

# **Lecture 7.**

## **IF Functions, Part 1**

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# IF Function

- Used to **return a value or text based** on a **certain condition.**
- Could be as simple as yes or no.
- Could be complicated such as returning a letter grade based on the numerical value of an exam score.
- Most common if functions:

IF

SUMIF

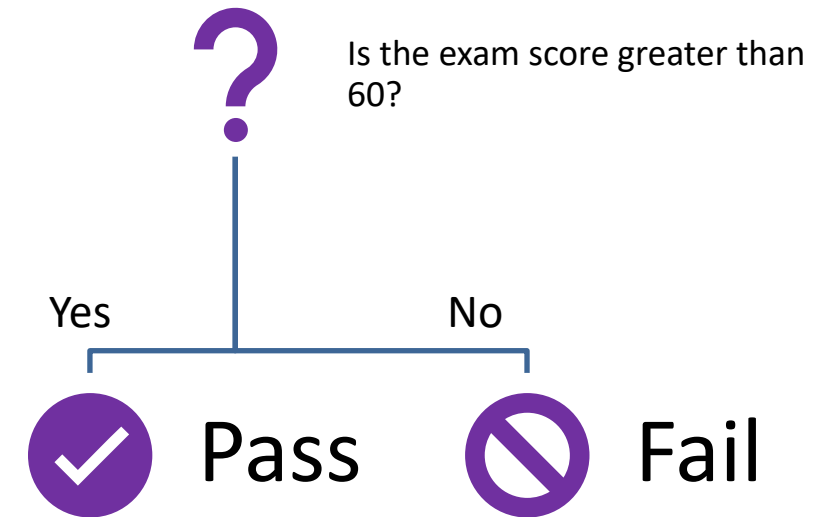
COUNTIF

AVERAGEIF

# Basic IF Function

- For example:
  - IF(logical\_test,[value\_if\_true],[value\_if\_false])
  - IF(B2>=60,"Pass","Fail")

SUM				=IF(B2>=60,"Pass","Fail")			
	A	B	C				
1		Value	Result				
2	Exam Score:	85	=IF(B2>=60,"Pass","Fail")				



# Advanced IF Functions

- Could combine with an AND function if you have multiple conditions that **all** must be met.
- `AND(logical1,[logical2],...)`
- Put the AND function in place of the logical test for the IF Function as seen below.

SUM				=IF(AND(B2>=750,A2>=34000),"Approved","Denied")			
	A		B		C		
1	Down Payment of at least 20%		Credit Score		Result		
2	\$36,000.00		725		=IF(AND(B2>=750,A2>=34000),"Approved","Denied")		

# Advanced IF Functions

- Could combine with an OR function if you have multiple conditions that needs **at least one** to be met.
- OR(logical1,[logical2],...)
- Put the OR function in place of the logical test for the IF Function as seen below.

SUM

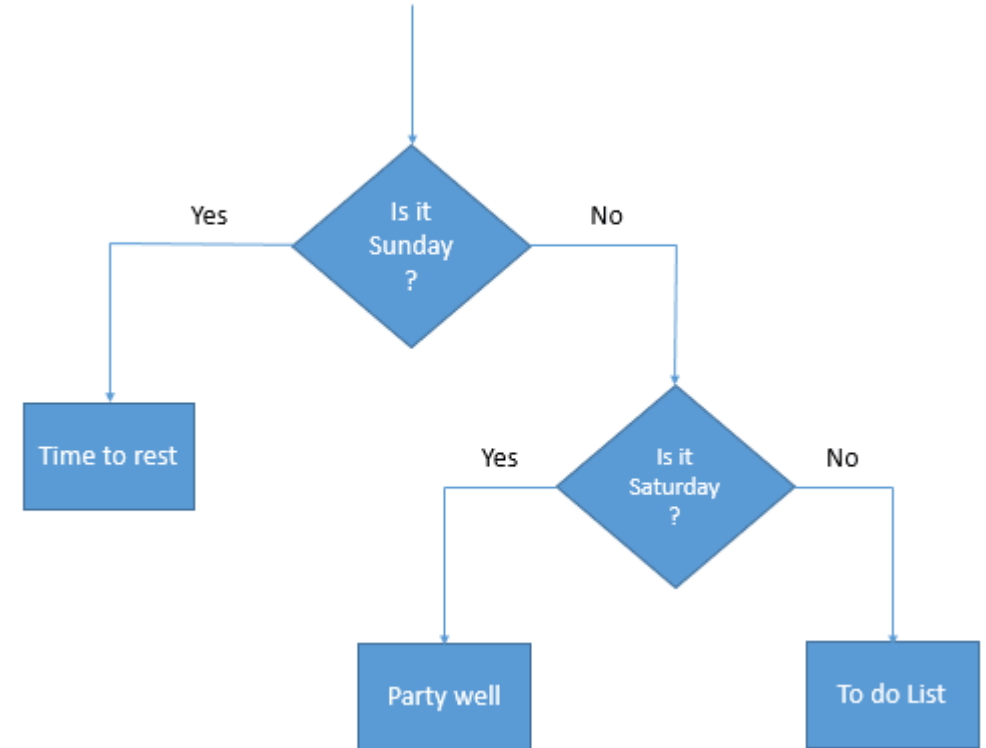
✕ ✓ f<sub>x</sub>

=IF(OR(B2>=750,A2>=34000),"Approved","Denied")

	A	B	C
1	Down Payment of at least 20%	Credit Score	Result
2	\$36,000.00	725	=IF(OR(B2>=750,A2>=34000),"Approved","Denied")

# Nested IF Functions

- Could have an IF function within an IF function.
- Referred to as a nested if function.
- Put the nested IF function in the first [value\_if\_false].



The formula :

**=IF(B1="Sunday","time to rest",  
IF(B1="Saturday","party well","to do list"))**

# Example 1: Employee Bonus Calculation:

- If an employee has worked for more than 5 years and has made over 50 sales, they get a \$1,000 bonus.
- If an employee has worked for more than 5 years and has made 30-50 sales, they get a \$500 bonus.
- Otherwise, they get no bonus.

```
=IF(AND(A1>5, B1>50), 1000,  
    IF(AND(A1>5, B1>=30), 500, 0))
```

## Example 2: Student Grade Assignment:

- If a student scores 90 or above, they get an 'A'.
- If a student scores between 80 and 89, they get a 'B'.
- If a student scores between 70 and 79, they get a 'C'.
- Otherwise, they get an 'F'.

```
=IF(A1>=90, "A",  
    IF(A1>=80, "B",  
        IF(A1>=70, "C", "F"))))
```



# Other Aggregated IFs

- SUMIF
- COUNTIF
- AVERAGE IF



# **AGEC 115: Decision Tools for Ag Economics and Agribusiness**

2024

Manhattan, Kansas