

**Bitwise Operations** 



## **Bitwise Operations**

- AND
- o OR
- XOR
- NOT



#### **Bitwise AND**

- Two binary strings of equal length
- Perform logical AND operation on each pair
- o If both values are 1, then the output is 1
  - Else the output is 0



# Bitwise AND Example

	1	0	0	1	1	0	1	1
AND	0	0	1	1	0	0	0	1
	0	0	0	1	0	0	0	1

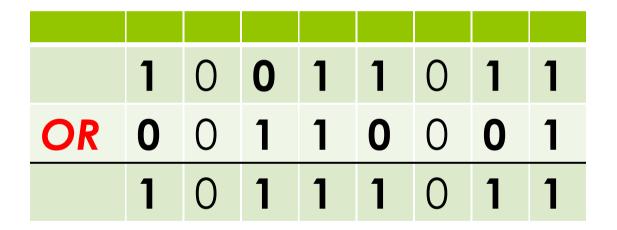


#### Bitwise OR

- Two binary strings of equal length
- Perform logical OR operation on each pair
- o If at least one value is 1, then the output is 1
  - Else the output is 0



## Bitwise OR Example



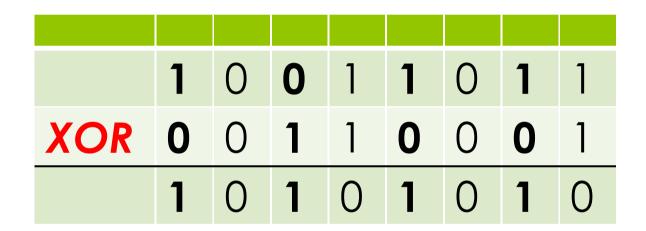


#### Bitwise XOR

- Two binary strings of equal length
- Perform logical xOR operation on each pair
- If both values are different, then the output is 1
  - Else the output is 0



## Bitwise XOR Example



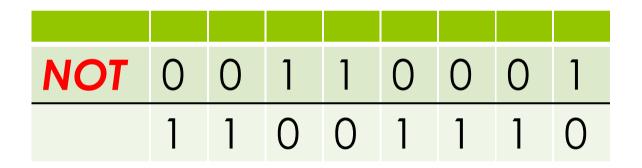


#### **Bitwise NOT**

- One binary string
- Perform logical NOT operation
- If value is 1, then the output is 0
  - Else the output is 1



## Bitwise NOT Example





The End?