

→ Pattern

① $N=0 \rightarrow [0]$

② $N=1 = 2^1 = 2 \rightarrow$ take $N=0$, add 1 in front

Step 1: 0 $\rightarrow [0, 1]$

Step 2: 1

③ $N=2 : 2^2 = 4$

Take $N=1$, add 0 in front, then reverse & add 1 in front

# Step 1	# Step 2 Add one	# Step 3: reverse Order	# Step 4: Append
00	10	11	[00, 01, 11, 10]
01	11	10	

④ $N=3 = 2^3 = 8$

Take $N=2$, add 0 in front, then reverse & add 1 in front.

# Step 1: add 0	# Step 2: add 1	# Step 3: reverse Order
000	100	110
001	101	111
011	111	101
010	110	100

Step 4: Append

[000, 001, 011, 010, 110, 111, 101, 100]

Problem if we don't reverse the Order

[000, 001, 011, 010, 100, 101, 111, 110]

The first & Last Number differ by 2 bit,
They should only differ by one bit

$$N=4 = 2^4 = 16$$

Take $N=3$, add 0 in front, then reverse & add 1 in front

#Step 1: add 0 #Step 2: add 1 #reverse order

0000	1000	1100
0001	1001	1101
0011	1011	1111
0010	1010	1110
0110	1110	1010
0111	1111	1011
0101	1101	1001
0100	1100	1000

#Step 4: Append

[0000, 0001, 0011, 0010, 0110, 0111, 0101, 0100,
1100, 1101, 1111, 1110, 1010, 1011, 1001, 1000]

#Idea

* Add 0 & 1 in front of bit, will make them differ by One bit.

* Reversing the Order of bits, will handle the difference of first & last bit