

Lecture - I

Basic

①

Areas:

open Excel

↓
new blank worksheet

→ Upper : Ribbon

Formula bar :- write something in
cell → it will show

spreadsheet and → Rows + columns.

→ Row → column

Add new sheet by clicking (+) button
at the bottom

→ Bottom area :- status Bar

→ Bottom right :- zoom in/out - $\frac{1}{100}$ +

→ Bottom right

→ Save file → (Ctrl + S)

Entering Data in sheet

* → For alignment of entered data



Home : → alignment options

* ~~Adjust size of~~

* Adjust size of cell

(i) select any row / column



Place cursor b/w^2
(\downarrow or \leftarrow)

adjust its size.

(ii) for data entry



select all the column from top

select ↓

place ↓

cursor anywhere

b/w columns



Double left click

Excel automatically adjust its size.

→ Text : → ^{left} ~~right~~ alignment } by default
nos : → Right alignn }

Formatting Data

- make it diff.
- i) select heading →
 - ii) select entire data
↓
Home : → Border [F11]
↓
all borders.

- iii) For Table / Tabular Data
- ↓
any cell inside table
Select ~~any cell~~ any cell inside table
↓
(Ctrl + T) or Insert :- Table
↓
automatically apply table + filter
↓
Design : - change Table colour

⇒ To goto table design
select any cell in the table
then only if will show Table design
option in ribbon.

Filter Data

→ After making Table
(Ctrl + T)
↓
Excel put in each heading for
filtering the data

↓
click on or filter button
set filter as per ur choice.

→ After applying filter :
states bar will show "x/y" filtered one
total

→ select all amount
states bar
sum & average
Right click on states bar
more options will come
(max, min, sum, count ...)

Convert Amount value in currency

select all amount



Home :- General



Currency



more number format



No. → Category → Currency



right box par



put : decimal (0 place)



symbol (₹ or Indian English)



select Put comma in amount

eg: 2543 will show ₹ 2,543

(Thousand separator)

Sorting Amount

→ Go to Amount filter in table



Select sort options

Note :-

① Sorting applied

- acts only at the time of sorting
- not dynamic in nature
- Apply sort

② After making Table (ctrl + T)

↓
if we enter new data entry
↓
Excel automatically continue making table.



Sum - Average - Count

Formula:

= sum(select range)

→ dynamic in nature

= sum(Table! [A1:A10]) : formula -

Change Table Name:

→ select any cell in table

↓
Table design

Table name → Rename it

SUM

$\Rightarrow = \text{sum}(\text{table name} [: :]) + \text{press entr}$

excel will show
all the column available
there
 \downarrow
select for which we want

To clear something

$\rightarrow \text{select} \downarrow \text{delete key}$ \rightarrow delete only content
not formating

$\rightarrow \text{select } \rightarrow$ Hence :- clear \rightarrow clear all

\Downarrow :
 \rightarrow delete all content + formating

Average

$\Rightarrow = \text{average} (\text{select range})$
or

$\Rightarrow = \text{average} (\text{table name} [: : -]) + [\leftarrow]$

To increase/decrease decimal point

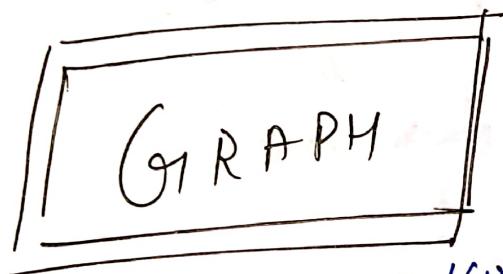
Select cell



Home : → Below general



decimal point.



Insert : → chart/graph option.

→ select Ament / data



insert bar chart



2-D bar



→ right click on chart/graph



Select Data



Horizontal category axes

↓
edit

edit
↓
select all the list from table
OK

Change colour of graph

select bar of graph

↓
chart design / design + Format

Format

↓
change colour, outline, effect

To change order in graph

→ select label (Horizontal label)

↓
right click

↓
format axis

or

select → **Ctrl + F** → format axis will open

→ Axis position

↓
change as per ur choice.

[For Bar space]

select bar of the graph

↓
[Ctrl + F]

↓
gap width

[Variation in graph as per filter]

→ as u filter from table
then graph will automatically
change as per filter in the
table.

→ To clear filter from table

↓



↓
clear filter option.

To check any table as per
our condition

select that particular eg! amount table

↓

name :- conditional formatting.

↓

highlight cells

↓

choose from there &
customise it.

→ dynamic rule.

① If statement :

= if (select amount) > 1000, "More than 1K", "Less than 1K"
+ press enter

then swipe with "+" down drag ; all
will automatic point.

② Count statement :

= count (select range)
no. of how much no. = ?

③ sum if statement :

= sumif ((range) , " Utilis" , (amount)) + pres entr

④ select the Amt → Home :- conditional
formatting → select the condition & highlight
those as per requirement.

⑤ for new rule making

select the items in excel
↓

Home ⇒ conditional formatting

↓

New Rule

↓

Use formula to determine cell or cells

$\Rightarrow = (\text{Amet cell}) > \text{Number}$ → that amount highlighted

$\Rightarrow = \$ (\text{Amet cell}) > \text{NO}$ → whole series of that amount highlighted

e.g.:

$(= E3 > 100)$
 $= \$E3 > 100$

⑥ Insert ⇒ {picture, online pic, shapes, Smart art graph, S.S.} → change colors.

Pivot - Table

→ Analyse data more quickly & precisely

→ select any column / box

↓
Insert → Pivot table

↓
choose the field

↓
Height & design the table.

→ Amount (1200)

↓
Select the amount → right click

↓
value field setting

↓
No. → currency.

(comma format)

Print Excel Sheet

→ (Ctrl + P)

↓
Page setup

↓
Page

↓
Fix to to empty

↓

point in 1 page

↓

→ if long list, then print in next page
∴ Heading sare page pe chalye

↓

Sheet
↓
point titles

Shortcuts

switch

prev. window which u were working
switch to other window

- ① Alt + tab : → switch to other window
- ② windows + D : → all windows get minimized & come to desktop
- ③ windows + tab : → all tabs are visible
- ④ windows + ~~red fm~~ + Prt. Scrn] : → S.S
(Insert)

Excel:

- ⑤ Ctrl + mouse : → last table ka box pe reach karne

- ⑥ switch + Ctrl + arrow : → to select entire
or
Ctrl + Shift + [B] : → select entire table

- ⑦ F2 : → press select any box + F2
allow edit in that box

- ⑧ F4 : → for repeating any prev. action

- ⑨ F5 : → Goto in any place of excel
(sheet 2! A6)

- (10) F7 : \rightarrow spell check.
- (11) F1 : \rightarrow to launch Excel help window
- (12) long press Alt : \rightarrow it will show some short cut alphabet

- (13) Ctrl + C \rightarrow copy
 - + P \rightarrow Paste
 - + X \rightarrow Cut
 - + B \rightarrow Bold
 - + I \rightarrow italic
 - + U \rightarrow Underline
 - + O \rightarrow Open
 - + N \rightarrow new file
 - + S \rightarrow save
 - + R \rightarrow Redo
 - + Z \rightarrow Undo
 - + S \rightarrow strike through
(~~cancel~~)

Useful Short cut in excel

- ① To add bunch of NO \Rightarrow
select them \rightarrow Home: - Auto sum (Σ)
- ② Shift + F11 \Rightarrow add new sheet
- ③ Quick chart \Rightarrow Insert \rightarrow Smart Art Graphic
- ④ Right click on "sheetNo" at the bottom
 \rightarrow (Rename option) \rightarrow Rename sheet
and (Tabs colour) \rightarrow change colour name.
- ⑤ write something or insert a symbol.
 \downarrow
right click
 \downarrow
hyper link
 \downarrow
Place in this Document
 \downarrow
sheet sheet for which
u want to create link.

⑥ To apply same format of any cell
to another

Select that cell



Home : format painter



then select that cell for
the change.

⑦ To freeze the heading



Select below a row below heading



View → Freeze pane

⑧ To hide any row / column



Select → right click



Hide

Note

① Extract Name initials



Type 2-3 name initial

: => flash fill

e.g.: Rakesh Kumar => RK



Press: (ctrl + E) extend with automatic
type rest all

② Filtered Totals

→ select any cell



ctrl + T : → convert into Table



Table design: → Total Row

* ctrl + shift + L → undo all filters

& back to original data

(3) Compare 2 list

→ Select 2 list/table



Home :- Conditional formatting



highlight cells



Duplicate value

→ Name appeared in both will be highlighted

(4) Frequency Distribution Analysis

→ Select data



Insert



Histogram box

Histogram

Box & whisker
(Plenty of data)

→ To change the graph axis



Select the graph



Automatic table will be selected

↓
Move it with " \leftrightarrow " to another table
for graph chay

(5) Running Totals

→ cumulative total

→ select the table / data



Ctrl + Q



quick analysis chart in sheet



Total



running total

(6) Quick Exchange Rate conversion

eq:

Sales Rs: → Dollars

↓ convert

Euro

$$\boxed{\begin{array}{l} \text{Rate conversion} \\ = 0.85 \end{array}}$$

Select those value



Paste them beneath Rate



Go to Rate cell



Select & copy the rate



Select those no data



Right click



Paste special



paste → multiply

=====

→ Not dynamic in process.

(7) Outlier Analysis

→ select all data / NO.



Home :- conditional formatting



color scale

for
→ Big / small values . highest

(8) Forecasting

→ To predict next/upcoming values.

select all data



Data



Forecast sheet

→ Excel : Q5-1. Sure

Forecast worksheet



options



confidence interval & other options.

(a) Interactive chart with slicers.

→ Select data

↓
convert it into Table

(ctrl + T)

↓

Design or Table designs

↓
insert slicer

↓

Product group

↓

select data sales figure
(amount)

↓

plot chart/graph.

(10) Excel Analyze Data for You.

Excel : 365

↓
select all data

↓
Home : - Ideas

Imp. Skills For Data Analysts

↳ playlist

P → Data Preparation

C → Number crunching

S → Story telling

Q → Asking Question

T → Technology

P = Data Preparation

D Data Source (read data from different sources)

2) Data cleaning

- remove duplicates
- blank & error
- Missing values

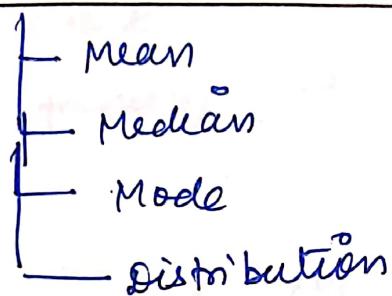
3) Combining Data

(from 2 source)

4) Data Transformation (as per our req. chart is made)

C = Number crunching

(1) Statistical Analysis

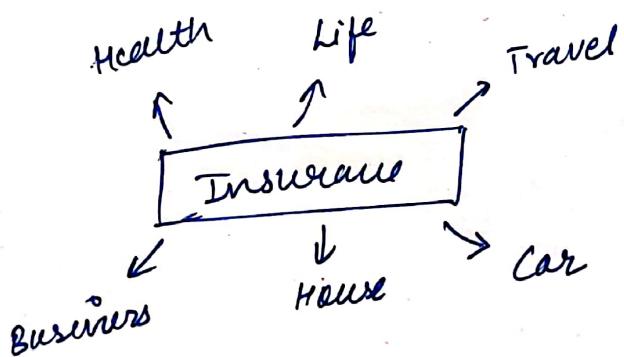


(2) Functional Analysis

e.g.: insurance client working

then ;

Quick learn about Insurance Industry



(3) Ad-hoc Analysis

- └ Trend analysis
- └ chart
- └ frequency distribution

- + Data → quickly analyse + produce output

(4) Experimental Analysis

→ design a choice based system
(A or B)

→ measure performance & analyse it

S = Story Telling

→ as a Data Analyst

we make things for someone

~~storytelling~~

- what charts to make
- story-telling chart
- Formatting chart to make attractive
- Presentation

* Build your Persuasion skills

to convince someone for

something

- Positive
- Test & Improve (feedback)

* Sense of Visual Design

- Use of font, colour, design work
- make creative

Q = Asking Question

→ ability to ask right question

- why do we need this?
- what should be included in it?
- Any exclusions?
- how to display it?

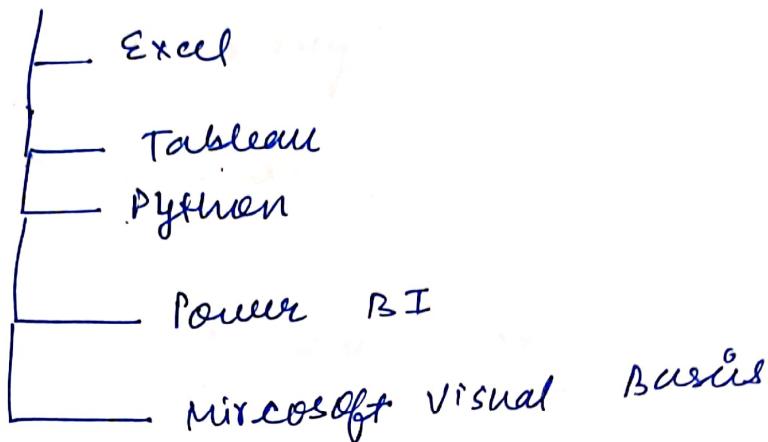
↓

for preparing any data sheet

- motivation behind this

→ Learn about our business
(line of work)

T = Technology



Key Excel skills to become Great
Data Analyst

1) Data Analysis

- Power Query
- Excel tables
- Excel formula
- Excel Pivot table (VVI++)

2) Story Telling

- charts
- dashboard
- Power point skills

Automation

- └ Power Query
- └ VBA Macros

} → to prevent Errors

Data Analysis with Excel

10 ways :-

(1) Descriptive Statistics [Quick Statistics]

- To turn raw data into table format

↓
select any cell

↓
(ctrl + T)

↓
Table Name : - Rename

• **Formula:** ✓ * **Sum:** = sum(tablename[Amount])

✓ * **Average:** = average[tablename[Amount]] + [ok]

✓ * **Median:** = median(tablename[Amount])

Note:-
→ average = AVERAGE (either small or capital)

→ = AV.

↑
Average select + table

↓
= average similarly to select
list → press tab.

Median → mid pt. of ur data , when arranged in ascending or descending order.

Average → sum of all values divided by count of values .

* minimum value : $= \min(\text{select range})$

* maximum value : $= \max(\text{data [Amount]})$

* Range : $\text{max. value} - \text{min. value}$

Quartiles → Refer to $\frac{1}{4}^{\text{th}}$ or $\frac{3}{4}^{\text{th}}$ points in your data when it is arranged in sort order .

* First Quartile : $= \text{percentile.exc}(\text{data [Amount]}, 0.25)$
 $\frac{1}{4}^{\text{th}}$ value \leq

* Third Quartile: = percentile.exc(data[Amount], 0.75)

⇒ To copy any formula just - (ctrl+c) of any result. → to get same formula.

Top $\frac{1}{4}$ value >

⇒ To bring filter to your table or remove them



(ctrl + shift + L)

Amount ▾ or Amount

⇒ when we have a heap of diff. products and some products are repeated



(i) point all product + time only

(ii) count no. of products + time only

(i) Distinct products: = unique(data[product])

(ii) Count distinct product: = counta.unique(data[product])

(2) Exploratory Data Analysis - (EDA)

with Conditional Formatting

- copy the given data
↓
convert into table ($ctrl + T$)
↓

remove all filter ($ctrl + shift + L$)

1) How varied my Amount is ?

- (a) select Amount Table / column
↓

Home : → conditional formatting
↓
colour scales

⇒ it applies diff. colour depending upon
the volume of the number.

OR

(b)

- select Amount column
↓
Home : → conditional formatting

↓
Data Base

→ Then we can select it also. (ascending or descending)

* To clear this applied formatting *

→ Select data column

↓
Home :- conditional formatting

↓

clear rules

(c) Select amount/data column

↓

Home :- conditional formatting

↓

Top / Bottom Rules

(various rules inside it)

* eq: Top 10 items if applied

[see name of person (repeat wala)
see items sold ⇒ max. wala.

(d) select unit column (which quantity is purchased how much)

Hence :- Con. format

↓
Duplicate value

⇒ certain no. of purchased box is purchased by 2.

(30) Sales Analysis with Formulas

|| ** sale by country (with Formula) ** ||

• Make a 3 table in separate sheet

country	Amount	Unit

→ select geography / country column full
↓
copy
↓
paste it in new worksheet

→ select all country name in
new table



data option from top



Remove duplicate

For Amount for each Country

SUMIFS - formula $\left\{ \begin{array}{l} \text{sum all the data entry} \\ \text{if condition given is} \\ \text{specified} \end{array} \right\}$

⇒ ~~sumifs (data table)~~

= sumifs (Table name [Amount], Table name

[Geography], ^{any¹} _{country name})

jiske liye total
amount nikal rhe

→ Us country ka net amount aa jayega.

for currency format :

select Amount



Home :- General → currency

OR

(ctrl + shift + 4) with 2 decimal places

→ To remove decimal point



Select → Home → decimal decrease

Handy tips to fill other amount wrt country

→ fill 1st one



place cursor at the corner  *



when cursor turns black  *



double click

For Units

=sumifs (table name [units], table name [country ~~name~~],
country name)

→ select that cell



(ctrl + 1) → to open formatting settings



Number



use separator

Now our data is ready



To make it presentable



Select whole data



Give borders & highlights to headings



(ctrl + shift + L) → to apply filter in
the heading



then sort it



Select all



Home: - Borders



apply only horizontal border

** To remove grid line of Excel.

View option from top



Disable gridlines

Note,

Table :-

Country	Amount	Units

→ move units a cell ahead of previous.

↓
copy the amount in the preceding column

↓
select new amount column

↓
Home : - conditional Formatting

↓
Data bar

↓
Manage Rules

↓

Select Data Bar

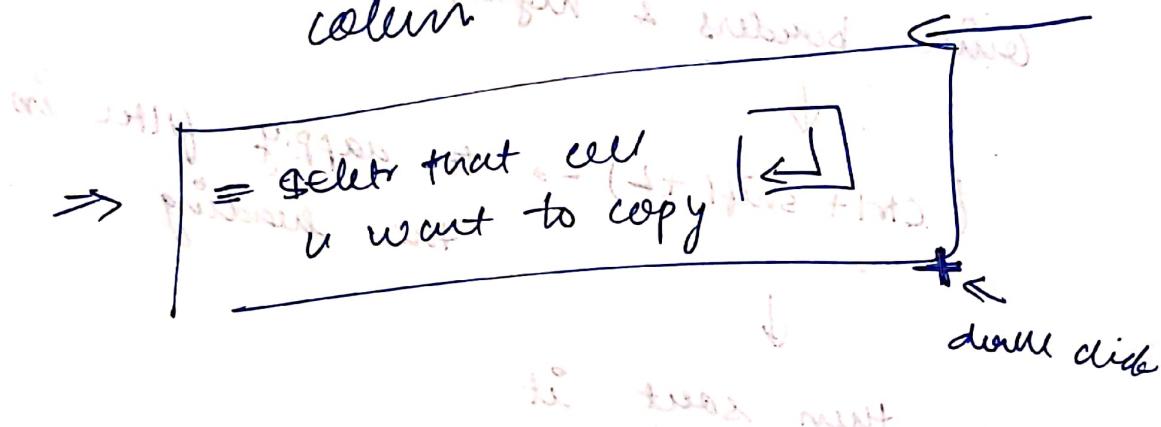
↓
Edit Rule

↓
Show bar only

↓
change colour as per choice

phase B. click on copy
↓
Clipboard to store or
↓

Have to copy the shorter text
same amount in another
column & instead of ~~ctrl + v~~



already highlighted plus press

ctrl + shift + left cursor or right

get many settings easily



highlighted cells

country	amount	Unit
—	—	—
—	—	 ↓ —

bar showing how high
the amount is.

→ select unit and give it very light
colours to make attractive.

(4) Sales Analysis with Pivot Tables

create insert option



pivot Table



select a Table

(give the Table Name)



we get canvas to build pivot
table

Here we want:

country

amount

unit

=

=

=

names you can see from

at best



Pivot Table Fields

↓
select country name in rows

↓
select amount & units → in values

Select

Amount & Units

→ in values

→ apply currency format

→ select it

→ file, send, forward, and

→ file, forward, and

help

press to ring keys from keyboard ←
introduction session of weeks

* TO make change in slice



select slice



option: ribbon



→ select any cell in pivot table
↓
change theme / colour / appearance
of table

→ To repeat the Amount column,
drag Amount from pivot table fields
& place it in values table
In b/w amount & units.

→ Apply bar as prev. format.

Name:

→ To look for individual person / sales

we can do in pivot tables.

→ from pivot table fields

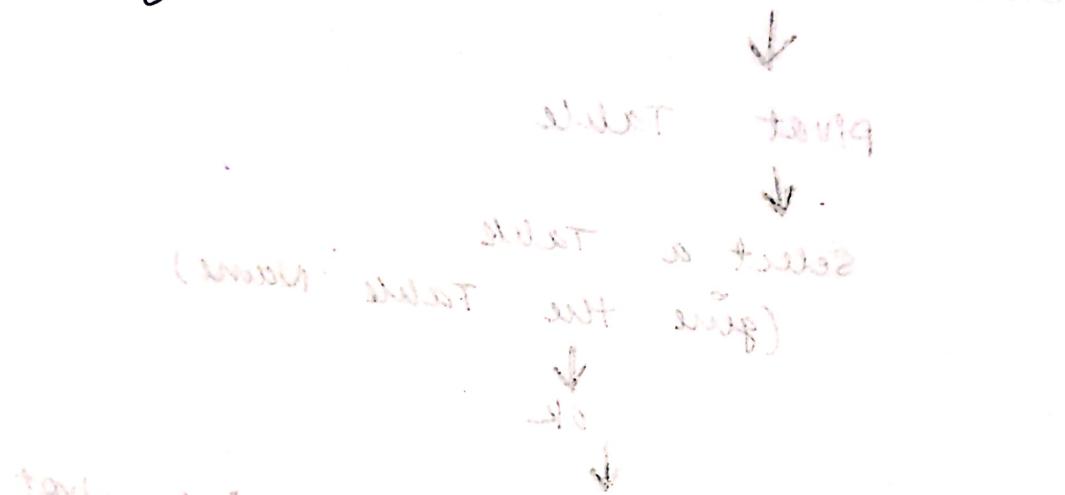
↓
right click on sales person

↓
add as a slice

↓
select it & goto slices
option on the top

↓
change it (formatting)

* You cannot remove any heading on table; just press space key once all will be removed.



In case of Pivot Table :

Any alphabets appearing are already arranged in $(A \rightarrow Z)$ format.

→ To apply sort to no. column

in pivot; select any cell

What is this?

right click

sort

(all will be sorted automatically then)

to sort

(5.) Top 5 Products with \$ per unit

- Use of Pivot Table make it simple
- goto Insert
- ↓
- Pivot Table
- ↓
- Table name : - select table
- ↓
- at bottom of it : - add this
- data to Data Model (enable it)

Pivot Table Fields :

- select country put it in rows
- select Amount & Unit → values

$\boxed{\$ \text{ per unit}}$

$$= \frac{\text{sum of Amount}}{\text{sum of Units}}$$

or from Pivot table

open pivot table field by selecting any
cell from pivot table



*

Once you close pivot Table field window

(cancel) ↓

Select any cell

right click

↓

Show field list

↓

Again pivot Table field window

filter appears

*

For Amt & Sum of Amt

↓

make filter to any cell

right click on small pop-up

last option



Right click on Data bar



Add Measure



Measure Name :— sales per unit

Formula : $\rightarrow = [\text{sum of Amot}] / [\text{sum of Unit}]$

↓
currency, decimal place

(0.2)

in
add
measure
only

we get sales per unit

↓
drop it in values box.



select it

(6.) Anomaly Detection

Method - 1

→ Copy the table in new sheet

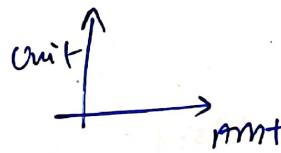
→ Select amount & unit table



Insert



x-y scattered plot (graph)



Method - 2

→ Select amount table



Insert:- Histogram



Box & whisker

→ Select geography & amount table



Select:- Histogram



Box & whisker.

(7.) Best Sales Person by Country

Pivot Table Method

→ Insert a pivot table

↓
select table name
↓
OK

Name,

Pivot Table Field	Value
-------------------	-------

Rows
Geography
Sales Person

Amount

select any 1 name

↓
click on filter row

Value
filter

Top 10

↓
edit Top ± (max)
or least
↓
OK

⇒ Best salesperson by country
or worst

(8.) Profit Analysis

- * How to combine & different tables in Excel *

lookup formula

Excel 365

=xlookup([@product], products[cost])

↓
vlookup (for older version of Excel)

calculating total profit :-

insert pivot table



Table name



(enabll) Add this data to data model

Note :- If once we have made a pivot table from data and now insert a new column to our data then it will not show new one in pivot table, to make it show

with ~~using~~ in ~~function~~ &
 inner sheet table
 $\Rightarrow =x\text{loopup}([\text{@products}], \underbrace{\text{products}}_{[\text{cost per unit}]})$
 ↓
 from main table []
 supports table [] → lower
 []
 ↓
 inner + first table
 ② we only see this
 first item
 ↓
 0.00

source in pivot table field

↓
just click Refresh from

Pivot Table Analyze
tab from tabs

[Rows]

Product

[Value]

Amount
cost

→ Add measure to pivot table

measure name : - Total Profit

formula : - $= [\text{sum of amt.}] - [\text{sum of cost}]$

↓
currency
↓
OK.

↓

sort it

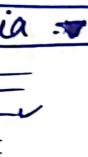
→ Add slicer for geography.

↓
to see for each country separately.

(30) Dynamic Country-level Sales Report

→ Data Validation

In order to select any 1 country among all like a box.

e.g. Pick a country 

and with the change in this country each & every data will change respectively in that sheet.

⇒ How to apply it

→ Place name of all country (once)



Select the cell



Data



Data validation



Specify in the tab ; ⇒

allow: list

Drop - Down Box

source: point / select range for results
u want

small drop down in the selected
cell where u

make a summary Report for
that particular country

(1) NO. of transactions for any 1 country

= countifs (tablename [Geography], [])

select that
all in which
u are choosing
a country.

(2) sum

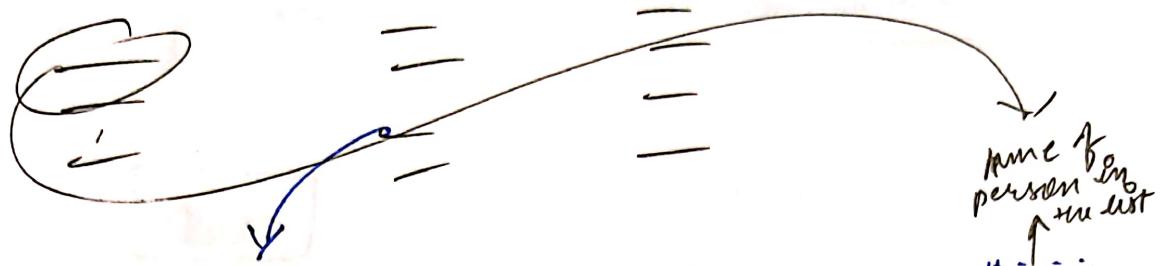
= sumifs (tablename [amount], tablename [Geography], [])

(3) Average

= averageifs (tablename [amount], tablename [Geography], [])

Name, make never again 1 Table.

<u>Name</u>	<u>Amount</u>	<u>Unit</u>
-------------	---------------	-------------



Amount

= sumifs(tallenane[Amount], tallenane[Sales Person], [= = =])

tallenane[Geography], [= = =])

country pick wala cell

(Unit)

= sumifs(tallenane[Unit], tallenane[Sales Person], [= = =])

tallenane[Geography], [= = =])

check whether somebody made certain no. of Target or not

= if(Amount select karo each time \rightarrow [conduct?], +, -)

↓
select (+, -) cells

↓
Home: Conditional Formatting

↓
seen sets

↓
 \rightarrow Manage rule

Manage Rule

icon ↓

① → value ≥ 1

Type
Number

② → value < 1

Type
Number

→ in the middle = no cell 'icon'.



→ If you do not want to use the 'icon' in the middle, you can use the 'rule' icon.

→ basic rule.

→ darker = no

→ grayish = no

→ lighter = yes

→ white = yes

→ black = yes

→ red = yes

→ green = yes

→ blue = yes

→ orange = yes

→ purple = yes

→ brown = yes

→ pink = yes

→ cyan = yes

→ magenta = yes

→ yellow = yes

(100) open - ended Questions

* which products to discontinue?

Ques:

- (1) Product sales \$
- (2) Product cost \$
- (3) Unit sold
- (4) Profit \$

Insert Pivot Table:-



Table name

+
(finally) add this data to Data
model.



Rows

Product

values

Amt.

Unit

Profit.



sort for least products



But measurement is hard
at some of least have max-profit

so add measure in pivot table field



Measure name : Profit%

formula : $= [\text{Total Profit}] / [\text{sum of And.}]$



No.



% → 1 decimal



Now it become easy to analyse

Profit & less data



Profit% → Home :- Condition for



colour scales.



Now for Example

if u want to drop any :-



Add slicer

* How To add slicer *

open ⚙ Pivot Table fields



right click on any data



slicer values



we can see
detail analysis
per Geography
area

Mistake

made in Data Interview

1) Impulsive Answer

→ STAR Method

S : Situation

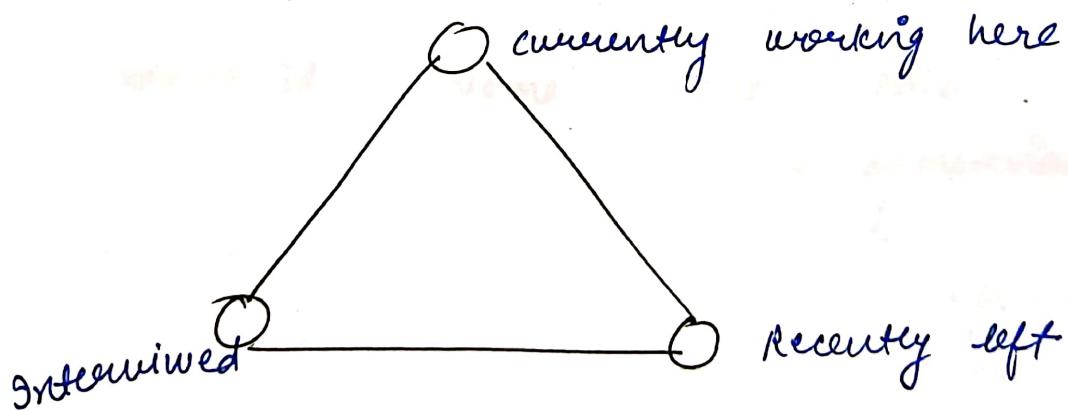
T : Task

A : Action

R : Result

2) NO Research

→ Triangle Technique



3.) Using same example multiple times

4.) All talk & no show

5.) Being inflexible.

6.) Being too hard on ourselves

7.)

Various Terms :

(1) Table

date	product Id	customer Id	quantity
------	------------	-------------	----------

↳ fact table

(2)

Product Id	Name	cat	price
------------	------	-----	-------

↳ dimension table.



tells information from
product dimension

(3)

customer id	name	age	gender
-------------	------	-----	--------

↳ customer id (dimension
table)

(4) Date Day of week Month Year Quarter
↳ calendar Table

Note :-

① Fact table :→ tall & narrow

② Dimension table :→ short & wide

Relationship b/w

fact & dimension
many one

Many-one relation.



These relationships are referred to
as keys.

Keys

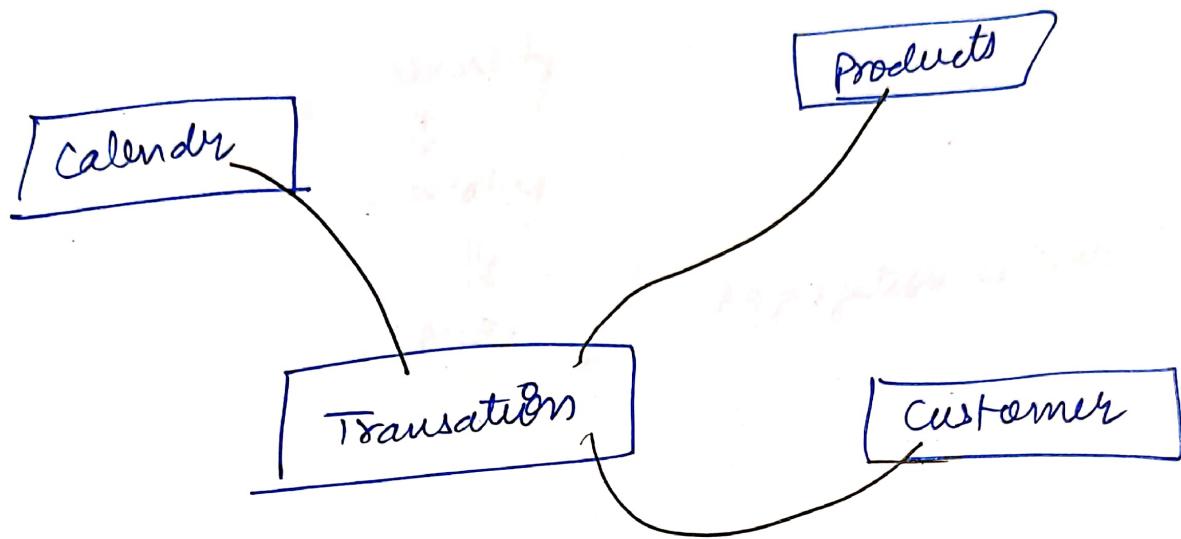
Foreign key

(Linking up)

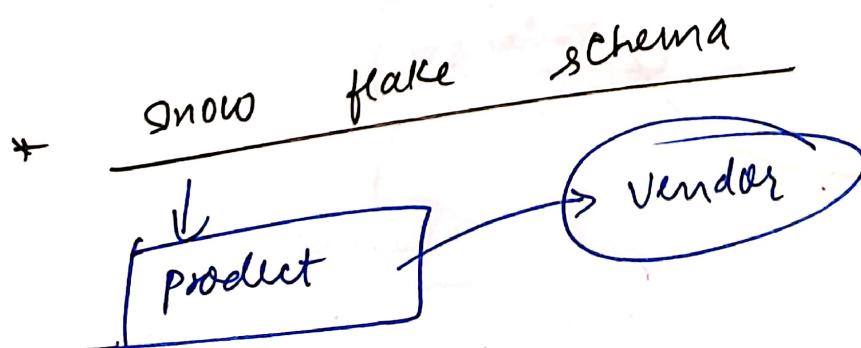
Primary key

(Actual information)

Modelling



* A central fact table & multiple dimension table on the outer adjust is referred as : star schema.



Measures & Values

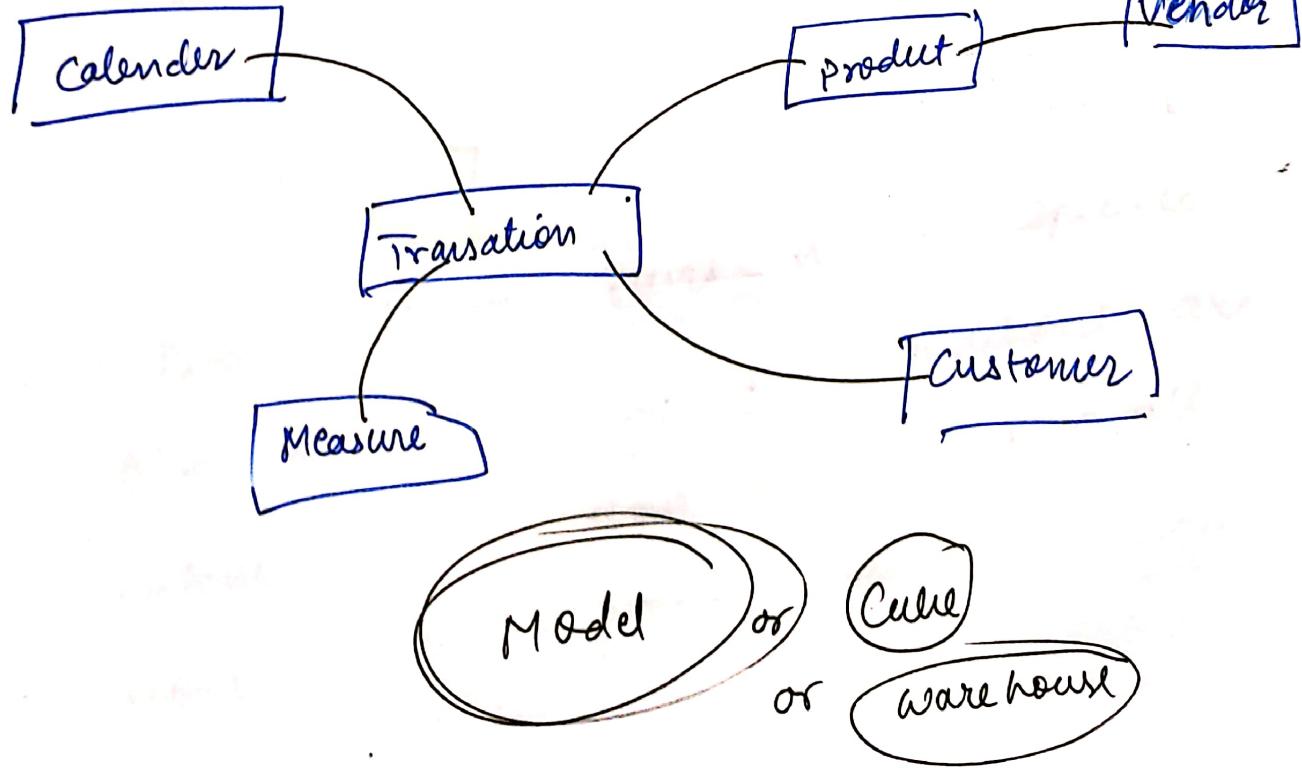
sum of Quantity column

↓
calculating it

↓
~~Measure~~ [or Aggregation or Value]

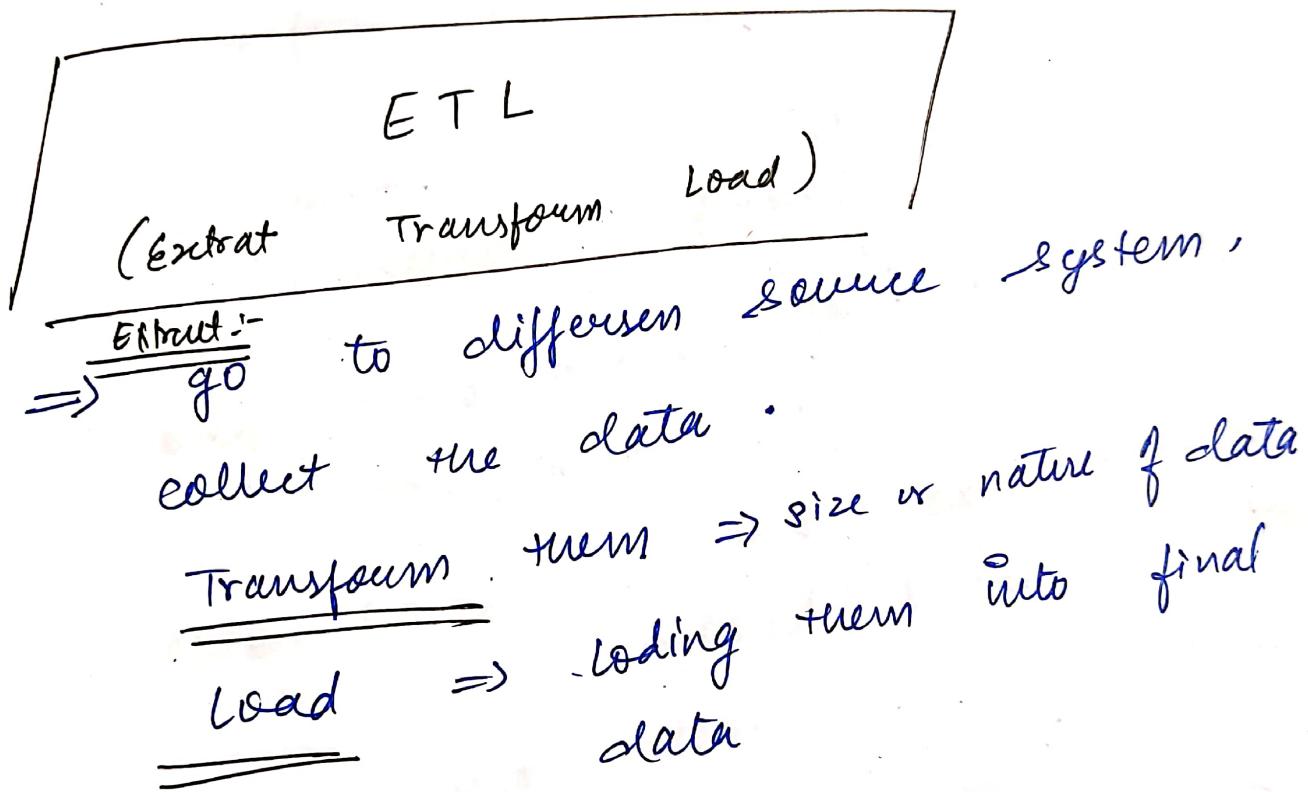
slicer

↓
break down the table &
look at it by individual category
or **filter**



Query or Power Query

⇒ for any given transaction table
we need to connect to another data table for calculation (sales)



Batch

→ Process that runs at a specific time or when specific conditions are matched / meet, then it will run all your ETL process and give you

final output data so that you can update your report.

Data Pipeline

⇒ How you are getting your data before generating reports.

Source - Refresh

Source: - Place where data is originally maintained

Refresh: process we ask to be updated based on the latest date.

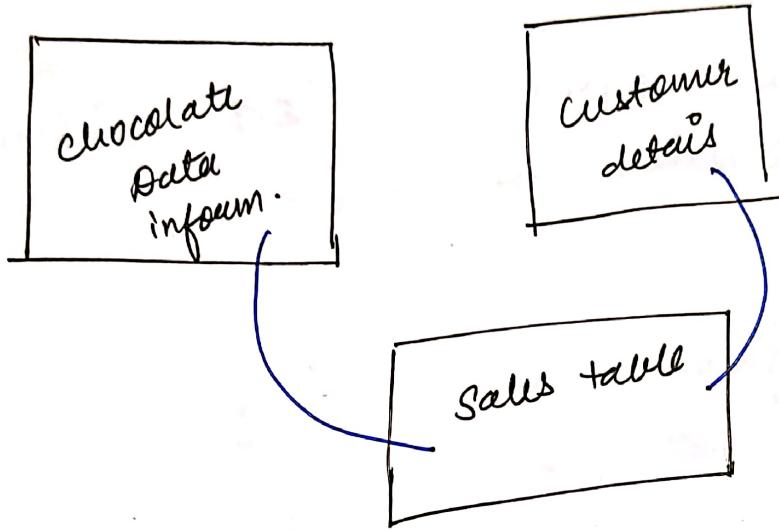
Technical Team

Data Base

Data Lake

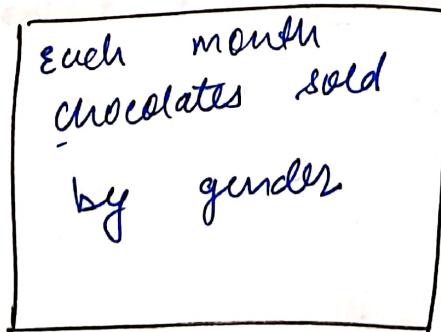
Data Warehouse

1. > Data Base (DB)



2. > Data warehouse (DW)

→ special type of data-base → primarily designed so that u could do analysis and reporting.



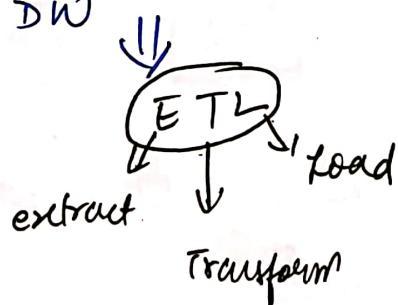
↓
figure out some trends to
give discounts & analysis
and ↓ what sales to promote

Note:-

1) Within "DB" → purpose is to keep track of business

2) Within "DW" → they periodically ~~archive~~
the data
↓
just like prev. year question paper

* Process of taking data from DB & loading it to DW



Data Lake (DL)

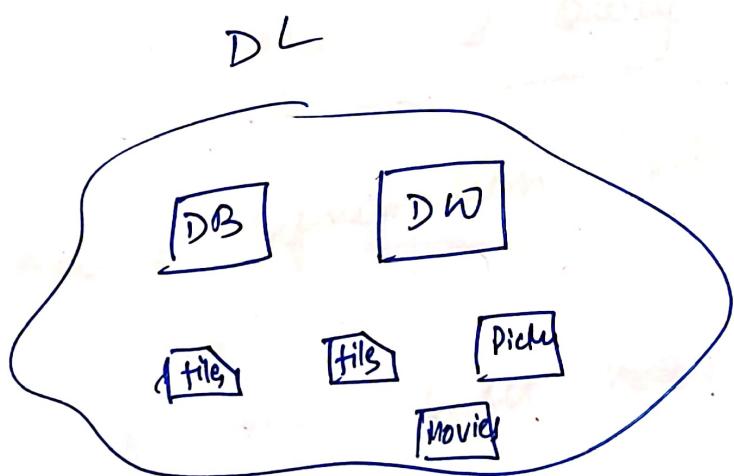
→ within DB + DW → data stored in form of Table

Table → bunch of rows & columns

↓
each column explains → bunch of data

→ "DL" → stored everything in semi-structured manner asking rules

↓
afterward can be used structured approach
unstructured approach ↓
asking computer to figure it out



Examples

- ① Data Base :- → SQL server
→ ORACLE
→ MS - ACCESS
→ Excel Spreadsheet

- ② Data warehouse :- → SQL Server
→ power BI F
→ Excel

- ③ Data lake :- → AWS
[maintained online → cloud] → Azure (store it in cloud)
→ Big Query

SQL (Structured Query Language)

- * Access information within these three :-
- SQL
 - forms & all (traditional reporting system)
 - power BI
 - Python script
 - depends on situation & which type .

PIVOT - TABLE

Analysis

(1) Create a Pivot table from given data

Method - 1 • Select all your data
↓

Insert :- Pivot Table

Dialogue Box (Range)

Select Table (Range) for
pivot table

Method - 2 • First convert all your data into

table (ctrl + T)

so that on editing any cell will automatic

change pivot table

↓

Name the table

↓

Select any cell of table

↓

↓
Upper Tab :→ Summarize with pivot table
(design)

↓
By default excel puts pivot table
in new excel sheet

(2) Understanding & setting up pivot table
after launching it

After pivot table is created

• After pivot ↓ table "Pivot Field Table" at right

You see - "Pivot Field Table" at right

corner



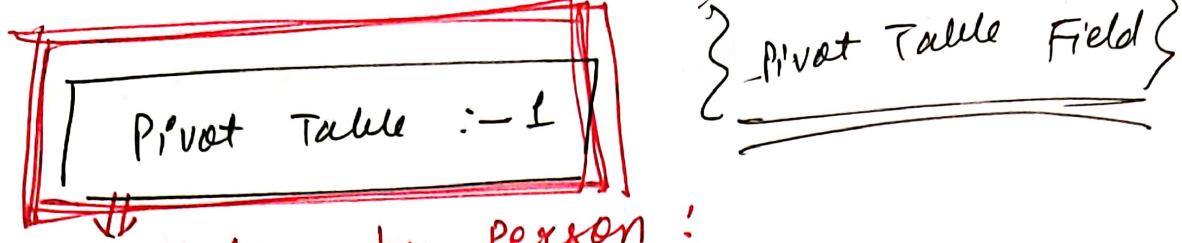
• consist of 4 boxes:-

(ii) columns

(i) Filter

(iv) values

(iii) rows



Total Sales by person :

- Takes sales person and put it in Row area
↓
Take amount & drag to values or right click on amount (pivot table field) and then select add to values.

* By default:
→ Depending upon type of field you are putting, pivot table will automatically either :- sum, count those things.

* Now a pivot table → total sales by person is created

Now do some formating

* select any amount cell
↓
right click
↓
Number format
↓
currency
↓
decimal, thousands separator, £

* change pivot table colour scheme of from design.

* Select cell of table
↓
design
↓
enable "Banded Rows"
so that every row is
colour coded differently to
make it more readable.

Report - 2

Pivot-Table

Sales by Person & Geography

- * Insert new pivot table from original data



Add (sales person + geography) → Rows

Add (Amount) → Values



2 level Pivot table is created

(all making vertical)

- * To change from vertical to horizontal :-

Add (sales person) → Rows

Add (geography) → columns

Add (Amount) → values

Report - 3
Pivot Table
Sales by Person

↓
filter by geography

- Insert new pivot table from original data



Add : Geography → filter
sales → rows
Amount → values



It will then give a filtering option for geography on top of pivot table

e.g:

Geography	All <input checked="" type="checkbox"/>
-----------	---

Report - 4

Top 10 products by customers

create new pivot table



Add : → product → Rows

Sum of customer → Values



click on filter of product



value filter



Top 10



then select it

* //Add sales person filter://

Add : → sales person → filters



Top 10 product for a particular person.

Report - 5

Interactive Pivot Report

- Create a new pivot table



Add: sales person → Rows
Amount → values



right click on geography

↓
Add as a slicer

visual filter

- * Slicer : it is like

Report - 6

Pivot Chart

- Select any cell of original data



Insert :



Pivot chart
(automatic if will bring to
new sheet)



"Pivot chart Field" dialogue box
opens same as "Pivot Table Field"



Add : geography → Axis / Rows
Amount → values



Format the chart as
prev. discussed.

Report - 7

Interactive Pivot Chart

- select your data



Insert: — Pivot chart



Pivot chart Field



Add: sales person → Axis / Rows
Amount → Value



right click on geography



Add as a slicer

by each country

⇒ enables to see separately



Decorate & formatting it

Report - 8 \Rightarrow

Bonus Report

Total & Percentage Report

- Insert a Pivot Table



Add :-

Sales Person \rightarrow Rows

Sum of Amount \rightarrow Values



Apply some formatting
to make it more attractive



Add! Amount \rightarrow Values



In new amount column \rightarrow right click

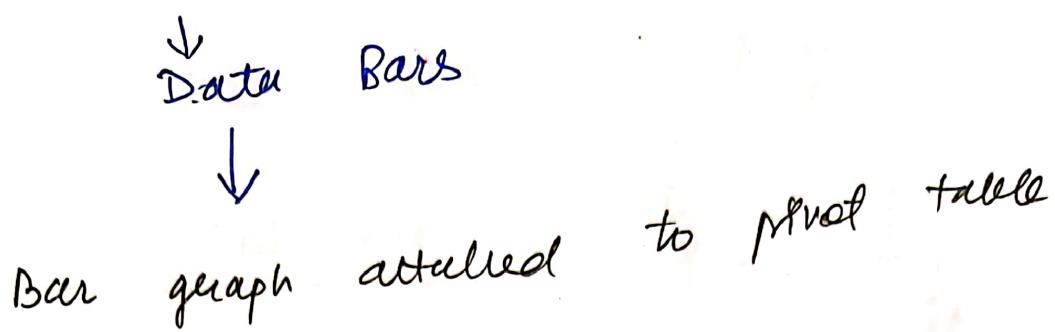
right click by selecting any
cell in new Amount column

\downarrow
show values as

\downarrow
% column Total

\downarrow
Name: Conditional Formatting





* New Data - - -

Updating Pivot Reports

⇒ Now we get extra new data
↓
copy it & load it in original
table by paste option
↓
Data
↓
refresh all

⇒ It will automatically update
all pivot table & charts -

V-LookUp

- ⇒ ask excel to lookup at my table
find out the record that has "—" in it & get me all its corresponding data.
- ⇒ = vlookup ("finding wala", where is data (total data range), 3, false)
↓
only applicable when data is sorted
which column we want to find for that
- ⇒ if vloop cannot find in the original data
it points :⇒ #NA#
- ↓
= iferror (vlookup - - - - - , "cannot find")
this message will be presented

Another formula for Vlookup'

= vlookup (Name, table name, column no. , false)

= vlookup (Rahul, sales, 3, false)

↓
An exact column
which detail we want

→ Index + Match

= match (value, table [column], 0)

0 → exact match

↳ gives index of value present in that column

= index (sales [sales person], match (----, sales [not sales], 0))

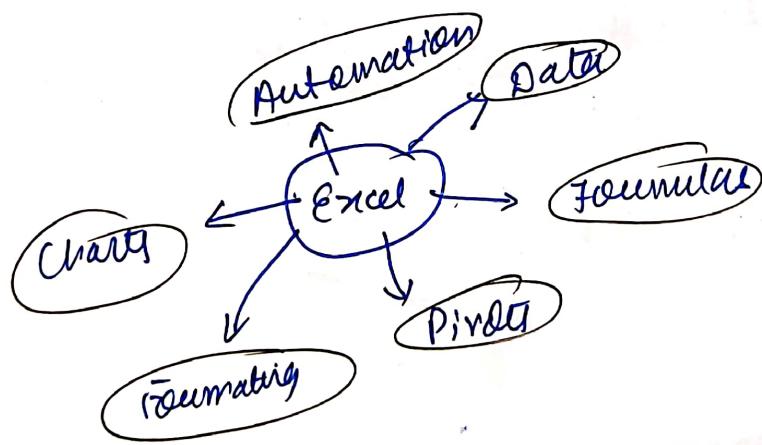
How to Learn any Software Quickly

① Pick a Problem & solve it

- * Focus on single things & problems
 ↓
 DO it at basic level only 1st
 ↓
 then move to next level.

② Go wide before going Deep

Eg:- Excel Software :-



⇒ First learn & understand basic level of all points of excel and then pick any 1 as per present need

and then go deep into them.

(3) Connecting the Dots

- idea of incremental learning
- Every new idea / things you learn or come across ↓ try to connect them with previous one which u already know

(4) Play to Learn

- ⇒ challenge yourself to learn different aspect of same things think outside the box.

(5) Stop Nit-picking

- stop worrying about small details i.e., whether to use pivot or formula instead gather both

(6) Share Your Waess

- Share what you learn
- Makes you more confident in your subject
- When asked to share, we prepare well, memorize it, and how to make simple & easy for others
 ↳ peers - we'll understand better.
- If you want to master something.
 Teach it.

(7) Reflect & revise

- No point of just learning
- After learning few key techniques go back and implement it.
- Active reflection : when we are actually doing the things which we learnt.

Passive reflecting \Rightarrow thinking of the idea which you've learnt while doing other things.

\rightarrow Give time to any idea, to move into your brain before go and implement in your work.

⑧

Knockout the hitch

\rightarrow Don't feel hesitation, or you know less about this software
 \downarrow
whatever you've learnt just try to go & perform it.

⑨

Join any course

\rightarrow Watch those videos and perform work in software.

Free Data sets to practice (sample Data)

<1> Kaggle

Kaggle.com

↓
Sign in with Google A/C

↓
(intro) Data sets section
(left corner)

<2> Workout wednesday

↓
workoutwednesday.com

↓
every wednesday they upload a dataset challenge

↓
every week get new set of data to work on

create some visualisation

↓
share it with community

↓
compare

↓
Sign in / join data set by google API
↓
then only u can download.

(3) Open Govt sites

① India : → Open Govt Data

② New Zealand : → Stats NZ

↓
Tools

↓
Large datasets

↓
CSV files for download.

(4) Power BI or Tableau

Power BI

↓

Try a sample dataset

5 Forums

- 1) MR EXCEL . com
- 2) stack overflow

→ search for ques → try them

& practise

↓ solve it → upload then there is
that site

↓ compare your work with others

6 Personal Datasets

→ Personal watch

→ A/C summary, credit card

→ Do analysis on them

↳ (i) more understand to handle
these data and present
them in effective manner.

(F) Random Data Generators

→ In excel apply this formula
to get random data
(i)

(i) To get any random No b/w 1 & 100

$$= \text{randbetween}(1, 100)$$

→ we'll get any random no b/w
1 and 100

(ii) Thousands rows of data

~~= randarray(1000)~~

= randarray([rows], [columns], [min], [max], [integers])

e.g:-

$$= \text{randarray}(1000, 5, 10, 300, \text{true})$$

↓ Other Method

→ goto website :

mockaroo.com

↓
generate table

download data (random data
from time)

{ → site for random
data generation

Top 5 Excel Skills

(1) Data Type - features

→ allows to work with rich data types right inside excel.

Only in
Excel-365

→ e.g.: we get some name of country
convert them to country data type
↓
select the countries
↓
Data: Ribbon
↓
data types see
↓
geography

Excel will convert these values in
country & add geo-symbol with a
card
↓
click on card →
country, flag,
capital &
details -- --

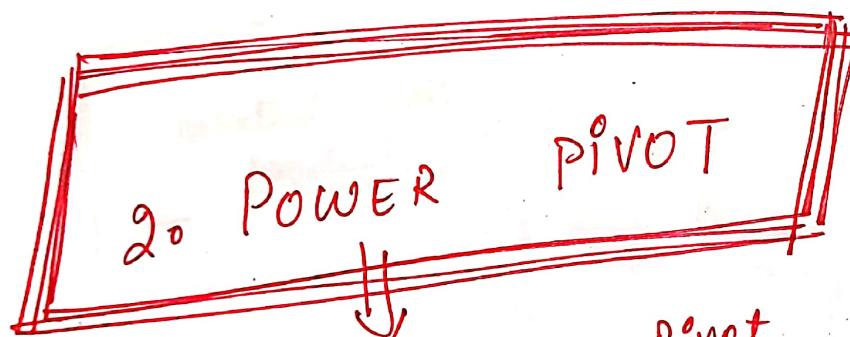
* To add anything (fixed) about any country
in the preceding rows.

= C6. -
=
= select them
=

Eq:-

Country	
6	India = C6. -

Pick any option



Multi-Table Pivot

→ If you are given 2 table data

lets say [sales + products]

To make pivot table from using
data from both

No need to combine 2 tables



Data : Ribbon



Data Tools :- Relationship



New



Diaglogue box :

Table ! Main table	Sales	Product column (Foreign)
Related table Product	table	Related column (Primary) product

↓
Excel with then create relationship
b/w 2 table



select any of 2 table



Insert :- Pivot table



Table name + (enable) add this
data to Data model



Pivot Table Fields



Add : →

Product Table

↳ category : → add it → Rows

Sales Table

↳ Format
Fruit

→ add it + values

* Note : ⇒ We can also create this type
from 5-6 different original data tables
↳ allows complex analysis

3. Story telling with
Better Charts

→ Histogram

→ Box & whisker

Select pivot column



Insert : - Insert statistics chart



Histogram

like this,
we can use box-whisker

→ we can also use map chart,
when we have data by country,
city or district.

2. Dynamic Array Functions

- [] filter
- [] sort
- [] unique

= filter(^(data)array range , amount column > 2000)
↓
data
what we want
to include

↑
↓
) , 2,-1
↓
descends

= sortfilter()
↳ sort in ascending
or
descending order



Power Query

⇒ Time saving features of Excel

→ if u r provided with 2 different
table having plenty of columns

↓
Select any cell of table (any)

↓
Data

↓
Take 1st Table & drag or load it to

Power Query from sheet

; Transform Data

↓
It will lead to power query editor

↓
Close & Load To ..

Only create connections

↓

OK

Repeat process load Table 2

④ Now both the Table are in power Query \rightarrow Table 1 & Table 2

↓
Home pilion : within power query

↓
combine : Append queries
↓

Two Tables
↓

Table to append to : which we want to add

e.g: we are on P.Q Table 1 then Table
to append will be Table 2.