





## مهم جداً

هذا الملف للمراجعة السريعة واخذ الملاحظات عليه فقط ،لانه يحتوي على اقل من 20% مما يتم شرحه في الفيديوهات الاستعجال والاعتماد عليه فقط سوف يجعلك تخسر كميه معلومات وخبرات كثيره

**يجب عليك مشاهدة فيديو الدرس كاملا**

لاتنسى عمل لايك ومشاركة القناة لتعم الفائدة للجميع  
لا تنسونا من دعائكم

**ProgrammingAdvices.com**

Mohammed Abu-Hadhoud



اساسيات مهمه لكل مبرمج  
العمليات في الكمبيوتر  
Operators



Mohammed Abu-Hadhoud

26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD

 **PROGRAMMING**  
ADVICES LEARN THE RIGHT WAY





Computer Foundations

# Operators

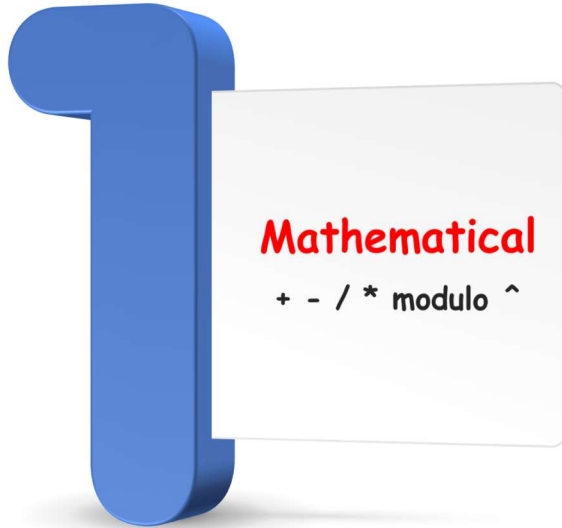
Mohammed Abu-Hadhoud

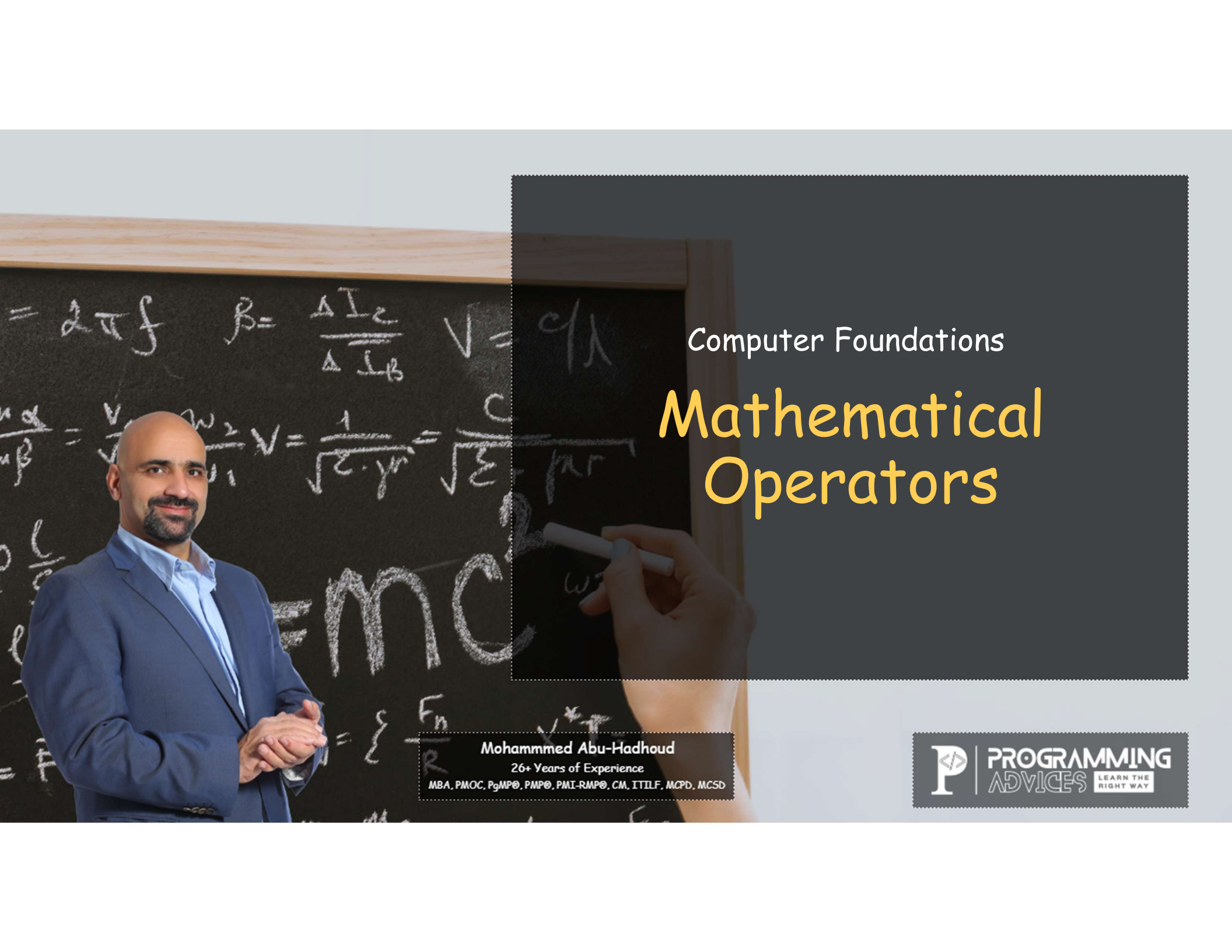
26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD

 **PROGRAMMING**  
ADVICES LEARN THE RIGHT WAY

# Operator Types





Computer Foundations

# Mathematical Operators

Mohammed Abu-Hadhoud

26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD



# Mathematical Operators

Operator	Computer Symbol	Example	Results
Addition	+	3.0 + 4.2	7.2
Subtraction	-	8.5 - 4.0	4.5
Multiplication	*	5 * 5	25
Integer Division	/	10 / 5	2
Modulo Division	Mod	9 Mod 4	1
Power	^	3^2	9



Computer Foundations

# Relational Operators

Mohammed Abu-Hadhoud

26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD

 **PROGRAMMING**  
ADVICES LEARN THE RIGHT WAY



# Relational Operators

Operator	Computer Symbol	Example	
		Operation	Results
Equal to	=	5 = 7	False
Less than	<	5 < 7	True
Grater than	>	5 > 7	False
Less than or equal to	<=	5 <= 7	True
Grater than or equal to	>=	5 >= 7	False
Not equal to	<>	5 <> 7	True

Computer Foundations

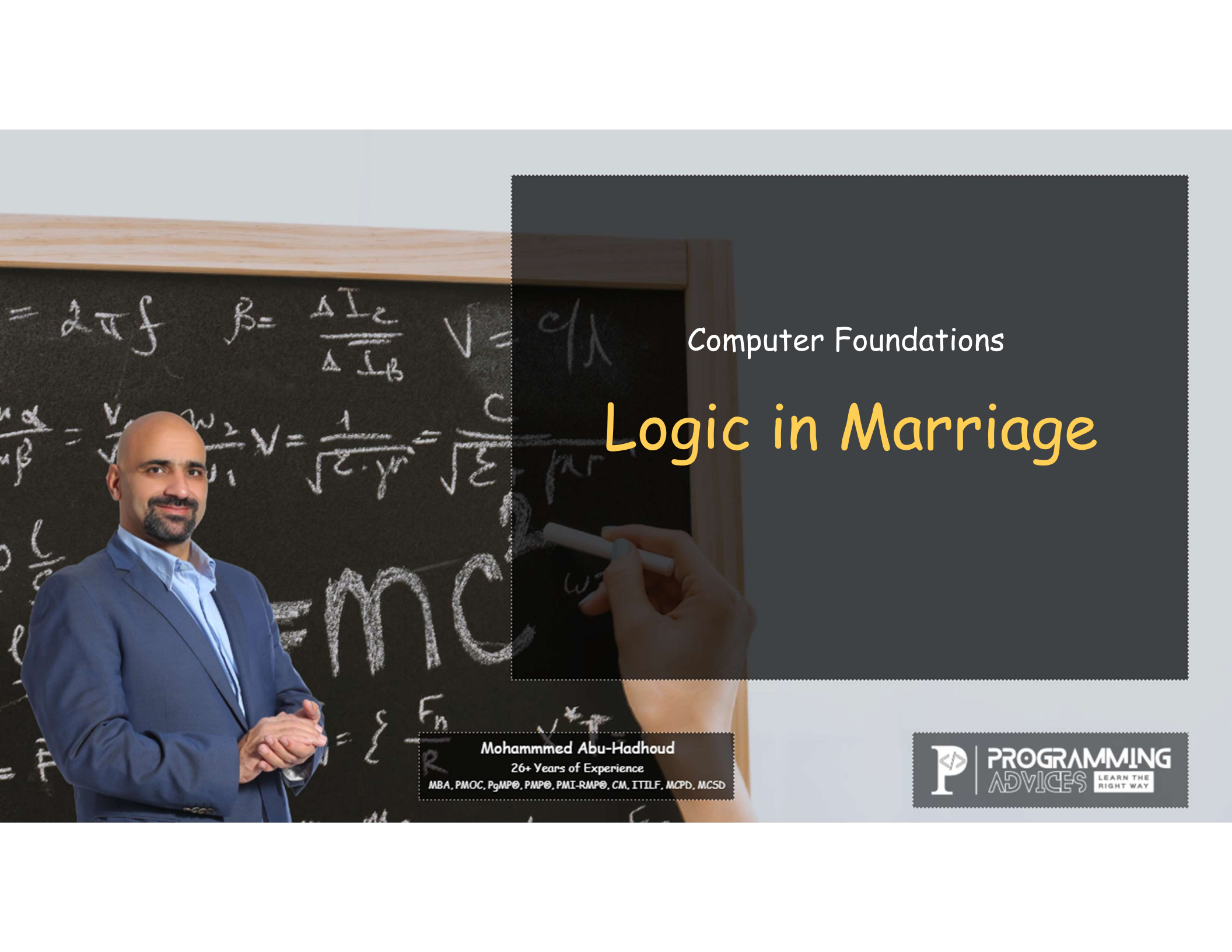
# Logical Operators

Mohammed Abu-Hadhoud

26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD

 **PROGRAMMING**  
ADVICES LEARN THE RIGHT WAY



Computer Foundations

# Logic in Marriage

Mohammed Abu-Hadhoud

26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD

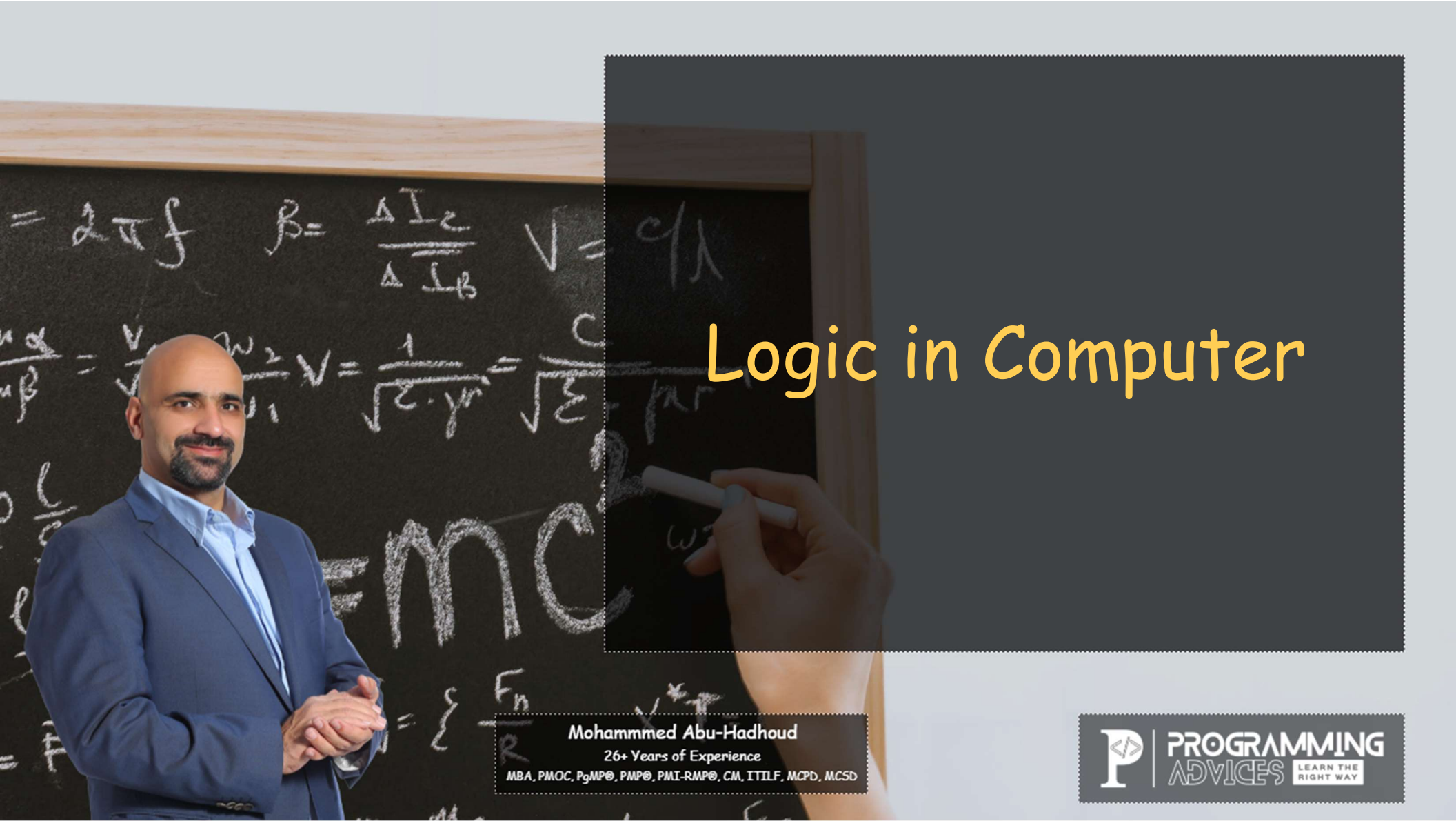
 **PROGRAMMING**  
ADVICES LEARN THE RIGHT WAY



# Logic in Marriage Life



Husband	Wife	Result
True	False	True
True	True	True
False	True	True
False	False	True



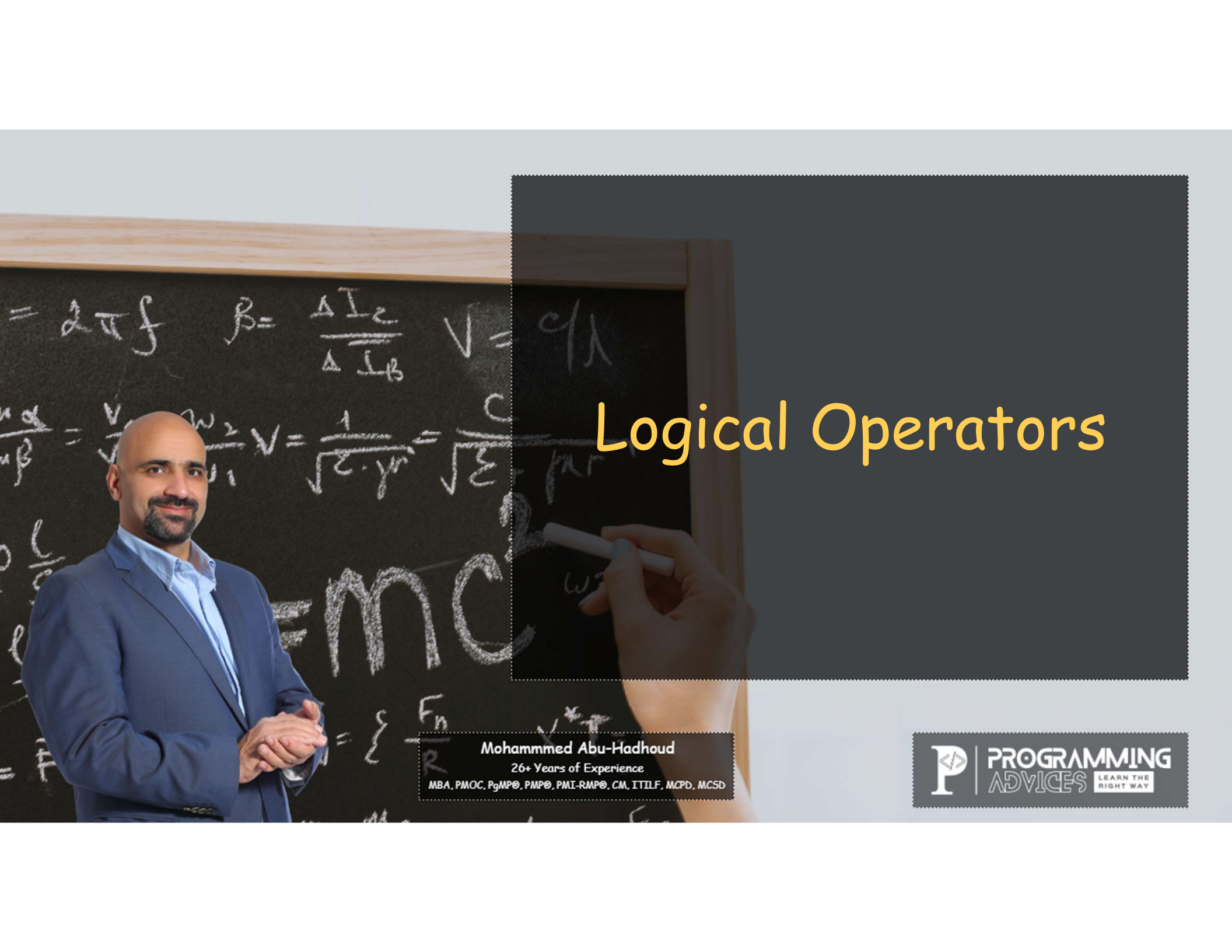
# Logic in Computer

Mohammed Abu-Hadhoud

26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD





# Logical Operators

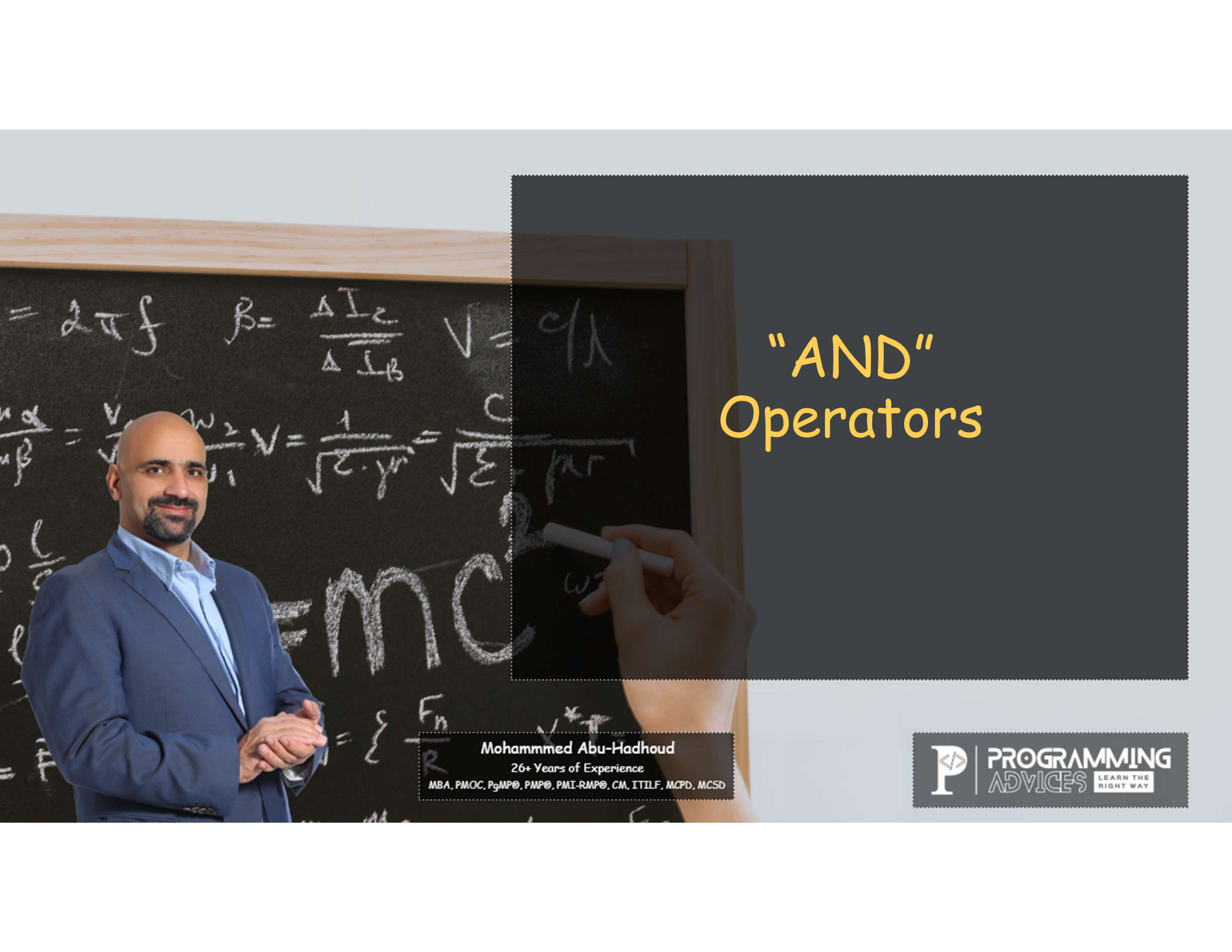
Mohammed Abu-Hadhoud

26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD







# "AND" Operators

Mohammed Abu-Hadhoud

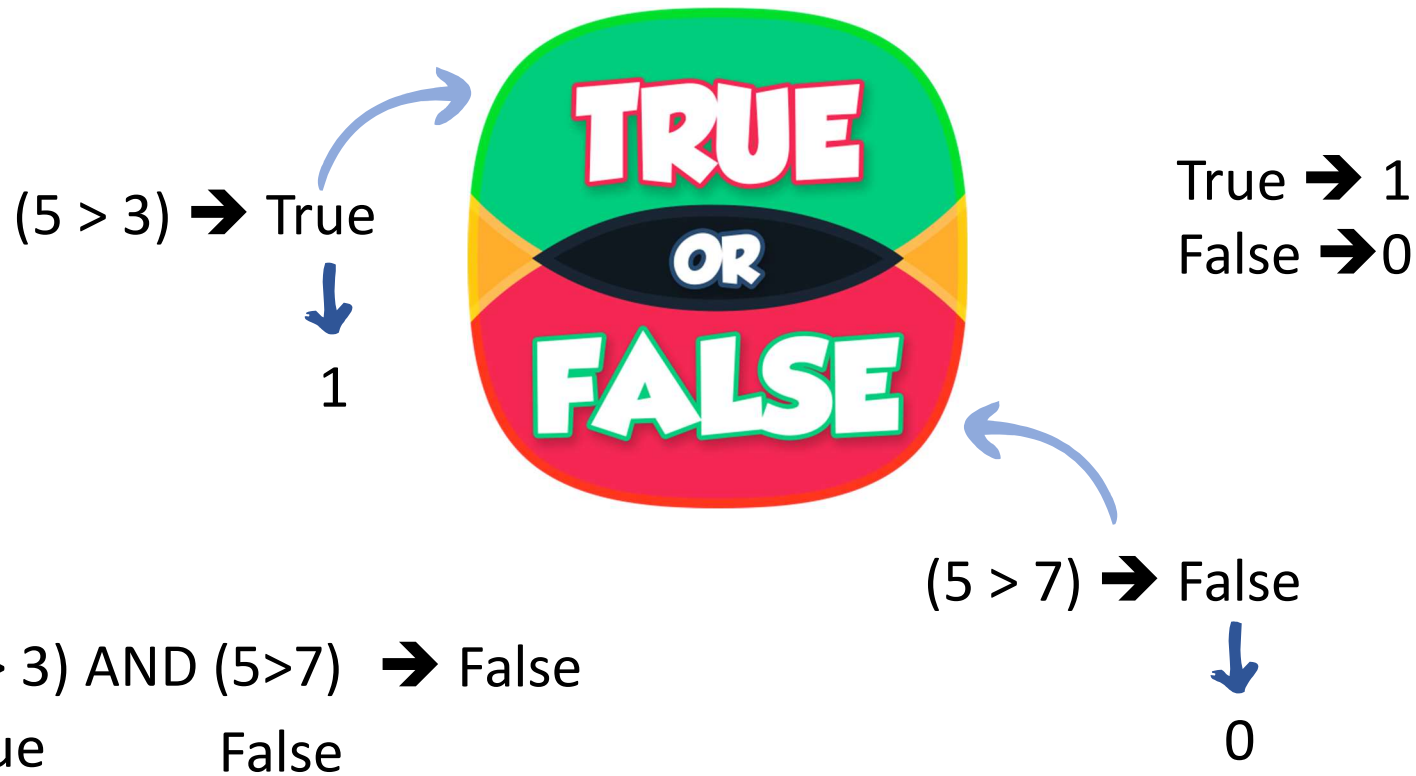
26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD

# Logical Operators

Operator	Computer Symbol	Example	
		Operation	Results
And	AND	True AND True	True
Or	OR	True OR False	True
Not	NOT	NOT True	False

# Logical Operators





# Practical Example to learn "AND" operator:

IF you wan to get hired you have to have all the following conditions:

1. Your Age must be  $\geq 21$  years
2. You should have a driver license.

This in computer means:

(Age $\geq$ 21 **AND** HasDriverLicesne=True) Then will be hired

# Logical "AND" Operator:

Condition A	Condition B	A AND B
<i>Age</i>	<i>Has Driver License</i>	
25 >= 21 → True	Yes → True	True
25 >= 21 → True	No → False	False
19 >= 21 → False	Yes → True	False
19 >= 21 → False	No → False	False

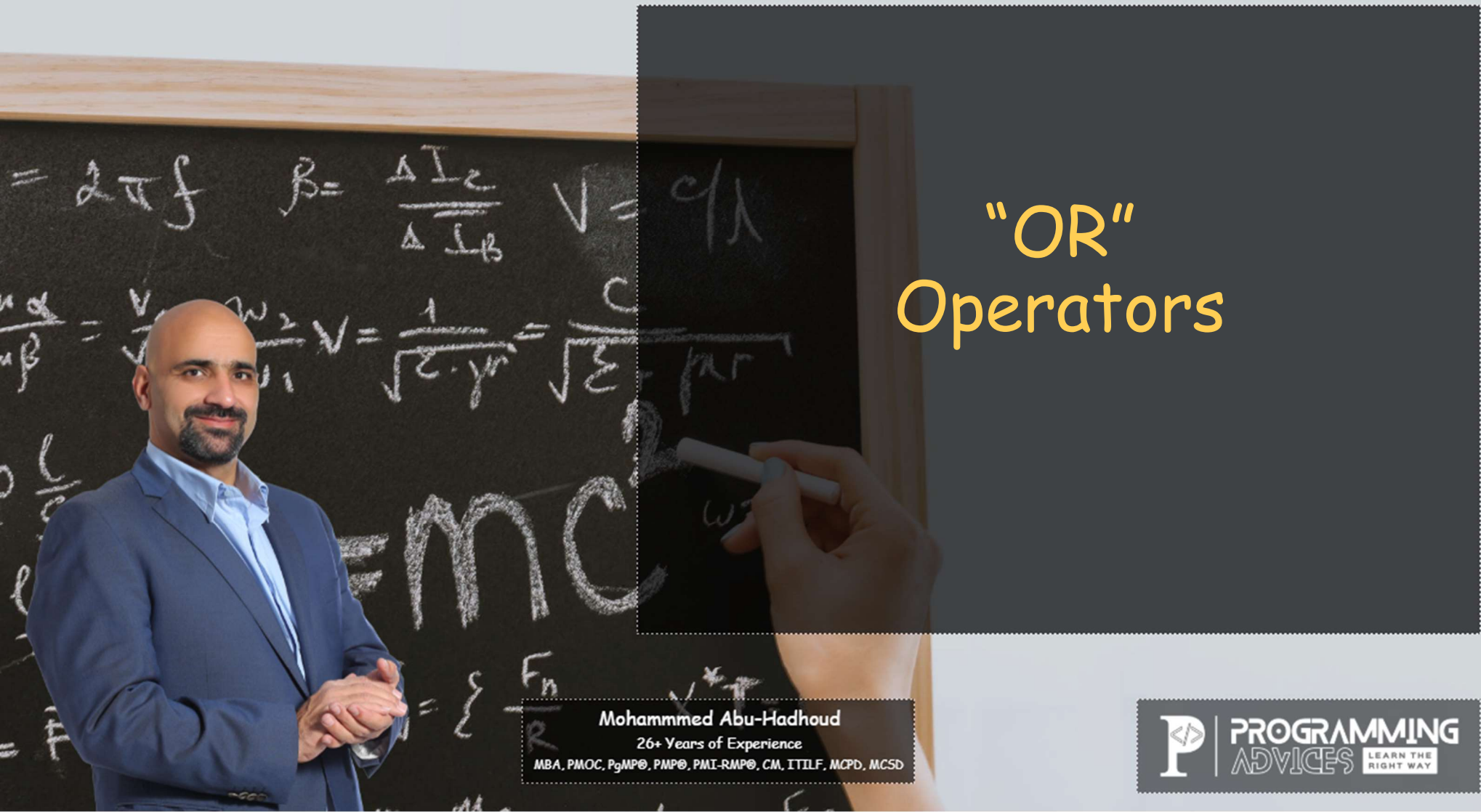
# AND

Any "False" in AND the result is False

A	B	A AND B
True	True	True
True	False	False
False	True	False
False	False	False

A	B	A AND B
1	1	1
1	0	0
0	1	0
0	0	0





# "OR" Operators

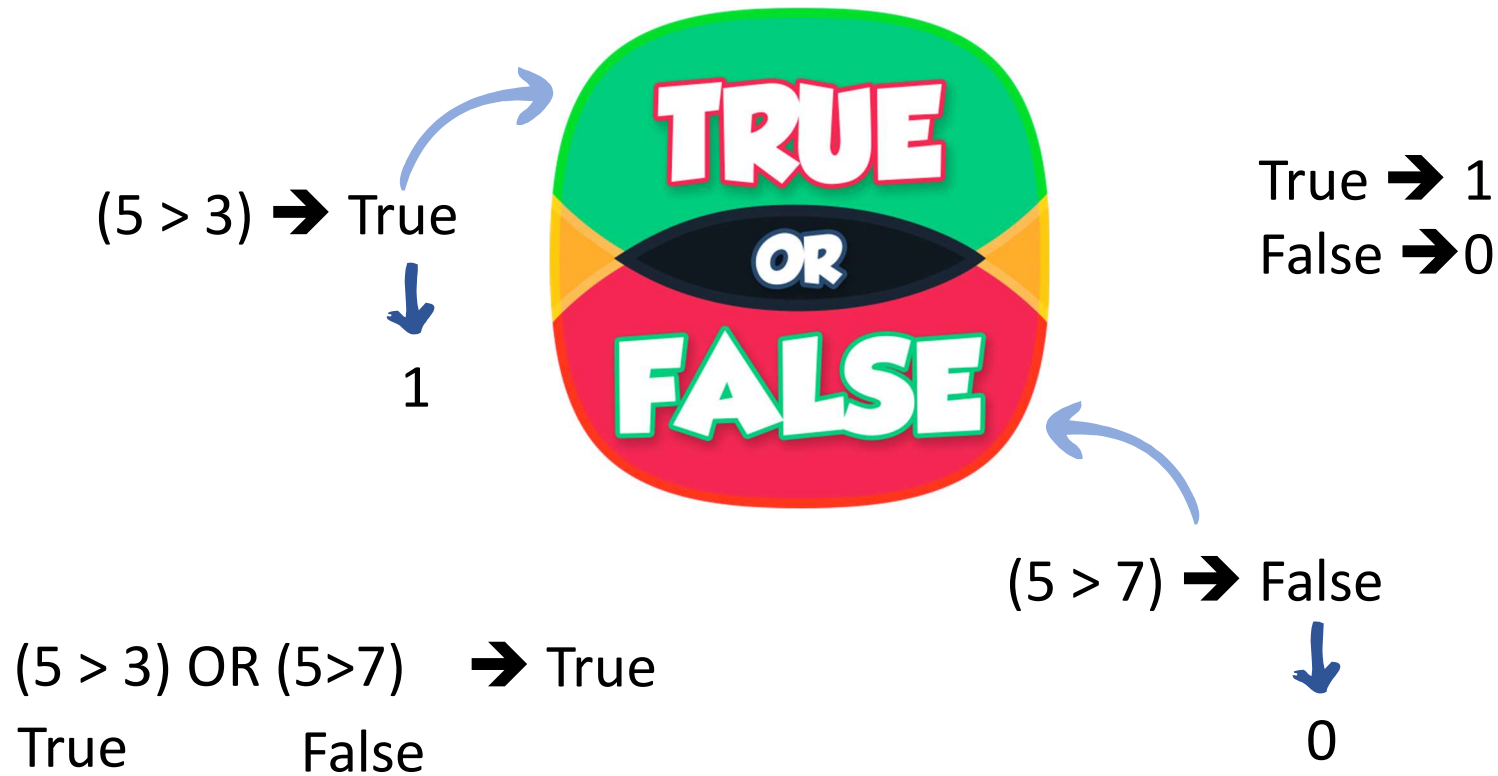
Mohammed Abu-Hadhoud

26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD



# Logical "NOT" Operators



# Practical Example to learn "OR" operator:

IF you want to get hired you have to have at least One the following conditions:

1. Your Age must be  $\geq 21$  years
2. You should have a driver license.

This in computer means:

(Age $\geq$ 21 **OR** HasDriverLicesne=True) Then will be hired

# Logical "OR" Operator:

Condition A	Condition B	A OR B
<i>Age</i>	<i>Has Driver License</i>	
25 >= 21 → True	Yes → True	True
25 >= 21 → True	No → False	True
19 >= 21 → False	Yes → True	True
19 >= 21 → False	No → False	False

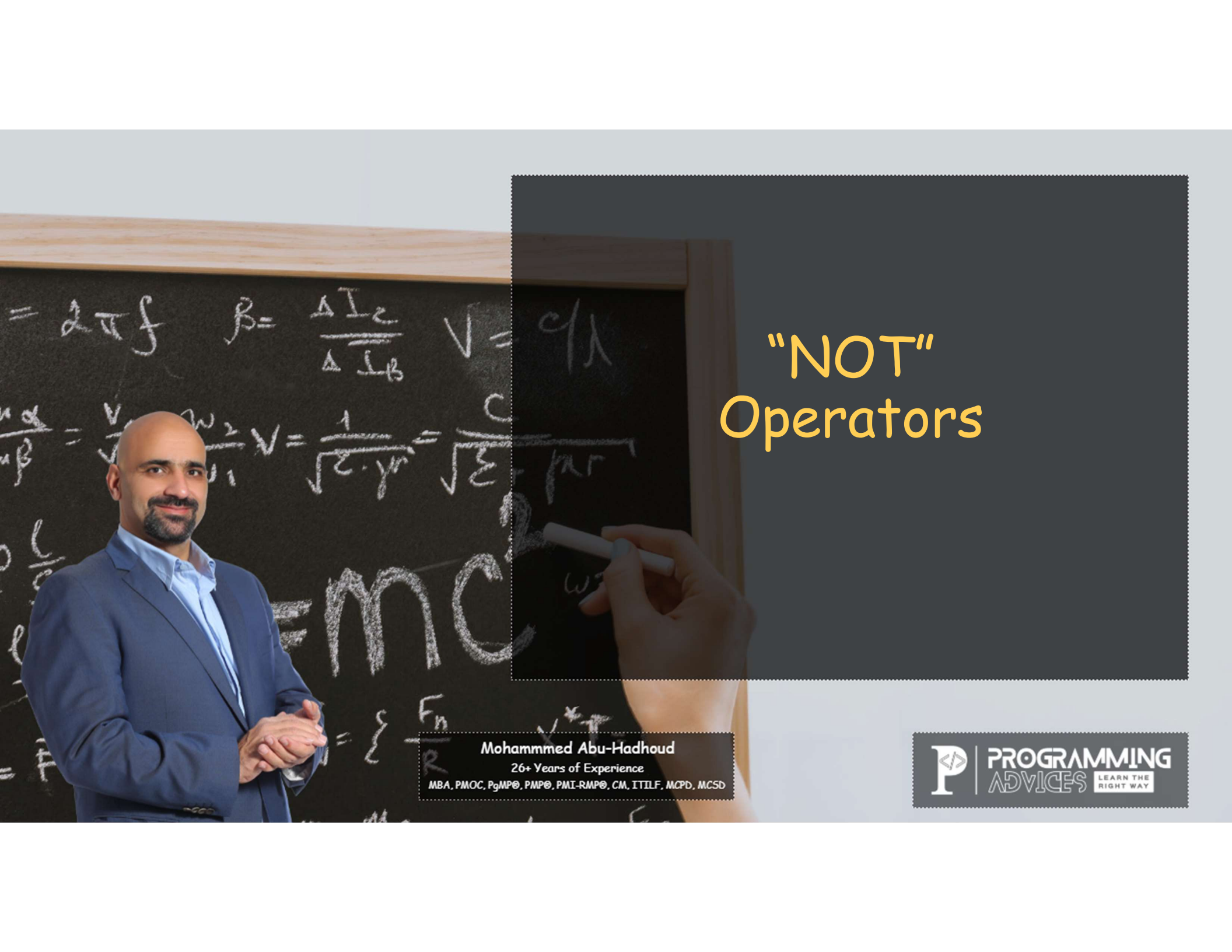
# OR

Any "True" in OR the result is True

A	B	A OR B
True	True	True
True	False	True
False	True	True
False	False	False

A	B	A OR B
1	1	1
1	0	1
0	1	1
0	0	0





# "NOT" Operators

Mohammed Abu-Hadhoud

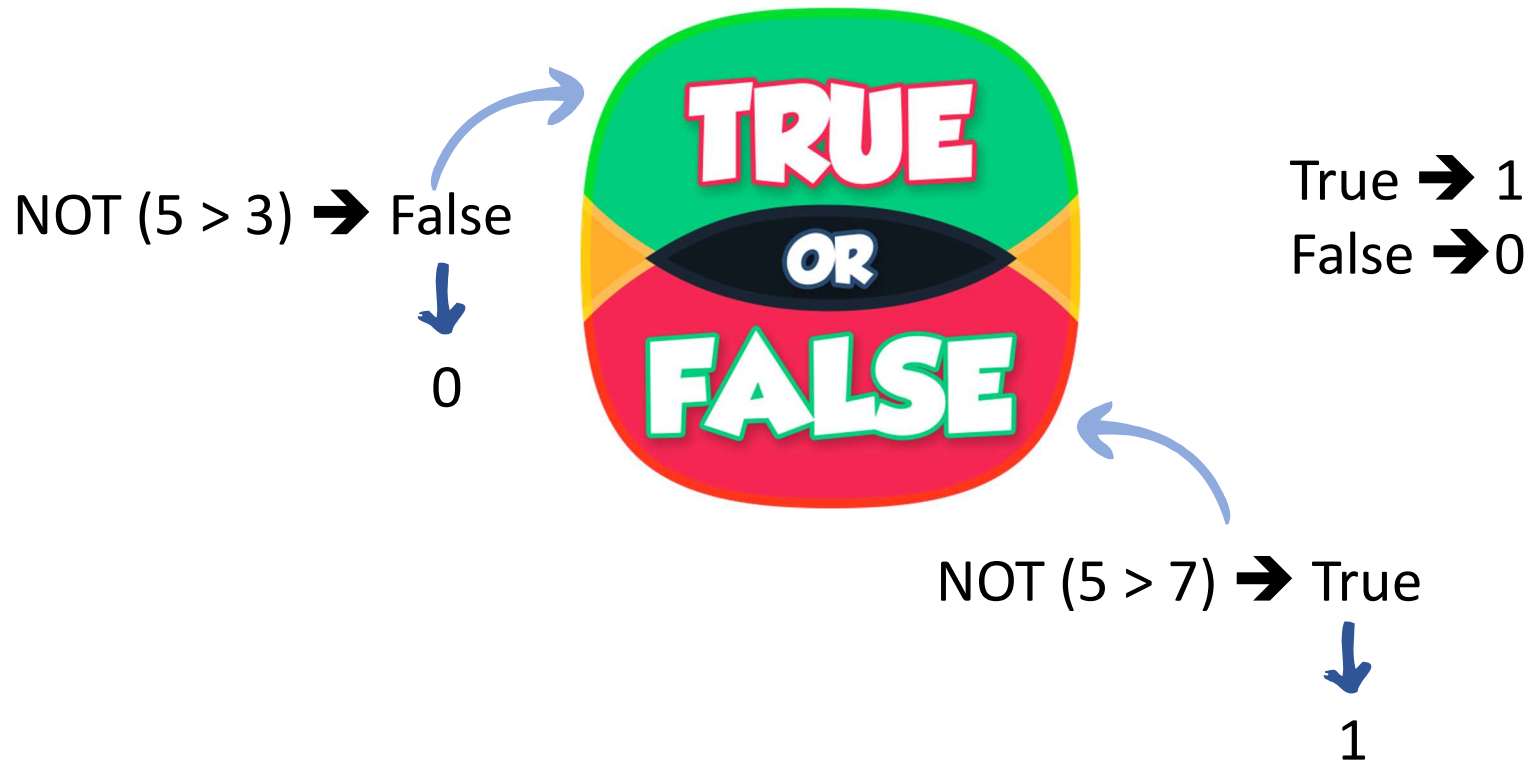
26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD

# Logical "NOT" Operator:

Condition A	NOT A
True	False
False	True

# Logical "NOT" Operators



# Homework



**Mohammed Abu-Hadhoud**

26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD



# Solve the following problems:

$12 \geq 12$	NOT ( $12 \geq 12$ )	1 AND 1	( $7 = 7$ ) and ( $7 > 5$ )
$12 > 7$	NOT ( $12 < 7$ )	True AND 0	( $7 = 7$ ) and ( $7 < 5$ )
$8 < 6$	NOT ( $8 < 6$ )	0 OR 1	( $7 = 7$ ) OR ( $7 < 5$ )
$8 = 8$	NOT ( $8 = 8$ )	0 OR 0	( $7 < 7$ ) OR ( $7 > 5$ )
$12 \leq 12$	NOT ( $12 \leq 12$ )	Not 0	NOT ( $7 = 7$ ) and ( $7 > 5$ )
$7 = 5$	NOT ( $7 = 5$ )	Not (1 OR 0)	( $7 = 7$ ) and Not ( $7 < 5$ )





Thank You

**Mohammed Abu-Hadhoud**

26+ Years of Experience

MBA, PMOC, PgMP®, PMP®, PMI-RMP®, CM, ITILF, MCPD, MCSD

