Variables and Types

The buildings blocks of apps

Paul Solt
iPhoneDev.tv

Coffee

+

=

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Coffee

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

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Variables

Give the CPU something to remember

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```c
 // 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;
```

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type

```
int age = 26;
```

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type name

```
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```

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type name expression

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type name expression

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assignment operator

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```
int age = 26;
```

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

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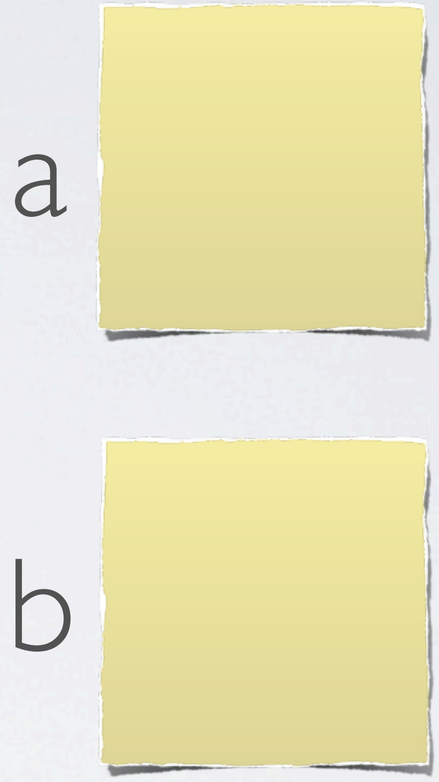

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```
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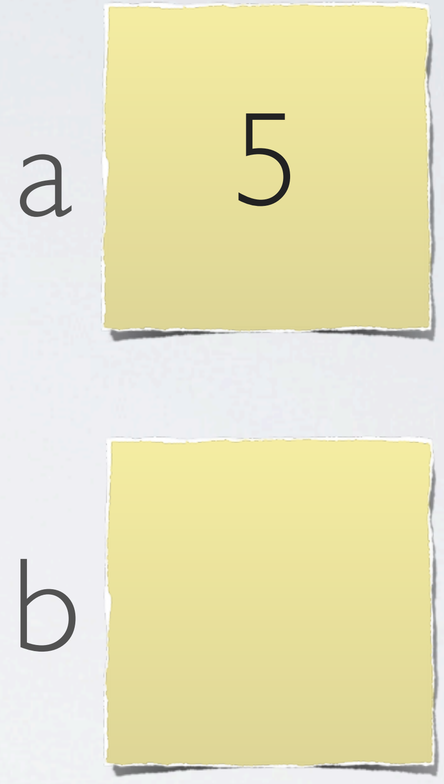
int b;
a = 5;
b = 20;
b = 5 + b;
a = a - b;
```



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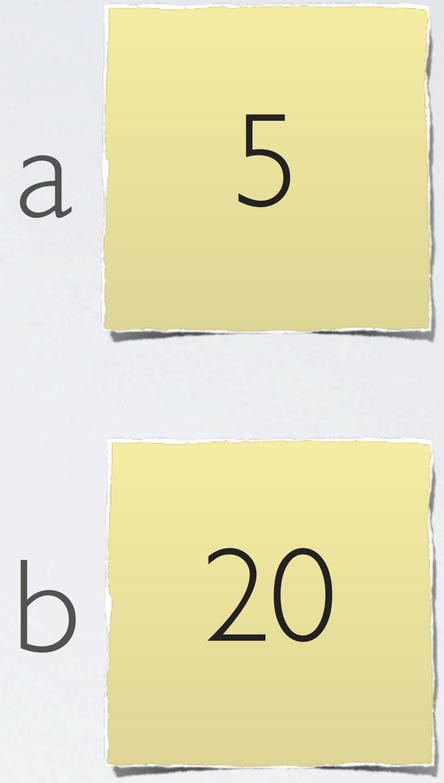

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b = 5 + b;
a = a - b;
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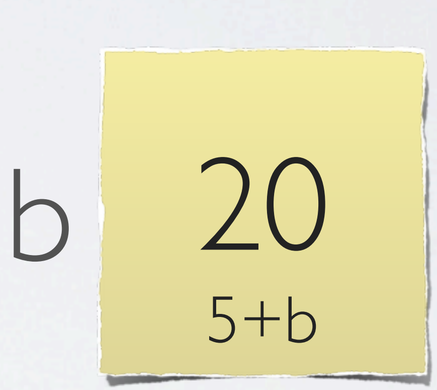

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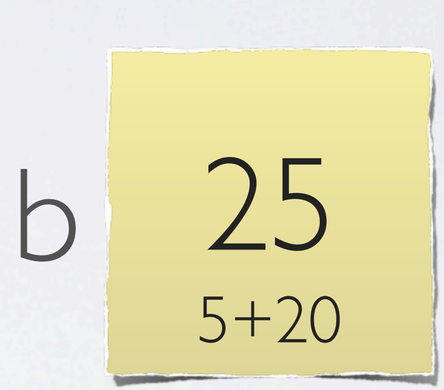

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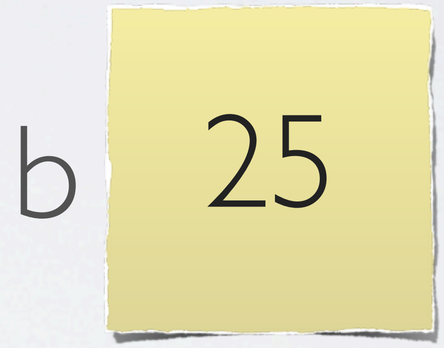

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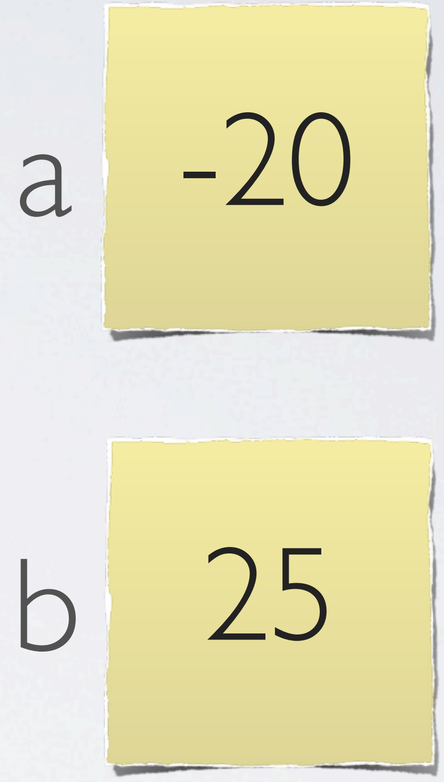

Types

What kind of information are we storing?

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- 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 = 9013372684473500;
```

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

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

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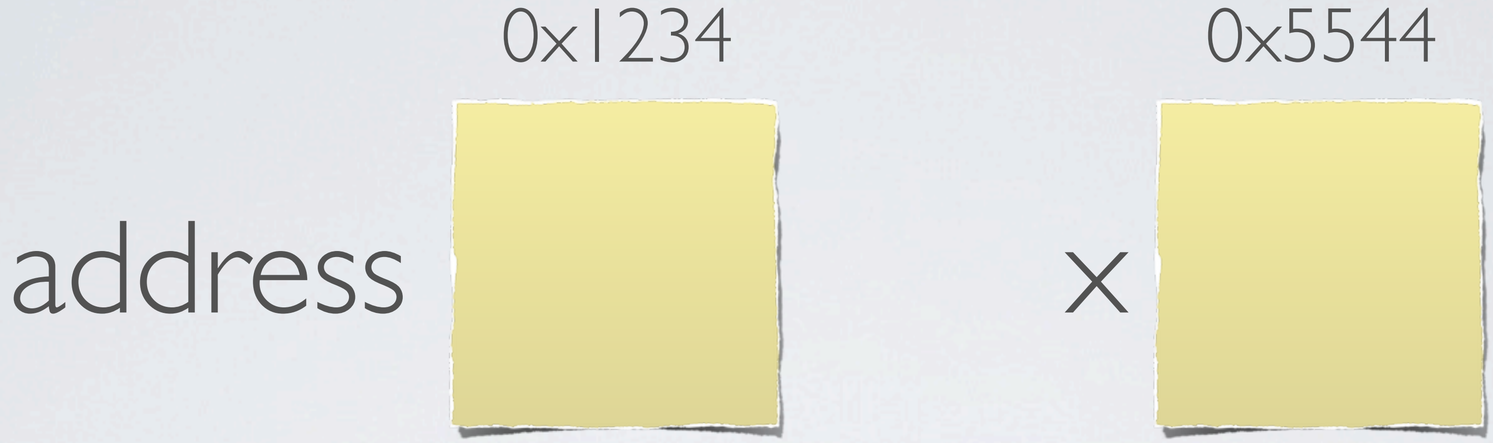
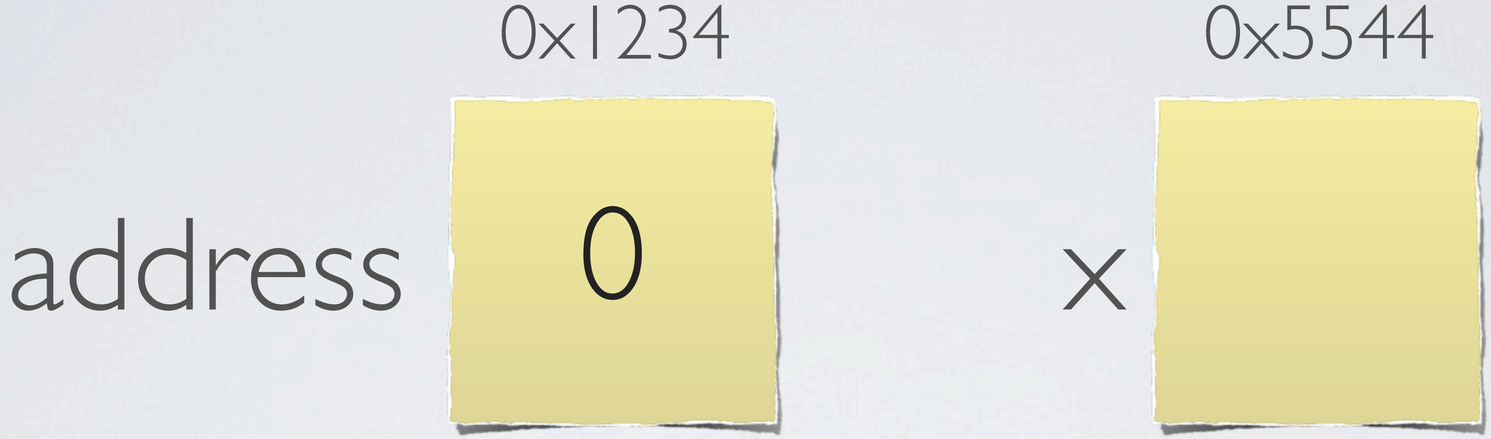



```
int *address = 0;
int x = 18;
address = &x;
*address = 27;
```

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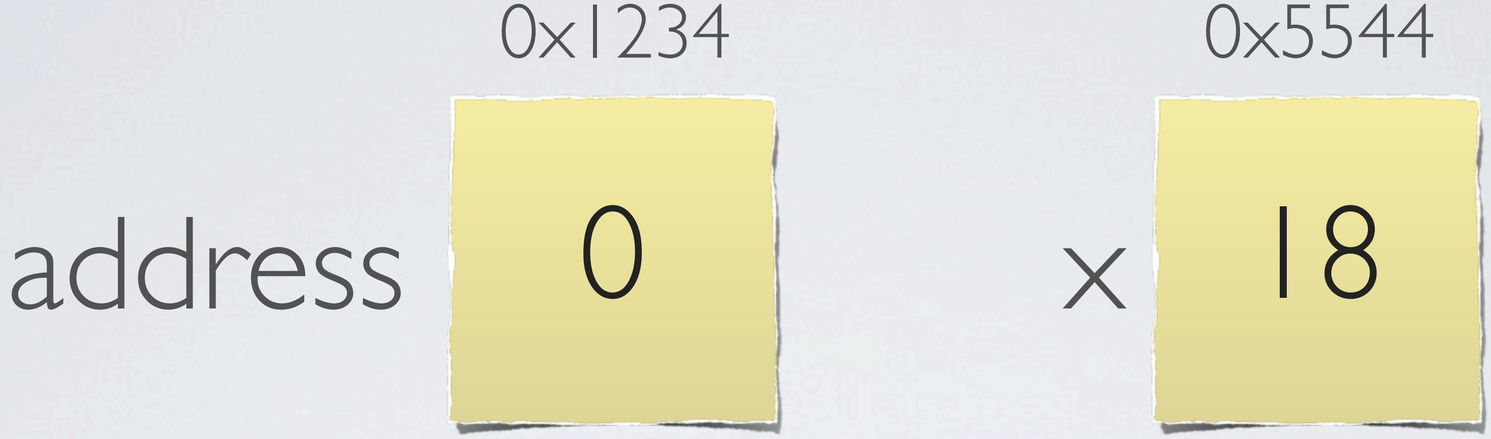


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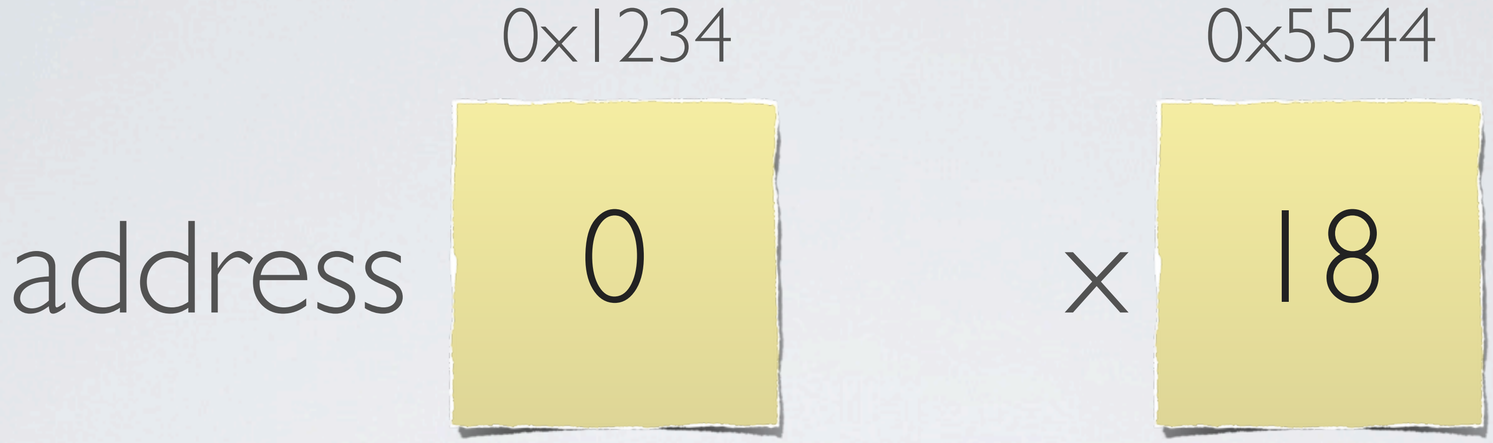


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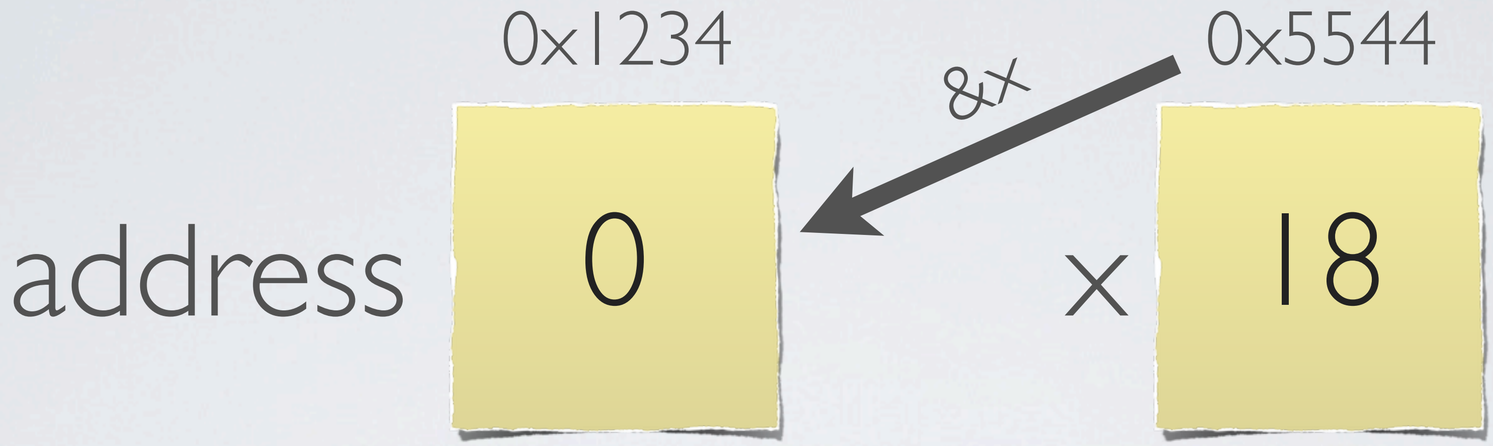


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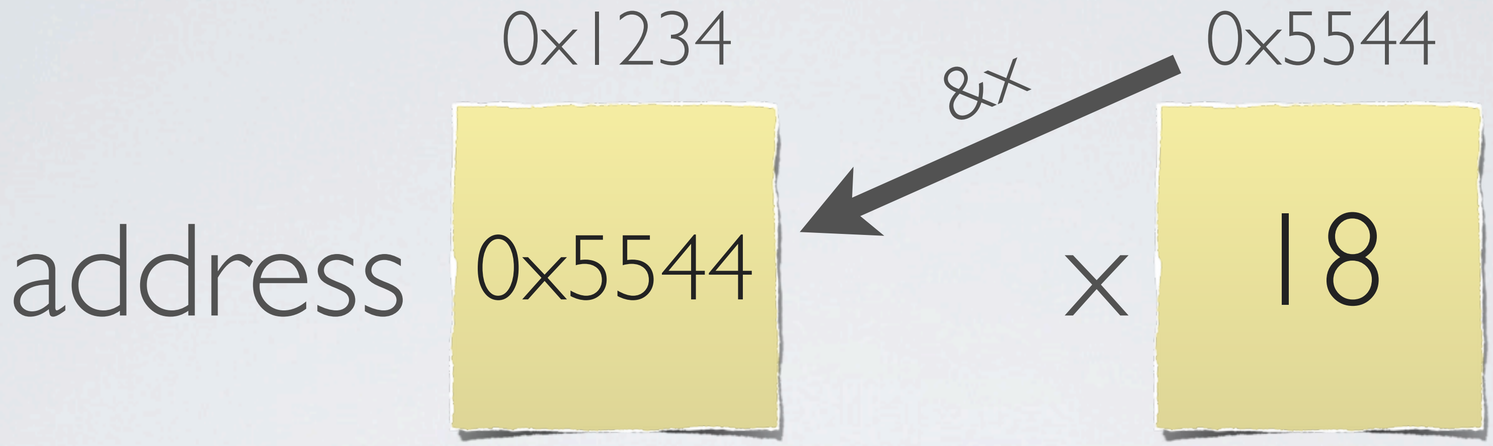


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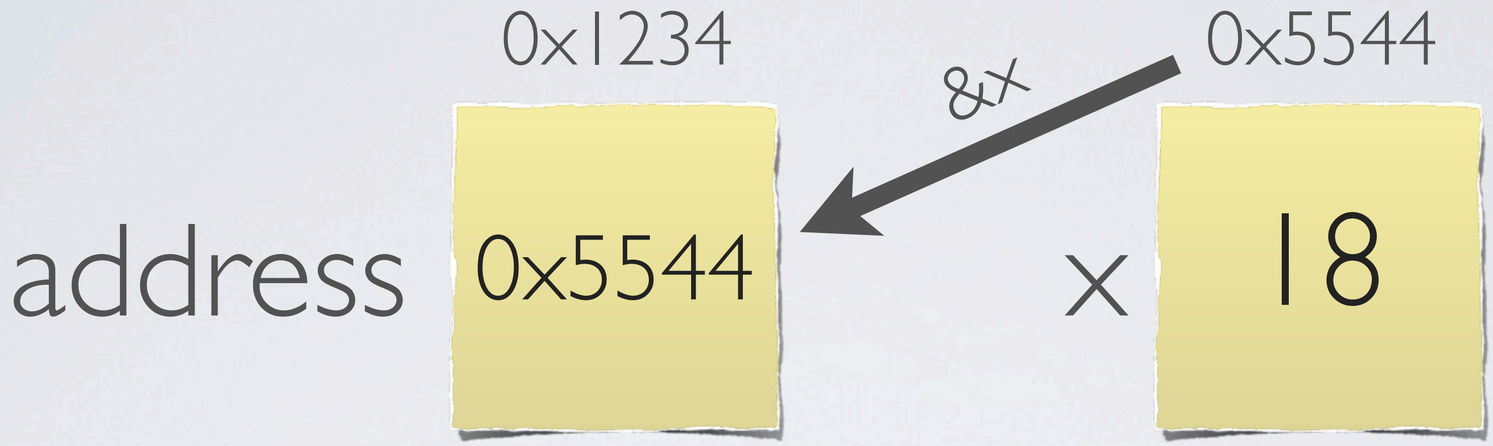


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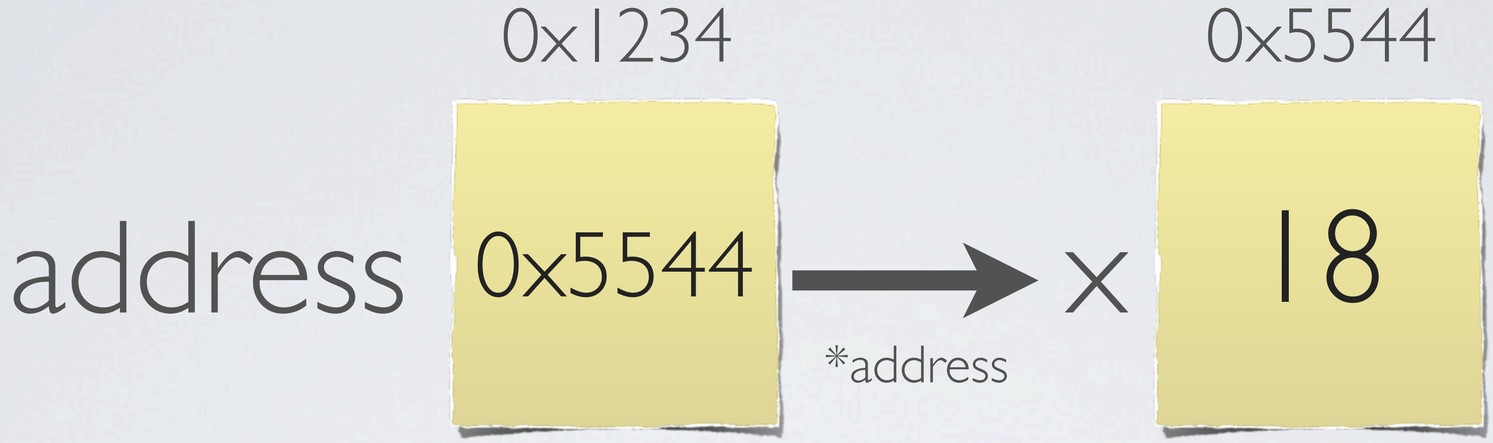


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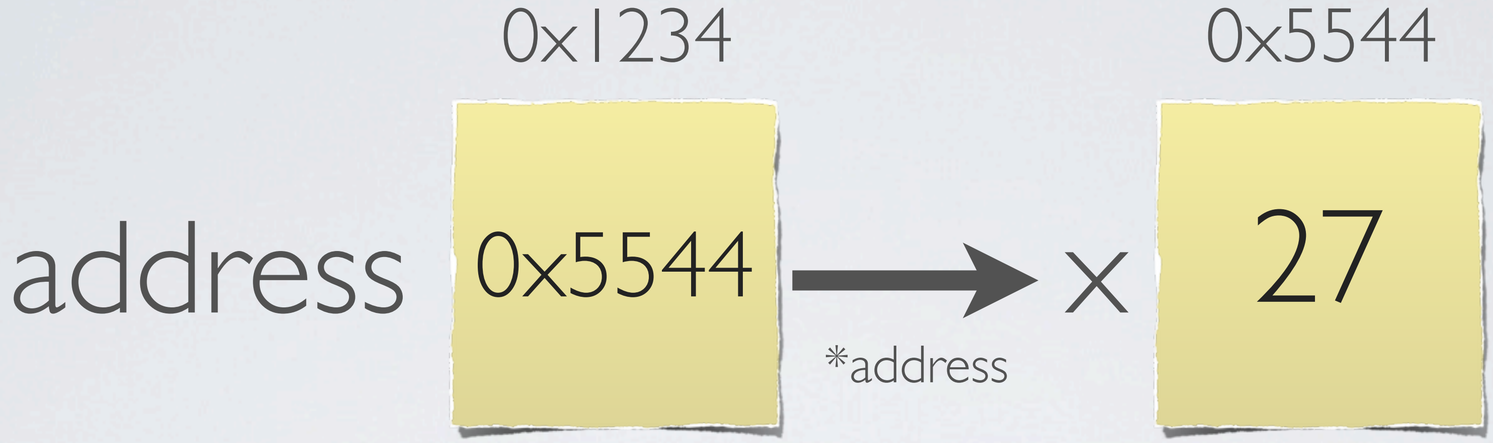


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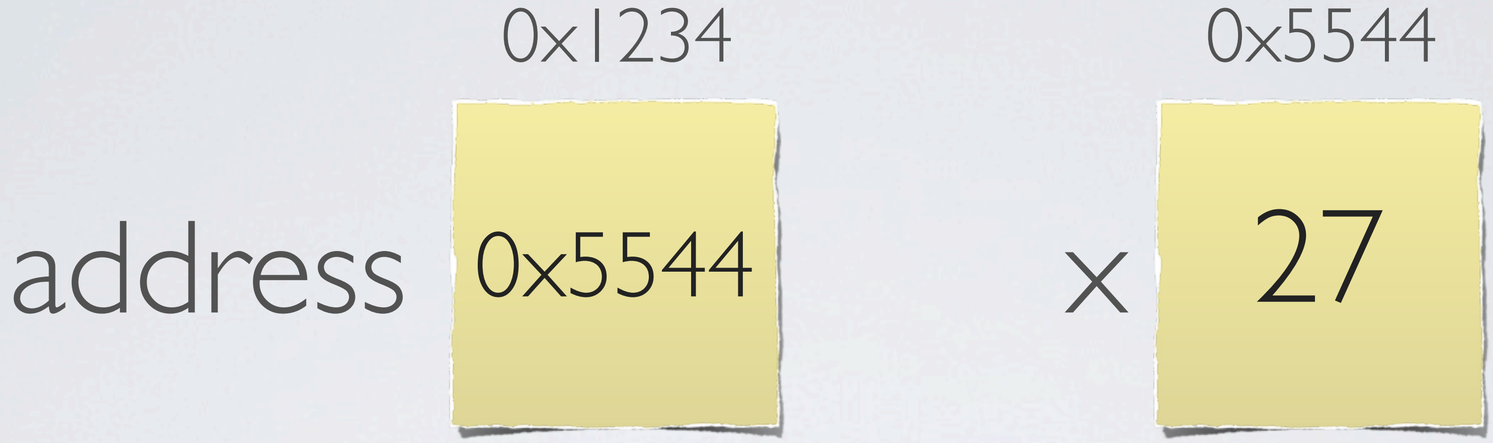


```
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int x = 18;
address = &x;
*address = 27;
```

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

...

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

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

...

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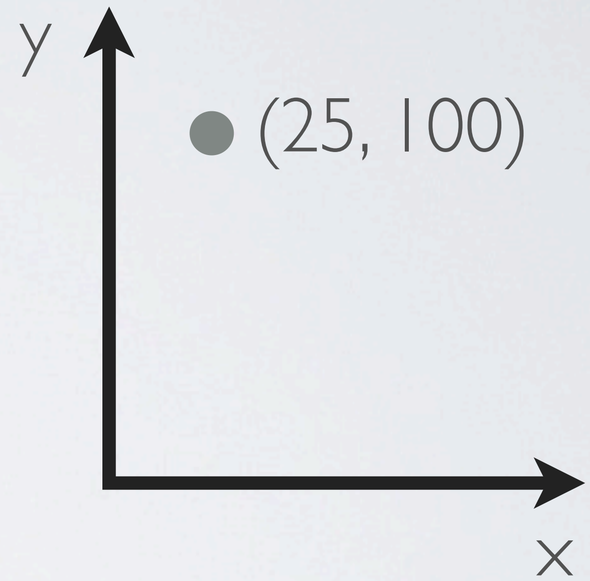

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