

Ques 3

(S-A, S+A)

4 Logical Function;

is $25 = 45$? [State] [Result] \Rightarrow Formula

	A	B	C	D
$25 = 45$	25	45	$= A1 = B1$	False
	26	45	$= 26 > 45$	False
	27	45	$= 27 < 45$	True
	25	45	$= 25 \leq 45$	False
	25	45	$= 25 \geq 45$	True

Logical Function: To see True / False as ~~as bit~~ binary form

[1, 0] use if

if (Logical test, [value if true], [value if false])

↓
if ($A_1 > B_2$, 1, 0)

IF (Logical test, [value if true], [value if false])

↑
it can be
anything

↑
it can be
anything you
choose.

= if ($A_1 \geq B_2$, Yes, No)

= if ($A_1 \geq B_2$, pass, Fail)

= if ($A_1 < B_2$, $A_1 + B_1$, $A_1 - B_1$)

= if ($A_2 > B_2$, today(), today() + 10)

← Home-tab date

• Nested if function:

= if (D5 > 60, "Distinction", if (D5 > 40, "Pass", "Fail"))

• And Function

=AND(logical1, logical2)

=AND(z0, ≤100)

You can apply multiple logical

IF (AND(E6>=0, F6<=40), IF(AND("Fail", IF-----)))

• Not function

=NOT(logical)

=IFERROR(value, value-if-error)

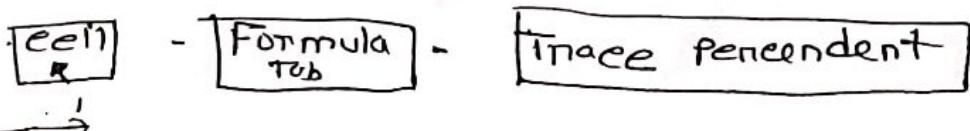
Using Auditing Tools: precedence, Dependence

some columns are interconnected to each other.

go to [Formula] - tab → [Show Formulas]

Then touch any formula to understand how
on by which features this formula created

other way is press on particular cell. To see
the relation



If you want remove arrows just keep click wison to remove

- ② On to see any particular cell by which it is related. By which function, use click [cell] → [Formula Tab] → [Trace Dependents]

Then it will show (A1) formula = (B1*B2+C2*D2)

- There is a way to what formula use,

just click formulated text on electronic

(Formulated text) → [FORMULATEXT(cell)]

= FORMULATEXT(cell)

- Evaluate Formula
- cursor on a Formulated cell

[Formula bar] → [evaluate formula] → [evaluate]

→ [Evaluate] → [Evaluate]

Show sequence

use relationship of elements

functions should add comments inside code

use of false positioning you can fix your code

Text related Function:

- Removing unwanted space for a text column -

use Function "TRIM"

Trim (Text)

Trim (column item)

Hi	The name	
Sounov		Tolukden



double click on + the it will auto fill.

- = Proper(text) For proper text.

- = Upper(text) : All capital lettered item

- = Lower(text) : All small letters

- = Len(text) : Length of the text

- Left(Text) : Left character 'T' : Left(Text, number etc) Left(F13,3)
- Right(Text) : Right characters! - Right(Text, Number)
- Mid (Text) : =mid (text, start, end)

- Concatenate (Text1, Text2) Concatenating two text.

=concatenate (Text1, ' ', Text2)

- Find() : Find ('s', B4)

B4 = Sounov

- Search (o, B4) = 1
← case sensitive

- = Replace(D₃, old_text, stat_num, num_cotic, By which you want to replace, you want to replace)

D₃
John & Rita

- = Replace(D₃, e, 1, "")

= John ritा

D₃ X - day - date

- = Substitute(D₃, old_text, what you, by which want to replace, you want to replace)

Date function:

- = Today(): Todays date } changeable based on time and date
- = now(): date and time together } on time and date
- = day(date): [date] object has .day() function
- = month(date): [date] object has .month() function
- = year(year)(date): [date] object has .year() function
- Suppose i have day, month and year separately, How do we combine them?

- Date(year, month, day)

new date object from old

- Add/ subtract month

$$= \text{Add}(+D_5 + E_5)$$

day-month-year
2/8/2024

3/8/2024 + 6

for subtraction

- Edate: subtract month! month, Edate(). Add
- also for year Edate(e.g., 120) 120 months

Edate(D₄, -2)

2 month minus

Date Functions

- Suppose 'I am working' in a company and I have to know one year how many days works except weekend (Saturday, Sunday). 152 weeks in a year.

- Network days $365 - \text{days_year}$

$261 - \text{days_work}$ (including weekend)

- NETWORKDAYS (start-date, end-date, [holidays])

↑ if some extra holiday include

- For specific country weekdays is specific. Then use NETWORKDAYS (start-doxs, end-date, [weekend], [holidays])

- Extract date to doxs.

new cell 8/8/2024 mouse click on

Format Search for format cell

If you do not find your format, customize your own format.

Custom - type

new format

8/8/2024

Date difference:

if you want to calculate your age, how many age are you, how many month are you,

Birthday = 21 July 2003

= datedif(D₁₂, D₁₃, "Y") ← year
Today = 8 August 2024

= datedif(D₁₂, D₁₃, "M") - month

= datedif(D₁₂, B₁₃, "MD")

Define name range:

When you work in excel you have multiple sheets!

so if you want to see so any particular sheet while working with another sheet you can

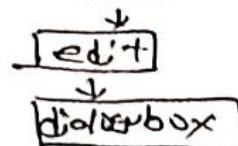
At first can create name by selecting name items.

← Namebox

This is an advantage of navigating with workbook from any worksheet.

To rename name range

click **Formula** tab → click middle **(Name manager)**



- How to delete name range?

Go to
SPP

Formula tab

Name manager

→ select name at below work b' → select name range
work diff. from sheet w' → and delete

• Create name range for multiple columns.

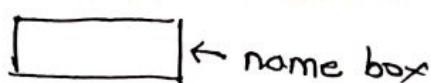
select all the column (pota) → go Formula - tab

Create from "selection"

↓
top row ✓
left column
OK

Work with name ranges with formula

First of all create name range.



[name]
[Text]

Function:

- $= \text{sum}(\text{numbers})$

$$= 28$$

Text	Numbers
Monday	10
Tuesday	20
Wednesday	30
Thursday	40
Friday	50
Saturday	60
Sunday	70

- $= \text{minimum}(\text{numbers})$: $\text{MIN}(\text{numbers}) = 10$

- $= \text{maximum}(\text{numbers})$: $\text{MAX}(\text{numbers}) = 70$

- $= \text{AVERAGE}(\text{numbers})$

(Average values) $= 44$

- $= \text{COUNT}(\text{numbers})$: $\text{COUNT}(\text{Text}) = 0$; count only use numbers not use for text

- $= \text{COUNTA}(\text{Text})$; this COUNTA is for counting text data.
 $= 7$

- For counting empty cell use
 $= \text{COUNTBLANK}(\text{numbers-range})$

- If you want to know 2nd min number / 3rd max number use

- $= \text{SMALL}(\text{numbers}, \text{in-th-number})$: $\text{SMALL}(\text{numbers}, 2) = 20$

- $= \text{LARGE}(\text{numbers}, \text{in-th-number})$: Third largest number
 $= 50$

We know name range can use for many test, specifically different sheet instantly go som into (name range)

- * Basic formulae
- Add. = $A_3 + B_3$
- Subtract = $A_3 - B_3$
- multiply = $A_3 * B_3$
- Divide = A_3 / B_3

④ Count functions (continued)

= COUNT(A₃: A₁₀) - count only numbers

= COUNTA(A₃: A₁₀) - count all (non-empty cell) (continued)

= COUNTBLANK(A₃: A₁₀) - count empty cells (continued)

• COUNT IF: (logical count)

not suppose some fruit count only Apple

fruits not been eaten

COUNTIF(range, criteria)

, let's do COUNTIF(A₃: A₁₀, "Apple") (continued) (continued)

on cell number

• The equation for permutation

(continued) (continued) (continued)

$$P_{k,n} = \frac{n!}{(n-k)!}$$

permute (number, number-chosen) (continued) (continued)

• The formula for combination (continued) (continued) (continued)

$$\binom{n}{k} = \frac{P_{k,n}}{k!} = \frac{n!}{k!(n-k)!}$$

COMBINT(number, chosen-number), when $P_{k,n} = \frac{n!}{(n-k)!}$

choose number of ways to choose k items from n items

Statistical Functions:

- **SUMIF**(range, criteria, [sumrange])
range must contain at least one value
and can be a cell or range
optional
 $\text{SUMIF}(A_1:A_{10}, <50)$ sum range
is optional from 0 to 1
if range in one row column, and criteria in another column
 $=\text{SUMIF}(\text{criteria range}, \text{criteria}, [\text{sumrange}])$ sum range
is optional from 0 to 1
 $=\text{SUMIF}(D_1:D_7, \text{"MONDAY"}, E_1:E_7)$ sum range
is optional from 0 to 1
- **COUNTIF**(range, criteria)
- **AVERAGEIF**(range, criteria)
you can change criteria by
referring to another cell
define criteria in another cell
 $\text{AVERAGEIF}(A_1:A_{10}, <90)$ criteria
(absolute address) $\boxed{<90}$
 $\text{AVERAGEIF}(A_1:A_{10}, >9)$ criteria
(absolute address) $\boxed{>9}$
- You can also use multiple criteria
 $\text{SUMIFS}(\text{sum-range}, \text{criteria range}_1, \text{criteria}_1, \text{criteria range}_2, \text{criteria}_2)$
- **SUMIFS**
- **COUNTIFS**
- **AVERAGEIFS**(average_range, criteria_1, crit_1, criteria_2, crit_2)

MATHS and ~~Trigonometry~~ function

- SUMPRODUCT(~~array1, array2, ...~~) (multiplies two column)
as well as sum

- MROUND(number, 1) nearest round number (integer)
nearest multiple of 1

$$\begin{aligned} \text{MROUND}(5.3, 1) &= 5 \\ 6.9 &= 7 \end{aligned}$$

- MROUND(number, 3) nearest multiple of 3

$$\text{MROUND}(3.7, 3) = 3$$

$$\therefore (5.7, 5) = 5$$

$$\text{MROUND}(5.7, 2) = 6$$

- FLOOR(number, 1) = lowest minimum closest number

- CEILING(number, 1) = highest closest number

: remainder

- MOD(number, division)

- QUOTIENT(numerator, denominator): "Give only integer //

(division, gives digits before decimal point)

(division, gives digits after decimal point)

LOOKUP FORMULAS

VLOOKUP: Apply formula for vertical table is called Vlookup.

- * Actually when you have one value of a column, suppose a random value, and you want to know corresponding column value of some new position?

This is where Vlookup use.

A	B	C
Product	quantity	price
mobile	25	\$26.95
camera	20	\$28.95
watches	30	\$35.95
cosmetics	40	\$49.5

=VLOOKUP(lookup_value, table array,
col-index-num, [range_lookup])

=VLOOKUP("mobile", A1:C4, 3; 0) ← Finding mobile price
exact match

• creating a dropdown list for vlookup (data validation)

click Data tab → Data validation

choose validation
list values then
automatic change.

↓
List

↓
Select from cells.

then automatically a dropdown
create

You can also use vlookup from name range

LOOKUP FORMULAS

- * Vlookup with approximation match:

~~Bottom of~~ $Vlookup($ ~~Bottom~~ $\text{last} = 0)$
L exact - quantity

$Vlookup(\dots \text{last} = 1)$

L approximation

sometimes any particular input is not exactly matched to its corresponding values.

1000	2000	3000	10
2000	3000	4000	20
3000	4000	5000	30

* Out of range vlookup not works

What if 1500?

* In the lookup value column only number is acceptable

$Vlookup(\dots \text{last} = 1)$
L approximation

* Lookup value column should be sorted in ascending order

* leaving 4th argument. Blank makes it as approximation match.

- * Trim and Vlookup.
 - most of the time it gives error
- Normally the data in company are not suited with proper space.

(or you can make your data proper) formula
 $=Vlookup(trim(A1), C10, 3, 0)$

↓ To fix table click F4

- If you have the data in the space in table itself.
- formula at first point don't have to add +0
 $=Vlookup(look-up-value, Trim(A1:C10), 3, 0)$
- ↓ \leftarrow enter+shift+enter
- It is form of text ↑ often apply.
 so to convert number you can add +0
 { } mean you can add 0 or 1 or 2 or 3

if you want to add and subtract value in table B

add +0

{ what you do is take previous formula +0}

Hlookup: If you have data in horizontal table, then
use Hlookup.

= HLOOKUP (Lookup_value, table_array, row_index_num, [range_lookup])
similar to Vlookup otherwise functionality.

* Vlookup Rule:

1. Lookup value should be unique in the column.
2. You should find values from left to right
3. Lookup value should belong to first column
on table array.

Lookup Function:

Suppose i have a table incom / tax

- e.g. want to fetch incom-tax based on income.
by lookup function

B6 = LOOKUP (lookup_value, array)

- Benefit of lookup function is to we do not give
a parameter like vlookup and hlookup, we
and Lookup function is applicable both
at row as column.

• LOOKUP (lookup_value, array)
First Last
col col

* Lookup for full record.

= LOOKUP(Lookup-value, ^{vector}Lookup-vector, result-vector,

Lookup ($f_{A8}, A8; A14, B8, B14$)
| ↓
Fix F4
F4

* VLOOKUP shows Full record.

= VLOOKUP(Lookup-value, ^{entire}Lookup-vector, match(Vlookup heading,
| Fix Fix
F4 F4 entire table,
 return record)

* Index: want to fetch some value in a particular index

= INDEX(onnax, rownum, [column, column])

= Index(Table, _{num}row, _{num}column)

* match function: using match function you can get the text in the entire column / record

= match(Lookup-value, Lookuparray, I/O)

value to find index

Protect Cells:

- How to lock and unlock the cells?

- By default every cell is locked. click right in mouse then press **Format cells** → **Protection** to check.

- To protect a sheet right click on that sheet

protect sheet
↓
enter password

if i lock a sheet i can't able to do any operation on that sheet.

- What if i want to unlock some cell and lock entire sheet

At first → right click → unprotect → password

then select some cells you want to unprotect

→ press **ctrl+1** (**format option**)

→ Locked.

Then protect sheet : check then

- On you can also do protect some cell and unprotect entire sheet
- select entire sheet → right click → format → unprotected

- * If you want to protect a sheet but want to give permission some user (insert/delete) then in right click on sheet → Format Cells → Protection tab → password

Permissions

Insert

Format

Delete

- * How to protect a file? → Go to File → Protect Workbook → Encrypt with password

File → Info → Protect Workbook → Encrypt with password

- ④ How to protect a workbook

tab Review → Protect Workbook

- # Hyperlink: Basically in a cell if add a link of another cell.

Select the cell - **Ctrl+K**

Let **place in this document** → Type the cell reference

* Hyperlink to file: Anything add to Hyperlink

Select cell - → Existing File
on web page → select anything

Select cell → → links → Existing File / web page

To edit, keep cursor there

and

Page setup for printing:

margins

orientation

page size

print area

Break

Background

Print titles

- To see print preview (

Then options:

- margins: normal margins, narrow margins / wide margins

- letter size / page size: A4, A3, A5, etc.

- portrait orientation - / landscape -

- collated / uncollated

i have 42 pages, out of 42 pages. if i want 3 copy How do we want

① You can give the page numbers

pages to

* Print Selection

Print Active

Print entire workbook

Print section.

• Custom scaling:-

- No-scaling
- Fit sheet on one page
- Fit columns on one page
- Fit all rows/ all column on one page

• How many copies do you want

Copies

II Layout method:

Go page layout tab then the layout

will see all options are available as -
you seen in prev print dialogue box.

- Print titles, select one now which will show header

Header and Footer:

go to **[Insert]** tab → **[Headers & Footer]**

3 empty box will open. click on empty boxes a

new tab **[Design]**-tab will open.

Then you can use various to header hence.

page number,	current date,	sheetname
--------------	---------------	-----------

page $\alpha[\text{page}]$ of $\alpha[\text{pages}]$

page 1 of 9



* If you want to insert a pic on logo.

[Design] Tab → **[Picture]**.

* you can also use **different footer**.

These have also a lot of options available.

like. different first page, different odd/even page, and similar tools like header scroll with document

Align with page margins.

Sorting: Numbers, categories, multicolumn sorting.

keep your cursor on a particular column cell.

then go to **Home** tab at the right side of ribbon
here have option **sort and filter**

sort and filter

sort smallest to largest

sort largest to smallest

custom sort

sort oldest to newest

- sorting based on column (Advanced sort)

Data tab → sort **A Z**

sort by **sort on** **order**

- multicolumn sorting

select any cell → **Data tab** → **sort**

- sort by quantity

sort on
cell-values

click Add level

- sort by price

cell values **smallest to largest**

from top to bottom

bottom to top result

Advance Filtering:

source data → criteria → location

keep your cursor in the source data!

- Go to **Data-tab** → **Advanced** - (source data automatically selected)

list range is automatically selected.

asking for criteria range

column	criteria
--------	----------

Brunt
Apex

→ copy to another location [select location]

• Advance filtering on multiple column

in criteria range just select -

Year	Brand
2018	Apex

- others like options

Year month profit
2018 Jan < 5 Oct > 2000

- Filter dates

Date
→ 10-07-2021

very simply

just select source data → Data → Advanced → filter

→ select criteria

- To copy another sheet just go at first another sheet, then - Data → Advanced → source

How to apply filters to table:

Positional arguments

keep a cursor to table / source data

ctrl + shift + L

every feature / column will show options for filter / sort.

Longcut: Go to Data - tab → Filter

Filter

To filter just press ← Then give your criteria

Date filter is amazing you can use it efficiently.

After,

equal,

Next month

Next q

you can also sort texts:

Filter text

begin with,

Ends with

using tools ↗