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Bitwise Operations

# Bitwise Operations

- AND
- OR
- XOR
- NOT

# Bitwise AND

- Two binary strings of equal length
- Perform logical AND operation on each pair
- 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
<b>AND</b>	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
- If at least one value is 1, then the output is 1
  - Else the output is 0

# Bitwise OR Example

	1	0	0	1	1	0	1	1
<b>OR</b>	0	0	1	1	0	0	0	1
	1	0	1	1	1	0	1	1

# 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

	1	0	0	1	1	0	1	1
<b>XOR</b>	0	0	1	1	0	0	0	1
	1	0	1	0	1	0	1	0



# 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

<b>NOT</b>	0	0	1	1	0	0	0	1
	1	1	0	0	1	1	1	0

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The End?