Binary Shift

What happens when you multiply a binary number by 2?

0	0	0	0	1	0	0	1

x   2

Binary Shift

What happens when you multiply a binary number by 2?

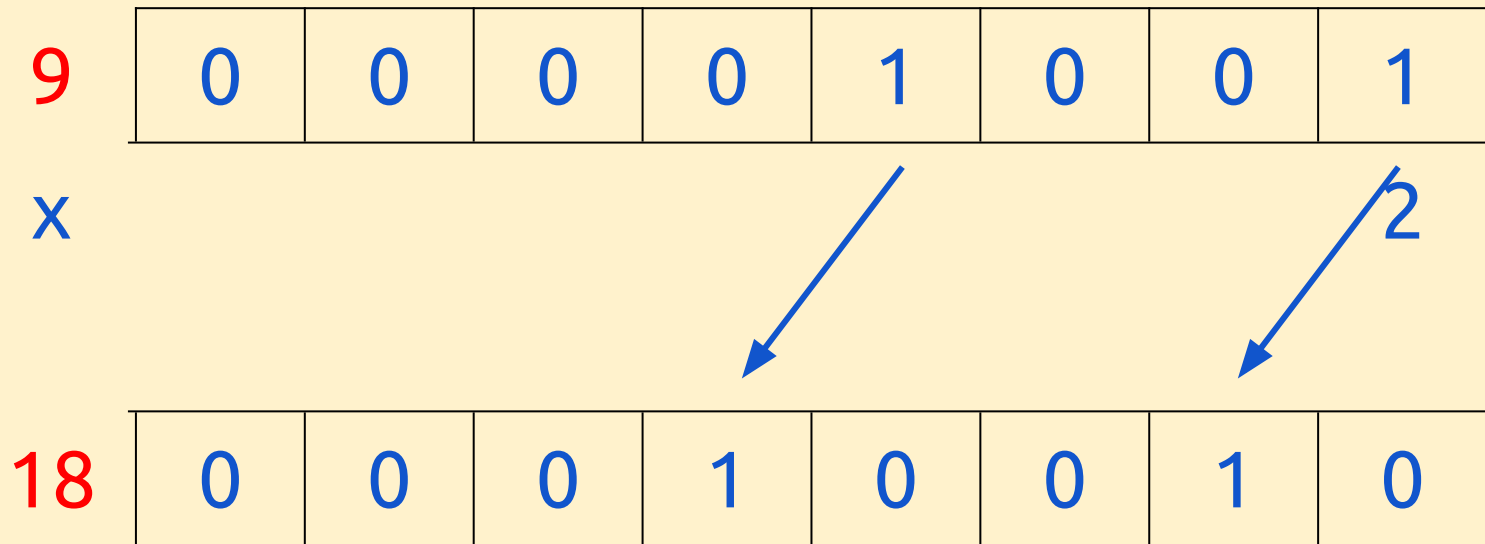| 9	0	0	0	0	1	0	0	1

x   2

18								

Binary Shift

What happens when you multiply a binary number by 2?

9	0	0	0	0	1	0	0	1

x

2

18	0	0	0	1	0	0	1	0

Binary Shift

What happens when you divide a binary number by 2?

0	0	0	0	1	1	0	0

/   2

Binary Shift

What happens when you divide a binary number by 2?

0	0	0	0	1	1	0	0

12 /   2

6
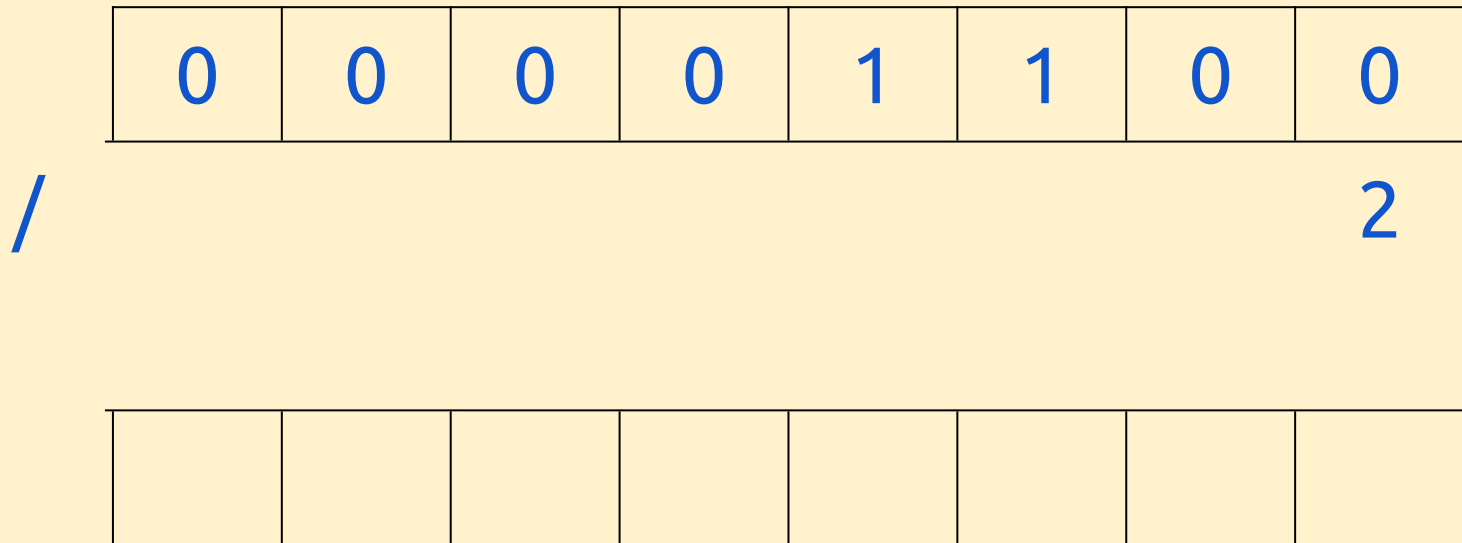
Binary Shift

What happens when you divide a binary number by 2?

12	0	0	0	0	1	1	0	0

/   2

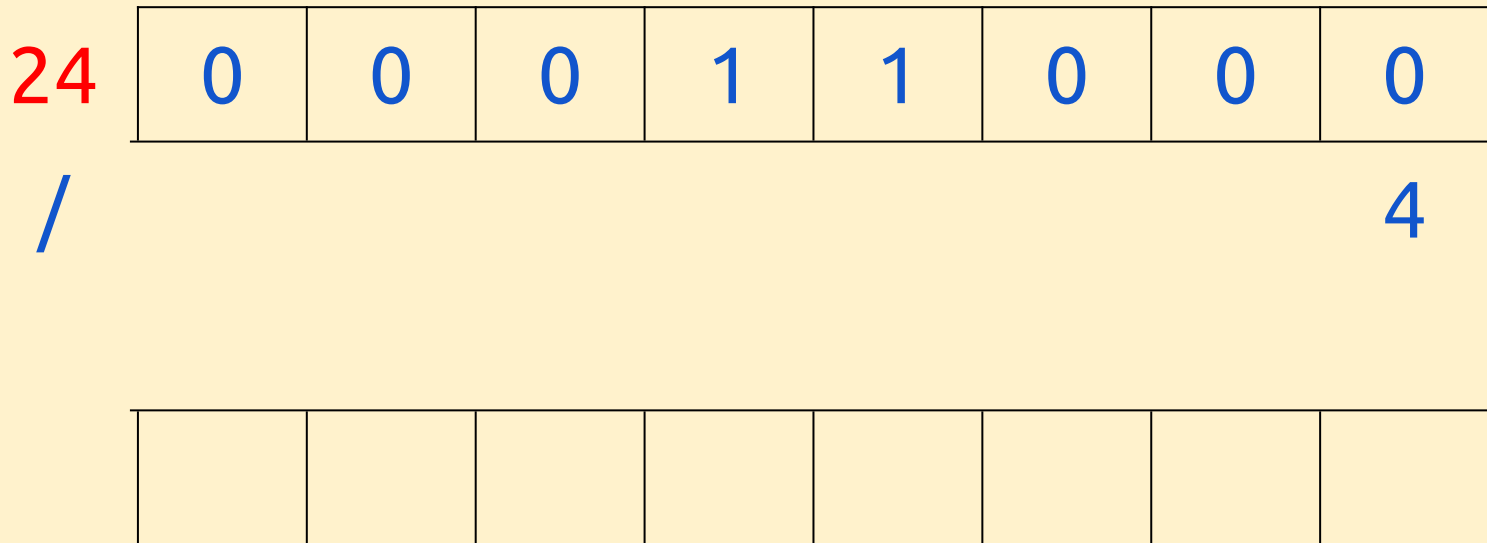| 6	0	0	0	0	0	1	1	0
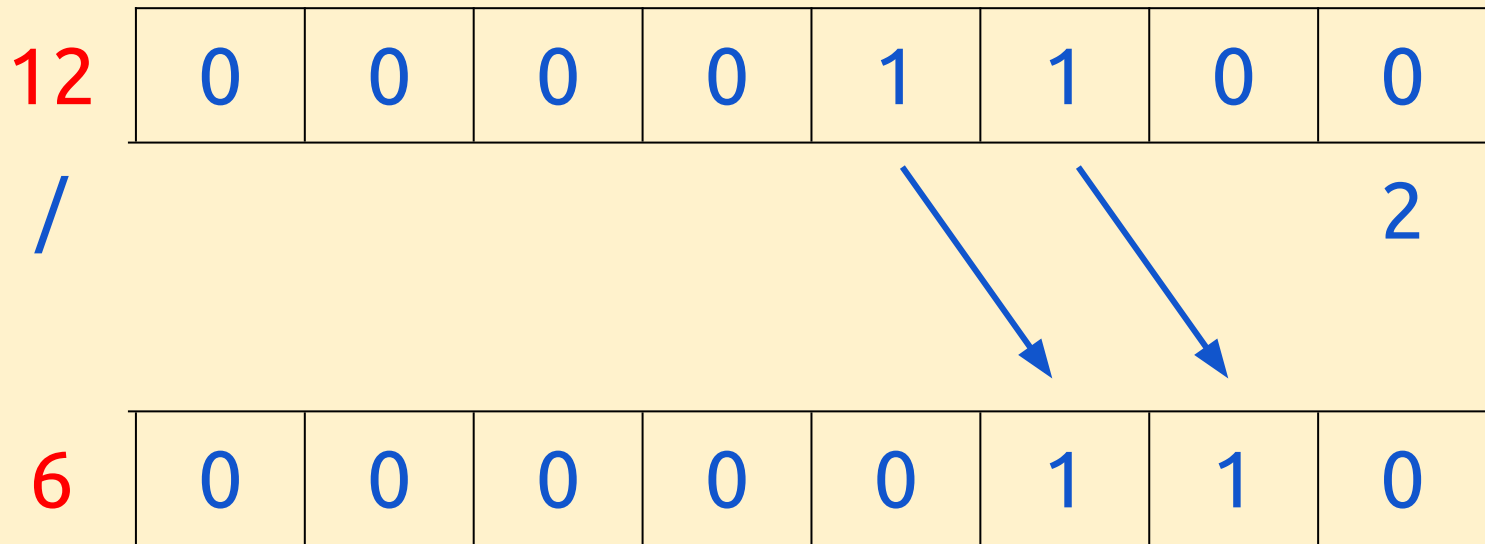
Binary Shifts

A binary shift can be used to multiply a binary number by 2 or to divide a binary number by 2.

- To **multiply** by 2, shift the binary number one place to the left.

- To **divide** by 2, shift the binary number one place to the right.

Binary Shift

How about dividing by 4?

0	0	0	1	1	0	0	0

24

/ 4

Binary Shift

How about multiplying by 8?

0	0	0	0	0	1	0	1

5

*   8

Binary Shifts

A binary shift of two places lets you multiply or divide by 4

A binary shift of three places lets you multiply or divide by 8

A binary shift is sometimes called a **logical shift** or a **logical binary shift**