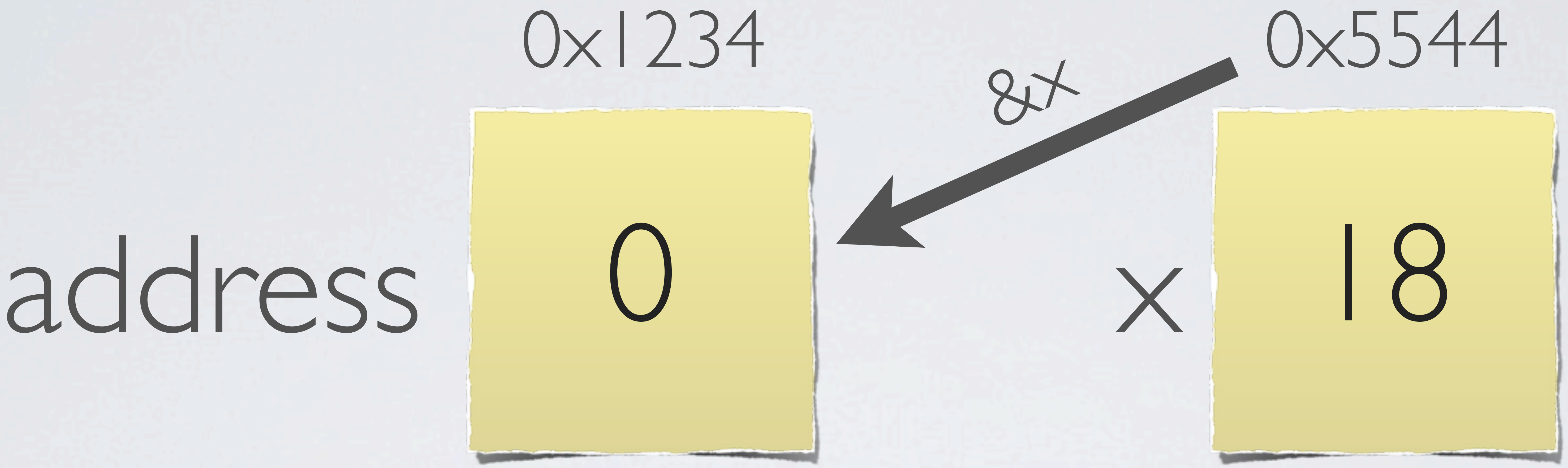

```
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*address = 27;
```

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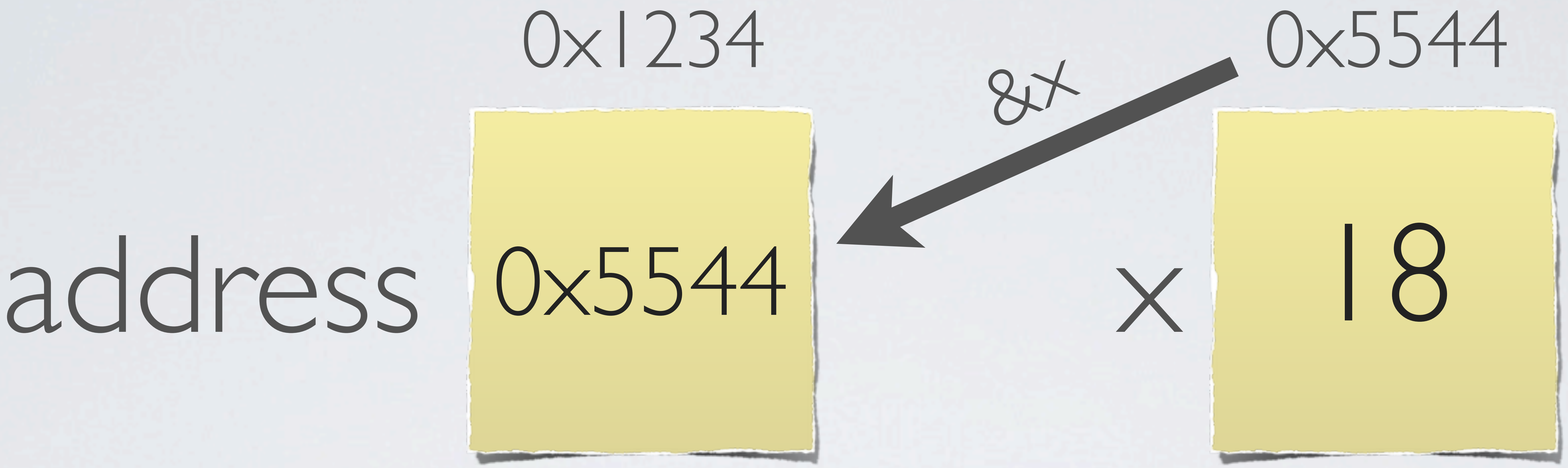

```
int *address = 0;
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address = &x;
*address = 27;
```

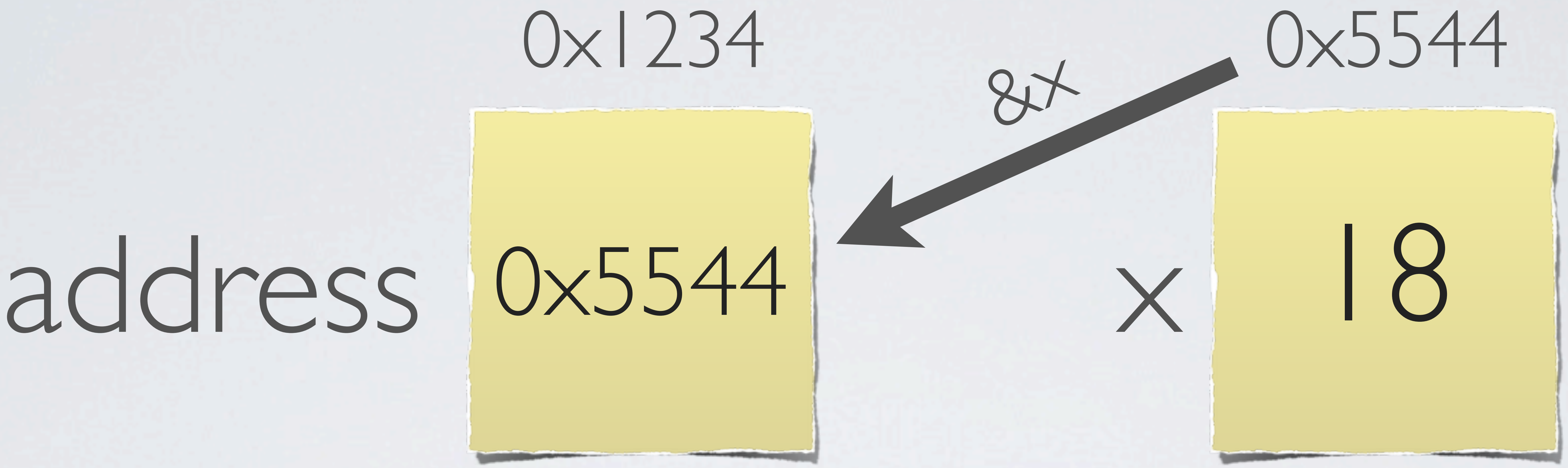

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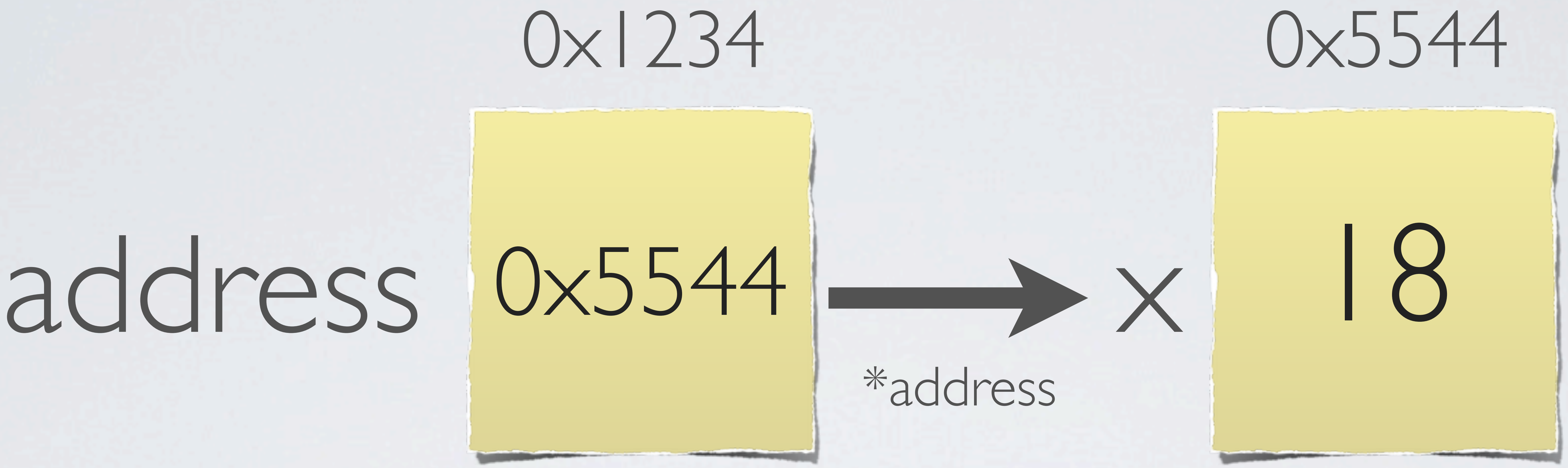

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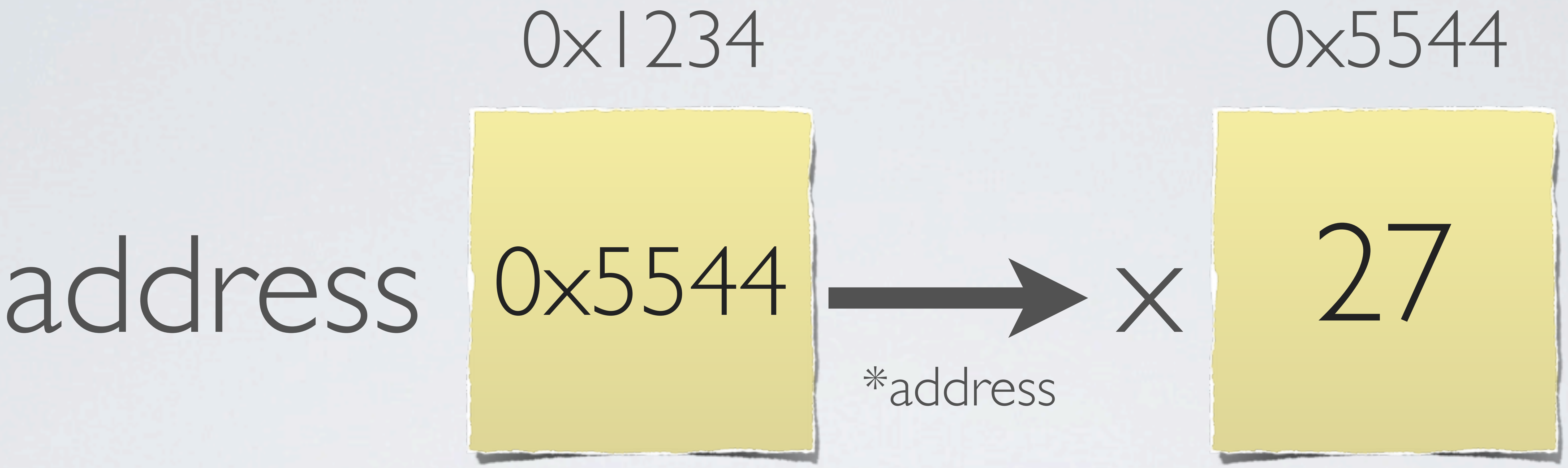

```
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int x = 18;
address = &x;
*address = 27;
```
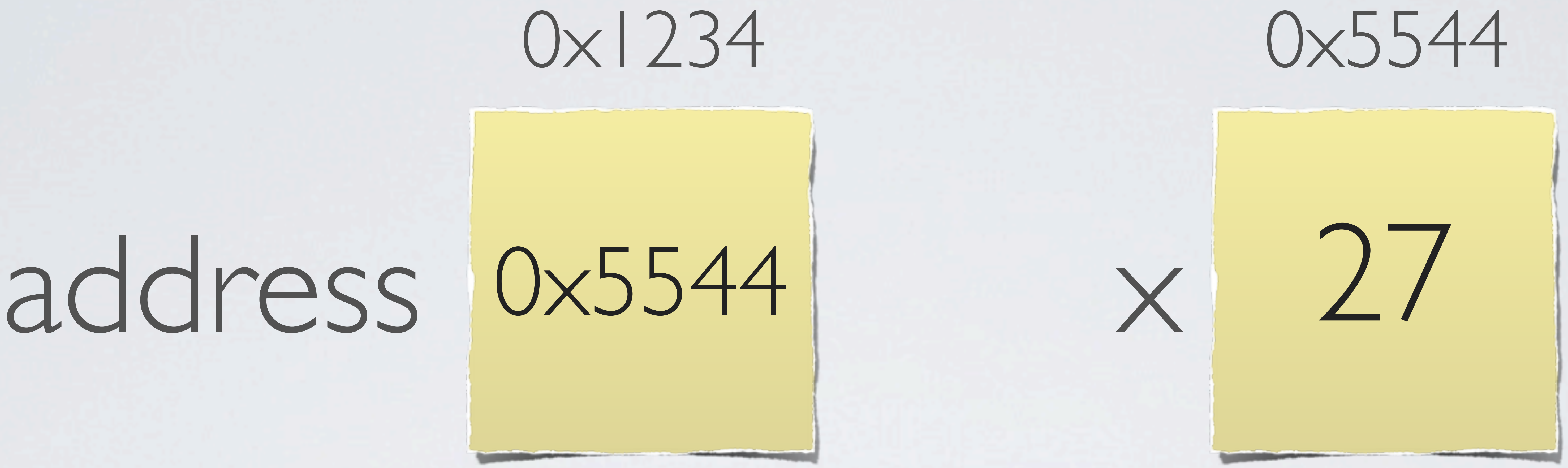
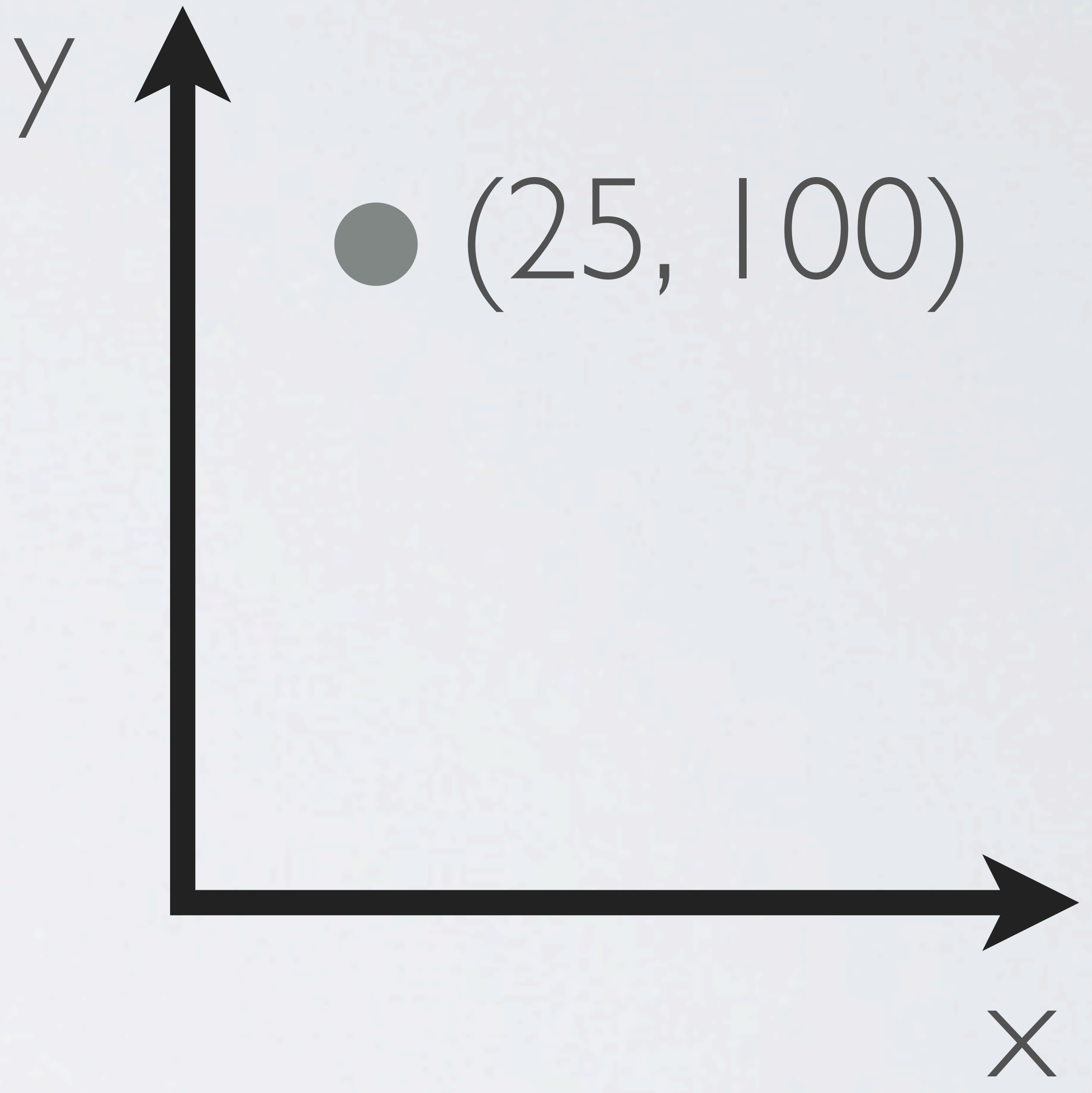



```
int *address = 0;
int x = 18;
address = &x;
*address = 27;
```

```
 struct Point {
    int x;
    int y;
};

           ...

struct Point a;
a.x = 25;
a.y = 100;
```

```
 struct Point {
        int x;
        int y;
};

                        ...

struct Point a;
a.x = 25;
a.y = 100;
```



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