Lab 2: Complex Calculations, If-Then Statements, and Pivot Tables

Outline

- Do a custom calculation using a formula
- Using a nested *If... Then* statement to define classes
- Summarizing data in a Pivot table
- Use a Lookup table to define classes

Cell Referencing

- A cell, in the same worksheet, is referenced by column and row, e.g. F11
- A cell in a different worksheet is referenced by sheet name, exclamation point, and cell reference, e.g. Sheet2!A1

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Custom Calculation

- Select the cell in which you would like the evaluation of the custom calculation to be displayed
- In the Function toolbar, enter the custom calculation by starting with the equals symbol '='
- After entering the custom calculation, press the 'enter' key to evaluate the function. The result will appear in the cell that was originally selected

If-Then Statement

- An If-Then statement consists of three parts: logical test, true statement, and false statement
- Syntax :

=IF(<logical statement>, <true statement>, <false statement>)

• Example:

=IF(A2 > 60, "Pass", "Fail")

Nested If-Then Statement

- An If-Then statement can contain n number of nested If-Then statement
- Syntax :

=IF(<logical statement>, <true statement>, IF(<logical statement>, IF(<logical statement>, <true statement>, IF(<logical statement>, <true statement>, ... <false statement>)))

• Example:

=IF(I6>=90,"A",IF(I6>=80,"B",IF(I6>=70,"C",IF(I6>=6 0,"D","F"))))

Example: If-Then Statement

=IF(I6>=90,"A",IF(I6>=80,"B",IF(I6>=70,"C",IF(I6>=60,"D","F"))))

	J6	▼ (°	<i>f</i> _x =IF(16>=	90,"A",IF(I	6>=80,"B",IF	-(16>=70,"C",IF(16	5>=60,"D","F	="))))					
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2	Winter 2010												
3													
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6	1	John	Smith	18	28	77	47	92	89	В			
7	2	Thomas	Steven	20	30	100	50	100	100	А			
8	3	Linder	Barry	11	29	45	44	90	78	С			
9	4	Alexander	Suzette	1	1	66	20	99	62	D			
10	5	Richards	Billy Joe	0	0	0	0	0	0	F			
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Pivot Table

Summarize data in a Pivot table

Pivot Table

- Pivot tables provide a mechanism to summarize data, and as a result, makes it easier to analyze and present data
- Creating a pivot table:
 - Step 1: select a range of cells
 - Step 2: select the 'PivotTable' icor
 - Step 3: specify the destination of the Pivot table
 - Step 4: format the Pivot table

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Pivot Table

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Lookup Function

Use a Lookup table to define classes

Lookup Function

- Lookup functions can be used to find values (data) in a data table
- Syntax: =Lookup(lookup_value, lookup_vector, result_vector)
- Example: =LOOKUP(I6,A19:A23,B19:B23)

• Note: The lookup value needs to be in ascending order

Example: Lookup Function

	=LOOKUP(I6,A <mark>\$</mark> 19:A <mark>\$</mark> 23,B <mark>\$</mark> 19:B <mark>\$</mark> 23)												
J6		▼ (<i>f</i> _∗ =LOOKUP(I6,A\$19:A\$23,B\$19:B\$23)										
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Student	Id First Name		Last Name	Quiz 1	Quiz 2	Assignment	Project	Final Term	Total Mark	Grade			
	1 John		Smith	18	28	77	47	92	89	В			
	2	Thomas	Steven	20	30	100	50	100	100	Α			
	3 Linder		Barry	11	29	45	44	90	78	С			
	4	Alexander	Suzette	1	1	66	20	99	62	D			
	5	Richards	Billy Joe	0	0	0	0	0	0	F			
			Average	10	17.6	57.6	32.2	76.2	65.8	D			
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0		F											
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Lookup Function (2)

• Syntax:

=Lookup(lookup_value, array)

• Example: =LOOKUP(I11,{0,60,70,80,90},{"F","D","C","B","A"})

• Note: The lookup value needs to be in ascending order

VLookup Function

- VLookup functions can also be used to find values (data) in a data table
- Syntax:

=VLookup(lookup_value, table_array, col_index_num, [range_lookup])

Example:
 =VLOOKUP(I6,A19:B23,2,TRUE)

• Note: The lookup value needs to be in ascending order

Example: VLookup Function

	=VLOOKUP(I6,A\$19:B\$23,2,TRUE)												
J6	J6 • fx =LOOKUP(I6,A\$19:A\$23,B\$19:B\$23)												
Α	В	С	D	E	F	G	Н	l.	J				
Student Id	First Name	Last Name	Quiz 1	Quiz 2	Assignment	Project	Final Term	Total Mark	Grade				
1	John	Smith	18	28	77	47	92	89	В				
2	2 Thomas	Steven	20	30	100	50	100	100	Α				
3	8 Linder	Barry	11	29	45	44	90	78	С				
4	Alexander	Suzette	1	1	66	20	99	62	D				
5	6 Richards	Billy Joe	0	0	0	0	0	0	F				
		Average	10	17.6	57.6	32.2	76.2	65.8	D				
Mark	Grade												
0	F												
60	D												
70	С												
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Note: The lookup value needs to be in ascending order

Questions?