Logic And

Symbol : &

Example AND operation(&)

5 = 00000101 (In Binary)
3 = 00000011 (In Binary)

AND operation
00000011
& 00000101
_____
00000001 = 1

Problem : Find the maximum value of a&b from a set A = {a1, a2, ..., an} which is less than an integer K
Explanation :
a1&a2 a2&a3
a1&a3 a2&a4
....
a1&an a2&an
Example : n=3 and k=2
Let A = {1,2,3}
1&2 = 0 < 2
1&3 = 1 < 2
2&3 = 2 < 2 false

Function find_AND in C/C++ language :

```
int find_AND (int n, int k){
   int  max_bitwise=0;
   for(int i=1;i<=n;i++){
      for(int j=i+1;j<=n;j++){
         int bitwise=i&j;
         if(max_bitwise<bitwise && bitwise<k){
            max_bitwise=bitwise;
         }
      }
   }
   return max_bitwise;
}
```

Logic Or

Symbol : |

Example OR operation(|)

5 = 00000101 (In Binary)
3 = 00000011 (In Binary)

OR operation
00000011
| 00000101
_____
00000111 = 7

Problem : Find the maximum value of a|b from a set A = {a1, a2, ..., an} which is less than an integer K
Explanation :
a1|a2 a2|a3
a1|a3 a2|a4
....
a1|an a2|an
Example : n=3 and k=4
Let A = {1,2,3}
1|2 = 3 < 4
1|3 = 3 < 4
2|3 = 3 < 4

Function find_OR in C/C++ language :

```
int find_OR (int n, int k){
   int  max_bitwise=0;
   for(int i=1;i<=n;i++){
      for(int j=i+1;j<=n;j++){
         int bitwise=i|j;
         if(max_bitwise<bitwise && bitwise<k){
            max_bitwise=bitwise;
         }
      }
   }
   return max_bitwise;
}
```

Logic XOR

Symbol : ^

Example XOR operation(^)

```
5 = 00000101 (In Binary)
3 = 00000011 (In Binary)

XOR operation
   00000011
^ 00000101
 ________
 000000110  = 6
```

Problem : Find the maximum value of a^b from a set A = {a1, a2, ..., an} which is less than an integer K
Explanation :
a1^a2 a2^a3
a1^a3 a2^a4
....
a1^an a2^an
Example : n=3 and k=2
Let A = {1,2,3}
1^2 = 3 < 2 false
1^3 = 2 < 2
2^3 = 1 < 2

Function find_XOR in C/C++ language :

```
int find_XOR (int n, int k){
   int  max_bitwise=0;
   for(int i=1;i<=n;i++){
      for(int j=i+1;j<=n;j++){
         int bitwise=i^j;
         if(max_bitwise<bitwise && bitwise<k){
            max_bitwise=bitwise;
         }
      }
   }
   return max_bitwise;
}
```