

"""

"4+3 " 7

""

1. "4+3 "4+3
- 2.
3. "1234567"
4. 7

" 4+3"4+3symbol""4""3""model 4 3

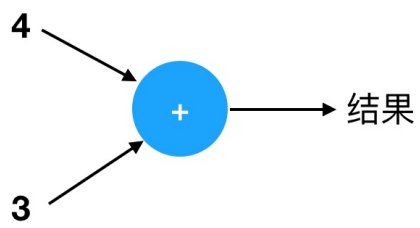
""3""5""4""3"

"4""3" 1 10

"""

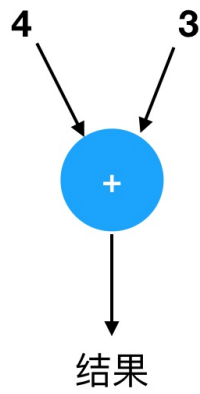
""

4 + 3



"" 4 3 "+" 4 3 7

""4 3 7



"""

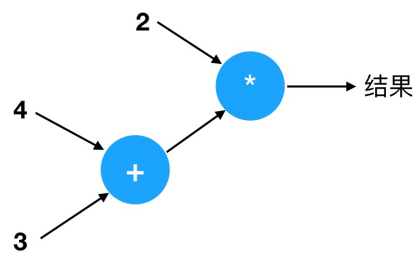
"""abstraction

4 + 3 4 + 3

4 + 3 expression"""

2 * (4 + 3)

4 + 3 """



4 + 37""" 2 2 * (4 + 3) 14

4 + 3 2 * ... 2 4 3 4 + 3 2

""""2 * (4 + 3)""coding

""""parsing

1. 12415.....

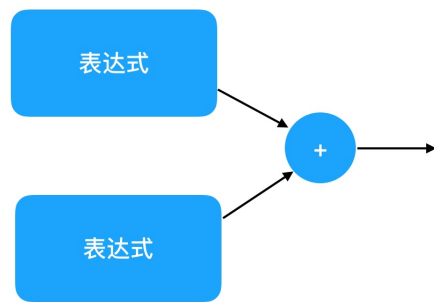
2. +

3. -

4. *

5. /

" + """

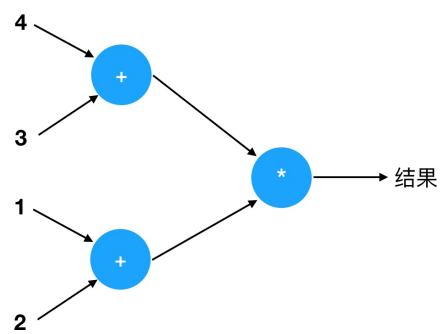


"""recursion

2 * (4 + 3)

- 4 3
- 4 + 3 +
- 2 * (4 + 3) *

(4 + 3) * (1 + 2)



4+3 7 1+2 3 7*3 21

1+2 3 4+3 7 7*3 21

4+3 1+2 4+3 1+2 4+3 1+2

4+3 1+27 3 7*3

parallel computing

"" 4+3 1+2 4+3 1+2

7 3 7*3 """

""

(5 - 3) * (4 + (2 * 3 - 5) * 6)

""

"""

$2 * (4 + 3)$

```
{
    a = 4 + 3      // a 4+3
    2 * a          //
}
```

a a = 4 + 3 "" a 4 + 3 variable

4 + 3 a 2 * a

// ""

4 + 3 7 a 7 2 * a 2 * 7 14 2 * (4 + 3)

a a b, c, d, x, y, foo, bar, u21...

""

""block""sequence a = 4 + 3 2 * a a = 4 + 3 2 * a

2 * a "" 2 * a

{...} "" (...) BEGIN...END

```
{
    a = 4 + 3
    b = a
    a = 2 * 5
    c = a
}
```

b 7 c 10 a = 4 + 3 a 7 b = a b 7 a = 2 * 5 a 10 c = a c 10

""

"" 4 + 3

$(5 - 3) * (4 + (2 * 3 - 5) * 6)$

```
{
    a = 2 * 3
    b = a - 5
    c = b * 6
    d = 4 + c
    e = 5 - 3
    e * d
}
```

e * d

""compiler""

compile

CPUassembly

"""

"""input t

t -> t*2

->

t t 2



t -> t*2

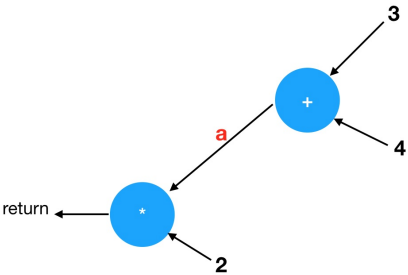
t -> t*2 function t

""" a, b, c, d, e t

"""

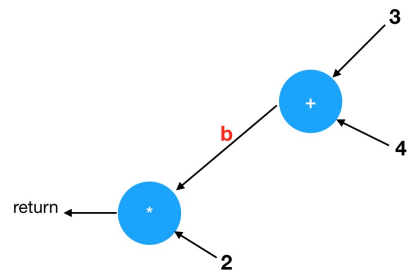
a

```
{
  a = 4 + 3
  2 * a
}
```



a t 2 a t

a b



a b

```
{
  b = 4 + 3
  2 * b
}
```

t -> t*2 u -> u*2 x -> x*2

""

a = 4 + 3

f = t -> t*2

f = t->t*2

f(t) = t*2

t

f = t*2

t t ""

y = x*2

"x y " x x

f(t) = t*2

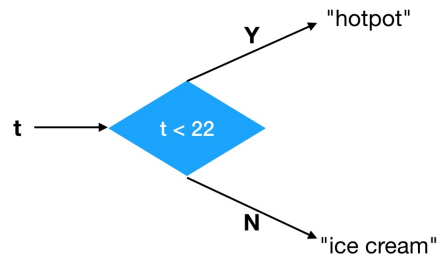
f(2)

4 f(2) 4

f(t) = t*2

t t*2 f t*2 t

```
""" 22 "hotpot" "ice cream"
```



```
"""branching
```

```
t < 22 """
```

```
if
```

```
t -> if (t < 22)
{
    "hotpot"
}
else
{
    "ice cream"
}
```

```
if else 22
```

```
else "" else else else
```

```
t ->
if (t < 22)
{
    a = 4 + 3
    b = a * 2
    "hotpot"
}
else
{
    x = "ice cream"
    x
}
}
```

```
"hotpot" "ice cream""string
```

```
""
```

```
if t < 22 "" < ""true false""
```

```
t 15 t < 22 true t 23 t < 22 false
```

```
""
```

- 1.
- 2.
- 3.
- 4.
- 5.

”

”

”

4+3 4+3.....

”
”

”

”