

Operator

Bitwise $\rightarrow \& \mid \sim >> <<$

$$8 + 4 + 2 + 1$$

$$2^3 \quad 2^2 \quad 2^1 \quad 2^0$$

- 1 bit $\rightarrow 0, 1$
- 2 bit $\rightarrow 0, 1, 2, 3$
- 3 bit $\rightarrow 0, 1, 2, \dots, 7$
- 4 bit $\rightarrow 0, 1, 2, \dots, 15$

$$3 \quad 2 \quad 1$$

$$2^2 \quad 2^1 \quad 2^0$$

$$0 \quad 0 \quad 0 = 0$$

$$0 \quad 0 \quad 1 = 1$$

$$0 \quad 1 \quad 0 = 2$$

$$0 \quad 1 \quad 1 = 3$$

$$1 \quad 0 \quad 0 = 4$$

$$1 \quad 0 \quad 1 = 5$$

$$1 \quad 1 \quad 0 = 6$$

$$1 \quad 1 \quad 1 = 7$$

for ex $2^3 \quad 2^2 \quad 2^1 \quad 2^0$

$$13 \rightarrow 1 \quad 1 \quad 0 \quad 1$$

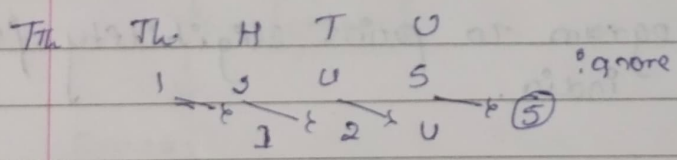
$$12 \rightarrow 1 \quad 1 \quad 0 \quad 0$$

$$5 \rightarrow 0 \quad 1 \quad 0 \quad 1$$

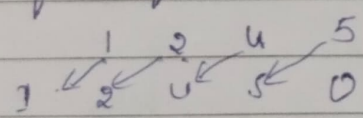
$$1 \rightarrow 1 \quad 1 \quad 0 \quad 1 = 13$$

$$8 \rightarrow 1 \quad 0 \quad 0 \quad 0 = 8$$

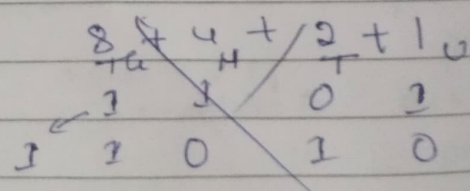
Right Shift



left shift \rightarrow increasing



(1) $13 >> 2$



$$8 + 4 + 2 + 1$$

$$1 \quad 1 \quad 0 \quad 1$$

$$1 \quad 1 \quad 0 \quad 1 \rightarrow 3$$

(2) $13 < 2$

$$\begin{array}{r}
 8 + 4 + 2 + 1 \\
 1 \quad 1 \quad 0 \quad 1 \\
 1 \quad 1 \quad 0 \quad 1 \quad 0 \\
 1 \quad 1 \quad 0 \quad 1 \quad 0 \quad 0 \\
 \hline
 36 \quad 16 \quad 4 \quad \quad \quad = 52
 \end{array}$$

Condition

Nested if else

Syntax:

if (cond 1): # Outer if

if (cond 2): # Inner if
 statements of inner if
 else:

statement of inner else

else:

statement of outer else.

Example

n = int (input())

if (n > 0):

if (n > 0):

print (" +ve ")

else:

print (" zero ")

else:

print (" -ve ")