INITIAL PERMUTATION (IP)

A clear 8-bit example: rearrange positions, not values

DES | CLASS LECTURE

IDEA: IP copies bits into a new order using a fixed list of original positions.

1 Original 8 bits

Position	1	2	3	4	5	6	7	8
	1	0	1	1	0	0	1	0

2 Given permutation rule

2	4	6	8	1	3	5	7

Read this rule from left to right.

3 Move each bit into its new position

NEW POSITION	1	2	3	4	5	6	7	8
TAKE BIT FROM	2	4	6	8	1	3	5	7
BIT COPIED	0	1	0	0	1	1	0	1

Example: New bit 1 = original bit 2 = 0 | New bit 2 = original bit 4 = 1

FINAL OUTPUT **IP(10110010) = 01001101**