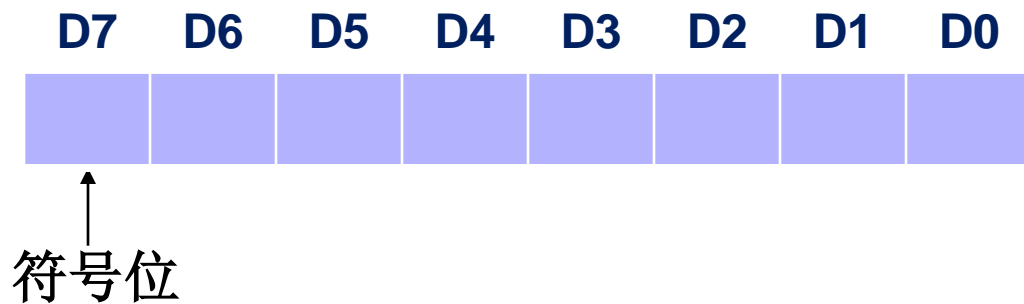


补码



“0”表示正

“1”表示负



“0”表示正

“1”表示负

+ 5

0	0	0	0	0	1	0	1
---	---	---	---	---	---	---	---

- 10

1	0	0	0	1	0	1	0
---	---	---	---	---	---	---	---

+

- 15

1	0	0	0	1	1	1	1
---	---	---	---	---	---	---	---



-10的补码

原码

1	0	0	0	1	0	1	0
---	---	---	---	---	---	---	---

反码

1	1	1	1	0	1	0	1
---	---	---	---	---	---	---	---

补码

1	1	1	1	0	1	1	0
---	---	---	---	---	---	---	---

+ 5

0	0	0	0	0	1	0	1
---	---	---	---	---	---	---	---

- 5

1	1	1	1	1	0	1	1
---	---	---	---	---	---	---	---

原码

1	0	0	0	0	1	0	1
---	---	---	---	---	---	---	---

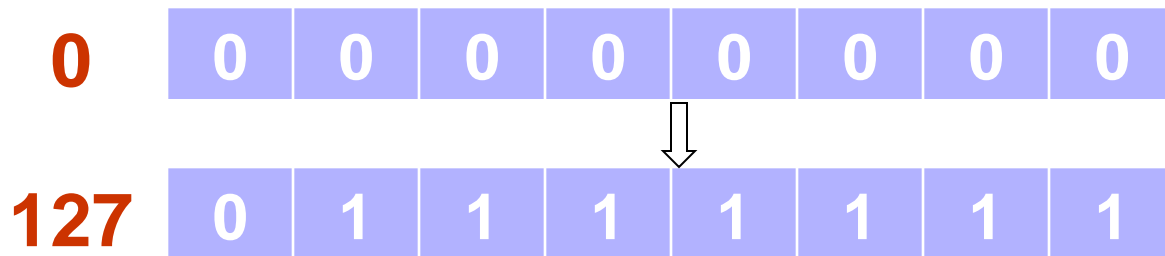


补码：把负数表示成加几等于**0**的形式。

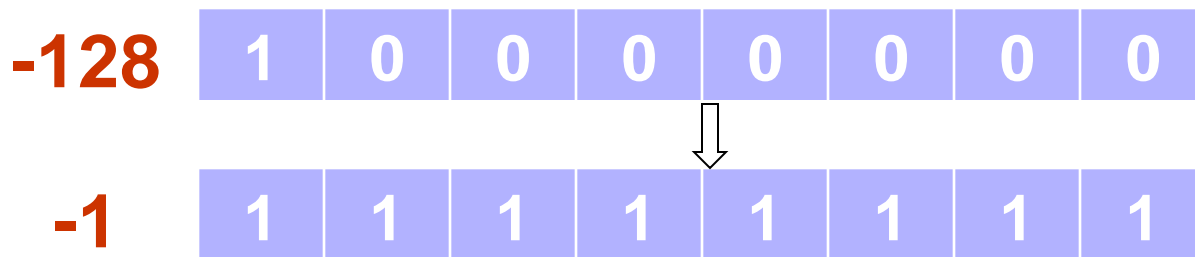
-1	1	1	1	1	1	1	1	1
+1	0	0	0	0	0	0	0	1
+								
0	1	0	0	0	0	0	0	0



正数：最高位为0



负数：最高位为1



假定一个整数X在机器中占用8位。

(1) 原码

$[X]_{\text{原}} =$	$\rightarrow 0X$	$0 \leq X$	$+7: 00000111$	$+0: 00000000$
	$\rightarrow 1 X $	$X \leq 0$	$-7: 10000111$	$-0: 10000000$

(2) 反码

$[X]_{\text{反}} =$	$\rightarrow 0X$	$0 \leq X$	$+7: 00000111$	$+0: 00000000$
	$\rightarrow 1 \bar{X} $	$X \leq 0$	$-7: 11111000$	$-0: 11111111$

(3) 补码

$[X]_{\text{反}} =$	$\rightarrow 0X$	$0 \leq X$	$+7: 00000111$	$+0: 00000000$
	$\rightarrow 1 \bar{X} +1$	$X \leq 0$	$-7: 11111001$	$-0: 00000000$



要点回顾

- 负数在计算机中都是以补码形式存在

原码：最高位为符号位，用1表示负号

反码：原码除符号位以外全部按位取反

补码：反码+1

