



**32** Pages  
27.6 cm x 21.2 cm

Ruled 7 mm • Ligné 7 mm

# **EXERCISE BOOK CAHIER D'EXERCICES**



*Book 2*

**NAME/NOM** Feb 19 - Mar 3 2025

**SUBJECT/SUJET** Pt 2 Excel, Getting started, Getting to know more, Learning More  
cont.



ASSEMBLED IN CANADA WITH IMPORTED MATERIALS  
ASSEMBLÉ AU CANADA AVEC DES MATIÈRES IMPORTÉES

12692

## Formatting Data

- Setting your Data Type - Insert Large Variety of Data types • Dates, Percentages, Fractions, Prices, text
- Ensure correctly displayed with Format tools, these tell Excel how to classify Data
  - Data may not display as you wish
- Default • Select cell • Home • Number Ribbon • Dropdown • Indicates Data Type
- To display Dates correctly • Select cells • Home • Number • Select Data Type
- Short Date or Long Date
- Add currency or Accounting Values • Home • Data Type • Currency will Add \$ and .00
- Change Currency • Home tool Ribbon • Number
- Add Percentage • Home • Ribbon • Number • Data type • Percentes • Ctrl ShortCut
- ~~Change Data type~~ ~~Remove Data type~~ ~~Number~~
- Change Data type display - Select cell Range • Home • Numbers • Data Type
- More Number Formats • Preview Above Dropdown

- Formatting - Can use formatting tools to change appearance of text in tables • Font style • Size • Effects
- Data
- Can clear Formatting • Change Text settings • Home • Tool Ribbon
- Font • Cell selection • Hovering over for preview • Home - Left hand side •
- Size • Dropdown or Type manually • Icons A increases size & Decreases size
  - B to Bold I to Italic, U to underline • Dropdown menu to double underline
- Ctrl + B
- Ctrl + I Available in Quick access menu • Right click Table • Style, size, Bold italic,
- Ctrl + U Ctrl underline.
- Clear formatting Select cells • Home • Edit • Eraser Icon • Clear All •
- Clear Formatting • Clear contents • Comments & links

- Aligning Data - Alignment tools to change where text appears • Merge Cells
- Change Alignment • Home • Alignment Ribbon • Top 3 Icons - Vertical Alignment
- Bottom 3 Icons - Horizontal Alignment •
- Modifying Indent with ~~EE~~ Icons - Nudges away from border • Alignment dictates indent
- Dynamic text - Home • Alignment • Angle, vertical text, Rotate up/down
- Format cell Alignment - More options • Configure orientation to exact Degree
- Merge cells tool • Combines multiple cells and combines into larger cell
- Select cells • Alignment ribbon • Merge + Centre • Only keeps upper left Value • Open Merge dropdown • Merge across • Merge cells • Unmerge

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Using Colours - Can apply colour to 2 main elements. Cells background. Home. Font. **Brighter For Backgrounds**  
A for Font. Standard and themes. Choose contrasting colours. More colours.  
- Select cells, Right click. Quick tools. Bottom Right to compare New+Current  
Creating table will modify colours. Design tab. Table styles. Hover over to Browse

Changing Cell Style - Quickly change colour - alignment, size in cell(s), can customize style.  
Make text stand out with cell styles - Select cells. Home. Styles tab. **Cells**.  
Selection menu. Hover to preview.  
Custom. Cell styles. New cell style. Name. Format. Data. Alignment. Font. Border. **Print**  
Font. colour. style.

Document Themes - Change overall appearance. Coloursets. Fonts. Graphical Effects  
- Page layout. Left hand. Themes icon. Selection menu. Hover to preview.  
- Customize. colour scheme to theme already selected. Fonts  
- Effects. Hover to see effects  
- Save custom theme. Themes. Themes. Save current theme. Choose location. Got again - Themes. **Brows for themes**. Select from library.

Formulas - Formulas to convert text characters. Can convert text to uppercase with uppercase formula  
Textcase Lowercase or Proper nouns.

Upper Formula = upper, or select from options = upper(select cell). Enter. Can also off Just one letter

Proper Formula = proper(select cell). Enter

Lower Formula = lower(select). Enter

Word Art Title - Tools clean professional looking titles. Insert title independently of any cells. Insert, Right hand.  
• Text. Word Art. Text Box will appear. Can Drag. Select to type. Can resize. Right click

Formatting title - Change title, color, size, rotation. Add effects. Shadows, glow, reflection. Select All text  
• Format menu. Alignment. BZ. Home. Font. Fill colour. Change word art style  
• Format Tab. Word art styles. Select All desired text. Right hand side.  
Options. Text Effects. Rotate. transform of position

Create a Table - Easy to format. Sort. Apply filters. Select cell Range. Insert Tab. Table. Recompose cell Range.  My table has headers. Design Tab. Style options.

**Ctrl + T** Table from nothing. Choose cell Range. Insert. Table.  Table icon. **Ctrl + T**.  Select + Drag selection range. Automatically adds headers. Remove table. Select cell range. Right click. Delete or Del key.

Resizing Columns - If the table isn't displaying contents properly. Go between 2 columns and rows.  Drag column. Same with rows.  If text is outside its cell range. Select cell. Home. Alignment. Wrap text. Auto Fit. Select cells. Home tab. Format. Auto fit Row height/Column width.  Doesn't work well with wrap.

Inserting Columns - If table is missing data, add rows and columns.

Rows - Select Row below where I want to insert. Right click. Insert. Row Above.  Select Column. Column will appear to the left.  Home. Insert. Insert sheet column/Row. Multiple - Shift select Row/column. Right click rows. Insert.

Inserting Borders - Different Border tools - Apply colour, thickness, style.

Add Border. Select cells. Home tab. Font.  Border icon. All Borders.  Remove Borders. Select cells. Home tab. Font. Borders. No Borders.

Draw in Borders. Dots appear. Drag to add Borders.

Style. Line style.

Add colour. Line colour. Erase Border. Erase.

Transferring Format - Transfer table formatting.

Styles - Auto Fill. If cells are next to each other. Select and Drag bottom right of cell.  Auto fill menu on bottom right. Fill Formatting only.  Copy Formatting - **Ctrl + C**. Select cell Range. **Ctrl + V**. Paste menu. Paste formatting.  Can be used on separate sheet.  Paint Brush tool. Home.  Clipboard. Paint. Select cells. Let Go.  Can be used in other workbooks.

## Illustrating Documents

Inserting Images - Insert • Illustrations • Pictures • Select Location • Can resize  
 Resize • Format Tab • Size • Right hand side • Select Dimensions  
 Online Source • Insert • Illustrations • Online image • Lower left • One Drive  
 • Search Bar • Bing search • Categories • Scroll down  
 • Add Filters • Size • Select images • Insert • Includes source

Inserting Screenshot - Insert • Illustrations • Screenshot • Choose window  
 Resize • Format • Size toolset  
 Crop - Dark Handles • Drag inwards to crop • Select crop  
 Screenshot • Screen clipping • Excel will hide • Can select area

Editing Image - Can adjust Brightness, contrast + Saturation • Artistic Effects • Border  
 • Select Image • New tab • Correction - Sharpen/soften + Contrast  
 Modify colour - Picture tools • Colour  
~~Artistic Effect~~ -  
 Picture styles in middle • Add Border • Dropdown for List  
 Change layers • Format • Arrange toolset • Bring image forward  
 Undo edits • Format Adjust • Reset image or size

Inserting Shapes - Create diagrams with shapes • Insert • Illustrations • Shapes • Recently used rectangles  
 • Select shape • Mouse becomes + Drag shape size  
 • Add text • Double click in shape • Adjust text from home  
 Group shapes - change style + location • Hold shift • Click • Format • Arrange • Group  
 • Shape styles  
 • Ungroup • Arrange • Group • ungroup

Inserting Icons - Insert • Illustrations • Icons • Categories • Select • Insert  
 • Add style • Format

Inserting Hyperlink - Types of link Website · Email · File

- Select cell · Type Email · Hyperlink automatic · Right click · Edit hyperlink
- Text to display

Insert website · Insert · Link · Choose Link type · Display text · Type address  
· Has recently used

External Document · Select cell · Right Click · Link · Existing file · Select file  
Last item · Text to display

Remove link · Right click Remove Hyperlink

Use Smart Lookup - Access additional information about words in document · Images · Definitions · Information on web

- Select Cell · Review Tab · Insights · Smart Lookup · Intelligent Services panel
- Smart Definition · Web results · Highlight single term · Right click · Smart Lookup
- Define · How to pronounce
- Images · Review · explore tab for images · Link to Images

### Using Basic Formulas

Inserting Formula using Function Lib - can help locate needed formula · grouped according to category · Can Search

- Select cell · Formulas · Data · Function Library · Financial · ~~More functions~~  
Recently used on Left

- Insert Function Tool · Left hand side · Also left hand side of Formula bar  $\text{fx}$
- Menu opens · Type brief description · Addition · Go · Results · Filter with category
- Select for function description · Click button for help
- It guides you through setting up function · Select Value Range · Select cell referencing
- Can Type function Manually ·  $= \text{Ave}$  · tab to autocomplete

Simple calculations - Cells are like calculator spaces · Addition  $= .3 + .5$  · Enter · Calc is inserted

- Select cell = Sum( · Select cell + select cell) ·  $\times$  symbol to multiply · Can select Row

Automated Formulas - Applying formulas to large areas, use Filldown function

- ex · Select cell · Sum C · Select cells ·  $\downarrow$  · Enter · Can copy + paste formula · Automatically adjusts to Row · Filldown · Select cell · Double click bottom right corner · Auto fills · Works for rows
- Drag for rows

Automated  
cumulative  
totals

Running Total

- If data is chronological, a column/row total can be created

• Create calculation once then apply to other entries

• Running total - Select cell • Select reference cell • Below select cell = Above cell + side cell

150	150
270	=150 +

• Select cell • Autofill for table

Make cell value absolute, add \$ between cell reference or A\$1

Technique

Insert Subtotal - Long table • Adding subtotal for a group in a table can be useful. Different calculations • Tools/Tools

- Sort • Select table • Data • Sort + Filter toolset • Sort • More • Sort by column
- Add subgroup • Data • Outline • Select column header • Use function • ex. SumC • Purchase total
- Uncheck unwanted options • Options • Replace current subtotals • Summary Below data
- Outline tools appear to collapse and expand groups • Collapse All at once • Select 2
- Collapse cell - symbol under I • Grand total
- Remove outline • Data • Outline • Subtotal • Remove cell

Counting cells in a Range - Counting Formula counts cells that contain Values • CountIf - certain conditions

Sumproduct + countif, to perform complex calculations

- ex. Total number of values in table • Select cell = COUNTA ( • Select cells • ) • enter

- CountIf • = COUNTIF ( • Select cells • , Select criteria • ) • enter. If make cell, can edit cell

- ex. Unique values • = SUMPRODUCT ( 1 / COUNTIF ( • Select cells • , comma • Select same cells • ) )

I  
D  
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n  
D  
E  
R  
Stand

Ranking A Value Ranking function used for finding where data is ranked in a list of entries • Visualize smallest and largest with MAX/min / small large Formulas

• Select cell • = RANK ( • Select cell • , Select Range to rank through • , 1, )

Smallest Value • Select cell • = MAX • Select Range

Largest Value • Select cell • = MIN • Select Range

3rd Largest • Select cell • = LARGEST ( Select Range, ~~column 3~~ ) • Works for SMALL

Round to 2 Decimals

Whole Number

Rounding - Different formulas • Round • Select cell • = ROUND ( Select cell, 2 ) 0  $\Rightarrow$  Whole Number

Round to Even/Odd • = EVEN ( Select )

Whole Number

Round up/Down • Select cell • = ROUNDUP ( Select cell,  $\Rightarrow$  0 )

Round to nearest Multiple • = MROUND ( Select cell,  $\underline{1}$  )

= Ceiling ( Select number, 0.5 )  $\Rightarrow$  Round to as rounds up to closest 0.5

= Floor ( Select, 0.5 ) rounds down to closest 0.5

Truncated • = TRUNC ( Select ) converts to integer

## Replacement Formulas - Substitute • Trim • Replace

- Replace • Select cell. =  $\text{REPLACE}(\text{select cell}, \text{number of characters 1, G}, \text{"Mine")}$
- Substitute • cell. =  $\text{SUBSTITUTE}(\text{select old text}, \text{"Letter"}, \text{"Letters, 1")}$
- Trim • cell. =  $\text{TRIM}(\text{select cell})$  removes spaces

Changes

Amount of Time

## Converting - Change to Binary to Hexadecimal

Number Types      Bin to Decimal =  $\text{BIN2DEC}(\text{select})$

Hex to Decimal =  $\text{HEX2DEC}$

Dec to Bin =  $\text{DEC2BIN}$

## Factorizing Results - Division with whole numbers, Quotient Formula, visualize Remainder with mod of division

• Select cell. =  $\text{QUOTIENT}(\text{Numerator, Denominator})$

MOD • =  $\text{MOD}(\text{Numerator, Denominator})$

## Creating Random Values - Multiple Options • Random between 0 and 1 • = $\text{RAND}()$

• Between 1 and G = Rand Between =  $(1, G)$

When you enter a random number previously generated entries will re-roll

• Between 1 and G =  $\text{RAND}() * 5 + 1$ , has decimal

• Whole number =  $\text{INT}((\text{RAND}()) * 5 + 1)$

Order of play =  $\text{RANH}(\text{Select cell with randomized Number})$  • Random in order column  
, "Choose order"

Pair Groups • Select top of order of play = cell/2

## Sharing + Collaborating on a Document

### Email Doc - Integrated Email • File • Share • Email • Send as Attachment • PDF • XPS

• Email Opens • Default Subject is File Name

PDF - No one Recipient can't Modify

### Sharing Workbook - Send via link and modify editing permissions • Save to OneDrive or SharePoint • File • Info

Via Link • Share • Copy path or Info

• Share with people • Invite people • Select Address Book • Contacts • Email

• Change permissions • Can Edit/Can view

Link - Bottom • Get sharing link • Editing Link or Sharing Link

Managing Links - Restrict or open • On OneDrive, users added • Upper right • Share • Select Individual • Access + Persons • to • On the Dropdown menu • Edit/View • Can include message •

Modify links • Bottom shows who has links • Right click • Disable link

Saving to OneDrive OneDrive - cloud storage accessible with excel •

- Share • Save to Cloud • OR • File • Share • Share with people save to cloud
- Add a place • Login • Microsoft Apps only
- Select OneDrive Account • Select folder • Save

Share menu • Add people

Access Documents • File • Open • OneDrive • Select • Navigate

Managing Workbooks - Open a different copy so more than one can edit it at the same time •

Version History - File • History • Previous Versions • Select to view document, can choose to restore  
Check out a document • Info • Manage workbook • Check out, other users can't use  
Check back in • Info • Discard check out • Select Version • Click Edit workbook prompt

Commenting on a document - Multiple people, comment tool useful for collaborating and coordinating

Identify comment • Red Marker over cell • Hover over to read

View all comments • Review • Comments toolset • Show all comments • Toggle

• Select cell with comment, then press next or previous

• Can Edit or Delete • Edit if editing, Delete to delete

Leave comment • Review • Leave comment • Select outside to view

Remove Update Username • File • Options • General • Username

Following & Tracking Changes - vital to track, Track changes tool

- Review • Add feature • Right click over tool Ribbon • Customize • New Group • Rename  
 • Select group • Left hand side • Dropdown • All commands • Track changes • Add • On  
 • Back on Ribbon • Track changes •  Select Box • Choose • When • Who • Where  
 • Can specify person • Save • Highlighted changes automatic

- See all changes • Track changes • Select boxes • Changes appear • Accept • Reject

- Untrack • Track changes • Uncheck  Track changes while editing

## 9 Excel 2019 - Getting to know more

### using Conditional Formulas

Inserting Conditional - SUMIF, S formulas to perform a sum calculation on certain Data Values  
Sum Formula

• Know how to specify conditions

Sumif - sums values in a range that meets certain criteria

ex UNPAID orders • Select cell • =sumif (select range, "condition", "select criteria", "select data range")

Sumif with Dates - After criteria range  $\text{inates} \quad >=$

Multiple criteria - SUMIFS (•Addition Range, "Criteria Range", "Criteria", "Criteria Range", "Criteria Range", "Criteria Range") • ">Date Range") • enter, can be expanded for more criteria

Conditional Message - If function is made up of a Range, condition, value if true, value if false • Used to display one message if condition is met, another if condition is not met

• use qualifying conditions to perform an analysis on data entry and display a message

If - ex discount • Select cell • =IF (logical test, "if yes in column", Select cell = "yes", "Discount", "No Discount")

Combine IF + AND functions • =IF((Select cell = "Yes"), "20%", "No Discount")

Expand IF with \* AND

Complex conditionals - IF can be used with other formulas • Create conditions based on calculations and analyze data in different ways. Example: A discount that needs to be above a certain price to apply

Example • = 5% Discount = Yes, =IF (cell = "Yes", Order Value \* 0.95, Order Value)

Double check - =IF (Quantity \* Price per unit > 1500, Price per unit \* 0.95, Quantity \* Price per unit)

Creating Multiple conditions - Return more than 2 messages, embed multiple IF formulas within one another, multiple result options  
ex =IF(H4 > 500, "Yes", "No")

Embedded Ifs - =IF(H4 > 500, IF(H4 > 1000, "15% Discount", "5% Discount"), "No Discount")  
Make 15% a calculation sub for - (Order value \* 0.85)

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IF + OR  
Formulas

- Combine qualifying and alternative conditions in FF. Discount example  
if single criteria, & IF works. Multiple conditions use IF OR or IF And  
 $=IF(OR(cell = "Yes"), cell > 2500, cell * 0.8, cell)$

OR

$=IF(OR(cell = "Yes") * AND(cell > 2500), cell * 0.8, cell)$

Count Value - Sumproduct and Date Formula to extract specific Value ex. purchases in Date Range  
Occurrences  
- Select cell:  $=SUMPRODUCT((MONTH(Select Range) = Month) * (YEAR(Range) = year))$   
"Works for month of a year, use reference cells for reusability" numerical cell

Using Reference Positions - Find a cell Value by using its positional coordinates in a table with Match and Offset

ex. Find a specific Month in a table, Identify the month number for october

Match October 1, 0, -1 Depends on list, Finds position

Select cell:  $=MATCH(G2, Select Range, 0)$

Calculate Profit total up to october for year

$=OFFSET(A2, Monthnumber, G3)$

Rolling Total Year Year

$=SUM(OFFSET(A2, 1, G3, G4, 1))$

Keeping Table - If you are constantly updating tables and adding new entries you can create conditional Fx  
up to date

Count Entries in table with CountA = COUNTA(Select Column headers) - 1

Removes Header

with conditional Formulas

ex. Last Order Value

$=OFFSET(E2, H2-1, 0)$

## Finding + Analyzing Information with Formulas

Retrieving info. Several different Formulas to return precise information relating to MDY: calculating with Dates  
workdays and days elapsed

Extract Day, Month, Year of cell

$=DAY(Date Value), =MONTH(Date Value), =Year, =WEEKDAY(cell, choose)$

choose start

Days Elapsed Between orders -  $=DAYS(Start Date, End Date, Method)$   
working Days Between Orders

European/American  
not mentioned

$=NETWORKDAYS(Start Date, End date, Holidays)$

Days into the future for delivery

= Workdays (start, 3 days), IncludeWeekends = Workdays.int (start Date, Days, SetWeekend.)

Finding A Date

- Automatically find a date Based on specified criteria

Automatically

Today's Date = Today(), = NOW() + Frequency

Last day of last Month | Last day of this Month | Last day of next Month

= eomonth(Today(), -1) | = eomonth(Today(), 0) | = Eomonth(today, 1)

This day last month = edate(Today, -1)

[.EQ] ✓ Equals given same Rank use,

According  
to  
Ranking

Largest & Smallest - Rank function for finding Value in a data list, small and large formulas

Values in a list = MIN(range) max = MAX(range), = RANR.eq(number to rank, Range, 0)

Large, 5th

Small = Large(quantity column, 5)

Separating Data  
into multiple cells

- Extract individual elements Search, Len, Left, Right, and ex customer names  
Len - character length | First Name length | customer start | Lastname  
= Len(cell) 12 | = Search("space", cell, 1) - 1 | = CharacterLength - Name Length - 1

\* String Data - Left, Right, extract data from a direction

First Name OR Number | Left  
= Left(cell, First Name Length) | = Right(cell, Last Name Length)  
middle initial | character of first | Extract  
= MID(Full Name, First Name Length + 2, 2)

Text to columns

• Select Range • Data tools • Text to columns • Menu • Delimited • Next • Set Delimiters

• Untoggle tabs, toggle Space • Choose destination • Select Range • Finish

Text & Join

Combining Data - Concat and Formulas can be used to combine in a single cell data taken from multiple

Values in a cell Concat, combine cells with user input Data

Added text

= concat(cell, ".", cell, "@XX.X.COM")

can select Range

= concat(range, "XX.COM")

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Text join formula, combine text but ignores empty cells, set delimiters  
 Delimiter - value that separates values in a string  
 ☐ Ignore empty cells

= Textjoin("space", TRUE, {Cell1, Cell2, Cell3})

Automatic Reports - Link calculations using multiple arrays, produce summary of Data table. Doesn't Breakup

\* All Arrays must be same dimensions

• Multiplies Rows, then adds them + sum, × Product

= Sumproduct(1st Array, 2nd Array)

or

= Sumproduct((CustomerList = 1st customer) \* (Quantity array) \* (Value array))

Cross Referencing - Vlookup and Hlookup, cross refernce the contents of two lists, Value or error is return

Data

Add \$ To look for Column number  
 ☐ Two of Aprox or exact

= VLookup(Values, List, 1, Aprox)

H = Horizontal  
 V = Vertical

= HLookup(Values, List, Row number, True)

Search Across - Calculation involving IF and Vlookup to search for a value in two separate tables

2 Tables

Tables named  
 whole table  
 column to show  
 ☐ to show

= Vlookup(Itemcode, IF(Supplier, "ZebraShy", ZebraShyTable, OtherTable), 2, False)

Inserting Data - use Vlookup to perform lookup with lists. ex city, state. Sort for approximate automatically

= Vlookup(cell, searchRange, 2, False)

Building own Table  
 ☐ New Row

= Vlookup(cell, {"San Francisco", "California", "New York", "New York"}, 2, False)

## Configuring Options + Settings

Managing

Account +

Connected Services

- Connect Multiple Services to account, view dates of installations

• Consult Office accounts. Top Right. Click username. "Account settings". Switch

account. QR + File. Account. Sign out/switch. On Right, subscription model

and sign in details. Change product key, etc

• UPDATES. New, disable, view, learn more

On left bottom 'Connected Services' Add service. Add other OneDrive/share point.  
 - Storage - Select OneDrive. Login. On right of service click remove, some can't be

Installing Addins - Search addins store. Insert Tab. Addins. Get Addins. Suggested on right. Bins maps  
 - Trust addin. Adds supplementary Data for sheets  
 - Browse store. Get Addins. categorys. Sort to right, suggestions, Ratings, Name  
 - Search. Colorizer. Click green addin to add or click to view. Appears as side panel  
 - Available in Addins group or My addins menu  
 View addins. Insert 'Addins' My add-ins, OR Get addins: My addins  
 - Beside addin, view on Data. Admin managed - organization  
 - Top right "Manage my Addins" opens Browser, manage addins  
 - Remove, Open menu, 3 dots, remove

Creating - Managing - Prepare Base workBook. Excel Template Forma to Default Template location

Templates  
 - Check save location for custom templates. Default is templates Folder  
 - Windows search %AppData%\Microsoft\Templates  
 - List of templates. File. Options. Save menu. Shows template save location  
 - Can copy path to there or modify

Save as Template - File. Export. Change File Type. Template. Save as. Name Save

Use custom Template - Open Excel. Personal. Click to open  
 - Update

Configure User - Toggle Live Preview, switching off quick analys tools, hiding minitoolBar

Input Behaviour Minitool Bar - When you select text it appears. Format text

Live Preview. Hover over text size to preview in the sheet

Quick Analysis tools - Select Range. Icon appears on Bottom right. Formatting. Charts. more

Deactivate - File. Options. User interface options. General.  check boxes for add

Customize Screen tips - Short descriptions appear when hover over tools  
 - File. Options. Screen tips style menu. Options:  
 - Descriptions & Names. Hide entirely

Configuring Default - Change cell reference style to Numerically. File. Options. Formulas

Formula Options  
 - "Working with formulas" • R1C1, conditonal formula auto complete, Columns/ Rows are all numbers. R3C5 (Row3, column5)

Document - How many worksheets are created in a new document. Default Font. View mode default  
 Default Settings  
 • File → Options → General → When creating new workbook → Use this as Default Font  
 • Default view → Normal → Page Break Preview → Page Layout view  
 • Number of sheets when opening New Book → Must close and restart

May use → Input + Navigation Defaults - File → Options → Advanced → Editing options → Change direction  
 moved after pressing enter, up, down, left, right  
 • Toggle Fill handles, (Auto complete tables)  
 • Toggle Editing directly in cells  
 • Toggle Autocomplete for cell values, flash fill

File → Options → Advanced → Display

• Number of recent workbooks,  quickly access number of recent workbooks,  
 will appear on Backstage view, under options + Account  
 ? • Number of unpinned recent Folders

Customizing - Default save format + Location → File → Options → Save → Default Format is  
 Save Options  
 • XLSX file → Save Work Books menu → Auto save frequency, Can disable  
 Save to computer → Save location

Customizing - Background + theme → Office Copy → Window + Status appearance + Language  
 Interface  
 • Background + Theme → File → Account → Office Background dropdown menu  
 • Preview in upper right → Theme → Colourful → Dark grey etc  
 Office Copy → File → Options → General → Personalise your copy  
 • Username  
 Always use these values regardless of size is → Background, Theme  
 Window + Bar appearance → Options → General → Start up options →  Show start screen  
 • New Blank workbook upon opening  
 Status Bar - Bottom of interface, displays info → Zoom tool → Right click toolbars  
 select features to show or hide

Language - Display language and editing language → File → Options → Language → Add  
 Languages → Set as default → Restart. Can Promote or Downgrade  
 • Link to Office.com for more Languages

## Customizing Quick Access Toolbar

- Add shortcuts to bar - Top left of window - Click arrow to right - select from list
  - More commands - Select from left list - Add - | Rearrange - Click - Press up/down arrows to the right of the list - OTHER remove - Right click icon - Remove
- Adjust toolbar position - click arrow on toolbar - Start below the Ribbon

## Customizing Ribbon

- Add Tabs and functions - Hide Ribbon - Double click selected Tab - Click once to show - Return to normal By Double clicking
- Top Right is Ribbon Icon - Auto Hide - Show Tabs - Show Tabs + Commands
- Custom Tabs - File - Options - Customize Ribbon - Click New Tab - Name - "sharing" - Name group "Email" - Add commands - commands not in Ribbon
  - Email - Remove tab - Options - customize - Remove

## Managing Data

### Importing Data

#### From Text File

- Import data from text file and edit as needed, Transform data with **Power Query**, Then replace data to highlight what you want to show
  - If source file is updated the excel file can be updated.
- Import Text File - Data Tab - Left side Get + Transform Data - From Text
  - File explorer - Open File - Menu - Verify file Origin - Delimiter -
  - Data Type - Shows Preview - Can edit from menu Load to import automatically - Load to (another workbook) option -
  - Query Menu on Right hand side - Can delete -
  - New Tab - Query - Edit - Opens editor - Can manually modify
  - Replace Value Menu - "Value to find", "Replace with" - Will not modify source document - Can Sync import
    - Keep or discard changes

- Sync changes from source document - Query Tab - Load Group - Refresh

### Importing Data from CSV

- Power Query - CSV - another contact list, emails - Preview - Load or Edit
  - Same as text file

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Finding a value - **Lookupt** in table, **INDEX** if you know row, column and coordinate with  
in Double entry **MATCH** formula

Ex. Order number based on Date  
=Lookupt(Date, Table, Vector)

Find Row + Column references with **MATCH**

=Match(Date, Table) & P This gives the row. The date is found in  
=Match(reference", <sup>exact match</sup>Table headers, 0)

Use coordinates to find specific value with **INDEX**

=INDEX(<sup>reference</sup>All values, Row, column), gives what's in coordinates

**IFS + SWITCH** - Test multiple conditions without nesting Ifs. **IFS** - use different operators  
**SWITCH** - Get result for non exact match. Ex. Grades

=IFS(score >= 6, "A", D2 >= "90", "B", ... | repeated IFS  
Ex. Text to Website | Use of | Inexact

=SWITCH(cell, "History", "history.com", "English", "English.com", "Unknown")

Calculating - **Average** Need average but have criteria  
Average ex. Grades 780

=AVERAGEIF(scores, ">80") | for Full semester  
=AVERAGEIFS(scores, "Semester", "Fall", scores)  
=AVERAGEIFS(scores, "Year", "2018")

**Max+Min IFS** - Max/Min with criteria. Can use logical operators and wildcards for partial match  
ex. max, lowest  
Grades

=MINIFS(range, semester, "Fall") | =

=MAXIFS(range, semester, "Fall", criteria Range, "2018")

Finding A - Finding Data with multiple conditions - COUNTIFS - count multiple with criteria [NOT] function.

Value in opposite of a logical Value

Double Entry scores  $\geq 75\%$

ex\* scores over 75% in fail

False = COUNTIFS(First Range, criteria, Second Range, Second criteria) | if scores pass or fail - [NOT]  
 scores  $> 75\%$  combine with IF value if true, if false - True or false  
 = NOT(cell < 75) = IF(NOT(cell > 75), "Fail", "Pass")

Forecasting Data - Loan Function - How many months to reimburse Loan NPER function, can be used IF/IF  
 Need Interest Rate, Loan amount, Negative Payments,

or 52

= NPER(Rate/12, Payment, Loan amount)  
 loan approach

= IF(NPER(Rate/12, Payment, Amount)  $> 45$ , "Refused", "Approved")  
 Age

= IF(OR(NPER(Rate/12, Payment, Amount)  $> 45$ , Age  $< 18$ ))

## Getting to Know Macros

Recording a - Automate tasks more easily with Macros, Perform actions

Macro Record Macro - View Tab • Right Hand side • Macros Group • Macros Dropdown Menu

- Record Macro • Name • Add shortcut key • Select Storage Location
- Leave Description • Perform actions to record • View Tab • Macros • Stop

Use Macro - View Tab • Macros icon • Select • Run •

Working with Macros Once you start using Macros you need to save as [Excel Macro-enabled workbook]  
 with Macros • Select Save • Dialogue Box appears • To save without Macros YES, NO to save with  
 will be directed to "Save As" Men • Save location • File explorer • Set Name • Drop  
 down File Type menu • Choose "Excel Macro Enabled Workbook" • Save  
 • Different Icon (1) • Can save Back to standard

Macro Tools - Available in multiple locations, add Macro recording to status Bar for easy access,  
 Advanced tools From Developer Tab in tool Ribbon  
 Normal tools - View Tab • Macros • Macros drop down • Options: New macros, Record • Use  
 relative references

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Activate Status Bar Record Macro Feature Bottom of Page; Right click over status Bar • Enable Macro Recording

Activate Developer Tab - Right Click Tool Ribbon • Customize Ribbon • Menu • On Right hand side • Developer • Ok • New Tab • New groups

Navigating VBA - Visual Basic Editor is an application easily accessible via excel - creates red text boxes  
Editor

• Developer Tab or Alt + F11 • New window • Top is tool Menu Bar  
• Errors, Debug Menu • Step into each step • Below is standard tool Bar  
Edit tool Bar: Right click, toggle or Customize

Panes • Project, manage projects, find worksheet, Modules = Macros, set  
Properties - Below Project, select worksheet or sheet to view  
• Can collapse menu

Module - Top right, navigate with dropdown menu

Bottom left • Switch views: Full Module, Procedure View  
• Gives clean view of steps

Get Out - Top left "View Microsoft Excel"

Running Macros - Insert Buttons to run Macro, cannot undo tasks. Alt + F8 to open Macros  
• Choose Macro • Run

Insert Button - Developer Tab • Controls Group • Insert • 2 Menus: Form Controls  
ActiveX controls • Form controls • Top left • Button • Go to sheet  
Click + Drag Button area • Macro Menu • Select Macro to Assign  
Rename by selecting • Select outside

Managing Macros - Find, Manage, View, Modify options, Remove

Locate Macros - View Tab • Macros group • Macros Icon OR Dropdown "View  
Macros" • OR Developer Tab • Code Group • Macros • OR Alt + F8  
• On Right: Run, Edit, Options, Delete, Step into, Create

Options - Select • Edit • Can set Shortcut key + description

Bottom of menu - Where Macros Are stored dropdown • This work book

Edit A Macro - Not running smoothly or want to streamline Actions, Edit in VBA Editor  
• Remove Actions, correct errors or remove Macros from document

Developer Tab - Macros OR Visual Basic • Macros • List • Select • Step into OR  
 Edit • Edit • VBA Editor opens • Choose Project, Module • Right hand pane  
 Bottom left corner change view "Full Module View", All Macros in work  
 book • Top right dropdown menu to select Macro "Facs"

Troubleshoot - Tap Bottom Bottom top toolbar • Run • If error 'Debug' prompt.  
 Highlights Error • Remove action or correct Typo

Enabling Macros - Opening Macro from another user • Enable content, security details.

Security Warning when opening a Macro - Enable content to add to trusted list  
 View warning don't • Click Macros Have been disabled • File menu info tab opens  
 • Security warnings at top • Left icon click for list • Enable All content, More options  
 • Advanced Options • Help protect if untrusted, or Enable for single session

Macro Security - Developer Tab, trusted docs, enable message bar display

Options - Developer Tab • Code • Macro security • Trust centre settings • Macro settings •  
 • Disable All Macros without notifications, with notifications, Enable All macros  
 File Menu - File • Options • Trust centre • Trust centre settings, other settings  
 Trusted documents • Allow or disable trusted documents, Can Clear More  
 Message Bar warning • Show message bar or Never Show  
 • Enable Trust centre logging

Copying Macros - Copy and import Macros. Copy, export, Export

In Different Workbooks - Copy Macro - Have Both Documents open • Developer Tab • Code • Visual Basic  
 • See both open Books • Modules • Drag & Drop Module from one project to other

Export - Right Click module • Export File • Name • Save location

Import - Right Click over existing module • Import file • BAS format

Remove - Right Click • Remove • Export to Backup prompt

## Creating & Editing Macros

From VBA editor, view Macros & Components, identify Procedure, Sub procedure, command  
 Understanding Macros • Developer Tab • Visual Basic • Lefthand project • Modules • Double click • Can contain  
 more than one Macro • Full Module - All macros • Procedure view - single •  
 Top right is procedure menu

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sections of Macro - structured by subprocedure. Sub Macro name ends with END SUB. Between are executable sections. Green Text is comments. Step in shortcut F8, Press again to step further. Useful for debugging or working on specific code.

Group of executable actions = Declarations

Run at any time F5 or Run

Working with Modules

- Add Modules, Rename modules and start adding code

in VBA • Expand Modules in Project • Insert Menu • Module • OR

• Toolbar • Userform menu • OR in Blank part of Project window Right click • Insert • Module

Rename Module: Select • Properties window • Categorized • Delete + fill

Add code - ex. Sub ClearFormatting() • End sub automatically inserted

With record tool in same session will be stored in same module, different sessions, different Modules

Remove module • File • Remove OR Right click, remove • Delete box

Backup yes or No

Inserting Procedures - Manually insert Procedures OR Use insert tool to enter Public + Private Procedures

Procedure - Blocks of statements used to create actions Subroutine - perform a task

Insert sub procedure ~ Sub space Name at procedure space()

OR • Insert tool • Procedure • Menu • Name, type, scope, private/public

Sub • Action fraction: Perform some actions before returning a Value

More by C + P

Writing Code in Visual Basic - Write your own code, Add properties, methods + comments. Edit formatting with tools ex start with sub, Add comment, 'comment', text turns green

App. ctrl + spacebar • Application.Caption = "Caption"

Use edit tools to turn text into comment • Right click toolbar: Edit • Toolbar appears. In middle "Comment Block" or "Uncomment Block"

List appear - Right click; list properties/methods ex Worksheets. Add After := active sheet • F5 to run

Organize with Format • Press Tab • Indent with edit tool • Shift + Tab = Out tab

Customize edit toolbar - Right click • Customize • Commands • Edit •

Rearrange commands • Add/Remove

Using Variables - How to declare and assign variables • How to insert constants  
 + Constants      Declare Variable - Tab • Dim space. Discount as integer - will be numbers  
 Dim status as string - will contain letters  
 Discount = 10 / Status = "Apply Discount"  
 Text Table header?  
 Insert constant -      Const Approvedby As string = "Text"

Using Objects - Works with an object model Program, insert objects, Browse object library, create object collection  
 ex customize name of window application  
 object  
 Application.Caption = "Excel 2019" / Object Browser - Toolbar • Object Browser [F2]  
 • Select Excel Library • Choose class • Searchbar • Select • Copy on top of window  
 ex. Worksheets.Add After:=ActiveSheet  
 Add object collection -

Using - Insert operators to perform calculations, Comparison + Logical operators & to perform  
 operators calculations if certain criteria are met  
 ex aDim as integer, b as integer, c as integer / A=10, B=15, C = A+B  
Logical + Comparison If a <= 20 Or B = 10, Then / MsgBox ("The result is " & C) /  
 Else / MsgBox ("Enter a valid value") / END IF IF

Execute Actions - If, then, else, Case Value procedures • Dim purchase as Integer / Purchase = 100  
 Under Conditions      Apply Conditions to variable If purchase > 500 / MsgBox ("Discount")  
 Embed second IF      Else / If purchase > 100 Then / MsgBox ("10% Discount")  
 Else / MsgBox ("No Discount") / END IF / END IF

Cases - Execute procedure with certain actions

• Select case purchase says Case as Purchase = 200  
 Case Is >= 500 / MsgBox ... / End Select

Creating Events - Event Procedures let you interact with objects, Create events for objects like worksheets/sheet  
 • Select object at top of window, dropdown, Procedure on right hand side • New sheet  
 Add lines to execute • Declare Dim SheetName as String / Sheetname = InputBox("Enter  
 Set name for active sheet ActiveSheet.Name = sheetname / ActiveSheet.Move After:=  
 Sheets(Sheets.Count)



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Add reminder - Procedure menu - Before close

MsgBox ("Don't forget to save") / After save procedure

Managing Errors - 3 types of Errors, Syntax, runtime, Logic Error. Identify as you write

If you hit enter directly without completing Sub you get Syntax Error (Name)

Syntax - if you don't fully declare variables ex. dim a As

Runtime - <sup>ex</sup> Having string in integer section Click debug to highlight Error, Name

• Debug - Step into - F8

Add on Error On Error GoTo 2 OR On Error Resume Next

## Working With Macros

Creating A Form - Create Userforms - A window or dialogue box that's part of a user interface

Add userform, insert userform object, remove userforms

Insert Userform - Menu Bar - Insert - Userform OR lower toolbar - Insert user

• Userform Box will appear + Forms section in Projects

• Select and property menu will show properties

• Userform can be resized. Toolbox appears - Insert objects

• Select label, drag label; text field

• To see toolbox select outside of label OR click toolbar

Group with shift click - In menu Format with Format - Align,

Make objects same size, spacing, centre, Group

Remove Userform - Project window - Right click userform - Choose Backup

Customizing A Form - Once objects are inserted you can begin customizing Form

1 Form

Change name of userform - Add caption - Select Form - Properties  
 • Categorised or alphabetical - Select Name. No spaces <sup>yes spaces</sup> - Caption - Below

Size - Properties - Width field OR Height. Colour of or Font works

Colour of Object - Select Object, Properties, - Back <sup>style</sup> colour on transparent  
 • Can group object - Align with Text align

Button Appearance - Select Button - Properties, Back colour, system

Run Userform - Select outside of object - Select outer perimeter of Form - Toolbar - Run

Date

Programming - With forms add entries, Data entries, saving entries or cancelling actions

4 Form

Add procedures to userform to connect to spreadsheet

yes, Parts

• Open form • Right Click View code • In object menu select object <sup>Parts</sup> of the userform • Select userform • Procedure menu • Initialize, Remove old code • Namebox. Value = "", Leaves value blank

Add additional Procedure - Object field • Save Button

Ex of cell writing - Cells(<sup>column</sup>emptyrow, 1).Value = Namebox.Value

Part of Data Entry

How it starts

Cancel Button - Unload Me • Save

Procedure

Tracking - keep track of entries by creating actions which insert the date + time

Changes Add object and procedure to worksheet - Right click on sheet • View code • Object: Worksheet  
with Macros Procedure • Change <sup>Dim mychange As</sup> IF Not Intersect(Range("A2:(15"), Target) Is Nothing And Target. count = 1 Then

Deactivate events to Avoid Errors Application. Enable Events = False

Enters the data - Target. Offset(0,1) = Now

Activate Events - Application. Enable Events = True / End If

Ex: Cell Range

Using Macros - Execute Macros in your worksheet • Insert • Macro • Select cell • Left of formula bar • Insert Function • Choose category • Dropdown • User defined • Select Macro • Right click • Select cell reference • Ok •

Formatting - Change text to upper or proper case • Set MyText = Application.InputBox(- /  
Data with Macros Prompt: = "Select your text", Type: = 8) / For Each Cell Selected In Mytext/Cell Selected. Value = UCase(CellSelected. Value) / Next Cell Selected To Run • Macros • Choose • Run • Select text • Ok

Ex: Calc B1:d1 cells

Calculating - Specific values to calculate in a list • Dim cellvalue as Range / Dim total As Variant / For Each cellvalue In Selection / If cellvalue.Font.Bold = True Then / If IsNumeric(cellvalue) Then total = total + cellvalue.Value / End If / Next / MsgBox total / Range("H1") = total

Exporting - Export chart • Dim MyChart as Chart / Set MyChart = ActiveSheet.ChartObjects(1).Chart  
charts with / MyChart.Export Filename: = "Directory"; Filname: = "JPG"

- Customizing - Excel has multiple number formats, But you can create your own. Fraction, Currency, Number Formats: Telephone Number • Default text is General • Home tab • Number group • Each cell is set • Select cell • Range • Currency or Accounting • Accounting For Formulas
- Make modifications - Number group • Decrease Decimal • OR More Number Formats • Menu • Symbol, Decimal places • Negative Values
- Percentages - Select cell • Range • Numbers group % • OR Format Menu • More Format • Can modify Decimal Places
- CBPHONEFormat** - In Home - Number group • Bottom Right corner Box • Numberformat menu • Left Hand Bottom • ~~Custom~~ • Special • Phone number • Below select Region

- Customizing Text Format - Custom Text format window, insert additional Data to multiple cells + change appearance of additional Text - If numerical text is Longer than 15 will be converted E+14, Switch to text format to avoid
- Custom Format Text - Format menu • More Number formats
  - Custom, Bottom of List • Select typefield • @ space "chapter" ex. Turns 1,2 into 1 chapter and 2 chapter, adds text to end
  - Modify That text - ~~Right click cells~~ Select and Right click cells. Format cells
- Modify Text Appearance - In Format cells menu navigate to Font tab
- Return to Default - In Format Men <sup>OR</sup> Numbers tab, Scroll to general
- Procedure - Select formattings then click cell

- Customizing Date + Time Formatting
  - Specify Data components displayed, units of measurement, ex 43468.
    - Number group, Format, Short date, OR Long Date
    - More Number Formats, Date, Type Format, Select, Choose Region
    - Similar For Time, Custom Time Format, Custom ex mm:ss
- Using Colour in Formats
  - Select cell Range, Right click, Format cells, Type: Before General
  - Type (RED) will make text coloured OR Format cells, Font Tab
- Conditional Custom - If a value meets

Add colour - (Blue) "Credit" ... (Red) "Debit" ...

### Creating Conditional Formatting Rules

- Highlights important information & visual indicator • Select Range • Styles group on Home • Menu "Conditional Formatting" • Menu "Colour Scales" • New Rule • Choose Type: All cells based on values • Format styles of colour scales • Below - Min/Max/Mid values • can change colour
- OK • Can edit • Clear option • Select Range • Styles • Conditional • Clear Rules • Rules/Styles

Calling Out Data - Highlight specific Rows, columns, cells -  $< > \geq$  values • cell Range • Home • Styles • with conditional Formatting Rules

- Conditional formatting • Highlight Cells Rules • Less Than • Choose value or cell • Dropdown menu • Choose Formatting

Highlight Rows - Select Range • Conditional Formatting • New Rules Use a Formula to determine which cells to format • Enter Formula Below:  $= \text{Row number} > 500$  • Format • Bold • Fill • Ok • Ok

Different Formula for Columns -  $= \text{isnumber}(\text{cell})$  removes detected if cell has number

Analyzing Data Ranges - Apply colourscheme • Conditional Formatting • colour scales Data Bars - Gradient fill or Solid fill • Drop down or New Rule Menu • Show Bar only, max/min values

IF Values Are Hidden - Conditional formatting, choose different colour

Use Icon sets - Conditional formatting • Icon sets • Icon style (also in menu)

Advanced Conditional Formatting - Find Duplicate Values or Hide specific Values - Select cell Range • Home Tab • Conditional Formatting • Highlight Cells rules • OR New Rule OR More Rules • Format only unique or Duplicate Values • Select Duplicate • Format • Ok Manage Undo • Conditional Formatting • Manage Rules • Re-select cell Range

Hide Values - Cell Range • Conditional Formatting • Highlight Cells Rules • "Equals to" • zero • Custom Format, # White text, White Fill, No strike through

Controlling Conditional Formatting - Set Order, Resolve Conflicts - Multiple rules • Adjust rules • Manage Rules Menu - Styles, Home Conditional Formatting • Manage Rules • Choice: Current cell selection or Worksheet Rules • Worksheet • Some rules take precedence • Change Priority - Select; Up/down arrow • Apply Delete Rule - Select • X delete Rule at top of menu • Stop if True -  check Box What be overwritten

## Finding + Grouping Data

Finding Items in - Namebox → GoTo tools, Find - Namebox, move to specific location → Select a worksheet

Type in column + Row → Enter → GoTo - Home tab → Find + Select toolset → GoTo or  $\text{Ctrl} + \text{G}$  → Menu with recently viewed cells → Select field → Type cell.

Or select cell →  $\text{Ctrl} + \text{G}$  → Special → Browse for elements → ex Formula or Conditional Formulas, Blanks, Will highlight cells. Also From Find + Select Dropdown Menu

Find feature - Find + Select → Find OR  $\text{Ctrl} + \text{F}$  → Type → Find Next, Find all, complete → <sup>option</sup> Select to be redirected. <sup>Can only search selected cell Range</sup>

Using Advanced - Find tools can be customized - Find → Options → Dropdown menu of recently searched

Find Tools

- Type term → Search by Format - Right hand side "Format" Number, Alignment, Border, colour, style or Pattern OR Choose Format From cell → Clear by dropdown menu → Clear Find Format → Set Range - Worksheet / book, Rows, columns
- Look in 'Formulas, comments, Values' →  Match case →  Match entire cell contents.

Using Selection - Selection tool can find inserted objects → Open + Use Selection Pane, select objects quickly → Selection Pane → Home → Find + Select → Selection Pane at bottom OR Page Layout → Arrange → Selection Pane

List of all objects appears on the right (In a pane) → <sup>ex</sup> Select object, will become highlighted in worksheet → Hide/show object OR "Hide All" / Show All

Change Order → Select item, move it up/down with  $\uparrow$ ,  $\downarrow$ ,  $\leftarrow$ ,  $\rightarrow$

Highlight All objects → Go to Special → Select objects

Select One object - Find + Select → Select object

Using Replace - Create search query, customize replacement parameters, Replace cell formats

Change Company names → Home → Find + Select Menu → Replace →  $\text{Ctrl} + \text{H}$

Find What → Select term to replace → Then Replace with → Can be single cell

Can Replace All → Ok to confirm → Options → Match case, Within sheet, Choose All, comments → Change Format → <sup>ex</sup> Highlight → Find What → Enter term → Replace with same term → Replace with Format

**Find + Replace with Formulas** - Search Queries can be customized to look at values or Formulas. Find Menu → Find → "Sum" Tools → Options → "Look In" Dropdown menu → "Formulas" • Findnext, Findall, Browse with cursor

**Freezing + Unfreezing Panes** - Freeze Panes + Ranges, Freeze tools, create Freeze panes, Use split view  
 ex You scroll down and can't see top row → **Freeze Top Row** → View Tab → Freeze Panes.  
 • Freeze top row (headers) OR Freeze First Column, **Freeze First Row + Column** → Freeze panes → Choose one below top row and Right of first column → Freeze panes.  
 Works for more than one → Undo → Unfreeze Panes

**Split tools** - Splits document Top/Bottom, Left/Right. Select cell where to split → View → Window group → Split → Turn off → toggle split

**Grouping Items** - Group Rows + Columns - Multiple groups, Collapse and hide at will. Select - shift columns → Data Tab → Outline group → Group tools → Dropdown Group → Collapse with  → Expand with  → Remove group → Select group outline  → Outline group → Ungroup Group Rows - Shift select Rows → Create Sub Groups - On left  Shift select Rows → Group Remove → Outline → Group → Clear Outline

**Creating Outlines** - Analyze data tables and automatically create outlines and groups. ex **Subtotal** → Outline → Subtotal → Choose Column → Choose Function → Only Select Purchase total → Replace current subtotals.  Insert Page break between Groups → OK → Creates subtotal for each Type  
 Automatic Outline - ex =Sum(Range) → Outline group → Group dropdown → Auto Outline

**Add Formatting** - Outline group in Data Tab → Bottom Right  → Menu → Directions →  →  Auto match styles

**Hide Outline** - File Menu → Options → Advanced → scroll down → "Display options for this worksheet" →  Deselect "Show outline symbols if an outline is applied"

## Sorting + Filtering Data

**Sorting Your Data** - Sort - Select cell → Home → Sort + Filter → Z-A, A-Z, S-L, L-S, Custom sort, Filter  
 Data Tab - Sort + Filter Group → Activate Filter,  Icons appear in headers  
 Quick access sort - Left side, Large to small  
 Sort menu → Sort Criteria → Column, sort by colour, font, Icons, oldest to newest

## Advanced Sorting Tools

- Include/Exclude Header Data; change sort orientation, Apply case sensitivity -
- Add sorting Options - Data Tab • Sort Icon •  Data Has Headers
- If Row Headers - Options... • Sort Left to right if Rows •  for case sensitive
- Set Sort criteria • If case sensitive • Capital to lowercase = A-Z  
lowercase to capital Z-A?

## Applying Multiple Sort Levels

- Multiple sort Levels + Create Data groups; Reorganize - Data Tab • Sort group • It shows sorts applied
- Add Levels - Top Left hand corner
- Add Level • Sort By additional Criteria • OR Copy Level - Sort Level
- Copy level above • Change Sort Order - Select Sort • Arrows •, Remove by delete level

## Using Custom sort lists

- For Data that doesn't sort Alphabetically • Days, months, or text based ranking
- Preset Custom List - Select cell • Home • Sort + Filter • Custom Sort
- Define Column • Sort on Values • Order Dropdown • Custom list
- Preset lists, days, months, short + long form
- Create Custom List - New list • Add • OR years 1950, space 1960, 1970 etc. Add

## Filtering Your Data

- Show or hide different types of data - ex Filter Data in column - Home • Sort + filter
- Filter • OR Data Tab • Filter •  will appear in header • Text/Text Filter
- Deselect All • Select Filter • OK  Filter applied Icon by column header
- Reapply Filter - Data • Sort + Filter Groups • Reapply, Clear to clear OR Filter now
- "Clear Filter from" " " OR Data Tab • Toggle off "Filter" Button

## Applying Multiple Filters

- Activate Filters • Filter menu • "Select all search Results" + "Search term" •
- Additional Term • Check "Add current selection to filter" OR In Filter menu select multiple Terms

## Building Filter Arguments

- Show values that meet criteria • Text and numerical arguments
- Data tab • Filter • text filters • ex Equals • Menu • Dropdown • Choose Argument
- In field type values or dropdown of column choices • OR
- If column is numerical - Filter • Number Filters Additional Argument - AND OR

**Sorting + Filtering** If colours have been applied, use codes to sort and filter. Apply filters using colours  
 Sort + Filter • Filter Select Filter options  Sort by colour • Dropdown menu  
 Select colour to filter to top Filter out, filter by colour Shows only selected  
**Change sort Order** Choose particular colour. Can choose "No colour" "No fill"

**Advanced** - Use separate to create advanced Filter Criteria - ex Table • Create Criteria -  
**Filter Options** Select  In new table Enter Data to filter out. Data Tab • Sort + Filter group • Advanced  
 Choose - Filter List in place or Copy to another Location • Choose In place. Select  
 cell Range (table, include headers) • Select Criteria Range (new Table) • Unique Only •  
 Add additional Criteria - ex  $>300$ ,  $<100$ . Will include less.

**Tidying Duplicate Values** Advanced Filter tool to temporarily hide duplicates. Select Data Range to be filtered +  
 Location of table • Activate advanced filter tool • Sort + Filter • Advanced. Filter list  
 in-place • Select Range • ~~Criteria Range~~ <sup>Leave Empty</sup>  display Unique Records •  
 Blue Row numbers Indicate some Rows are hidden • Numbers Missing -  
 See Hidden Row - Hover between missing Row and click - Drag to expand  
 Unhide all - Clear Filter

## Referencing Data

**Referencing Your Cells** -  $=\text{Sum}((\text{Range}), (\text{Range}))$ , Include double() Reference Column - <sup>ex</sup>  $(H:H)$ , <sup>rows</sup>  $(3:3)$   
 indicates Worksheet  
 - Reference Data in other sheets/Books - <sup>ex</sup>  $=\text{Sum}(\text{London!Range})$  • Enter • Auto • Reference  
**Using Dictionaries** - If worksheet includes non-Alphabetic characters will need ~~Wk~~  
**Same Worksheet Other Workbook** - <sup>ex</sup>  $=\text{Sum}([File.xlsx]Worksheet!Range)$  IF Book is closed Formula becomes  
 File Path • If File is lost, Results will be corrupted **Backup** • Copy and Paste only values  
 on

**Choosing Between Absolute/Relative + Mixed cell References** • Default is Relative -  $\Rightarrow B2$   
**Absolute + Relative** Refer to same cell from static location - Use absolute <sup>ex</sup>  $=\$B\$10$  <sup>ex</sup> Mixed  $=($B$8:E8)$ ,  $(B\$13)$ ,  
**Cell Values** prevents Fill Errors If adding from a single cell in a Table use  $\$$

**Naming Your Data** - Allows you to refer to them in later calculations menus "Name Box" - Select Range  
 Ranges
 

- Select Name Box • Type Name • Enter / Esc included
- Create From selection - Select Range with headers • Formulas Tab • <sup>Ctrl</sup>  **Create From selection**  <sup>Ctrl</sup> **Shift**  **Ctrl** **Shift** **Alt** **Up** **Enter** **Esc**
- Naming Adds Dropdown to Name <sup>Ctrl</sup>  **Create From selection**  <sup>Ctrl</sup> **Shift** **Alt** **Up** **Enter** **Esc**
- Manually - Select Range • Formulas Tab • Define name • Set Name • Scope limit to workbook • Add comment • Can reselect **Absolute Reference**

**View** - Formula Tab • Name manager

**Example** - Use in Formula =AVERAGE(Name)

**Use in Formula** - Formula Tab • Use in Formulas • Select From List

**Managing Named Ranges** - Edit, manage, adjust - Formula • Name Manager • List of Ranges • Tables are Added  
 "Refers to" is the scope (workbook, sheet)

**Filter** - Based on Scope, Errors, Names

**Deleting Named Range** will corrupt dependencies #NAME?

**Calculations using Constant Values** - Update several values by using a reference cell. ex Variable tax Rates  
<sup>Ctrl</sup> **Shift** **Alt** **Up** **Enter** **Esc**  
 $=\text{cell} * (1 + \text{choose}(\text{Index cell}, \text{Value}_1, \text{Value}_2, \text{Value}_3, \text{etc}))$   
 Because the values are constant Add \$

**Using Cell References** - Indirect Formula - ex =Parts!C16 Direct / =Indirect(Cell&"!"&cell)

Indirectly

1. **Watch Window** - Working with multiple worksheets • Useful for larger workbooks  

- Formulas Tab • Auditing tabset • Watch Window • Menu • Resize/move
- Click + Drag to border to fix as pane

**Add Data** - Move to worksheet • Add Watch • Select cells • Add • Shows Cell values + Formulas

**Jump to cell** - Double click on list

**Activating Automatic Updates** - Updates to cells - Deactivate • Formulas Tab • Right side • Calculations Options  

- Automatic, except for data tables; Manual
- Manually • Formulas Tab • Right hand side • "Calculate Now" or "Calculate Sheet" **F9** **Shift + F9**

**Set Default** - File • Options • Formulas • Set default toggle, Can  calculate before save

## Using Formula Auditing

- Visualizes Reference cells + Data Ranges • Formulas Tab • Formula auditing
- **Trace Dependents** - Shows cells that are affected by the currently selected cell →
  - Arrow Appears • Remove Arrows command to clear
  - Precedents - Same But Reverse Order
- **worksheet Icon** - Pulling Data from other Worksheet • Double click to open Go to Window

## Forecasting & Solving Problems

- Understanding Error Messages** • **Circular Reference Error** - When Formula was composed the cell where the Formula is contained may have been added to the Formula
- #DIV/0! Error** - Divide By Zero Error • Change value
- #Value! Error** - If area in cell reference is incorrectly defined or formatted <sup>ex: space</sup>
- #REF! Error** - Reference Error • Problem with reference used in formula: !Name/cellRange
- #NULL! Error** - Cell Reference is not separated correctly <sup>ex:</sup> Missing
- #NAME? Error** - Name of formula is spelled incorrectly
- View Formulas** - Formulas Tab • Formula Auditing • Show Formulas • Cells expand
- Enable Background Error checking** - Files • Options • Formulas •  Enable Background Error
- Indicate Errors with colors • Choose Fill colour • Can Reset ignored Errors

- Reviewing** - Error tools to check, evaluate and Debug Formulas
- Debugging** **Identify Error** - Select Error cell, on left of cell  • Drop down menu • Name of Error
- Formula Errors** Help, Show calculation steps, Ignore, Edit
- Error Checking Tool** - Formulas • Formula Auditing group • Error Checking • Menu Location, Error Name, Description • Help • Show calculation steps
- Edit or ignore • Next navigator, Previous
- Additional Options May Appear** <sup>ex: "Trace Error"</sup> Arrows appear
- Evaluate Formula** - Formula • Auditing • Evaluate Formula • Can stop in/out
- Evaluate** - Cannot evaluate, still getting error, that is the location
- Can Restart • Traced arrows Do not Disappear

- Calculating** - Interest Repayments, Loan Repayments, Total repayments per period
- Interest and Total Period must be same number type as period being calculated <sup>ex:</sup> Years
- Loan Total Payment Per year** • **PMT formula** •  $= \text{PMT}(\text{Rate}, \text{Total Period}, \text{Loan Amount})$

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Interest Paid Per Time period -  $= \text{IPMT}(\text{Rate}, \text{Period}, \text{Total Period}, \text{Loan})$

Principle Loan paid Per period -  $(m \text{Interest}) = \text{PPMT}(\text{Rate}, \text{Period}, \text{Total period}, \text{Loan})$

Change to Monthly - Change total loan period to months, time period to months

Divide interest Rate By 12

Reaching A

Target Value

- Goalseek tool - If you use formulas to obtain certain Results use goalseek  
Requires Formula -  $ex: (C3 + C4) * (cell)$

Data Tab - Forecast Group - What-if-Analysis - Goalseek - Set cell - To Value

• Changing cell  $ex: You set a target Sales price and it adjusts your profit$

Solving A  
Problem

- Math problem solvable with Solver Tool - Activate solver addin - File - Options  
• Addins - Bottom: Excel Add-ins - Go - Solver Addin - On  
Access - Data Tab - Analyze Group - Solver - Set Objective - Profit Cell  
Set Task - Max/Min / value of Variable cell Range - Add constraint - Condition  
constraint, can be multiple - OK - Solve

Using Forecast - One click forecasting to make predictions on historical data - Adjust Timeline  
Tool and seasonality settings to make changes  $ex: Data \text{earnings}$

Forecast - Select All table values, including headers  $in \text{empty}$  - Data Tab - Forecast group  
• Forecast & sheet - Chart Appears - Estimated Forecast, High/Low confidence  
• Can change to Bar Chart, Set Forecast end - Options - Start Date, Confidence  
interval - Can Modify Range Create Sheet (chart) - Makes new sheet

Using Data Tables - Good for testing 'What if' Scenarios -  $ex: Calculate \text{Total Profit per unit} = \text{Units} * \text{Price per unit} - \text{cost per unit}$   
If you want to change variable, Data table, test -  
Top left cell is Profit Reference - Select Scenario Table - Data - Forecast - Data  
table - Set Row/column Input cells - (Price per, cost per) - Be adjust widths  
Can change update settings to exclude Data tables