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CS CHEATSHEET

1° YEAR BIEM/BIEF/BEMACC

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CS CHEATSHEET

Ch 1-2

REFERENCES:

1. Absolute = A1$ → blocks rows and columns
2. Relative = A1 → does not block rows or columns
3. Mixed → two types: $A1 → block column, row relative reference A$1→ block row, column absolute reference

MAIN FORMULAE AND FUNCTIONS:

- **SUM** → Returns the arithmetic sum of a set of numerical values. Empty cells and those containing non-numeric values are non-considered.
- **AVERAGE** → Returns the arithmetic mean of a set of numerical values. Empty cells and those containing non-numeric values are non-considered.
- **MAX** → Returns the largest value of a numeric set. Empty cells and those containing non-numeric values are non-considered.
- **MIN** → Returns the smallest value of a numeric set. Empty cells and those containing non-numeric values are non-considered.
- **ABS** → Returns the absolute value of a number. The same number without the sign (positive or negative).
- **COUNT** →Returns the number of cells in a range that contain numeric values: the cells that contains dates and times are counted.
- **COUNTA** → Returns the number of cells in a range that contain data, which are not empty. Includes the calculation that contain any type of information.
- C**OUNTBLANK** → Returns the number of empty cells in a range; those cells containing no data in a certain range of cells.
- **IF** (logical_test,(value_if_true),(value_if_false)) → Checks if a certain condition set by the user is verified or not, and returns different values or performs different operations as applicable.

SORTING AND FILTERING

The sorting and filtering function offers two different ways to customize the display of data in your sheet:

- *Sorting* = enables all, or part, of the data to be organized in ascending or descending order. It is not possible to undo a sorting after saving.
- *Filters* = show or hide information in the sheet according to selected criteria. They do not change the general layout of the sheet.

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IMPORTING DATA FROM TEXT FILES

1. Open the file containing the text data → Edit → Select All > Copy.
2. Open the Excel sheet → Edit > Paste.
3. Organize data:
    - Select column data → Data > Text in columns > Follow conversion wizard (Delimited > Next > Select data delimiters > Check preview > Next > Select Destination > End).
    - Format data by inserting separators, currencies, etc.

CONDITIONAL FORMATTING

- Allows the appearance of cells to be changed according to conditions specified by the user. If the conditions are true, the cell range is formatted. Otherwise, no formatting
- Select the cells to which you wish to apply conditional formatting -> Home > Styles > Conditional Formatting > Manage Rules

MAIN FUNCTIONS

-Of text:
TRIM → Removes all the spaces from a text string (except those needed to separate the single words).
-Logical functions:
AND (logical1,logical2,…) → Returns the logical value when all the conditions in the arguments are TRUE, that is, when all arguments are TRUE, and returns FALSE if one or more of the specified conditions are falase.
OR (logical1,logical2,…) → Returns TRUE when at least one of the conditions in the argument is true, that is, when at least one of the argument is TRUE, and returns FALSE if all the specified conditions are false.

NESTED FUNCTIONS
Nested functions in Excel are functions within other functions. The result returned by one function is used as an argument to another function.

COMMANDS
Paste values → Pastes only the copied data values displayed un the cells.

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FUNCTIONS

- **SUMPRODUCT** (array1,(array2),(array3),…) → Returns the sum of the products of two or more arrays of equal size.
- **COUNTIF** (range, criteria) → Returns the number of cells in a range that meet certain criteria.
- **AVERAGEIF** (range,criteria,(average_range) → Returns the average (arithmetic mean) of the cells in a range meeting certain criteria.
- **SUMIF** (range,criteria,(sum_range) → Returns the sum of cells in a range that meet a certain criteria.

COMMANDS

- **SUBTOTALS** → It is possible to automatically calculate subtotals and overall totals in a list for a column → Data > Structure > Subtotals:
  Subtotals: with the subtotals tool, we can automatically insert some functions into a list, such as SUM or AVERAGE, in order to calculate partial totals for groups of homogeneous data.
  Overall totals: derived from detail data, not form the values in the subtotals (EX: if the Average summary function is used, the overall total row displays an average of all detail rows in the list, not an average of the values in the subtotal rows).
- **REMOVE DUPLICATES** → Select the cell range containing the duplicate values to be removed. Choose Data > Remove duplicates > select or deselect columns in which to remove duplicates > OK.

CONDITIONAL FORMATTING WITH FORMULA

1. Select cells to be formatted.
2. On the home tab, click conditional formatting > New rule.
3. In the style box, click on Classic.
4. In the Classic box, select the option Format only first or last values and replace it with use a formula to determine the cells to be formatted.
5. In the next box, type the formula.

6. In the Format with box, click on custom format.
7. Choose OK to close all dialogue boxes.

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MAIN FUNCTIONS

- **PMT** (rate,nper,pv,(fv),(type)) → Calculates the periodic payment (installment) for a loan or a mortgage based on constant payments and a constant (fixed) interest rate.
- **RATE** (nper,pmt,pv,(fv),(type),(guess)) → Returns the interest rate for a loan or mortgage with known term and constant installments. It is reciprocal of the PMT function and identifies the fixed interest rate that leads a mortgage with given principal and term to have a certain constant installment.
- **FV** (rate,nper,pmt,(pv),(type)) → Computes the future value of an investment based on periodic payments and a constant (fixed) interest rate. It computes the amount obtained at the end of the investment, after all the periodic payments have been invested at a fixed interest rate.

COMMANDS

- **Transpose** → paste with a 90-degree rotation.
- **Forecasts** → Data > Forecasts (Calculate or predict a future value using existing values);
- **Target Search** → Data > Data Prediction > Target Search → allows you to determine which value to enter in an input cell to obtain the desired result in a cell containing a formula.
- **Assigning a name to a cell** → To assign a name to cells in Excel, you must select the cell or set of cells to be named and go to the Formulas tab of the ribbon.

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MAIN FUNCTIONS

Text functions:

- **RIGHT** (text,(num_chars)) → Returns the rightmost character(s) of a text string.
- **LEFT** (text,(num_chars)) → Returns the the first characters in a text string, based on the number of characters specified.
- **MID** (text,start_num,num_chars) → Returns a specific number of characters from a text string, starting from a specified position.
- **UPPER** (text) → Convert all the characters of a text string in UPPER case.
- **LOWER** (text) → Convert all the characters of a text string in lower case.
- **CONCATENATE** (text1,(text2),(…)) → Joins two or more text strings in one text string. The text is joined following the order of the arguments, and possible numerical values are also converted into text.
- **LEN** (text) → Returns the number of characters in a text string. The spaces in the string of text, including any consecutive spaces are treated as any other character.
- **SEARCH** (find_text,within_text,(start_num)) → Locates the position of the first character of a text string within a second text string.
- **PROPER** (text) → Converts the first letter of each word of the text string into uppercase, while converting the other letters into lowercase.

Example: “MARIO ROSSI” → EXTRACT “ROSSI” → =RIGHT(no.cell,LEN(no.cell)-SEARCH(“ “,no.cell))

Statistics:

- **COUNTIFS** (criteria_ramge1, criteria1,(criteria_range2,criteria2),(…)) → Counts the number of cells in a range that satisfy one or more criteria.
- **SUMIFS** (sum_range1,criteria_range1,criteria1,(sum_range2,criteria_range2,criteria2),(…)) → Returns the sum of cells in a range that meet one or more criteria simultaneously.
- **AVERAGEIFS** (average_range,criteria_range1,criteria1,(criteria_range2,average_range2,criteria2),(…)) → Computes the average (arithmetic mean) of all the cells that meet one or more criteria.

COMMANDS

• **Data validation**

1. Select the cell(s) for which you wish to create a rule → Data > Validate Data.
2. On the Settings tab, select an option under Allow and a condition.
3. Set the other necessary values according to the option chosen under Allow and Data.
4. Select the input Message tab and customize a message that users display when entering data.
5. Select the Show input message when cell is selected check box to display the message when the user selects or positions the mouse pointer over selected cells.
6. Select the Error Warning tab to customize the error message and choose a Style.
7. Select OK. At this point, if the user tries to enter an invalid value, an error message is displayed with the customized message.

PIVOT TABLES

Given a table divided into rows and columns, I must have:
1. In the first line a header
2. First complete row (NO empty columns or columns without header).

Ch 8

Important differences protect folders/files.
To remove 'protect workbook' simply remove (literally delete) the asterisks.
Levels of protection:
1. Sheet protector
2. Protect folder
3. Protect folder when opening

VLOOKUP (lookup_value,table_array,col_index_num,(range_lookup)) -> Looks for a specified value in the first column of a table and returns a value corresponding to the one sought, available in another column of the same table.
The table is sorted in ascending order by default.
• value = code to search
• Matrix table → cells to search in
• Index → column number to be returned
• Interval → insert
TRUE: imprecise correspondence → to be used in case the value I want to search for needs to be searched for in groupings of values (e.g. discount ladders).
FALSE: exact matches I search for a code and it returns the value corresponding to that code If you do not enter anything it comes out true.

VLOOKUP is no good in a table where the same code is repeated several times, as it would then return an error.

MATCH (lookup_value,lookup_array,(match_type)) → Searches for a specified value in a range of cells and returns its position in the same range.
That position must be entered as an 'index' in the VLOOKUP (Returns the relative position of an array element that matches a specified value in a specified order).
• Value
• Array → header in which to count (must have the same cells as the VLOOKUP)

If it says that VLOOKUP the index should automatically appear, then it means that MATCH should be used.
Arrays of VLOOKUP and arrays of MATCH must always be the same.

RANK.EQ (number,ref,(order)) -> Returns the rank of a number in a list of numbers. The result of the RANK.EQ function is a number indicating which rank has a specified number chosen by the user in a list of numbers sorted in ascending or descending order.

MACRO
Create a macro:
1. Change format → FILE > Save As > Workbook with macro activation...
2. Check from protection center. "Disable all macros with notification".
3. View > Record macro > Complete data > OK (you cannot enter spaces, but _; first letter character (the small square at the bottom left indicates that you are recording).
4. Click on sheet tab (if there is more than one sheet).
5. Check hidden cells.
6. Whatever you do now, actions will be recorded
7. Stop recording:
1. View > abort
2. Click on the small square in the bottom left-hand corner.

Display recorded macros:
View > View Macros > Edit
Using the macro:
View > View Macros > Run

<u>FUNCTIONS</u>

DAY (serial_number) → Return the number of the day related to any serial number corresponding to a date.
MONTH (serial_number) → Return the number of the month related to any serial number corresponding to a date.
YEAR (serial_number) → Return the number of the year related to any serial number corresponding to a date.
HOUR (serial_number) → Return the number of hours relative to any serial number corresponding to a time or date.
MINUTE (serial_number) → Return the number of minutes relative to any serial number corresponding to a time or date.
SECOND (serial_number) → Return the number of seconds relative to any serial number corresponding to a time or date.
WEEKDAY (serial_number,(return_type)) → Returns the day of the week corresponding to a date. The syntax of the function has two arguments; the first one is required while the second one is optional.
DAYS (end_date,start_date) → Returns the number of days between two days. The syntax of the function has two arguments, both required.
TODAY () → Return the serial number corresponding to today's date. This number is automatically displayed in date format. TODAY function returns only the date. The syntax has no arguments.
NOW () → Return the serial number corresponding to today's date. This number is automatically displayed in date format. NOW function returns the date and the time. The syntax has no arguments.
DATE (year,month,day) → Returns the serial number that represents a specified date for which you know the day, month and year. This function is useful especially on two occasions: 1) When you have the year, month and day in three different cells of the worksheet, and you want to combine the values to create a full date. 2) When you have a date in a format that Excel does not recognize, such as yyyymmdd, and want to convert it to a serial number accepted and managed by Excel.
DATEDIF (start_date,end_date,interval) → Computes the difference between two dates in days months or years. The syntax of the function has three mandatory arguments.

IFERROR (value,value_if_error) → Performs a specific operation or reurns a value defined by the user when a formula or a function returns an error. The syntax of the function has two arguments, both required.

SHORTCUTS
BOLD → Ctri + B
COPY → Ctri + C
CREATE A NEW WORKBOOK → Ctri + N
CUT → + Ctri + X
DOWN ONE CELL → Enter
OWN ONE SCREEN → Page Down
FIND → Ctri + F
HIDE SELECTED COLUMNS → Ctri + 0
HIDE SELECTED ROWS → Gtri + 9
ITALICS → Cti 4 1
LEFT ONE CELL → Shift + Tab
MOVE BETWEEN CELLS → (<-; ->)
OPEN A WORKBOOK → Ctri + O
PASTE → Ctri + V
PRINT A WORKBOOK → Ctri + P
REDO → Ctri + Y
REPLACE → Ctri + H
RIGHT ON CELL → Tab
SAVE A WORKBOOK → Ctri + S
SELECT ALL → Ctri + A
SELECT ENTIRE COLUMN → Ctri + Space
SELECT ENTIRE ROW → Shift + Space
TO CELL A1 → Ctri + Home
TO LAST CELL → Ctri + End
UNDERLINE → Ctri + U
UNDO → Ctri + Z
UP ONE CELL → Shift + Enter

ERROR TYPES

ERROR #### (…) Among Excel errors, this message does not signal a problem with the formula, unless it is the result of an operation between dates. The continuous # symbol (hash mark or hashtag call it what you like) signals insufficient space on the column. On the other hand, when the formula includes serial date/time numbers, it indicates that the result is negative and therefore not representable.

ERROR #NUM! This error also identifies a problem of width, not physical but logical. The #NUMI error occurs when using numeric values that exceed Excel's limit. The current version allows you to enter numbers between -10^308 and 10^308.

ERROR #RIF!
This error occurs when rows or columns that have references within the formula are deleted. Example: The cell with formula A1+B1 will return the error #RIF! after deleting column B.

ERROR #VALUE!

When the data types of a formula's references do not match (e.g. a number added to a letter), the #VALUE error occurs/The same problem occurs when the arguments of a function do not match the required data type (e.g. numb. or value). sum product when matrices have different dimension.

ERROR #DIV/O!
This error code is generated when the formula contains a division with a divisor equal to zero. The #DIV/O! error also occurs when the divisor reference leads to an empty cell.

ERROR #NAME is returned when using non-existent function names (or with incorrect syntax) or incorrect range names. In the latter case, the incorrect name is placed between double quotes.

ERROR #NULL!
The error code #NULLI occurs when a range is given without the correct separator. Example: COUNT (A1 B1). Here the colon symbol has been omitted to indicate the start/end of a cell range. Or the semicolon symbol to separate two different ranges.

ERROR #N/A! This code is typical of functions to search for values within an array (e.g. VLOOKUP, HLOOKUP MATCH, etc.).
When the value is not present, the error #N/A! is returned, which means Not/Available.