

\* 7/19 : (비트연산자, 비교연산자, 할당문, 메서드) 훈련  
비트.이동연산자

comcs-java/comcs-java-lang/app

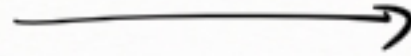


bitcamp-study/java-lang/app

com.comcs.quiz.ex01

Test01

Test02



복사-붙여넣기 연습할 것.

\* 비트 연산자의 특징

① OR

$$\begin{array}{r} 01 \\ 111 \\ \hline 11 \end{array} \leftarrow \text{부진}$$

$$\begin{array}{r} 01 \\ 100 \\ \hline 01 \end{array} \leftarrow \text{원래 값 통과}$$

② AND

$$\begin{array}{r} 01 \\ \& 11 \\ \hline 01 \end{array} \leftarrow \text{원래 값 통과}$$

$$\begin{array}{r} 01 \\ \& 00 \\ \hline 00 \end{array} \leftarrow \text{값 차단}$$

\* value & 1  
↳ 최하위 1비트 추출

$$\begin{array}{r} 01110011 \\ \& 00000001 \\ \hline 00000001 \end{array}$$

③ XOR

$$\begin{array}{r} 01 \\ 111 \\ \hline 10 \end{array} \leftarrow \text{원래 값을  
스왑}$$

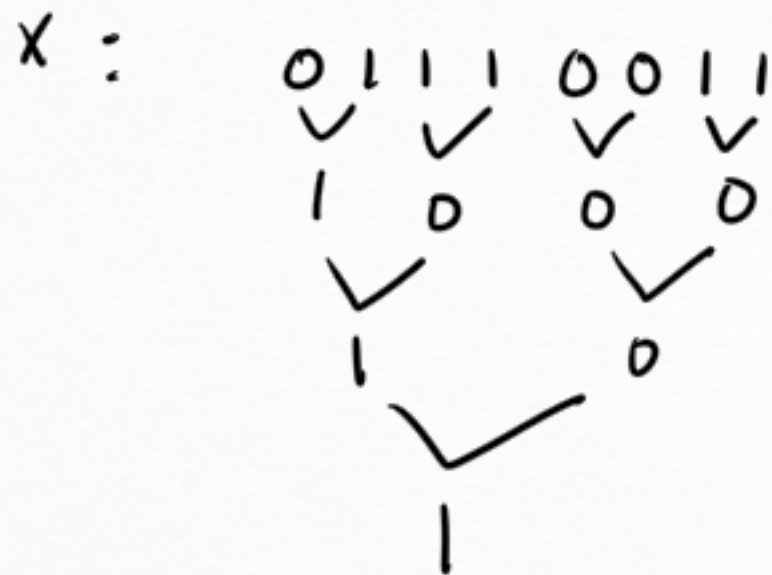
$$\begin{array}{r} 01 \\ 100 \\ \hline 01 \end{array} \leftarrow \text{원래 값을  
그대로 통과}$$

\* msb et lsb

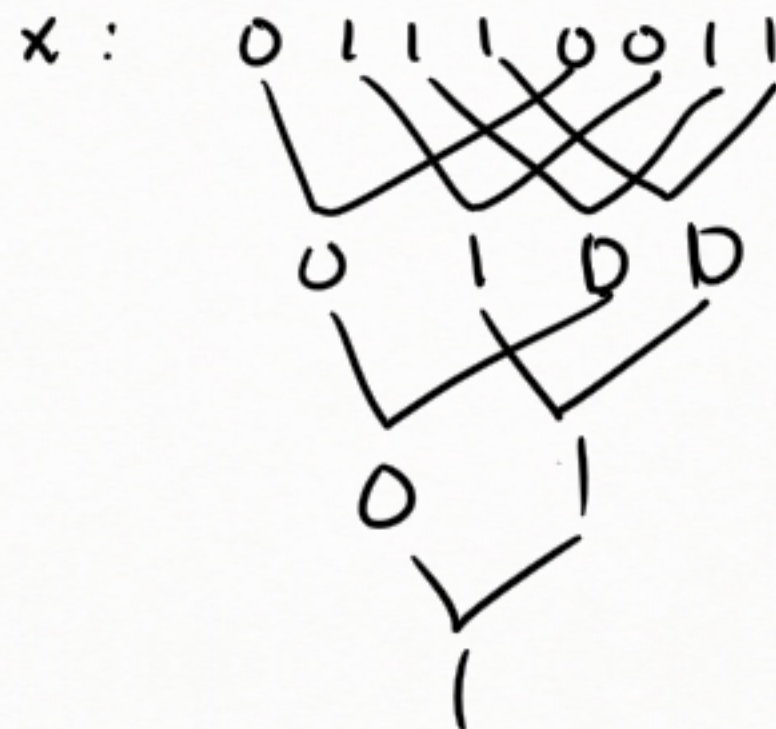
01110011  
↑ msb most significant bit (최상위 비트)  
↑ lsb least significant bit (최하위 비트)



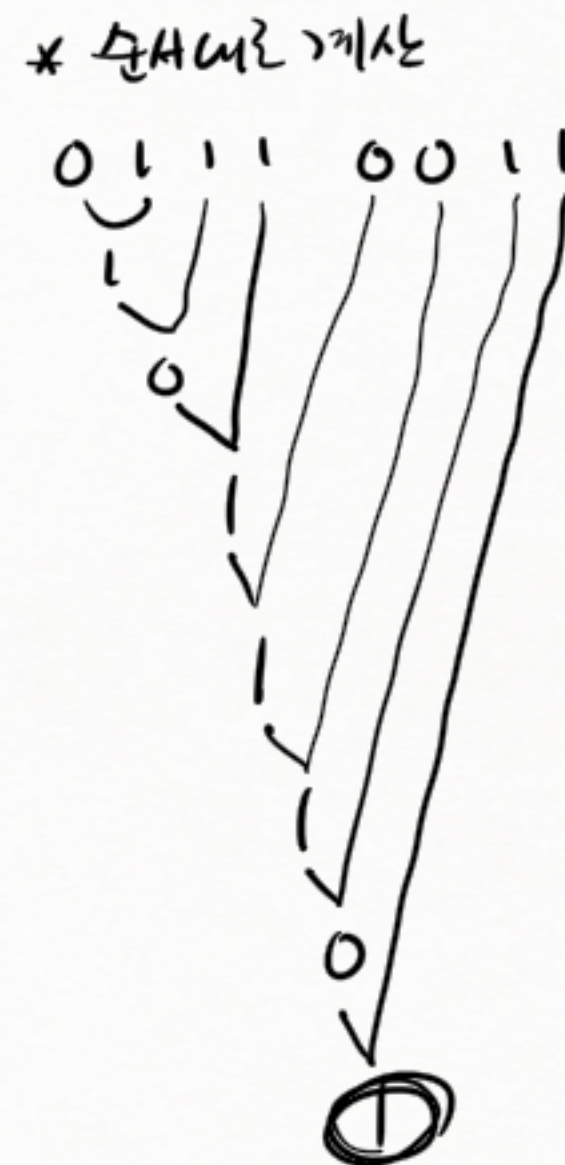
# \* XOR 과 비트 연산의 특징



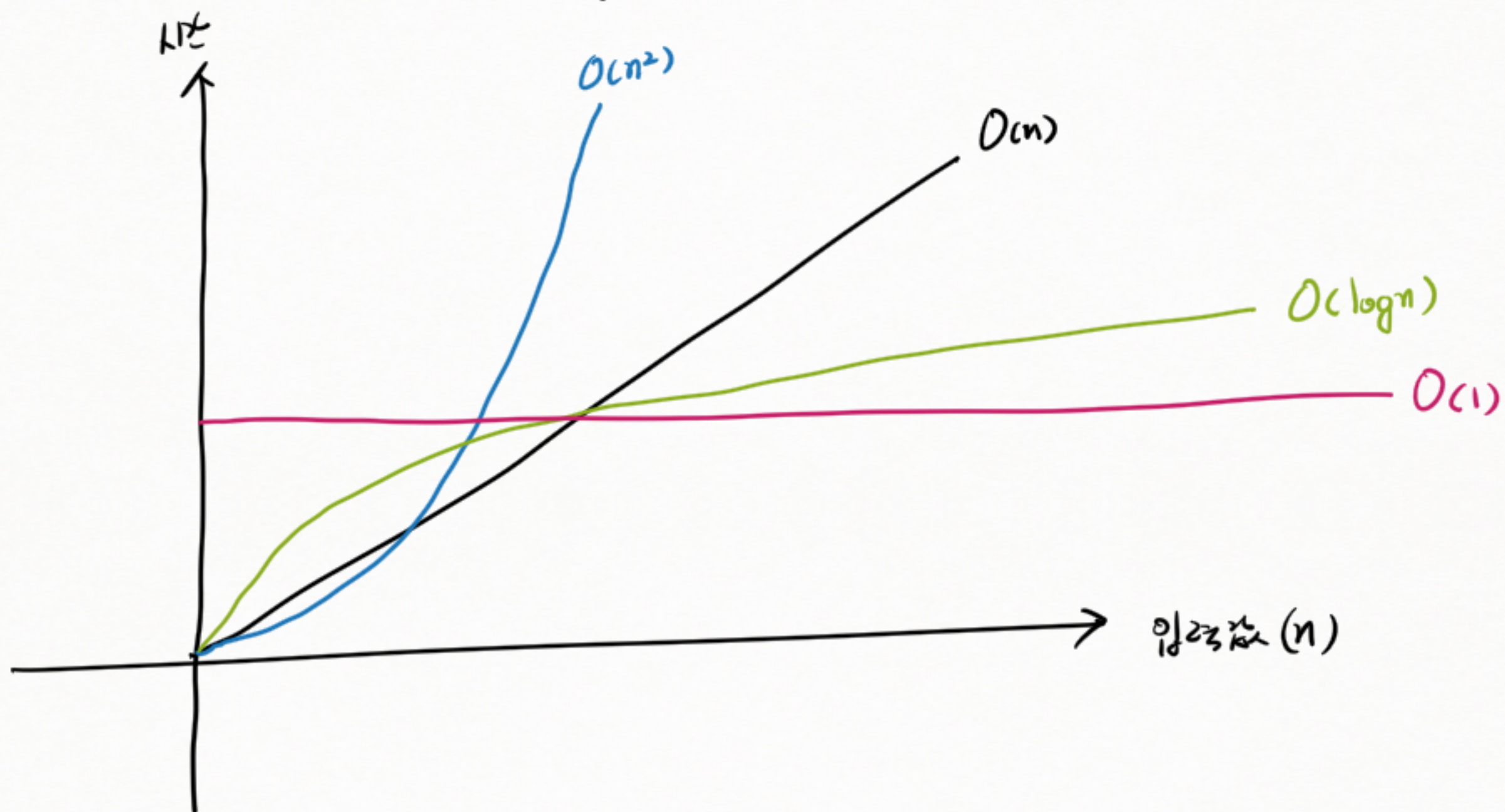
\* 곱셈 방법을 반쪽



\* 곱셈 방법을 반쪽



\* 시간 복잡도 : Big-O





\* 패리티 비트 + XOR 연산

①  $x \& (x-1)$

↳ 최하위 비트에서  
1 값을 갖는 비트를  
0으로 만든다

$$\begin{array}{r} 011001\textcolor{red}{\times}0 \quad x \\ \& 01100101 \quad (x-1) \\ \hline \end{array} \quad \textcircled{1}$$

$$\begin{array}{r} 01100\textcolor{red}{\times}00 \quad x \\ \& 01100011 \quad (x-1) \\ \hline \end{array} \quad \textcircled{2}$$

$$\begin{array}{r} 01\textcolor{red}{\times}00000 \quad x \\ \& 01011111 \quad (x-1) \\ \hline \end{array} \quad \textcircled{3}$$

$$\begin{array}{r} 0\textcolor{red}{\times}00000 \quad x \\ \& 00111111 \quad (x-1) \\ \hline 00000000 \end{array} \quad \textcircled{4}$$

$O(k)$

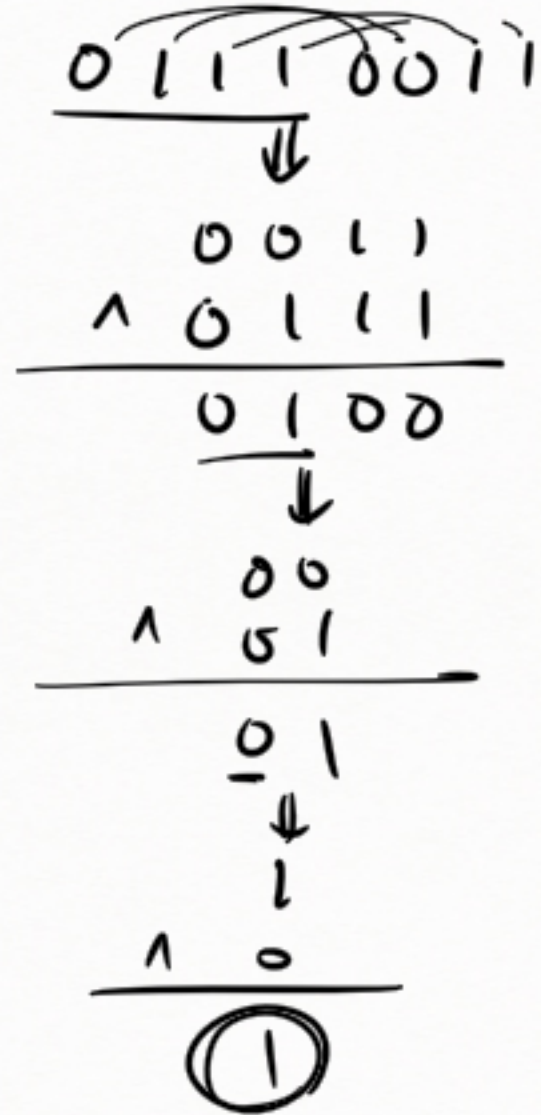
↳ k는 값이 1인 비트의 개수

\* 2비트 이진치 XOR 연산

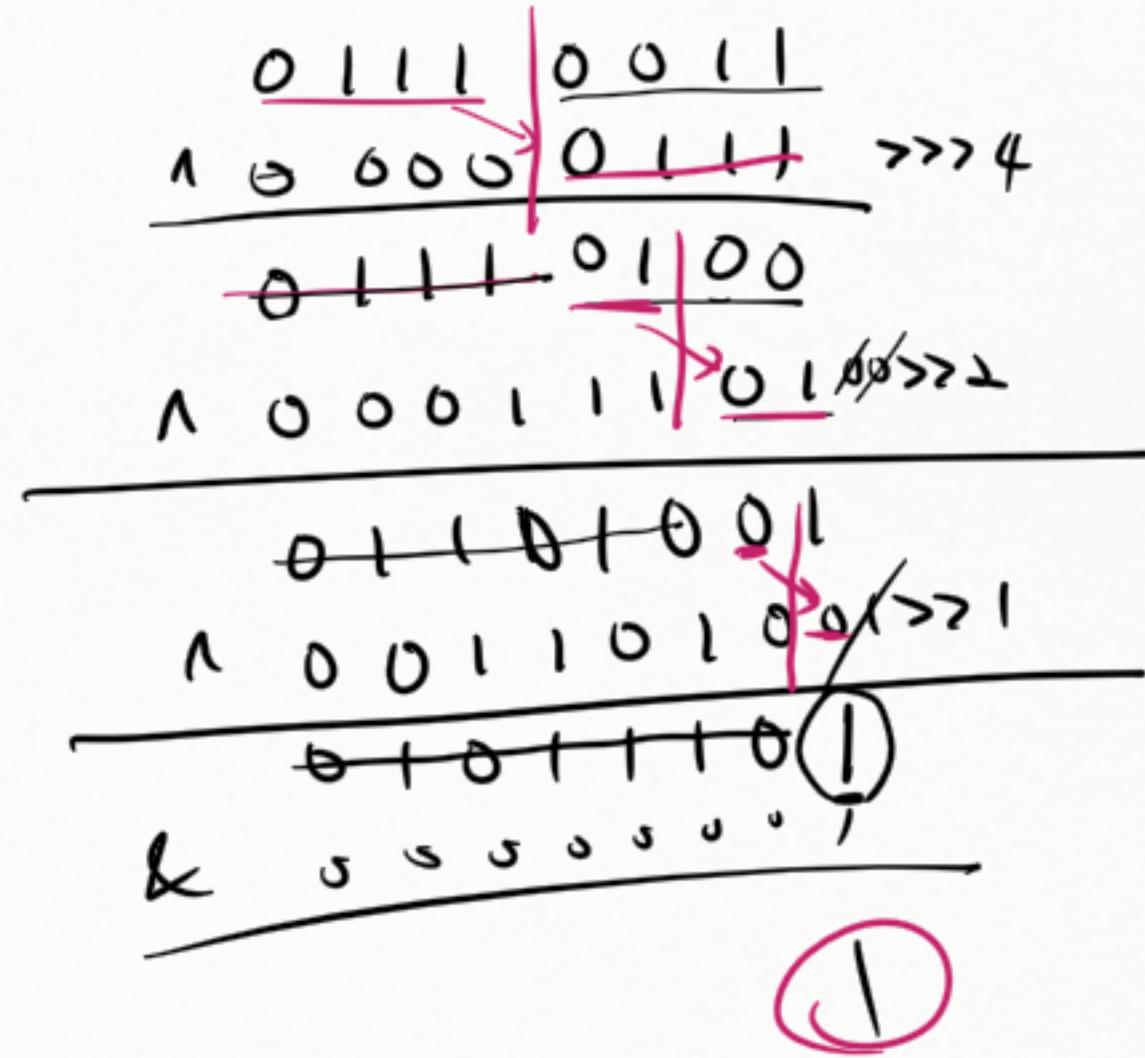
✓ 8진수 5는 101



✓ 2비트 이진치



0(1)





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Test03

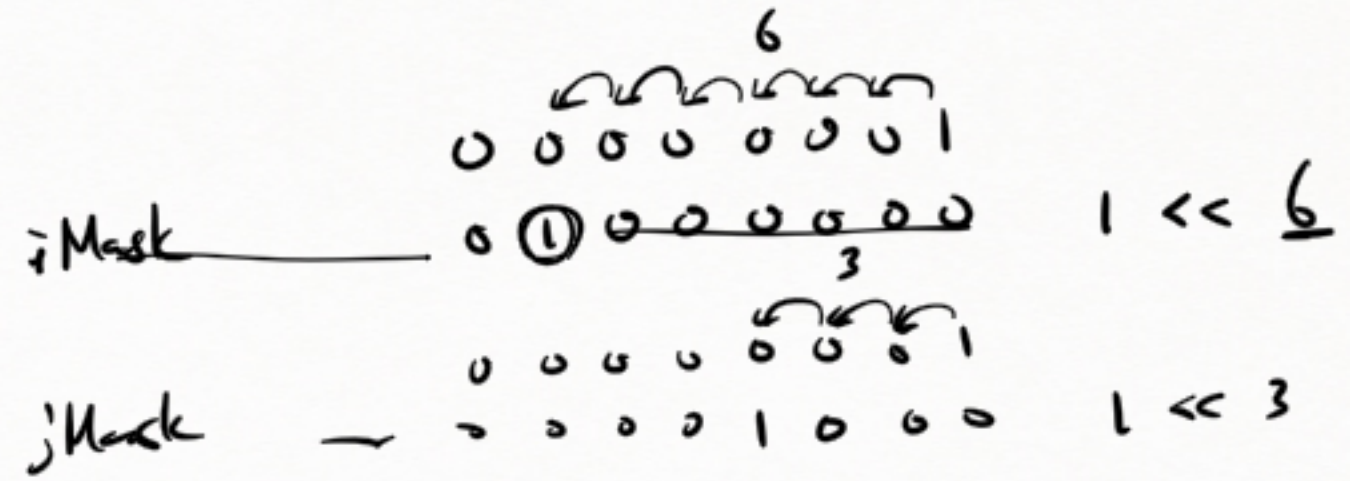
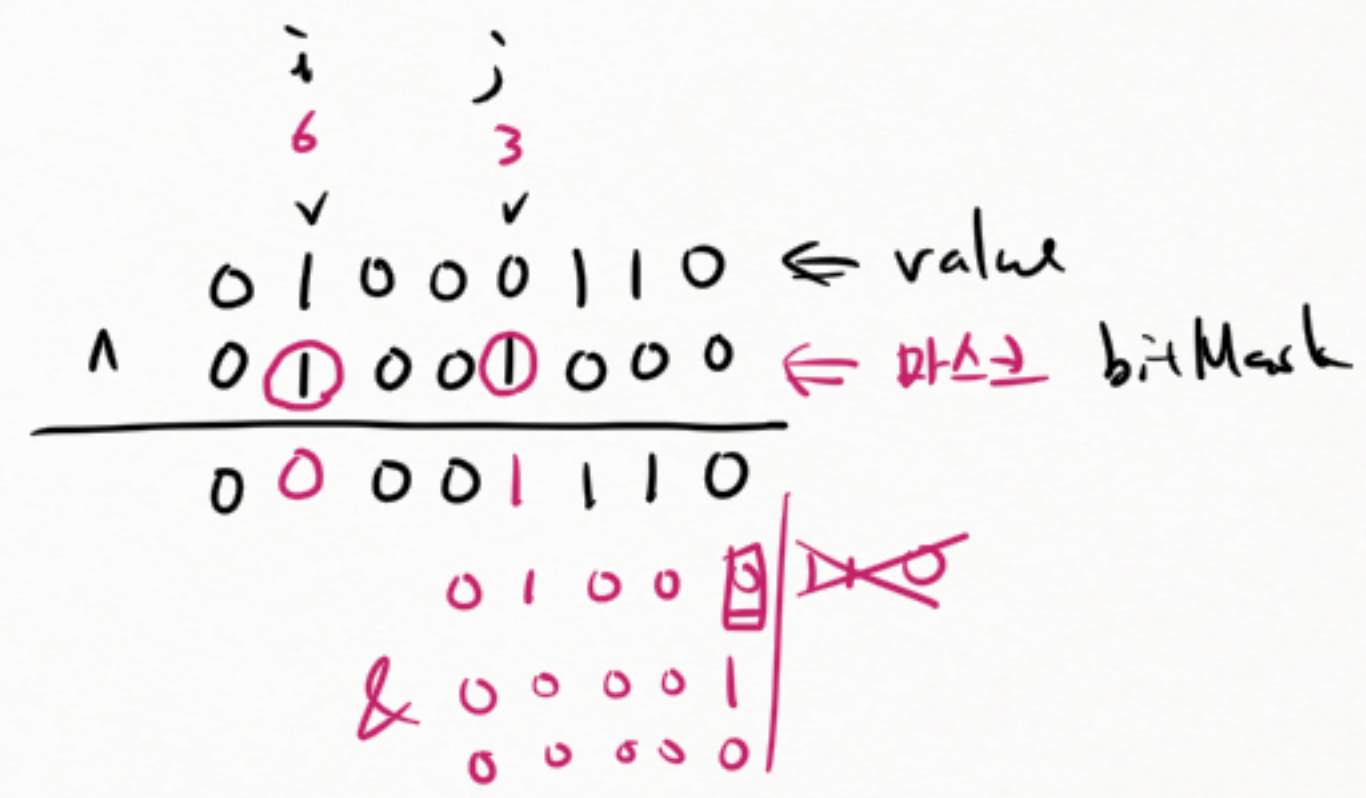
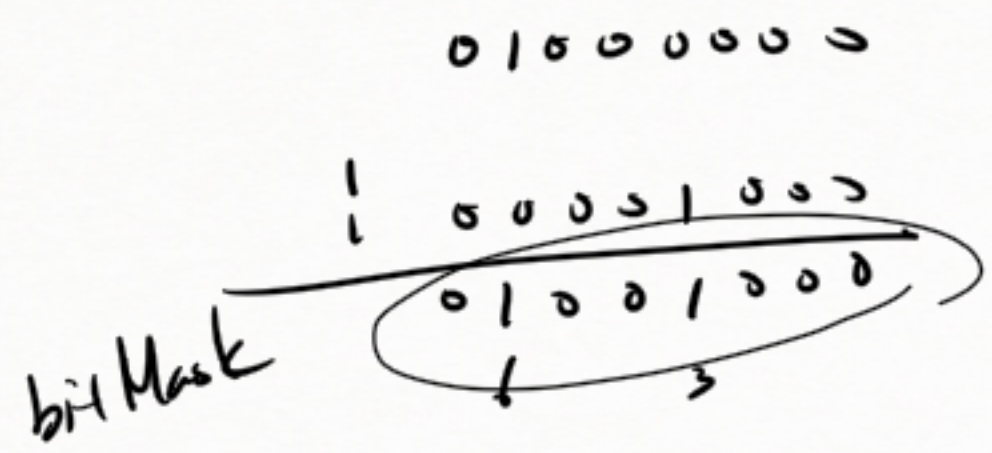
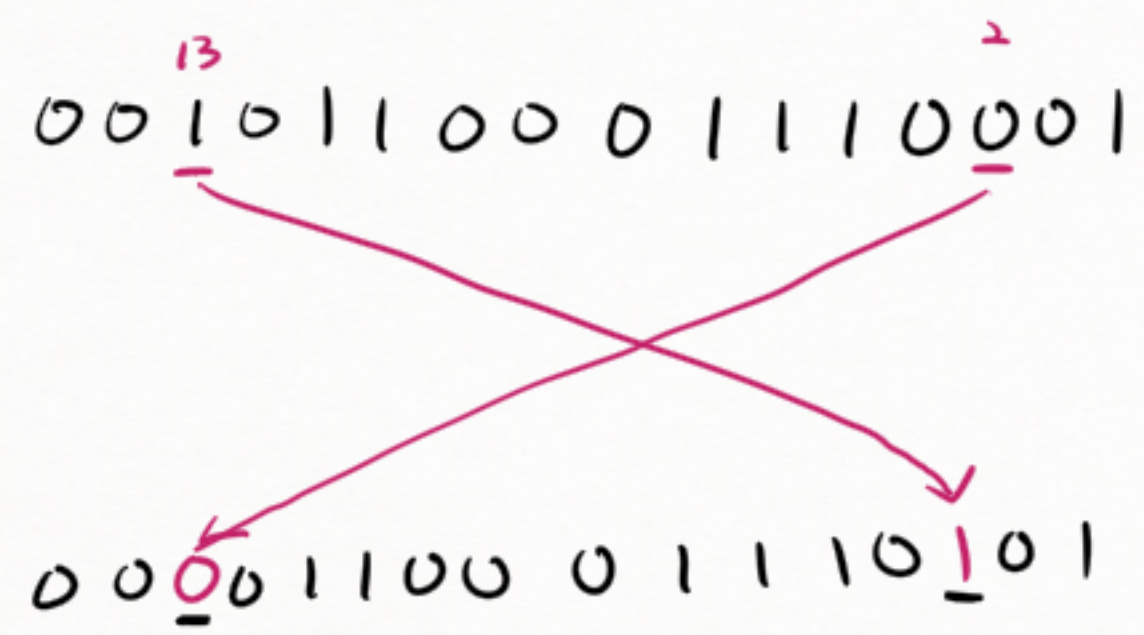
Test04

Test05



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\* 두 비트의 값 교환





\* 7/21 : 연습과, 이해, 그리고 정리

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Test06

Test07

Test08



복사-붙여넣기 연습할 것.