

# Nested Recursion



```
void fun (int n) {
```

```
    if ( — ) {
```

```
        =
```

```
        fun (fun n);
```

```
    }
```

```
}
```

```
<
```

1 parameter is  
used: both old and  
new

```
int fun (int n) {
```

```
    if (n > 10)
```

```
        return n - 10;
```

```
    else
```

```
        return fun (fun (n + 1));
```

```
    }
```

```
fun (95)
```

$$\text{fun}(95) = 91$$

$$\text{fun}(\text{fun}(95+11))$$
$$\text{fun}(96)$$

$$96 = \text{fun}(106)$$

$$\text{fun}(\text{fun}(96+11))$$
$$\text{fun}(97)$$

$$97 = \text{fun}(107)$$

$$\text{fun}(\text{fun}(97+11))$$
$$\text{fun}(98)$$

$$98 = \text{fun}(108)$$

$$\text{fun}(\text{fun}(98+11))$$
$$\text{fun}(99)$$

$$99 = \text{fun}(109)$$

$$\text{fun}(\text{fun}(99+11))$$
$$\text{fun}(100)$$

$$100 = \text{fun}(110)$$

$$\text{fun}(\text{fun}(100+11))$$
$$\text{fun}(111)$$

$$111 = \text{fun}(100+11)$$

$$\boxed{91}$$

$$\text{if}(111 > 100) \checkmark$$

$$\text{return } 111 - 100 \rightarrow 91$$