

Microsoft Excel (2007) as a Dynamic and Interactive Reporting Tool

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Agenda

- IF/Then Logics
- Lookup Tables
 - Table Naming
 - Drop Down Lists
- Radio Buttons & Check Boxes
- Report Building Recommendations



If/Then Logics

- If/Then logics are important for any input-driven reporting or calculations.
- Basic statement:

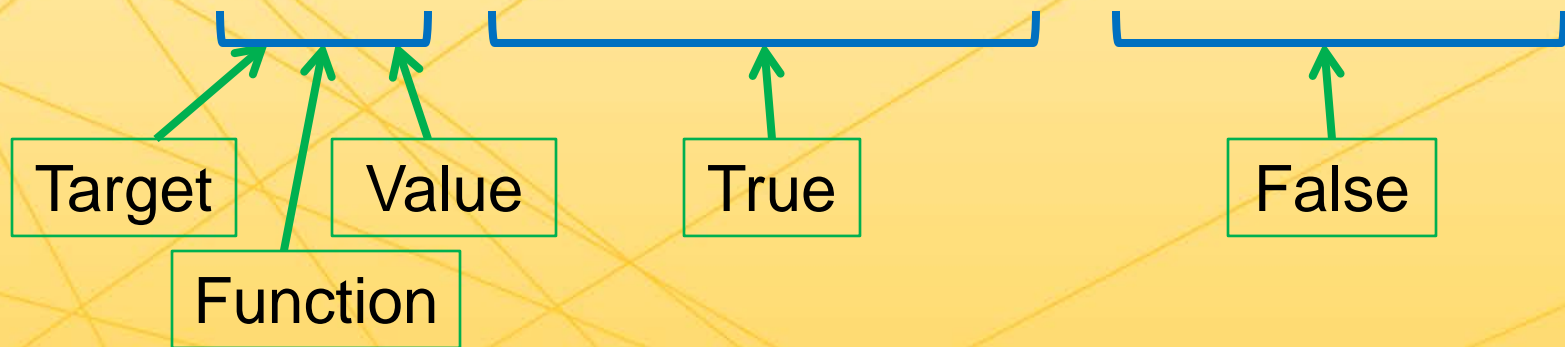
=IF(target[function]value, ^(then)true, ^(then)false)

- “target” is some cell
- Function is mathematical (e.g., equal to, greater than, less than or equal to...etc.)
- Value is either a numerical statement, text, etc., or some other logic (more on that later)
- “true” is the “then” or output if the target[function]value is true
- “false” is the “then” or output if the target[function]value is not true.



If/Then Structure

=IF(A1=3, "this is a three", "not a three")



Nested If/Then Logics

- If X is true, then A, if not, then if Y is true, then B, if not, then C. (Bad magician logic...)

=IF(A1=3, "this is a three", IF(A1=2, "this is a two", "neither 2 or 3"))



- Like math statements, parentheses must add up.
- Limitation: after three or so nested statements, it gets bulky. MS also limits the degrees of nesting.

AND/OR If/Then Logics

- Shorthand for what could be super-nested logics.

$$=IF(OR(A1=4, A1=5, A1=6), A1*5, A1*200)$$

(or) (or)

TFV True False

Versus

$$=IF(A1=4, A1*5, IF(A1=5, A1*5, IF(A1=6, A1*5, A1*200)))$$

...So long as there is just one true/false value

Registration Price Example

	Non Member	Late	Pay Member	(Final Price: \$175 +...)
1. AIRUM Member Early				\$175
2. AIRUM Member Late		\$20		\$195
3. Non-Mem Early, not pay Mem	\$10			\$185
4. Non-Mem Early, pay Mem			\$25	\$200
5. Non-Mem Late, not pay Mem	\$10	\$20		\$205
6. Non-Mem Late, pay Mem		\$20	\$25	\$220



(Lookup) Tables and Table Naming

- Tables names should be:

- Memorable
- Simple
- **Without Spaces
- No limit on size (whole sheet or just one cell)

“MasterDB” much easier to remember than
“09MasterDatabase!\$A\$2:\$O\$617”

- Can amend table dimensions under the Function Tab (Name Manager)
- Lookup Tables good for when if/then logics become overly nested. (Like if/then logic on steroids.)
- There are VLOOKUP and HLOOKUP (same idea, different directions. What’s your preference?)



Lookup Structure

- Basic statement:
 - =VLOOKUP(target,table,column,T/F)
 - “target” is the cell whose value you want to match to something
 - “table” is either a named table or cell grouping (e.g., \$C\$2:\$E\$10)
 - Note: target values must be in first column (or row if using HLOOKUP)
 - “column” is where the column in which the matched value will be found.
 - Note: the target value is always column 1
 - T/F: type “true” if you’d allow excel to find not-exact matches.
 - Note: I ALWAYS use False

=VLOOKUP(Target,Table,Column,T/F)

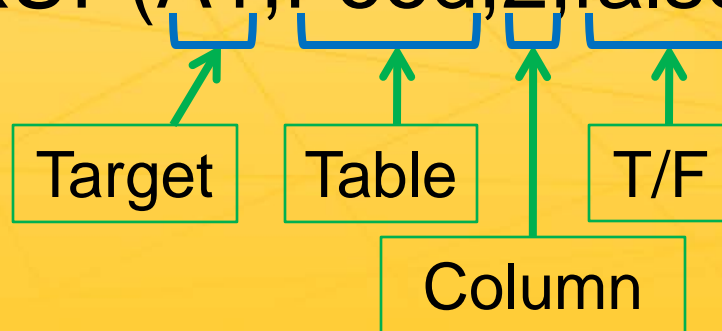


LOOKUP example vs. Nested IF

=IF(A1=1,“Walleye”,IF(A1=2,“Pork Tenderloin”,IF(A1=3,“Chicken Piccata”,IF(A1=4,“Vegetarian”,IF(A1=“G”,“Gluten-free”,“none”))))))

Or

=VLOOKUP(A1,Food,2,false)



Binary Input Tools

(Have you turned on your Developer Tab?)

Radio Buttons

- “1” or “0”
- Free floating control
- Can’t click off
- Multiple radio buttons default to being linked

Check Boxes

- “True” or “False”
- Free floating control
- Clicks on and off
- Multiple check boxes default to being independent



Combo Boxes vs Dropdown Lists

Combo Box

- Free-floating Graphic, must link to target cell
- Visually obvious where located
- Difficult or impossible to make cascading lists
- Resultant value is numerical position in list
- In Developer Tab

Dropdown List

- Within-Cell Development
- Need reference or highlight to find easily
- Easy to make cascading lists (“indirect”)
- Resultant value is actual value
- In Data tab under Data Validation



Putting It All Together

Staying Organized

- Don't try to cram it all onto one page.
 - Main Database Page
 - Most projects utilize at least one large database. Keep isolated so that other activities don't interfere with database structure and integrity
 - Lookups/Tables Page
 - Keep some order (vertical or horizontal) so that changing cell sizes does not make some cells difficult to read. Also makes it easier if you need to add/subtract rows to table. (Name Manager)
 - Keep table names separate/distinct from tables to avoid accidentally including in table.



continued

– Worksheet Page

- Anything that will eventually be on the Output page should be stored here.
- Any User Inputs should be targeted to this page so that all options are in one place
 - Also if eventually creating a “reset” macro, then you don’t have to go hunting down all the controls on various pages
- Allows space for pure data manipulation without having to keep track of what is linked to what
 - Also makes for shorter formulas if not constantly referencing other worksheets.
 - Allows you to focus on data manipulation without worrying about what’s being affected graphically.



continued

– Report Page(s)

- Tool-heavy and Graphics-heavy
 - Don't have to worry about losing formulas or data when adjusting graphic output. Simply re-reference cells on Worksheet.
- Shrink cell sizes to uniform graph-paper like size (10x10, 12x12, etc.)
 - Makes it easier to line things up.
 - Can merge cells to make text boxes
- If planning on utilizing a lot of controls, make a separate Controls page, so that printable report is not cluttered with drop downs and check boxes.
- All output (including graphs) should reference work on Worksheet Page



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