

1. un ex_1(32)

$$ex_1(32) = 32 + ex_1(16)$$

$$ex_1(16) = 16 + ex_1(8)$$

$$ex_1(8) = 8 + ex_1(4)$$

$$ex_1(4) = 4 + ex_1(2)$$

$$ex_1(2) = 2 + ex_1(1)$$

$$ex_1(1) = 1$$

$$\therefore ex_1(32) = 74$$

2. un ex_2(0)

ex_2(0) Print 0 Hello!

↳ ex_2(2) Print 2 Hello!

↳ ex_2(4) Print 4 Hello!

↳ ex_2(6) Print 6 Hello!

↳ ex_2(8) Print Go Back

ex_2(6) Print 6 Bye!

ex_2(4) Print 4 Bye!

ex_2(2) Print 2 Bye!

ex_2(0) Print 0 Bye!

call stack

0 Hello!

2 Hello!

4 Hello!

6 Hello!

Go Back!

6 Bye!

4 Bye!

2 Bye!

0 Bye!

3.1 ex_3(4) → 12

$$3.2 \quad ex_3(10) \rightarrow 2 \times ex_3(5) + 7 = 14 + 7$$

$$\rightarrow 2 \times ex_3(0) + 7 = 7$$

$$\rightarrow 0$$

$$\therefore ex_3(10) = 21$$

$$3.3 \quad ex_3(17) \rightarrow 2 \times ex_3(12) + 7 = 90 + 7$$

$$\rightarrow ex_3(12) = 2 \times ex_3(7) + 7 = 45$$

$$\rightarrow ex_3(7) = 2 \times ex_3(2) + 7 = 19$$

$$\rightarrow 6$$

$$\therefore ex_3(17) = 97$$