Day 1: Overview of Excel

# Introduction to the main functions of Excel:

* Absolute Reference (Tham chieu Tuyet doi): to reference a fixed cell. When the formula is copied to other cells, this reference does not change. In Excel, an absolute reference is indicated by adding a dollar sign ($) before both the column letter and row number, for example $A$1.
* Relative Reference (Tham chieu Tuong doi): Used to reference a cell based on its relative position to the cell containing the formula. When the formula is copied to other cells, this reference adjusts according to the new position. A relative reference does not use the dollar sign for example A1.
* Data Validation: a feature that allows you to control the type of data or the values that users enter a cell. This tool can be used to set restrictions and create guidelines for data entry, which helps in maintaining data integrity and preventing errors.

# Some useful notes of mine:

Protect sheet in excel is also important to help data becomes stable.

Some useful add-in tools: ChatGPT, GPT-excel, Dax Studio

Automate in tools bar is necessary when you have multiple files that can be done the same way

# Instruction on using basic shortcut to improve productivity:

1. Ctrl + C, X, V, Z, Y S P F (Find) , R (Replace)
2. Ctrl + Arrow Key: Move to the last cel
3. Ctrl + Shift + Arrow Key: Selected cells from standby cells to the last cells in the direction of the arrow.
4. Ctrl + Space / Shift Space: Select the entire column / row.
5. Ctrl + T: Create a table from data.
6. F2: Edit the selected cell
7. Ctrl + Shift + L: Turn Filters on/off.
8. Alt + E, S, V: Special paste
9. Ctrl + 1: Open the format cell dialog box
10. Alt + Enter: Insert a line break within the same cell.
11. Ctrl + Page Up / Page Down: Switch between sheets in a workbook
12. F4: Repeat the last action or toggle between absolute / relative references in a formula
13. F5: Open the ‘Go to ‘ dialog box, allowing you to quickly move to a specific cell or a named area in the worksheet.
14. F9: Recalculate all formulas in the worksheet. This is useful when you want to ensure that all displayed
15. F12: Open the ‘Save As’ dialog box, allowing you to save the current worksheet with a new name or in a different format.

# How to use cell reference functions (Vlookup, Hlookup, Index, Match, Offset, Choose, Indirect)

1. VLOOKUP (Vertical Lookup): Searches for a value in the first column of a table and returns a value in the same row from a specified column. Syntax: VLOOKUP(Lookup\_value, table\_array, col\_index\_num, [range\_lookup]).
2. HLOOKUP (Horizontal Lookup): Similar to VLOOKUP, but searches for a value in the top row of a table and returns a value in the same column from a specified row. Syntax: HLOOKUP(lookp\_value, table\_array, row\_index\_num, [range\_lookup]).
3. INDEX: Returns the value of an element in a table or an array, selected by the row and column number indexes. Syntax: INDEX(array, row\_num, [column\_num]).
4. MATCH: Searches for a specified item in a range of cells, and then returns the relative position of that item in the range. Syntax: MATCH(lookup\_value, lookup\_array, [match\_type]).
5. OFFSET: Returns a reference to a range that is specified number of rows and columns from a cell or range of cells. Syntax: OFFSET(reference, rows cols, [height], [width]).
6. CHOOSE: Selects a value or action to perform from a list of values, based on an index number. Syntax: CHOOSE(Index\_num, value1, [value2],…). (Is this random?)
7. INDIRECT: Returns a reference specified by a text string. This reference can be a cell or range of cells. Syntax: INDIRECT(ref\_text, [a1]).

These functions are powerful for data retrieval, manipulation and dynamic referencing in Excel, especially when combined with each other or with other Excel functions.

# Learning to process text data with Excel functions:

1. CONCATENATE or CONCAT: Combines two or more strings into one string
2. LEFT: Extracts a specified number of characters from the start of a string.
3. RIGHT: Extracts a specified number of characters from the end of a string.
4. MID: Extracts a substring from the middle of a string, given a starting position and length.
5. LOWER: Converts all characters in a string to lowercase.
6. UPPER: Converts all characters in a string to uppercase.
7. PROPER: Converts the first character in each word of a string to uppercase.
8. TRIM: Removes all spaces from a string except for single spaces between words
9. LEN: Return the length of a string
10. FIND or SEARCH: Locates one text string within another and returns the location of the first character of the found text.
11. REPLACE or SUBSTITUTE: replace part of a text string, based on the number of characters you specify, with a different text string.
12. TEXTJOIN: Joins several text strings into one text string, with a delimiter (comma? End sentence?)
13. CHAR: Returns the character specified by a number
14. CODE: Returns the numeric code for the first character in a text string
15. VALUE: Converts a text string that represents a number to a number
16. TEXT: Converts a value to text in a specific number format.

These functions are essential **for text manipulation** in Excel **and can be combined in various ways** to achieve more complex text transformations analyses.

# Functions for processing date data.

Excel offers variety of functions to handle and manipulate date data. Here’s an overview of some key functions:

1. TODAY(): Returns the current date
2. NOW(): Returns the current date and time
3. DATE(year, month, day): Construct a date based on year, month and day values
4. DATEVALUE(date\_text): Converts a date in the form of text to a date serial number
5. DAY(serial\_number): returns the day of the month from a date serial number
6. MONTH(serial\_number): Returns the month from a date serial number
7. YEAR(serial\_number): Returns the year from a date serial number
8. WEEKDAY(serial\_number, [return\_type]): Returns the day of the week corresponding to a date
9. WEEKNUM(serial\_number, [return\_type]): returns the week number of a specific date
10. EDATE(Start\_date, months): Returns the serial number for the last day of the month which is a specified number of months before or after a start date.
11. DATEDIF(start\_date, end\_date, unit): Calculates the difference between two dates based on the specified unit (like days, months, years).
12. NETWORKDAYS(Start\_date, end\_date, [holidays]): Returns the number of whole working days between start\_date and end\_date.
13. NETWORKDAYS.INT(start\_date, end\_date, [weekend], [holidays]): Similar to NETWORKDAYS but allows customisation of which days are considered weekends.
14. WORKDAY(start\_date, days, [holidays]): Return the serial number of the date before or after a specified number of workdays.
15. WORKDAY.INTL(start\_date, days, [weekend], [holidays]): Similar to WORKDAY but allows customisation of which days are considered weekends.

These functions are **essential for managing** and **analysing date-related data in Excel**, such as **calculating age, tenure deadlines**, and **scheduling.**