A Practical Approach to Data Analytics

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Bangalore Branch of SIRC of ICAI

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  - GDPR & Privacy Law
  - Data Analytics, Implementation and Testing of Internal Financial Controls
  - SOX and SOC (SSAE-16 and 18)
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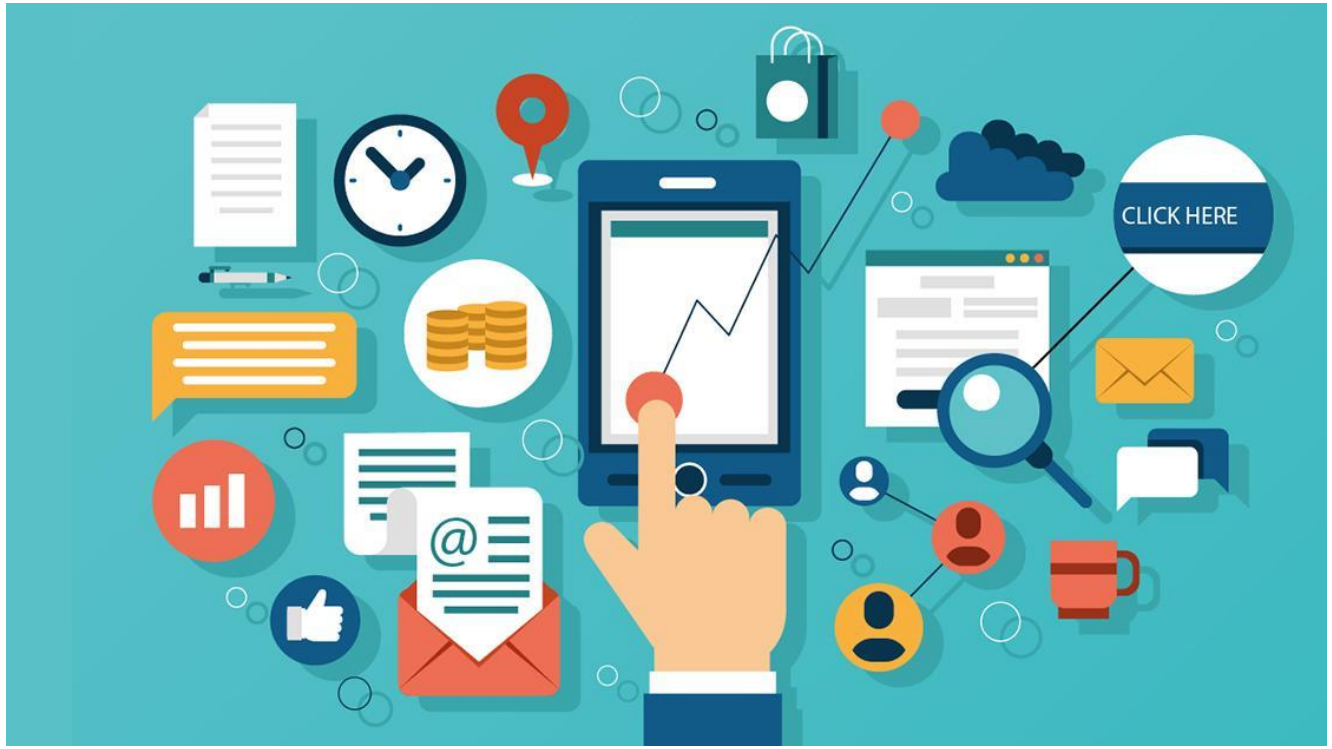
AGENDA

- Importance of Analytics
- How to use Analytical Tools
- Implementation Areas
- Practical Tools



IMPORTANCE OF ANALYTICS FOR AUDIT

WHAT IS DATA ANALYTICS?

Generic term for Computer Assisted Audit Tools and Techniques (CAATTs)

Collection of tools, techniques and best practices to access and analyse digital data.

Empowers auditors to use technology to audit digital data

Access to 100% of the data and to analyse data to infer insights from information

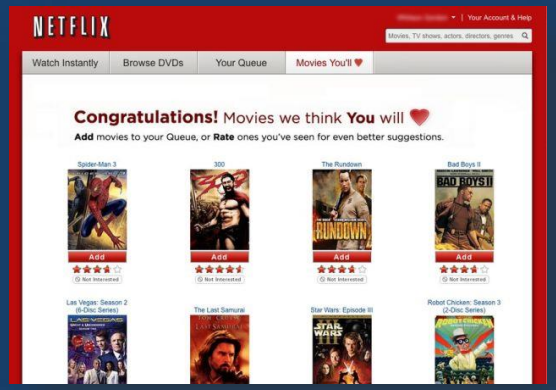
TYPES OF ANALYTICS

Why do airline prices change every hour?

Prescriptive Analytics
advice on possible outcomes

How do grocery cashiers know to hand you coupons you might actually use?

Predictive Analytics
understanding the future



How does Netflix frequently recommend just the right movie?

Descriptive Analytics
insight into the past

WHY DATA ANALYTICS?

Identifying unknown risks

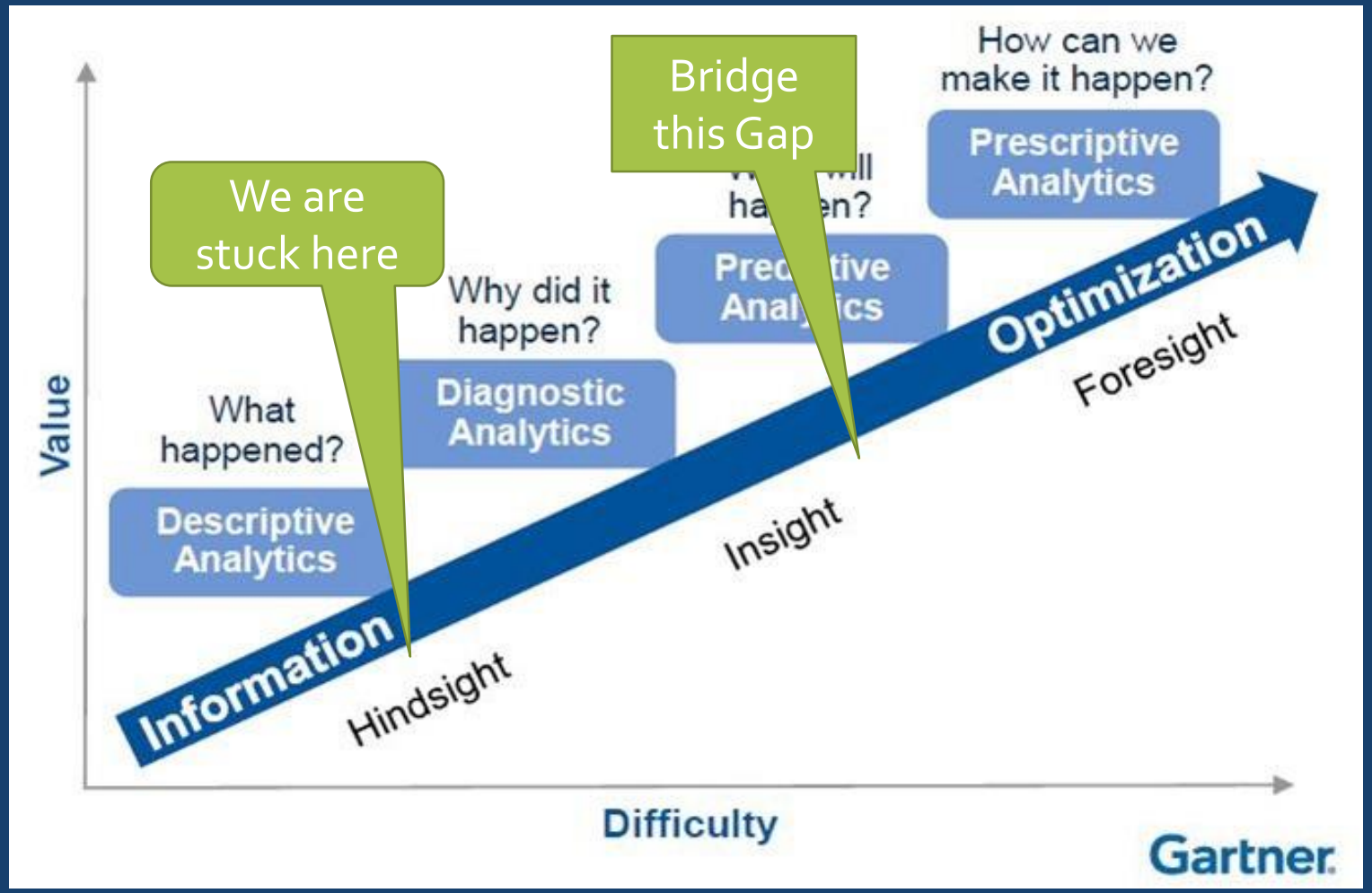
Deeper insights into business

Creating Profiles

From Hindsight to Foresight

Multi-Dimensional approach

Declining audit relevance using traditional methods



"The greatest enemy of knowledge is not ignorance, it is the illusion of knowledge."
~Stephen Hawking

COMMON MYTHS

- It is only for Large Companies!
- Applied only when there is humongous data
- Require Complex Tools
- Need to be a Data Scientist
- Driven by Maths & Statistics
- Require huge qualifications
- Heavy Investment!
- It is all about algorithms

TYPES OF DATA THAT CAN BE ANALYSED

Structured data

- Sales records
- Payment or expense details
- Payroll details
- Inventory records
- Financial reports
- Found in accounting software, databases, spreadsheets, etc

Unstructured data

- Email and instant messages
- Payment text descriptions
- Social media activity
- Corporate document repositories
- News feeds

USING ANALYTICAL TOOLS

- **Excel**: Spread software of Microsoft has various features useful for auditors.
- **General Audit Software**: Add-in for Excel with specific CAAT functions.
- **General Audit Software:** Data Analysis Software with specific CAAT functions
- **Application Software**: Standard and Ad-hoc Reporting and Query features available or specific functionalities designed for auditors.
- **Specialised Audit Software**: Audit software designed to work in specific software.

STEPS INVOLVED IN ANALYTICS

STEPS INVOLVED IN USING DA

Curate

Transforming data in a standard structure to be usable

Ex: Harmonise, Split text to columns etc

Profile

Validating data at a macro level

Ex: Column Statistics, Stratifying

Analyse

Examining the data in detail to discover essential features

Ex: Sampling, Outliers, Filter

Investigate

Observing or querying the data in detail

Ex: Statistical queries, RSF, Benford Law

Document & Report

Documenting & reporting

Ex: Audit log, Indexing

PRACTICAL DEMO

Tally

Company Creation Ctrl + M

Name : ABC Company

Mailing & Contact Details

Mailing Name : ABC Company
Address : #45, Divya Enclave
Rajaji Nagar
Bangalore

Statutory compliance for : India
State : Karnataka
PIN Code : 560048
Telephone No. : 080-25896321
Mobile No. : 9002565541
E-Mail : sales@nationaltraders.com

Auto Backup Details

Enable Auto Backup : No

Company Details

Currency Symbol : ₹
Maintain : Accounts with Inventory
Financial Year from : 1-4-2012
Books beginning from : 1-4-2012

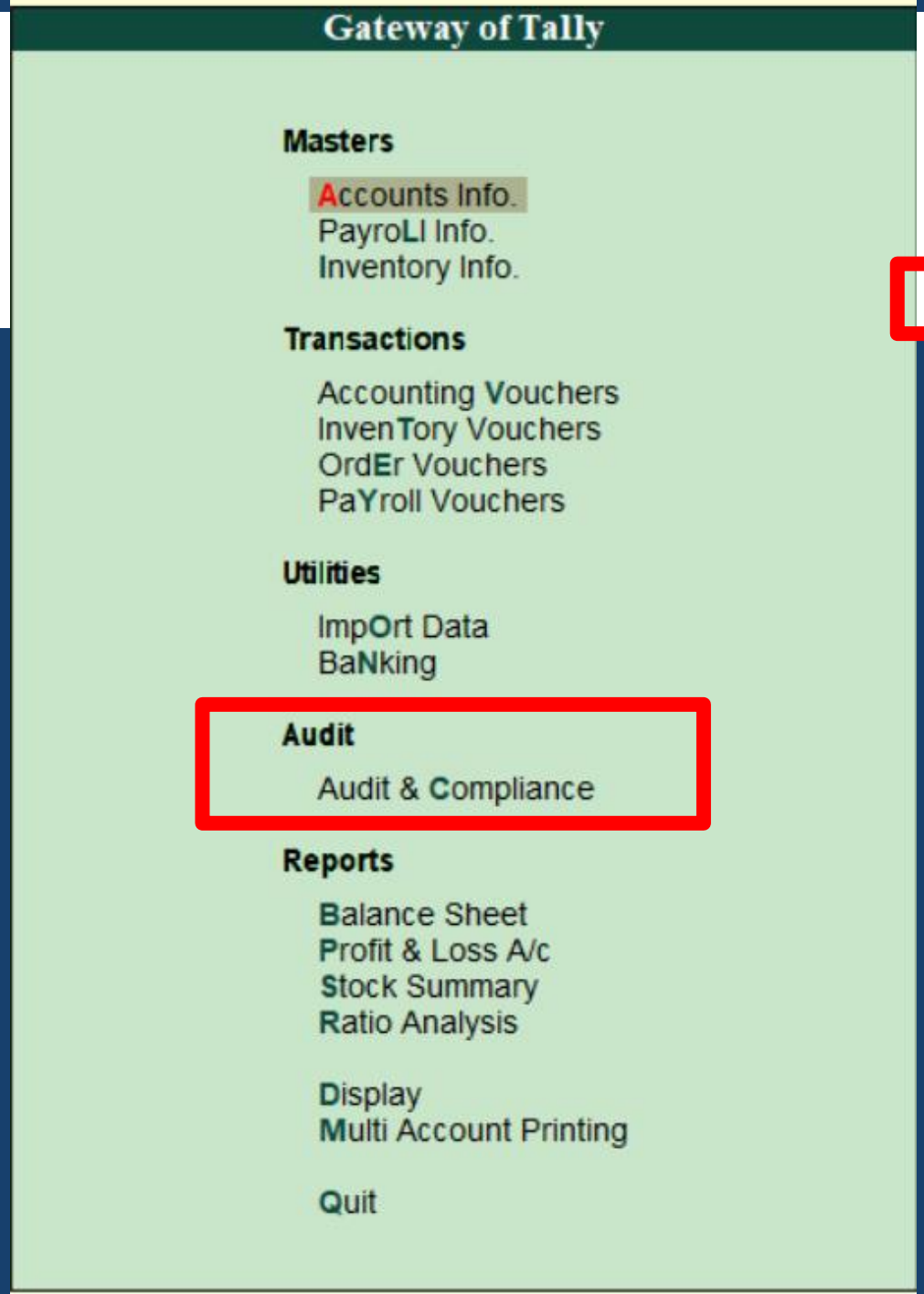
Security Control

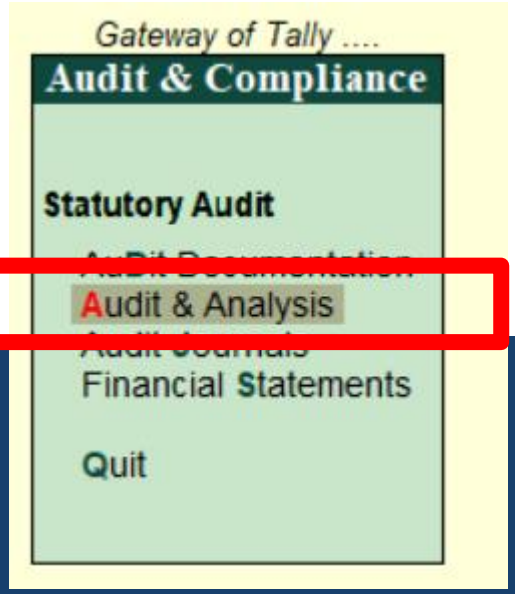
Use Security Control ? Yes
(Enable Security to avail Tally.NET Features)
Name of Administrator : Ajay
Password : ••••••••••••
Repeat Password : ••••••••••••
(Password Strength is Strong)
Use Tally Audit Features ? Yes
Disallow opening in Educational mode ? No

Base Currency Information

Base Currency Symbol : ₹
Formal Name : INR
Number of Decimal Places : 2
Is Symbol SUFFIXED to Amounts ? No
Symbol for Decimal Portion : paise

Show Amounts in Millions ? No
Put a SPACE between Amount and Symbol ? Yes
Decimal Places for Printing Amounts in Words : 2


Gateway of Tally
Masters
Accounts Info.
PayroLl Info.
Inventory Info.
Transactions
Accounting Vouchers
InvenTory Vouchers
OrdEr Vouchers
PaYroll Vouchers
Utilities
ImpOrt Data
BaNking
Audit
Audit & Compliance
Reports
Balance Sheet
Profit & Loss A/c
Stock Summary
Ratio Analysis
Display
Multi Account Printing
Quit


Gateway of Tally ....
Audit & Compliance
Statutory Audit
Audit & Analysis
Financial Statements
Quit


Data Analysis
Particulars
Verification of Chart of Accounts
Verification of Stock Items
Verification of Balances
Analytical Procedures
Pending Documents
Statutory Payments
Periodic Payments and Receipts
Relative Size Factor (RSF)
Other Analysis

PRACTICAL DEMO

Excel

Few Powerful Excel Functions

1. Quick Analysis
2. Pivot Table
3. Slicer & Dicer
4. Lookup
5. Conditional Formatting
6. Goal Seek
7. Flash & Auto Fill
8. Rand, Randbetween
9. Sparklines

PRACTICAL DEMO

CAAT Tool

1. COLUMN STATISTICS

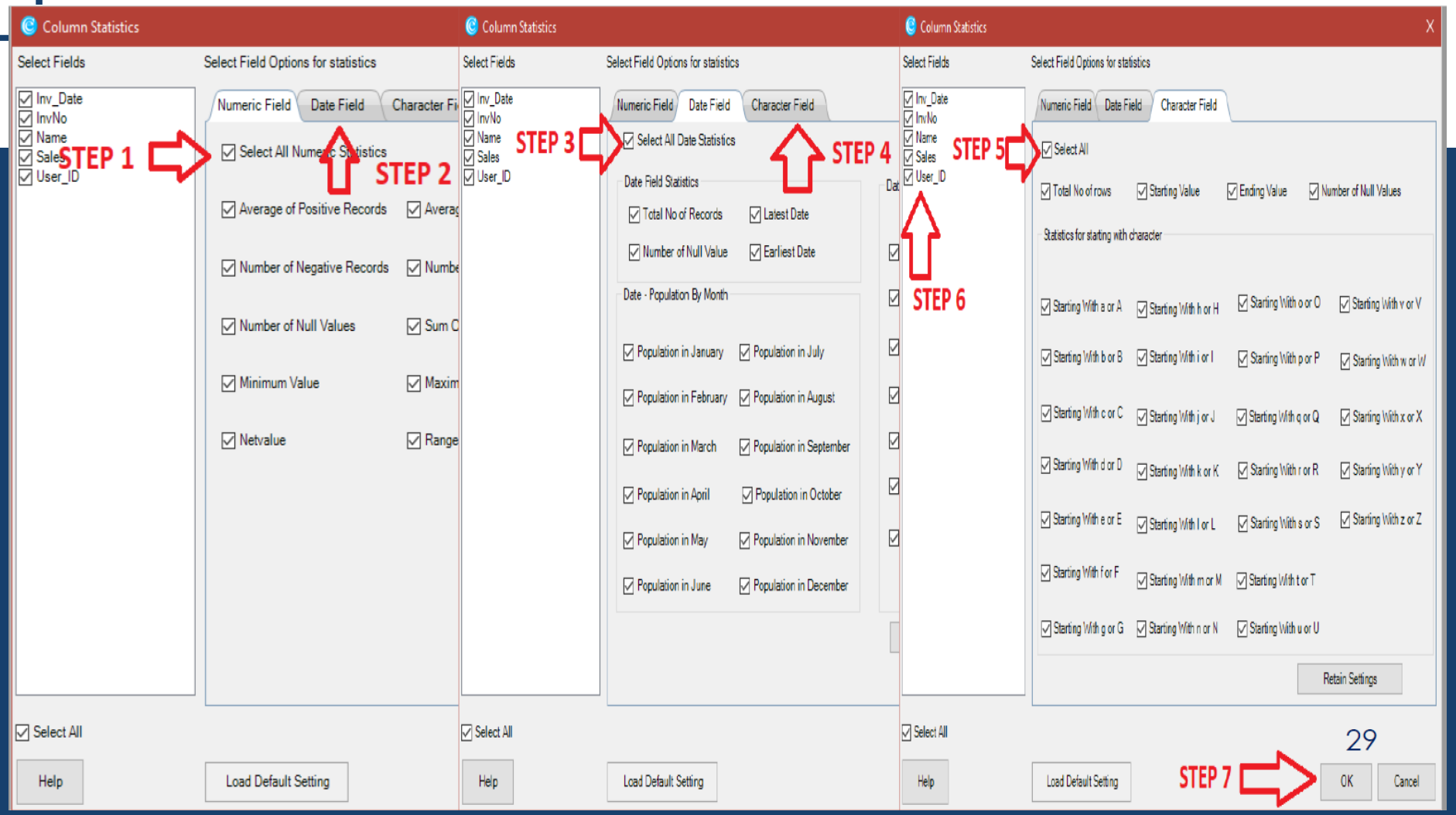
What is it ?

- Displays column-wise statistics of all numeric, date and numeric, date and character columns

Where to use?

- Risk Assessment
- Planning & Scoping

EXAMPLE


Column Statistics
Select Fields
Select Field Options for statistics
Inv_Date
InvNo
Name
Sales
User_ID
STEP 1
Numeric Field
Date Field
Character Field
Select All Numeric Statistics
STEP 2
Average of Positive Records
Number of Negative Records
Number of Null Values
Minimum Value
Netvalue
Select All
Help
Load Default Setting
STEP 3
Select All Date Statistics
STEP 4
Date Field Statistics
Total No of Records
Latest Date
Number of Null Value
Earliest Date
Date - Population By Month
Population in January
Population in July
Population in February
Population in August
Population in March
Population in September
Population in April
Population in October
Population in May
Population in November
Population in June
Population in December
STEP 5
STEP 6
Select All
Total No of rows
Starting Value
Ending Value
Number of Null Values
Statistics for starting with character
Retain Settings
29
STEP 7
OK
Cancel

Field Statistics

Numeric Field | Date Field | Character Field

	STATISTICS	Inv_Date
1	Total No of Records	6666
2	Population in January ==>>	309
3	Population in February ==>>	242
4	Population in March ==>>	325
5	Population in April ==>>	756
6	Population in May ==>>	776
7	Population in June ==>>	721
8	Population in July ==>>	702
9	Population in August ==>>	607
10	Population in September ==>>	838
11	Population in October ==>>	887
12	Population in November ==>>	241
13	Population in December ==>>	262
14	Number of Null Value ==>>	0
15	Latest Date ==>>	31 Mar 2017
16	Population in Monday ==>>	1038
17	Population in Tuesday ==>>	1157
18	Population in Wednesday ==>>	251
19	Population in Thursday ==>>	951
20	Population in Friday ==>>	1094

Field Statistics

Numeric Field | Date Field | Character Field

	STATISTICS	Inv
1	Total Number of Rows	6666
2	Average of Positive Records	4332
3	Number of Negative Records ==>>	0
4	Number of Positive Records ==>>	6663
5	Sum of Negative Records	NUL
6	Average of Negative Records	NUL
7	Number of Zero Value Record ==>>	0
8	Netvalue	NUL
9	Absolute	7664
10	Range	6663
11	Variance	3700
12	Maximum Value ==>>	7664
13	Minimum Value ==>>	1001
14	Number of Null Values ==>>	3
15	Sum Of All Records	28870683

Field Statistics

Numeric Field | Date Field | Character Field

	STATISTICS	Name	User_ID
1	Total No of rows	6666	6666
2	Starting Value ==>>		AA
3	Number of Null Values ==>>	0	10
4	Ending Value ==>>	zinobia	SF
5	Starting With a or A ==>>	678	972
6	Starting With b or B ==>>	255	0
7	Starting With c or C ==>>	156	0
8	Starting With d or D ==>>	398	0
9	Starting With e or E ==>>	5	0
10	Starting With f or F ==>>	85	0
11	Starting With g or G ==>>	129	0
12	Starting With h or H ==>>	141	0

2. IDENTIFY DUPLICATES & GAPS

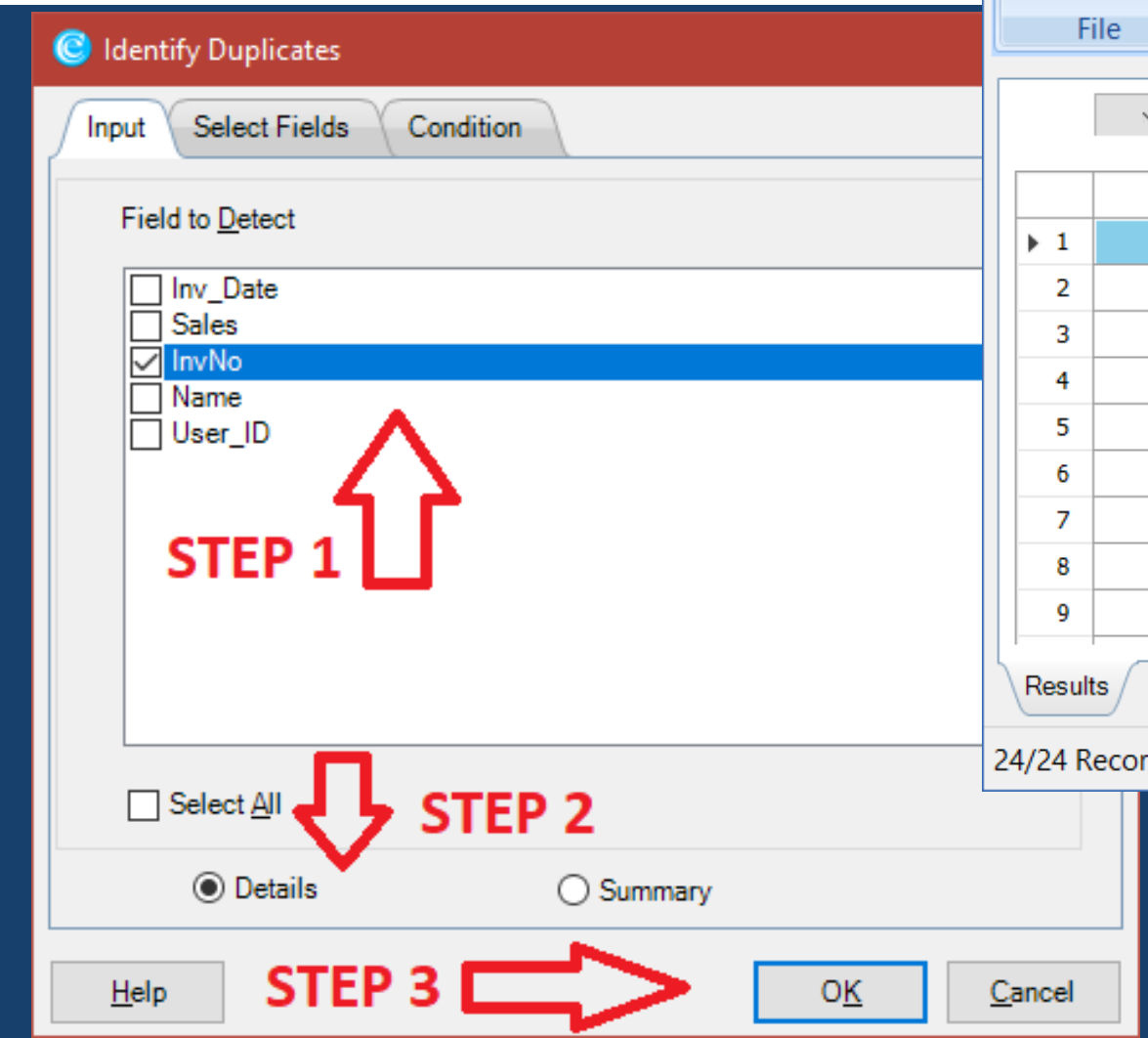
What is it ?

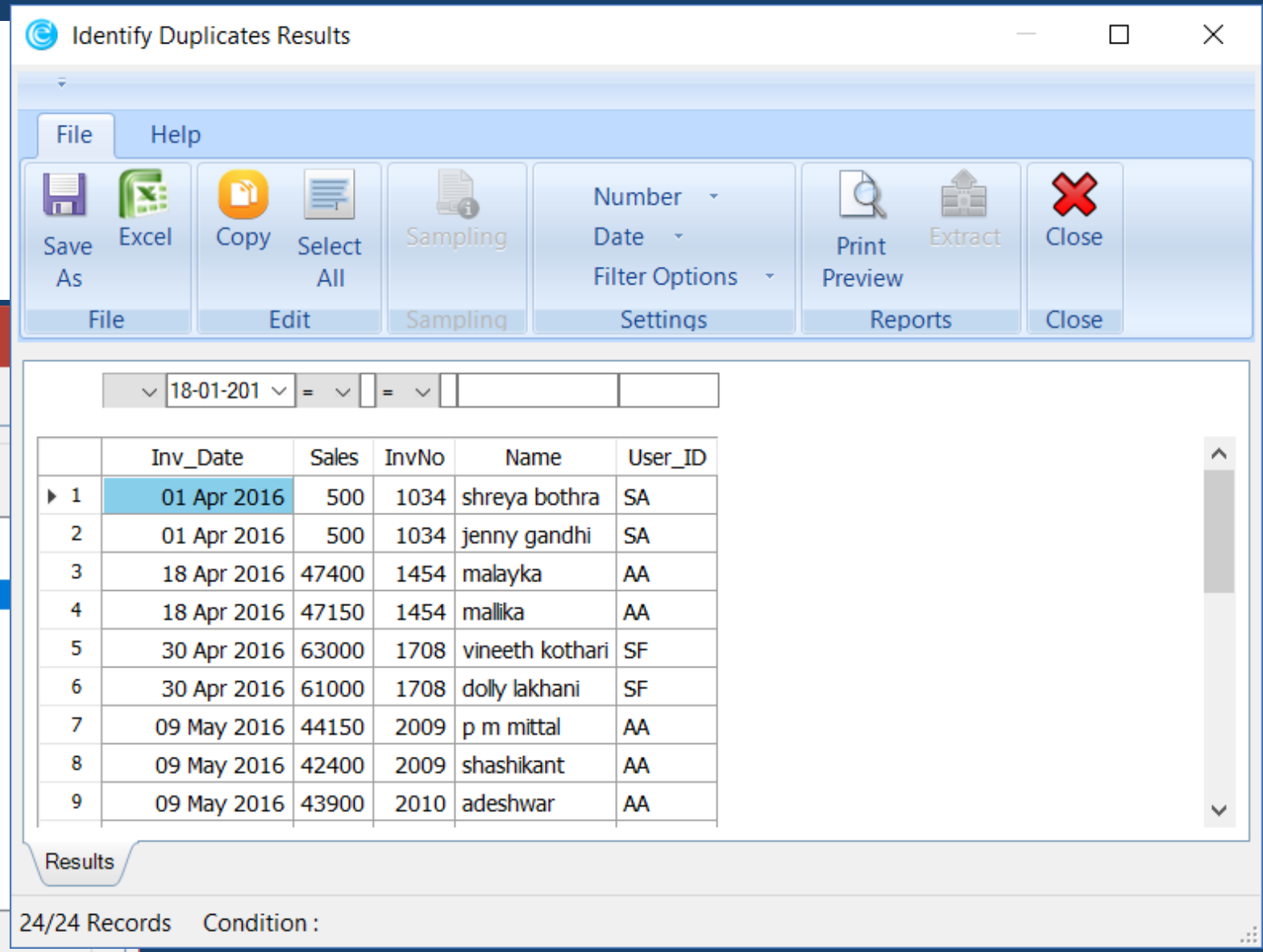
- Identify Duplicates in a series of data or displays all successive numeric numbers with defined intervals

Where to use?

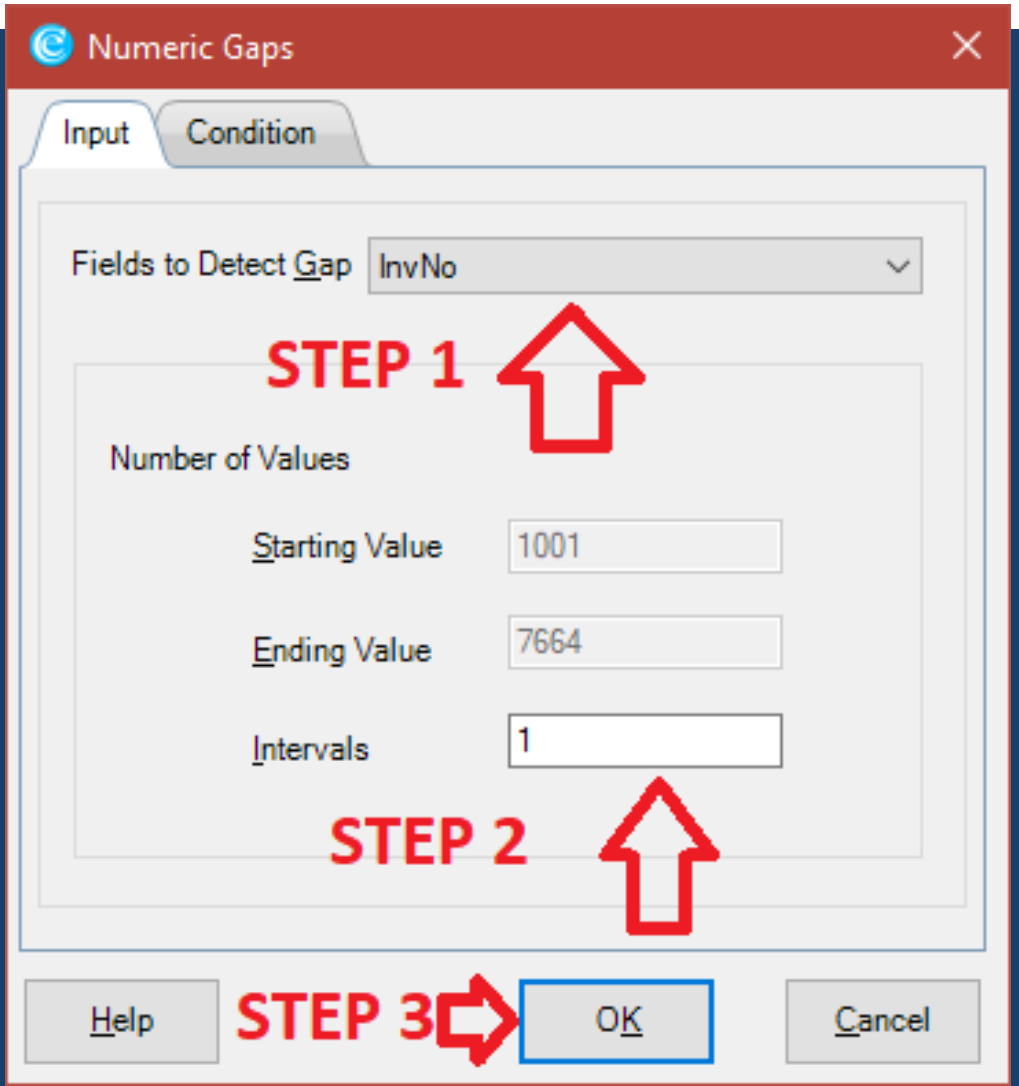
- Planning & Scoping
- Fieldwork

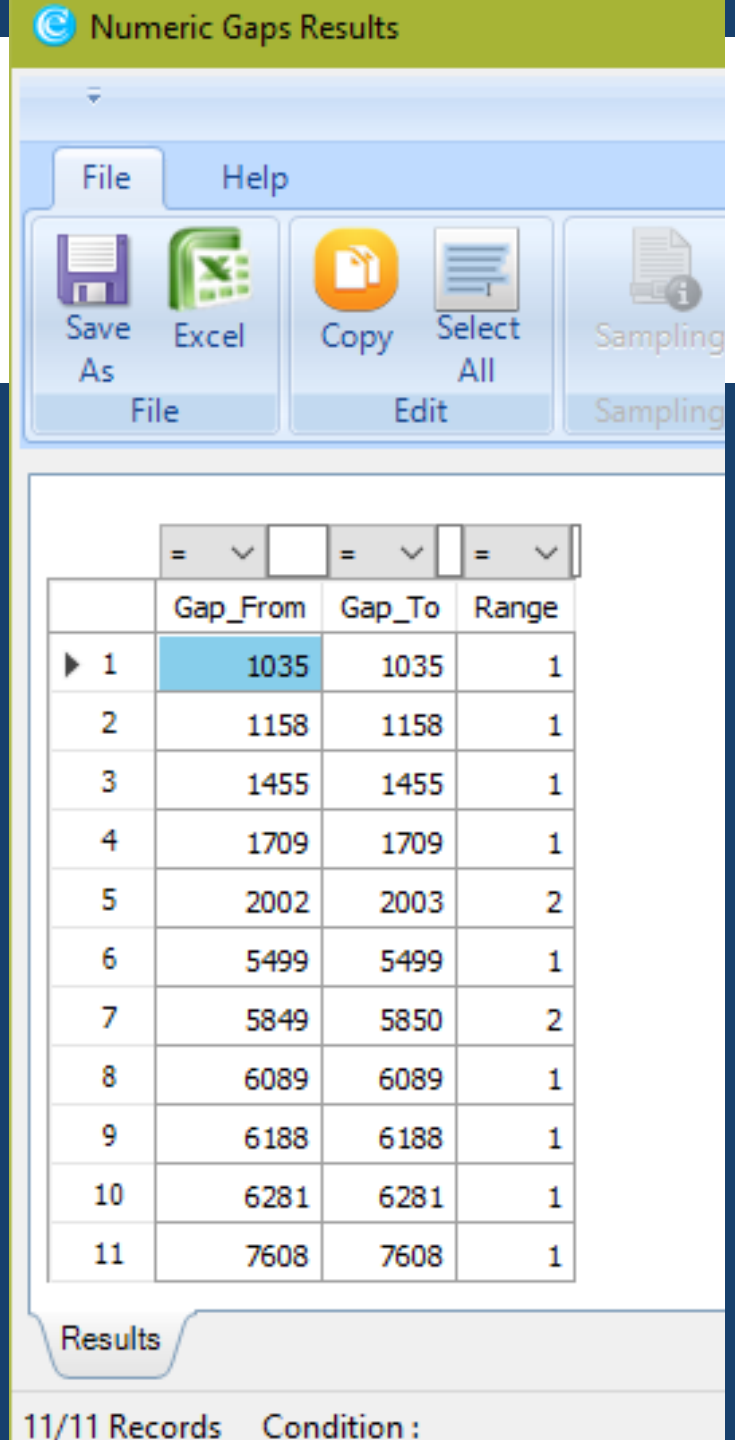
EXAMPLE


Identify Duplicates
Input
Select Fields
Condition
Field to Detect
Inv_Date
Sales
InvNo
Name
User_ID
STEP 1
Select All
STEP 2
Details
Summary
Help
STEP 3
OK
Cancel


Identify Duplicates Results
File
Help
Save As
Excel
Copy
Select All
Sampling
Number
Date
Filter Options
Print Preview
Extract
Close
File
Edit
Sampling
Settings
Reports
Close
18-01-201
Inv_Date Sales InvNo Name User_ID
1 01 Apr 2016 500 1034 shreya bothra SA
2 01 Apr 2016 500 1034 jenny gandhi SA
3 18 Apr 2016 47400 1454 malayka AA
4 18 Apr 2016 47150 1454 mallika AA
5 30 Apr 2016 63000 1708 vineeth kothari SF
6 30 Apr 2016 61000 1708 dolly lakhani SF
7 09 May 2016 44150 2009 p m mittal AA
8 09 May 2016 42400 2009 shashikant AA
9 09 May 2016 43900 2010 adeshwar AA
Results
24/24 Records
Condition :

EXAMPLE


Numeric Gaps
Input
Condition
Fields to Detect Gap
InvNo
STEP 1
Number of Values
Starting Value
1001
Ending Value
7664
Intervals
1
STEP 2
Help
STEP 3
OK
Cancel


Numeric Gaps Results
File
Help
Save As
Excel
Copy
Select All
Sampling
File
Edit
Sampling
Gap_From
Gap_To
Range
1 1035 1035 1
2 1158 1158 1
3 1455 1455 1
4 1709 1709 1
5 2002 2003 2
6 5499 5499 1
7 5849 5850 2
8 6089 6089 1
9 6188 6188 1
10 6281 6281 1
11 7608 7608 1
Results
11/11 Records
Condition :

3. SAMPLING – STRATIFIED RANDOM

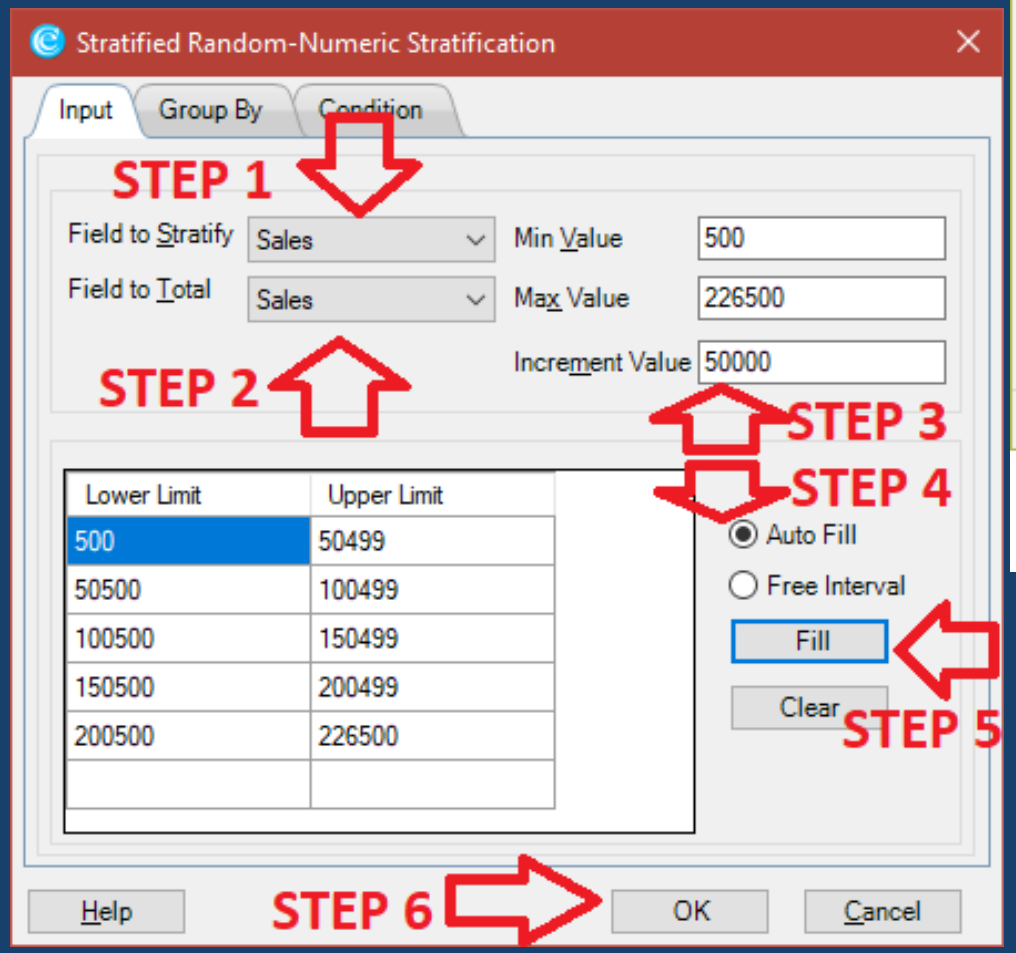
What is it ?

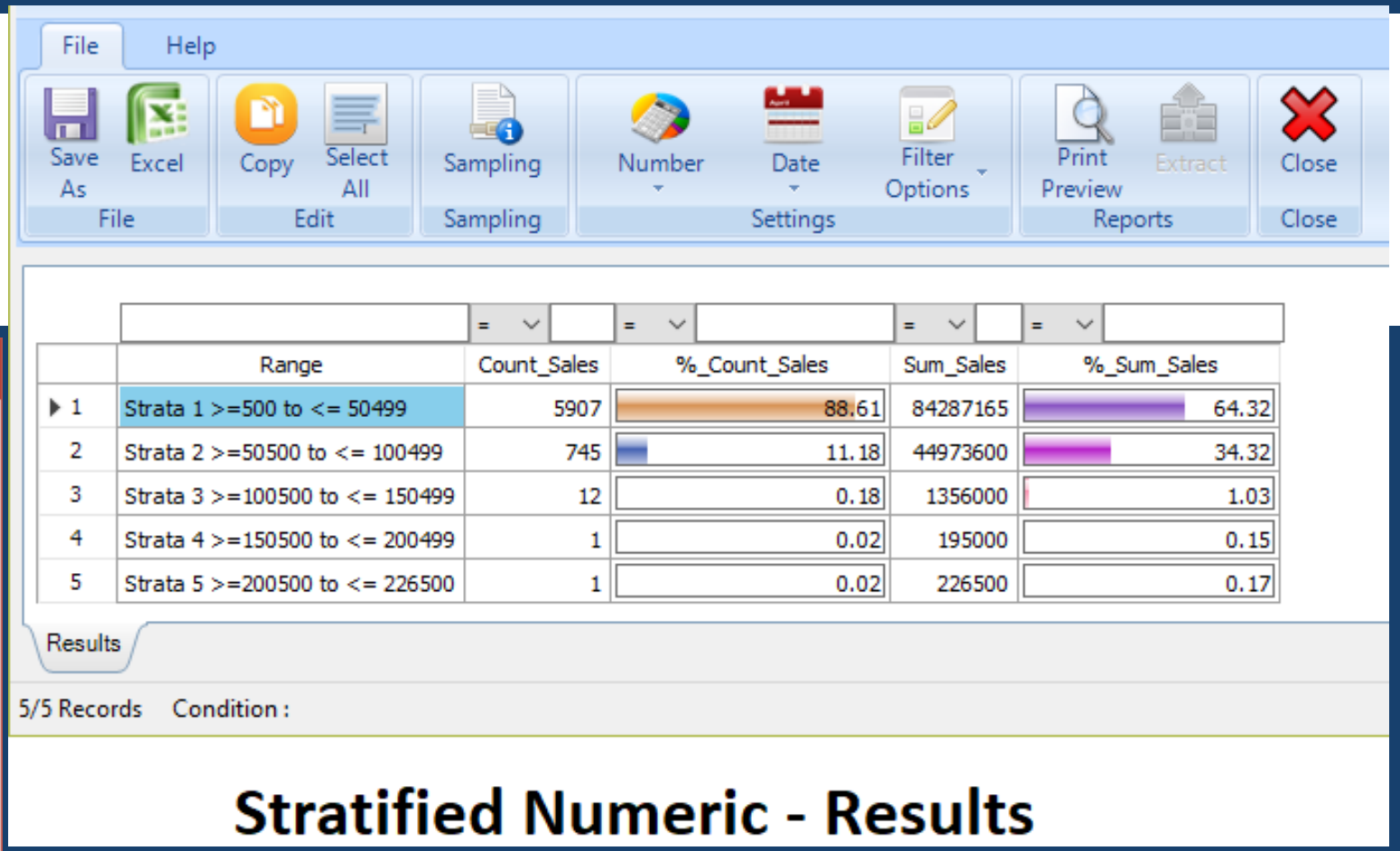
- Randomly picks a specified number or percentage of samples from a stratified population.

Where to use?

- Risk Assessment for test case
- Field work for doing detailed testing

EXAMPLE



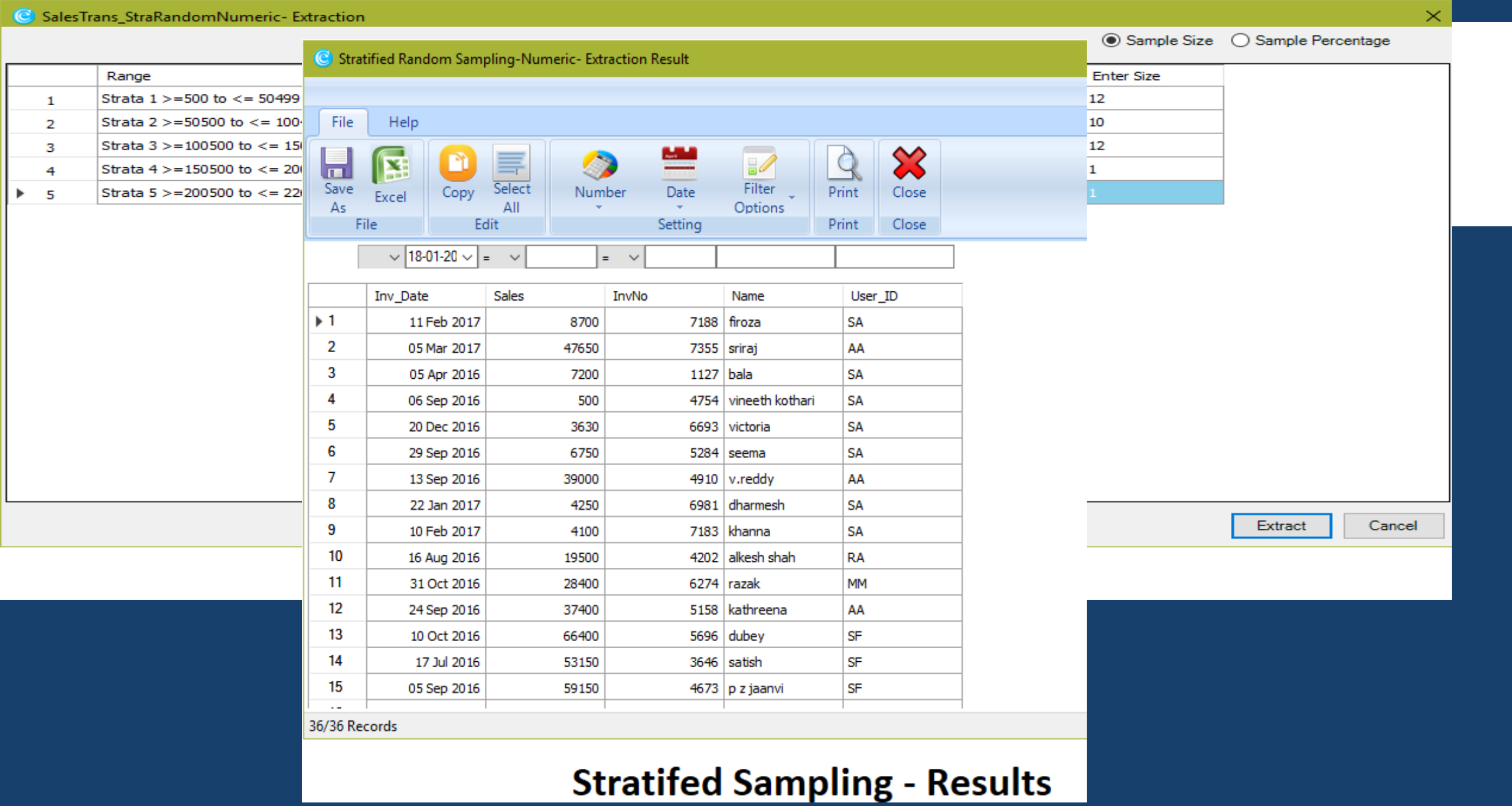


	Range	Count_Sales	%_Count_Sales	Sum_Sales	%_Sum_Sales
1	Strata 1 >=500 to <= 50499	5907	88.61	84287165	64.32
2	Strata 2 >=50500 to <= 100499	745	11.18	44973600	34.32
3	Strata 3 >=100500 to <= 150499	12	0.18	1356000	1.03
4	Strata 4 >=150500 to <= 200499	1	0.02	195000	0.15
5	Strata 5 >=200500 to <= 226500	1	0.02	226500	0.17

Results

5/5 Records Condition :

Stratified Numeric - Results



Stratifed Sampling - Results

4. PARETO / ABC ANALYSIS

What is it ?

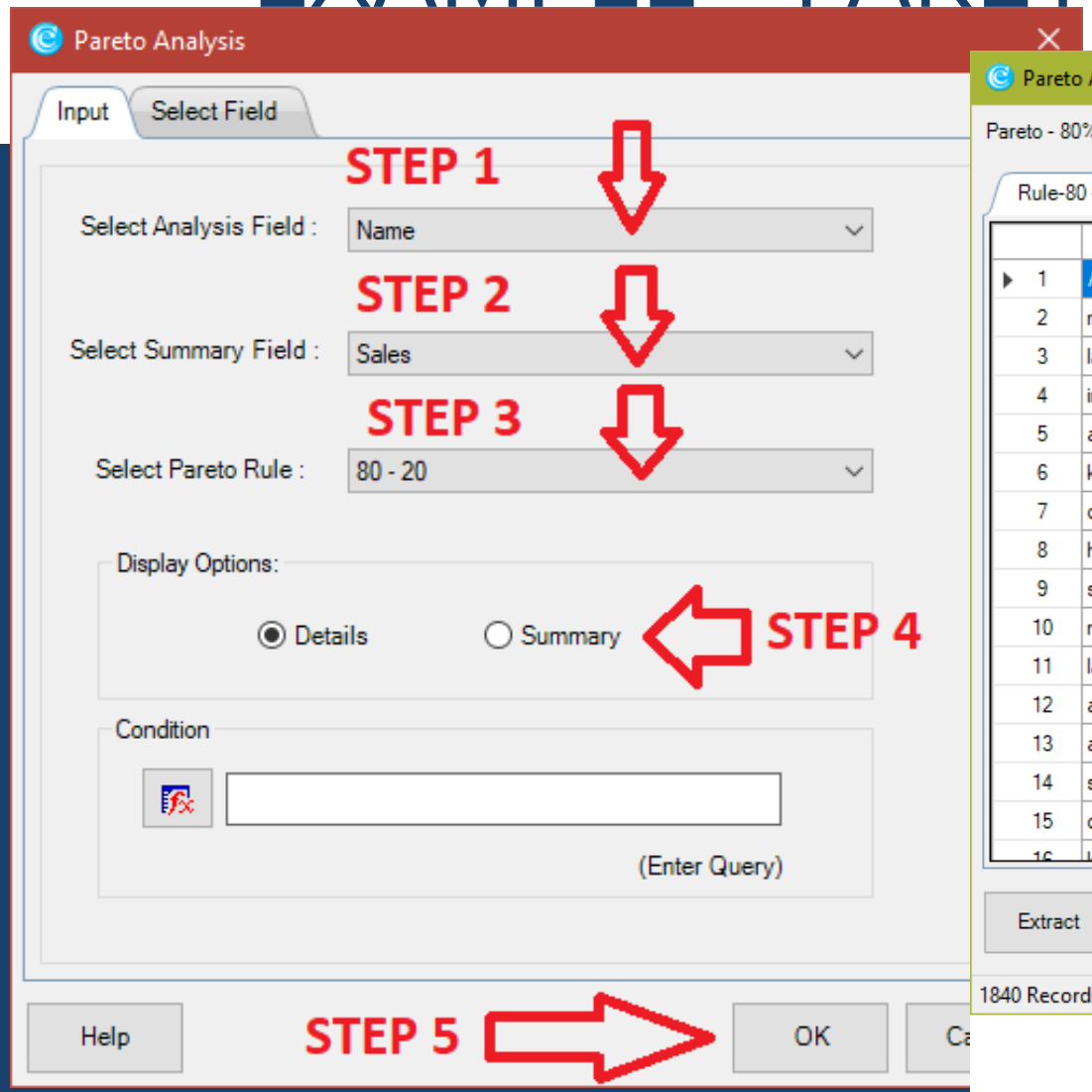
- Pareto Analysis:
- Displays items in two separate tabs of 80:20

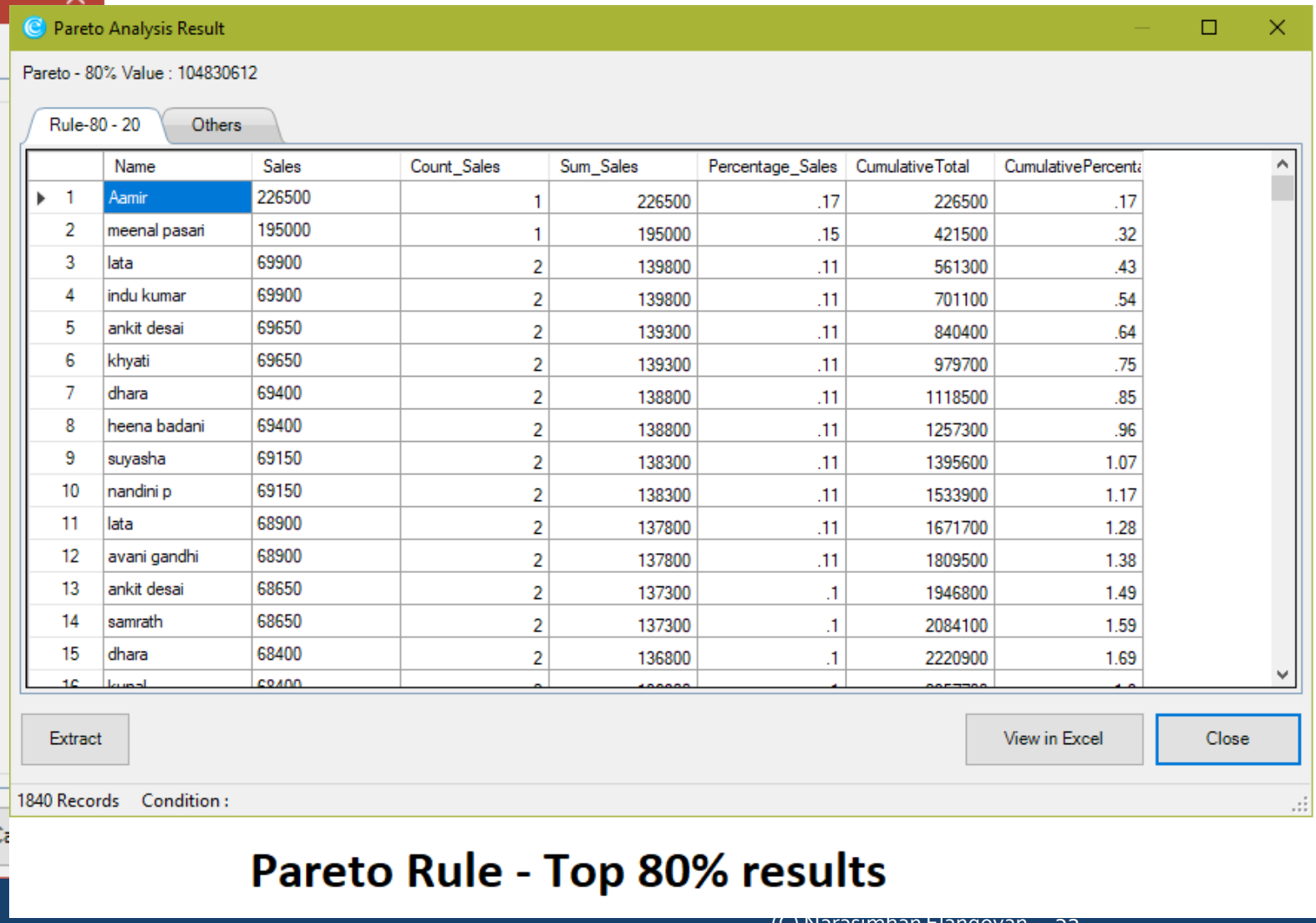
- ABC Analysis:
- Displays items in three separate categories as per the same percentage given for each category.

Where to use?

- Risk Assessment for profiling
- Planning & Scoping

EXAMPLE – PARETO ANALYSIS

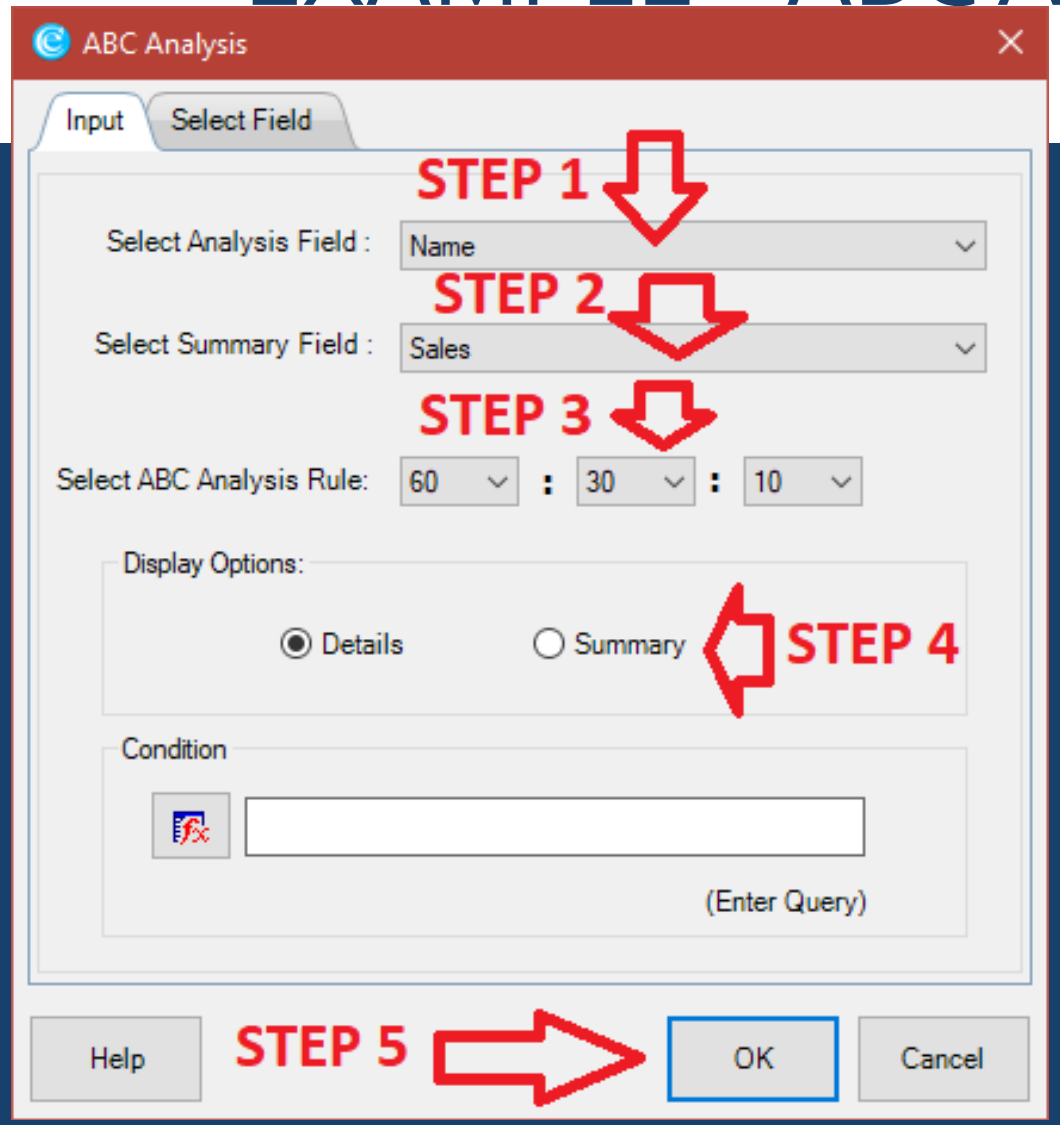


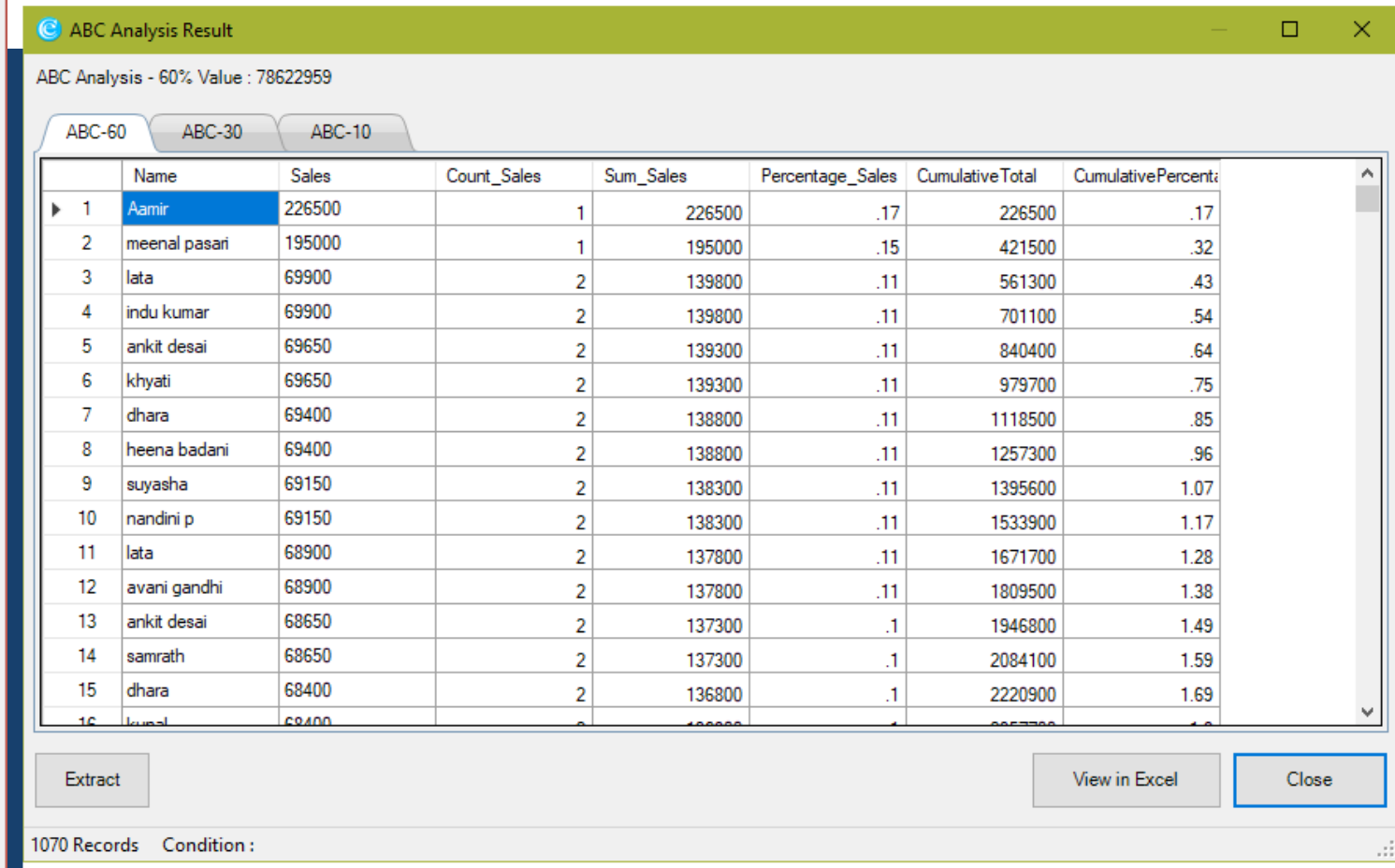


	Name	Sales	Count_Sales	Sum_Sales	Percentage_Sales	CumulativeTotal	CumulativePercenta
1	Aamir	226500	1	226500	.17	226500	.17
2	meenal pasari	195000	1	195000	.15	421500	.32
3	lata	69900	2	139800	.11	561300	.43
4	indu kumar	69900	2	139800	.11	701100	.54
5	ankit desai	69650	2	139300	.11	840400	.64
6	khyati	69650	2	139300	.11	979700	.75
7	dhara	69400	2	138800	.11	1118500	.85
8	heena badani	69400	2	138800	.11	1257300	.96
9	suyasha	69150	2	138300	.11	1395600	1.07
10	nandini p	69150	2	138300	.11	1533900	1.17
11	lata	68900	2	137800	.11	1671700	1.28
12	avani gandhi	68900	2	137800	.11	1809500	1.38
13	ankit desai	68650	2	137300	.1	1946800	1.49
14	samrath	68650	2	137300	.1	2084100	1.59
15	dhara	68400	2	136800	.1	2220900	1.69

Pareto Rule - Top 80% results

EXAMPLE – ABC ANALYSIS





	Name	Sales	Count_Sales	Sum_Sales	Percentage_Sales	CumulativeTotal	CumulativePercenta
1	Aamir	226500	1	226500	.17	226500	.17
2	meenal pasari	195000	1	195000	.15	421500	.32
3	lata	69900	2	139800	.11	561300	.43
4	indu kumar	69900	2	139800	.11	701100	.54
5	ankit desai	69650	2	139300	.11	840400	.64
6	khyati	69650	2	139300	.11	979700	.75
7	dhara	69400	2	138800	.11	1118500	.85
8	heena badani	69400	2	138800	.11	1257300	.96
9	suyasha	69150	2	138300	.11	1395600	1.07
10	nandini p	69150	2	138300	.11	1533900	1.17
11	lata	68900	2	137800	.11	1671700	1.28
12	avani gandhi	68900	2	137800	.11	1809500	1.38
13	ankit desai	68650	2	137300	.1	1946800	1.49
14	samrath	68650	2	137300	.1	2084100	1.59
15	dhara	68400	2	136800	.1	2220900	1.69

ABC Analysis - Top 60% results

5. QUADRANT / PATTERN ANALYSIS

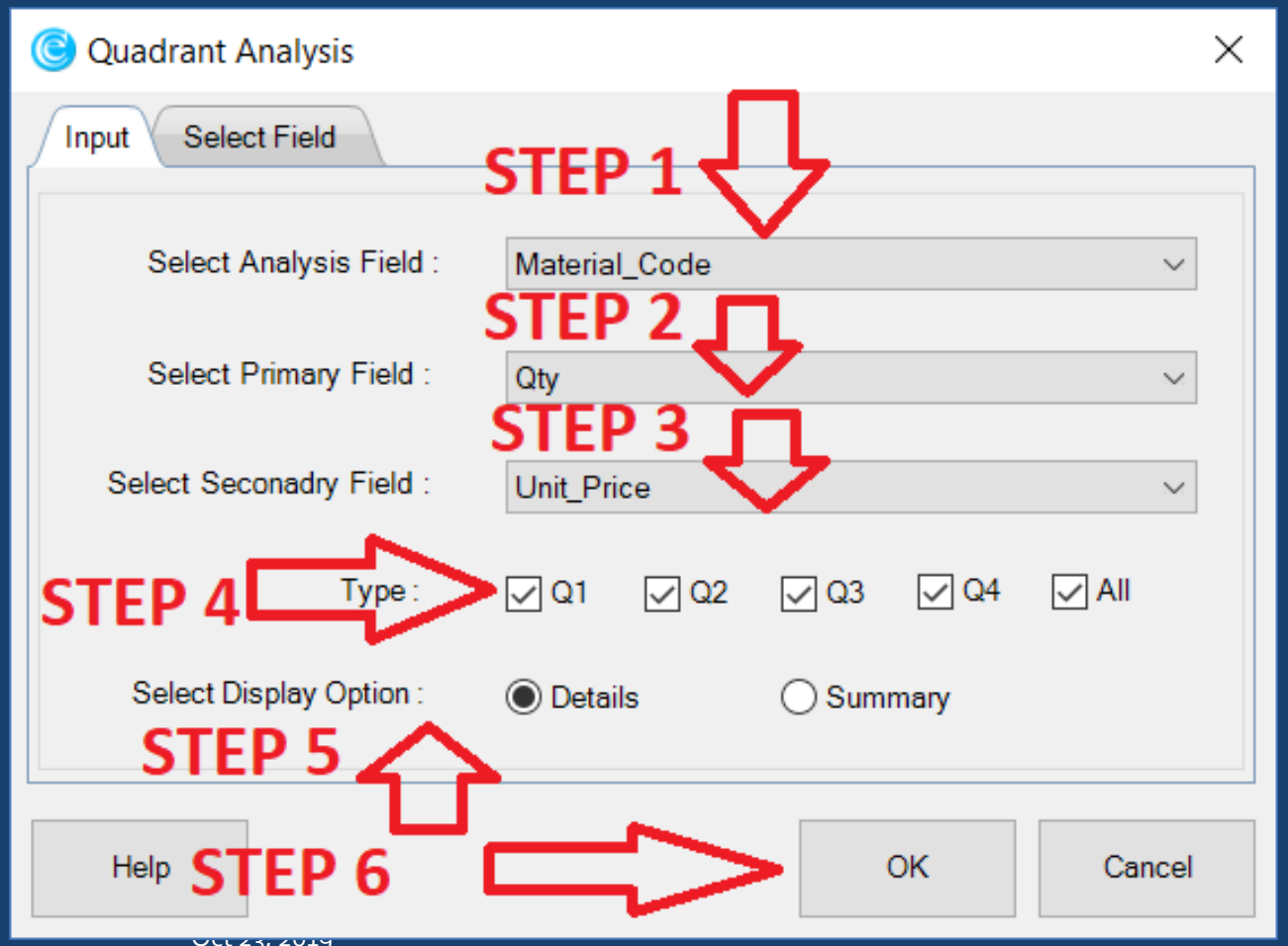
What is it ?

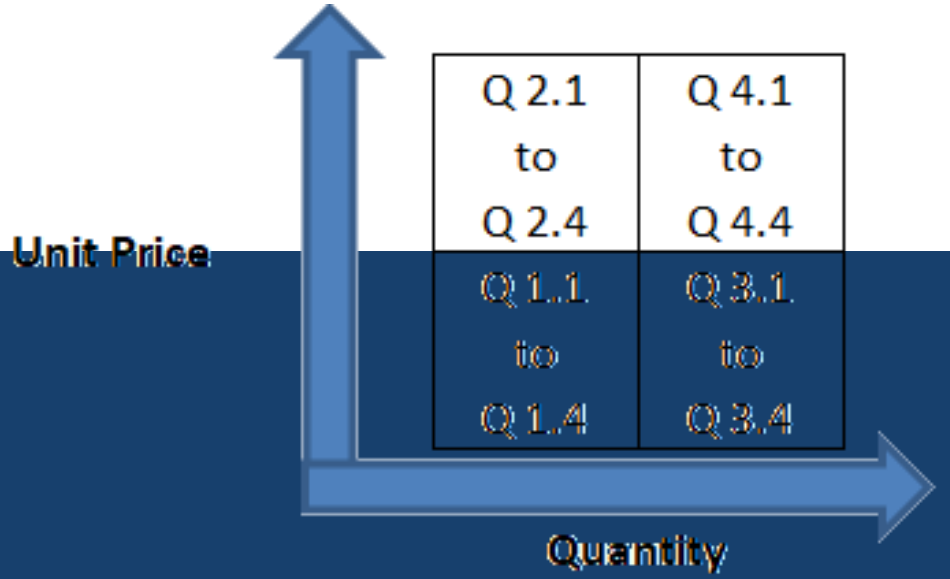
- Displays items in four quadrants as per the specific same percentage given for each category.

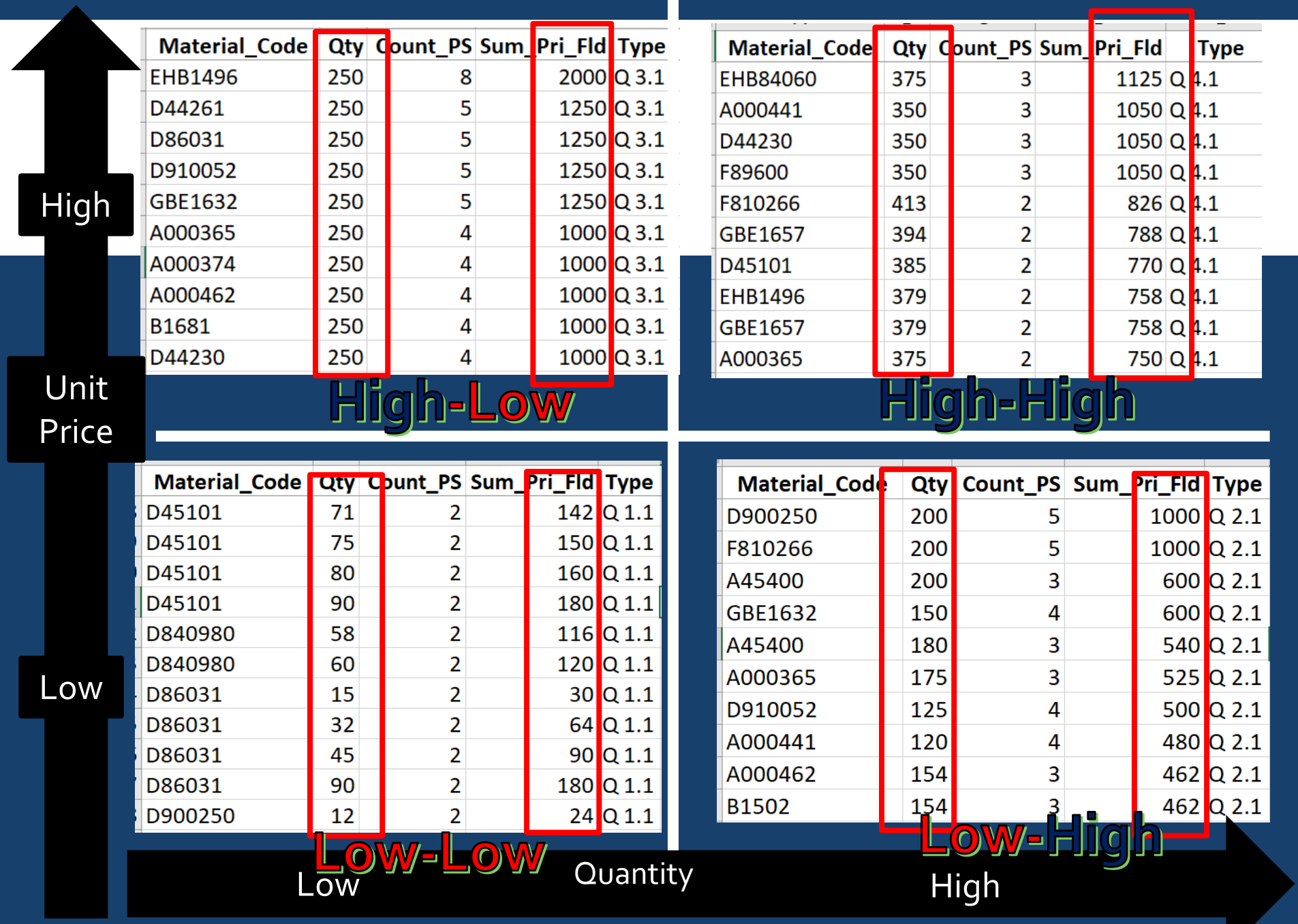
Where to use?

- Risk Assessment for profiling
- Planning & Scoping
- Fieldwork

EXAMPLE


Quadrant Analysis
Input
Select Field
STEP 1
Select Analysis Field :
Material_Code
STEP 2
Select Primary Field :
Qty
STEP 3
Select Seconadry Field :
Unit_Price
STEP 4
Type :
Q1
Q2
Q3
Q4
All
Select Display Option :
Details
Summary
STEP 5
Help
STEP 6
OK
Cancel


Unit Price
Q 2.1 to Q 2.4
Q 4.1 to Q 4.4
Q 1.1 to Q 1.4
Q 3.1 to Q 3.4
Quantity



Material_Code	Qty	Count_PS	Sum_Pri_Fld	Type
EHB1496	250	8	2000	Q 3.1
D44261	250	5	1250	Q 3.1
D86031	250	5	1250	Q 3.1
D910052	250	5	1250	Q 3.1
GBE1632	250	5	1250	Q 3.1
A000365	250	4	1000	Q 3.1
A000374	250	4	1000	Q 3.1
A000462	250	4	1000	Q 3.1
B1681	250	4	1000	Q 3.1
D44230	250	4	1000	Q 3.1

High-Low

Material_Code	Qty	Count_PS	Sum_Pri_Fld	Type
EHB84060	375	3	1125	Q 4.1
A000441	350	3	1050	Q 4.1
D44230	350	3	1050	Q 4.1
F89600	350	3	1050	Q 4.1
F810266	413	2	826	Q 4.1
GBE1657	394	2	788	Q 4.1
D45101	385	2	770	Q 4.1
EHB1496	379	2	758	Q 4.1
GBE1657	379	2	758	Q 4.1
A000365	375	2	750	Q 4.1

High-High

Material_Code	Qty	Count_PS	Sum_Pri_Fld	Type
D45101	71	2	142	Q 1.1
D45101	75	2	150	Q 1.1
D45101	80	2	160	Q 1.1
D45101	90	2	180	Q 1.1
D840980	58	2	116	Q 1.1
D840980	60	2	120	Q 1.1
D86031	15	2	30	Q 1.1
D86031	32	2	64	Q 1.1
D86031	45	2	90	Q 1.1
D86031	90	2	180	Q 1.1
D900250	12	2	24	Q 1.1

Low-Low

Material_Code	Qty	Count_PS	Sum_Pri_Fld	Type
D900250	200	5	1000	Q 2.1
F810266	200	5	1000	Q 2.1
A45400	200	3	600	Q 2.1
GBE1632	150	4	600	Q 2.1
A45400	180	3	540	Q 2.1
A000365	175	3	525	Q 2.1
D910052	125	4	500	Q 2.1
A000441	120	4	480	Q 2.1
A000462	154	3	462	Q 2.1
B1502	154	3	462	Q 2.1

Low-High

6. RELATIVE SIZE FACTOR

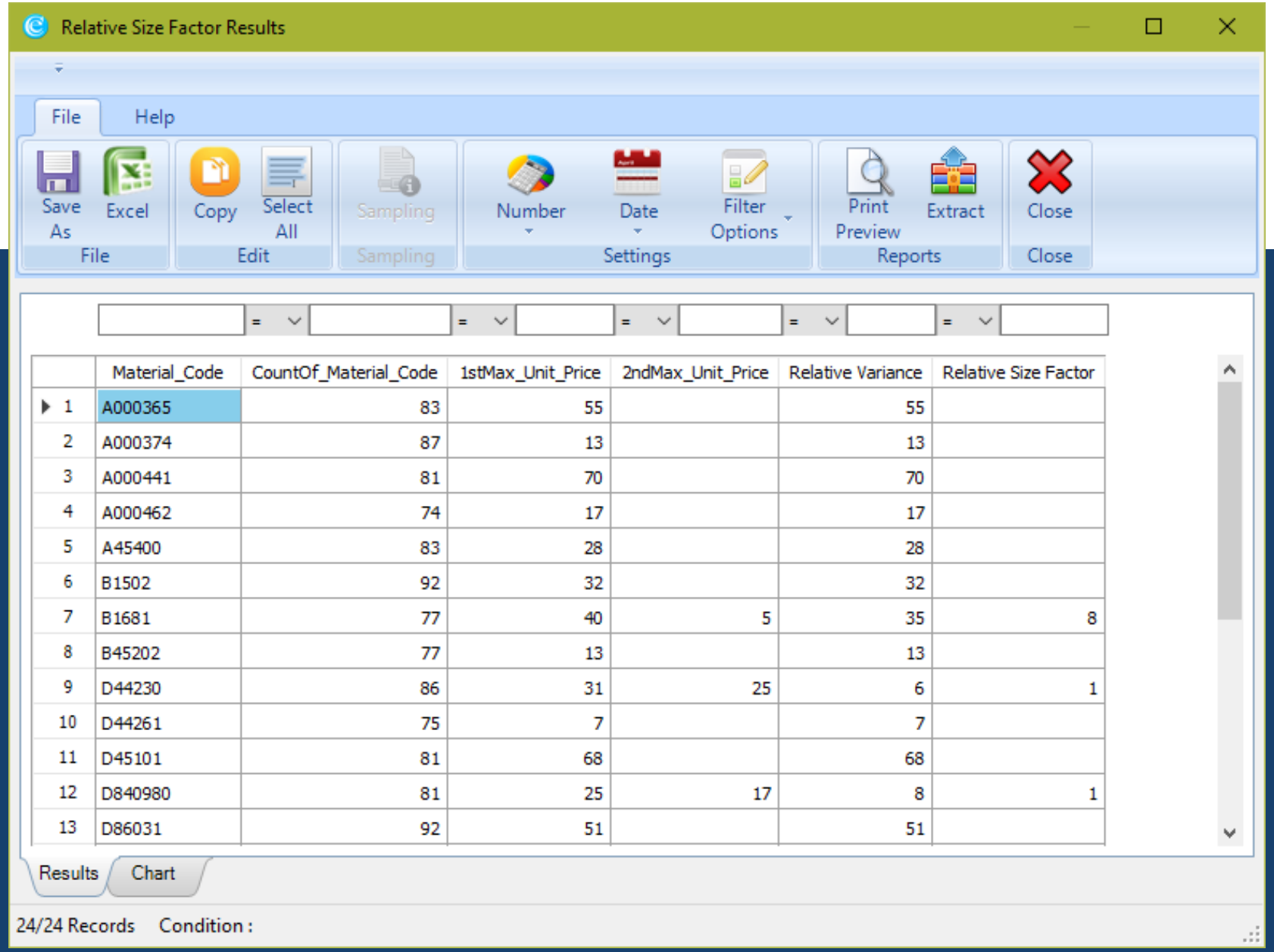
What is it ?

- Displays the variation between highest value and 2nd highest value (in terms of difference and proportion).

Where to use?

- Risk Assessment for profiling
- Planning & Scoping
- Fieldwork

EXAMPLE



	Material_Code	CountOf_Material_Code	1stMax_Unit_Price	2ndMax_Unit_Price	Relative Variance	Relative Size Factor
1	A000365	83	55		55	
2	A000374	87	13		13	
3	A000441	81	70		70	
4	A000462	74	17		17	
5	A45400	83	28		28	
6	B1502	92	32		32	
7	B1681	77	40	5	35	8
8	B45202	77	13		13	
9	D44230	86	31	25	6	1
10	D44261	75	7		7	
11	D45101	81	68		68	
12	D840980	81	25	17	8	1
13	D86031	92	51		51	

7. MAX VARIANCE FACTOR

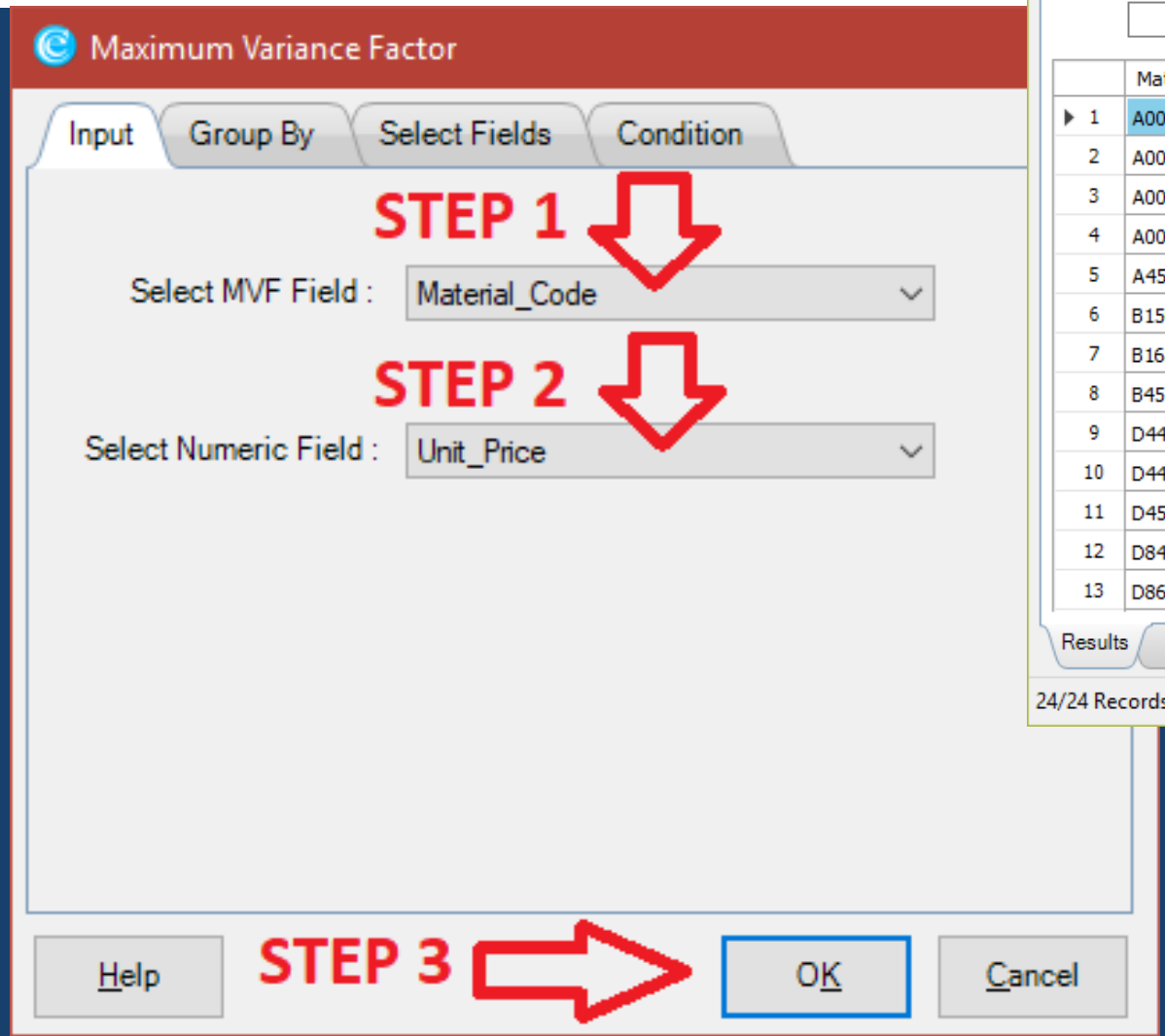
What is it ?

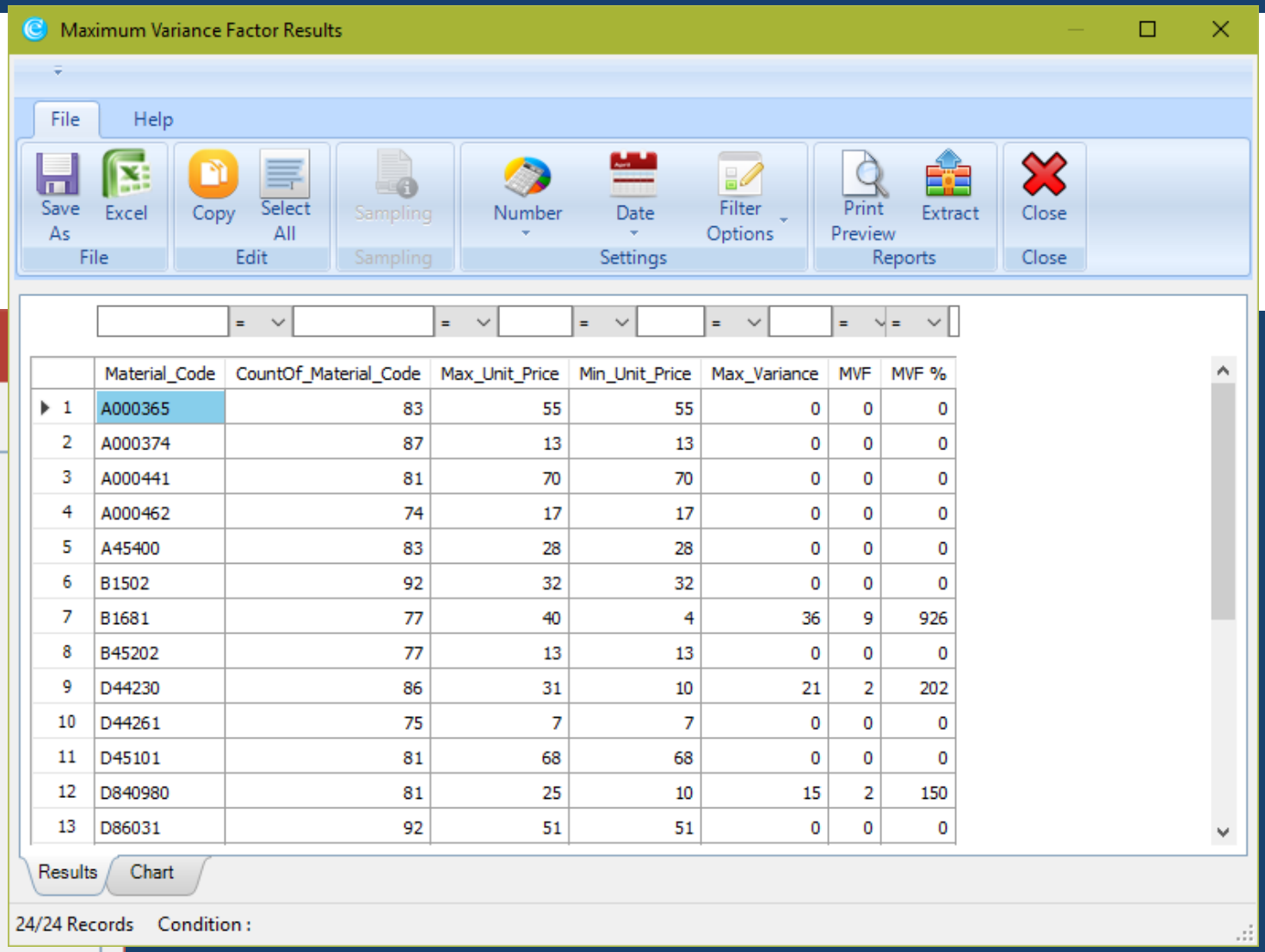
- Displays the variation between highest and lowest value (in terms of difference and proportion).

Where to use?

- Risk Assessment for profiling
- Planning & Scoping
- Fieldwork

EXAMPLE





	Material_Code	CountOf_Material_Code	Max_Unit_Price	Min_Unit_Price	Max_Variance	MVF	MVF %
1	A000365	83	55	55	0	0	0
2	A000374	87	13	13	0	0	0
3	A000441	81	70	70	0	0	0
4	A000462	74	17	17	0	0	0
5	A45400	83	28	28	0	0	0
6	B1502	92	32	32	0	0	0
7	B1681	77	40	4	36	9	926
8	B45202	77	13	13	0	0	0
9	D44230	86	31	10	21	2	202
10	D44261	75	7	7	0	0	0
11	D45101	81	68	68	0	0	0
12	D840980	81	25	10	15	2	150
13	D86031	92	51	51	0	0	0

Results Chart

24/24 Records Condition :

8. BENFORD LAW

What is it ?

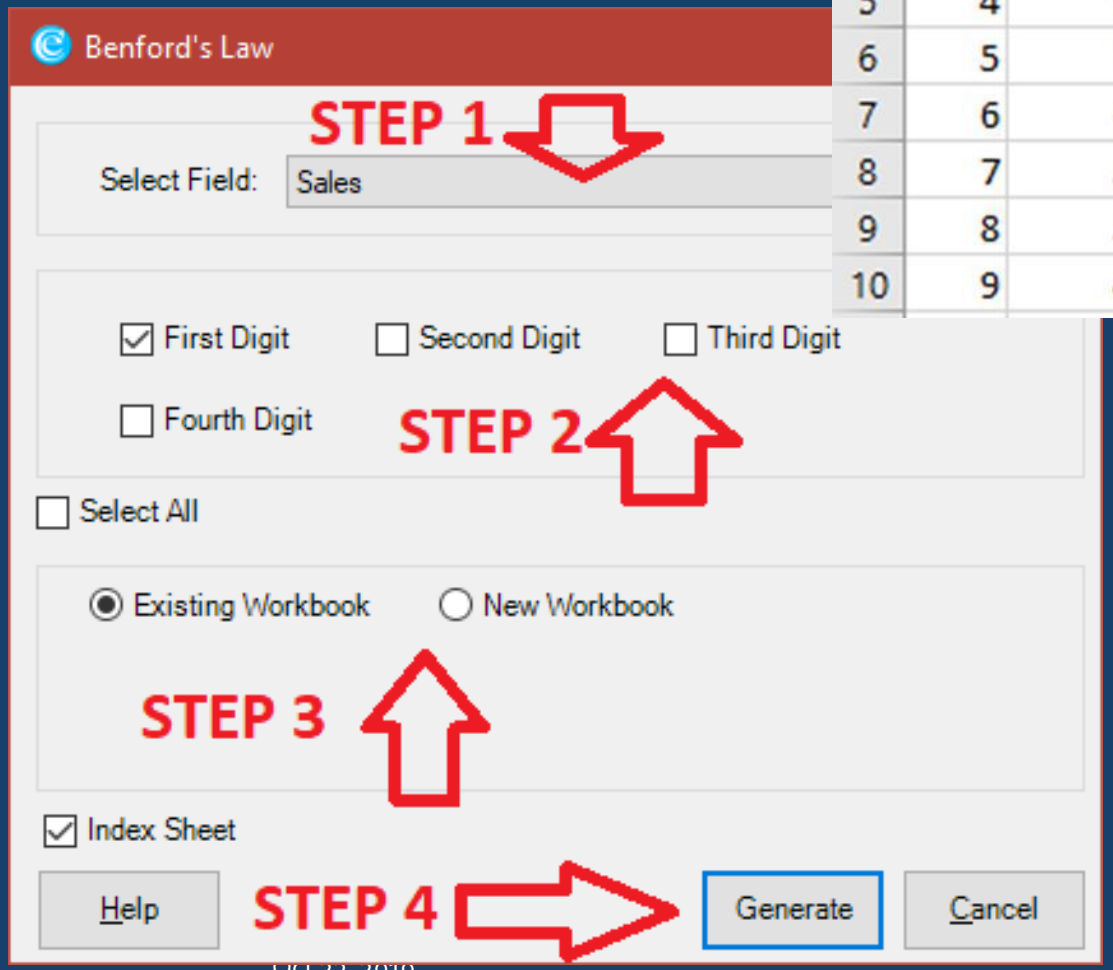
- Displays variance in patterns of numeric data based on Benford Law for first digit beginning with 1 to 9.

Where to use?

- Risk Assessment for profiling
- Planning & Scoping
- Fieldwork
- Monitoring

EXAMPLE

	A	B	C	D	E	F	G	H
1	Digit	BlawPer	ActualPer	Diff	Variance	Actual_Occurrance	BLawOccur	Diff_Occurance
2	1	30.1	13.4	16.7	55.5	895	2006	1111
3	2	17.6	15	2.6	14.8	998	1173	175
4	3	12.5	30.3	-17.8	-142.4	2017	833	-1184
5	4	9.7	13.7	-4	-41.2	910	647	-263
6	5	7.9	11	-3.1	-39.2	733	527	-206
7	6	6.7	9.5	-2.8	-41.8	630	447	-183
8	7	5.8	4.8	1	17.2	317	387	70
9	8	5.1	1.2	3.9	76.5	77	340	263
10	9	4.6	1.3	3.3	71.7	89	307	218



9. AUTHENTICATION CHECK

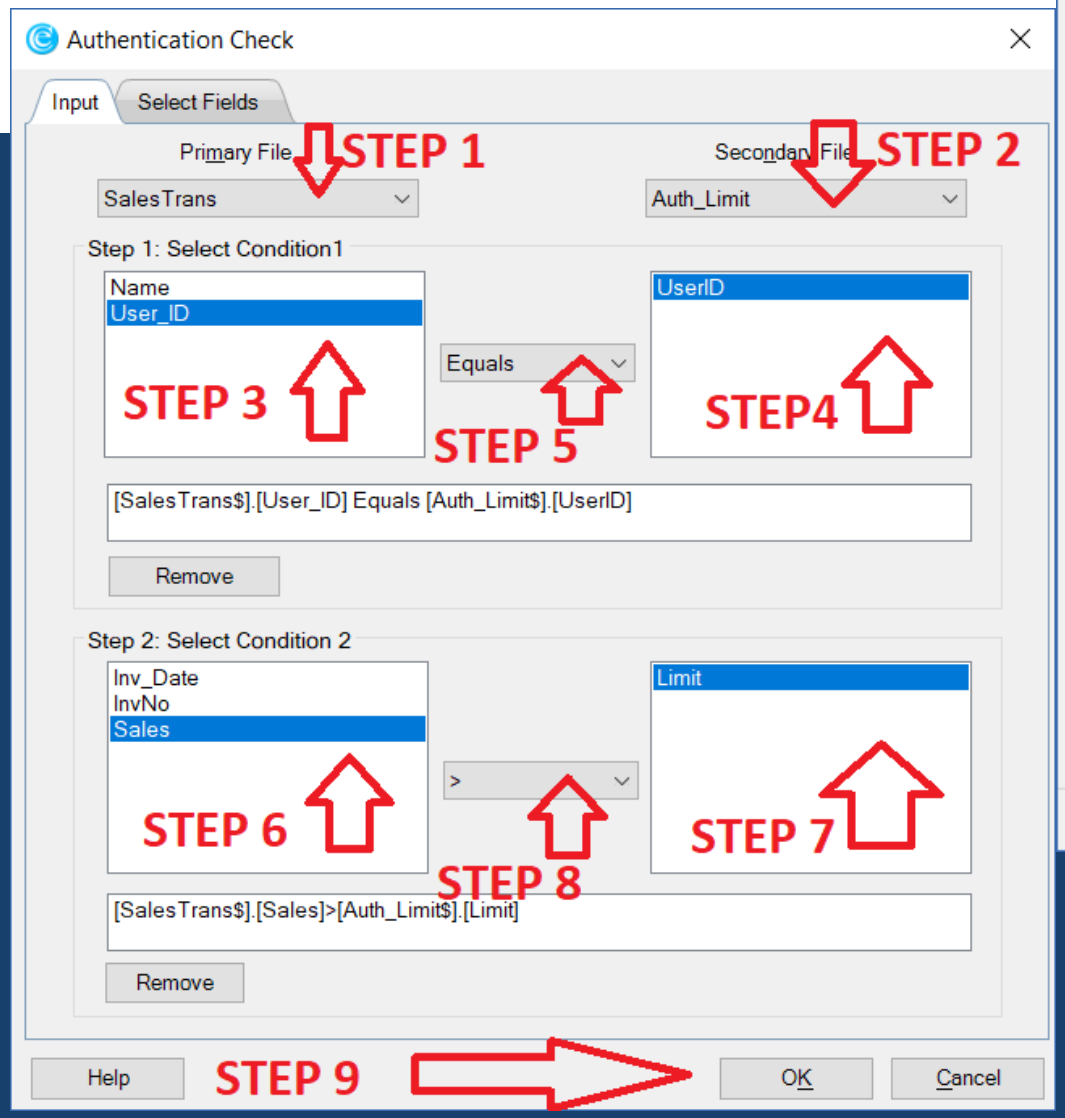
What is it ?

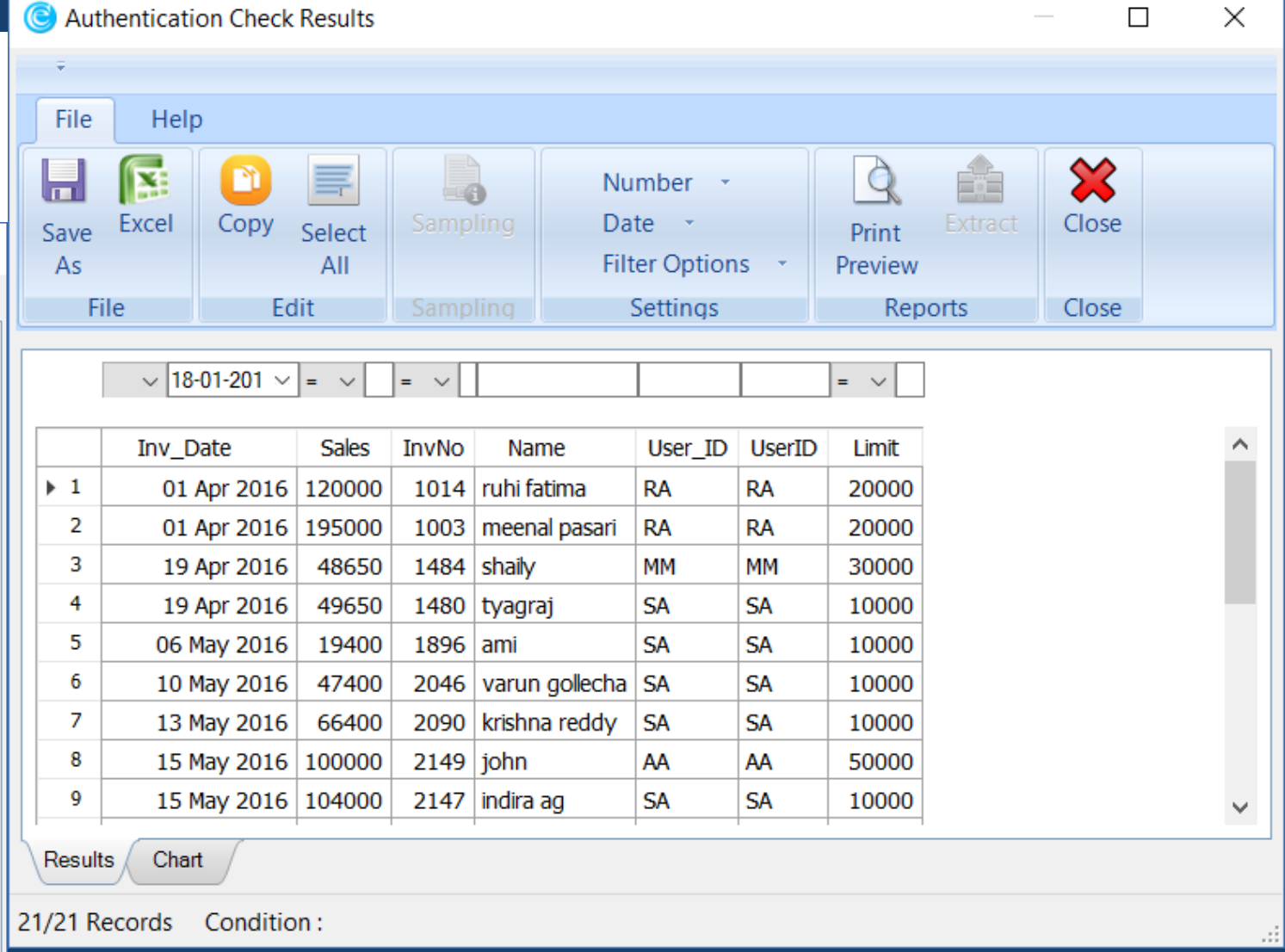
- compares two columns of two different worksheets by applying the selected condition.

Where to use?

- Fieldwork
- Monitoring
- Continuous Improvement

EXAMPLE


Authentication Check
Input
Select Fields
Primary File
Secondary File
STEP 1
STEP 2
SalesTrans
Auth_Limit
Step 1: Select Condition1
Name
User_ID
UserID
STEP 3
Equals
STEP 5
STEP4
[SalesTrans$].[User_ID] Equals [Auth_Limit$].[UserID]
Remove
Step 2: Select Condition 2
Inv_Date
InvNo
Sales
Limit
STEP 6
>
STEP 8
STEP 7
[SalesTrans$].[Sales]>[Auth_Limit$].[Limit]
Remove
Help
STEP 9
OK
Cancel


Authentication Check Results
File
Help
Save As
Excel
Copy
Select All
Sampling
Number
Date
Filter Options
Print Preview
Extract
Close
File
Edit
Sampling
Settings
Reports
Close
18-01-201
Inv_Date Sales InvNo Name User_ID UserID Limit
1 01 Apr 2016 120000 1014 ruhi fatima RA RA 20000
2 01 Apr 2016 195000 1003 meenal pasari RA RA 20000
3 19 Apr 2016 48650 1484 shaily MM MM 30000
4 19 Apr 2016 49650 1480 tyagraj SA SA 10000
5 06 May 2016 19400 1896 ami SA SA 10000
6 10 May 2016 47400 2046 varun gollecha SA SA 10000
7 13 May 2016 66400 2090 krishna reddy SA SA 10000
8 15 May 2016 100000 2149 john AA AA 50000
9 15 May 2016 104000 2147 indira ag SA SA 10000
Results
Chart
21/21 Records
Condition :

10. PIVOT TABLE / MIS

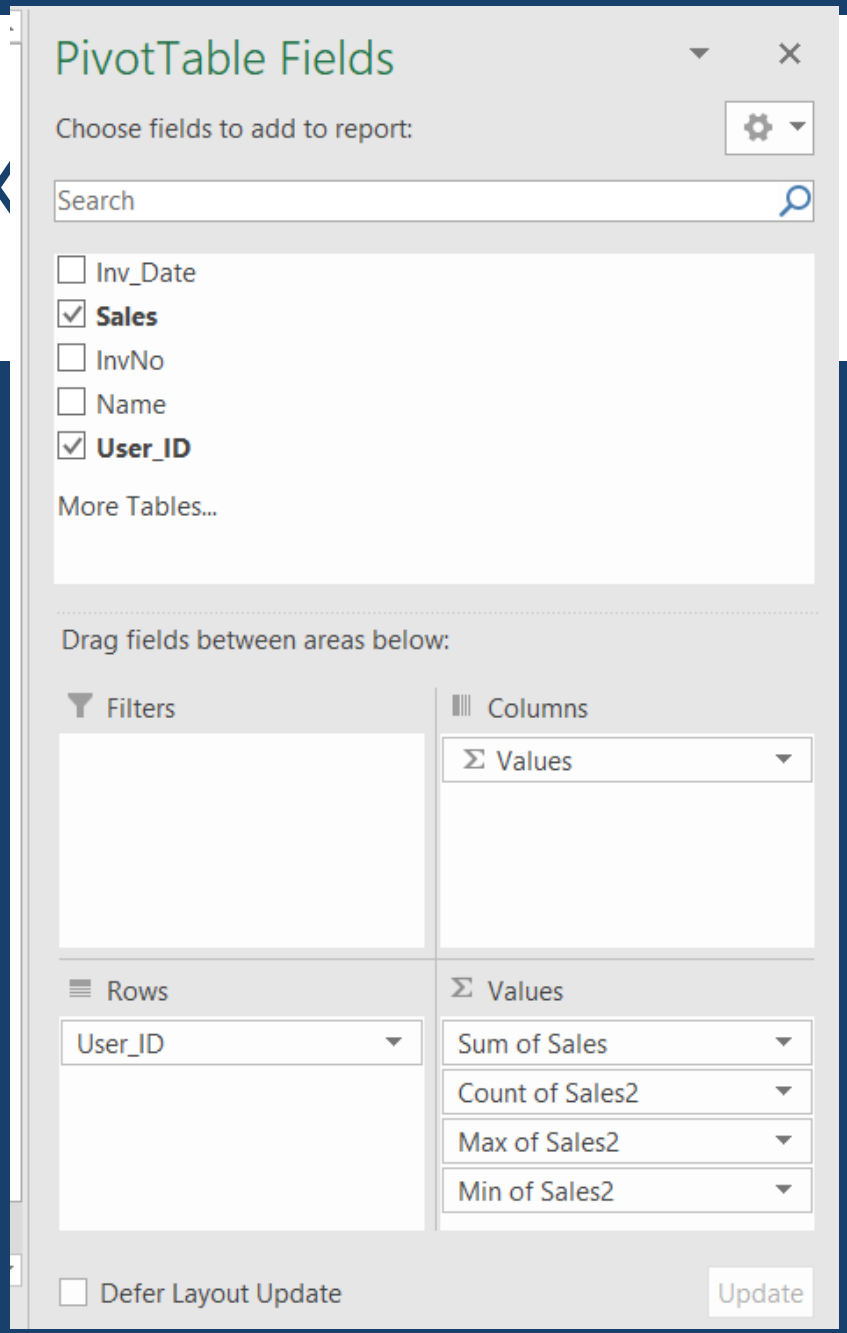
What is it ?

- Summarizes data by sorting, averaging, or summing and grouping the raw data
- MIS can summarise by criteria such as day, day of the week, month etc.

Where to use?

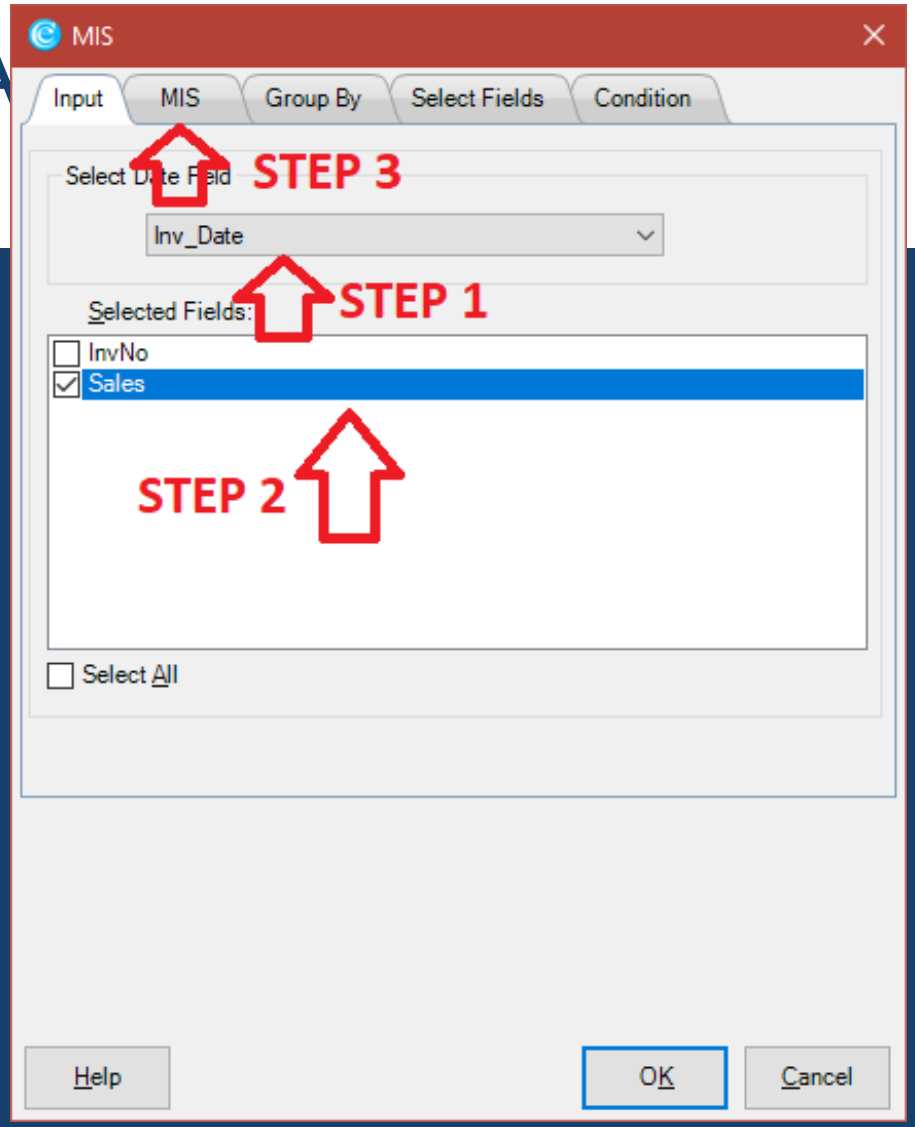
- Risk Assessment
- Fieldwork
- Reporting
- Monitoring

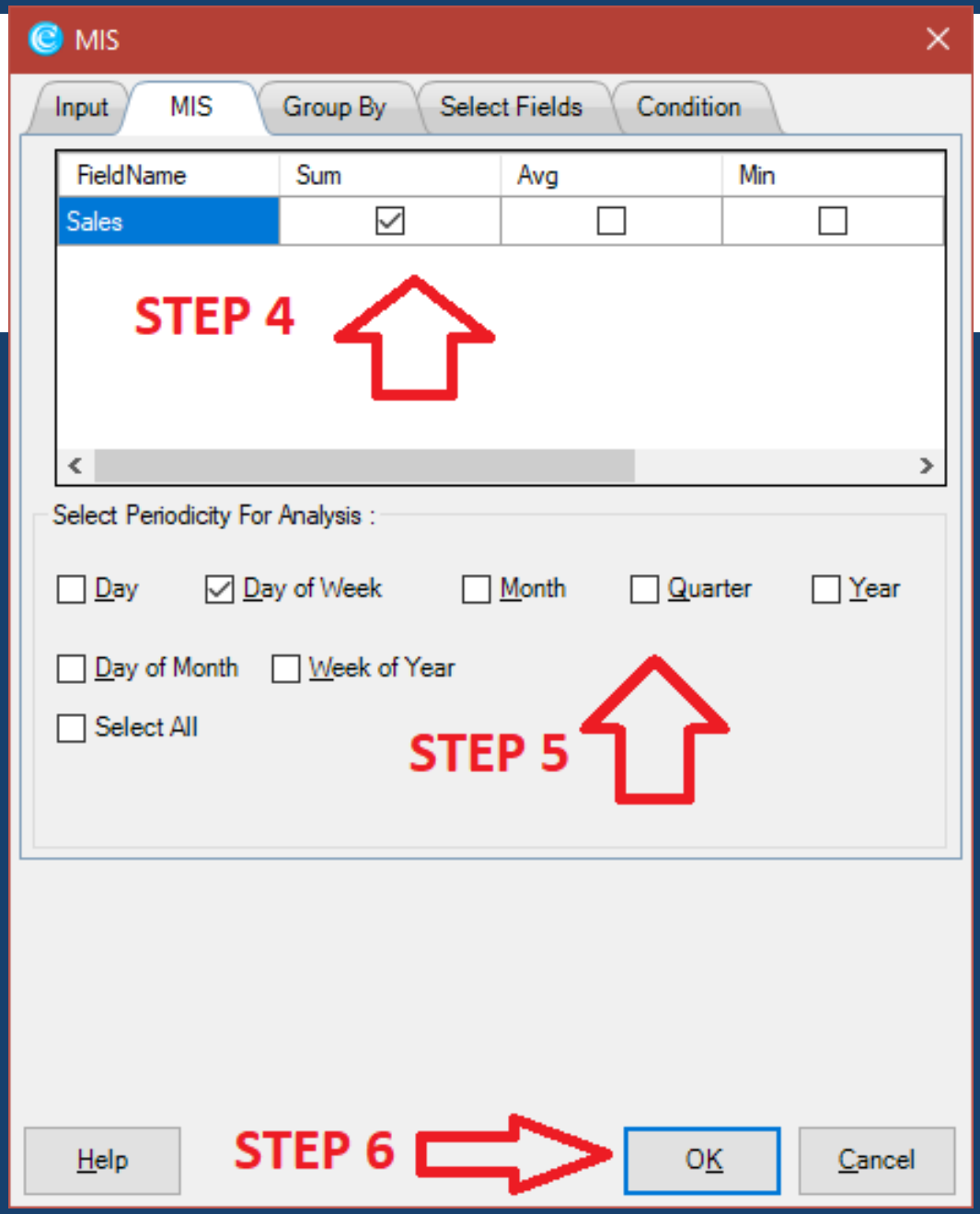
EX



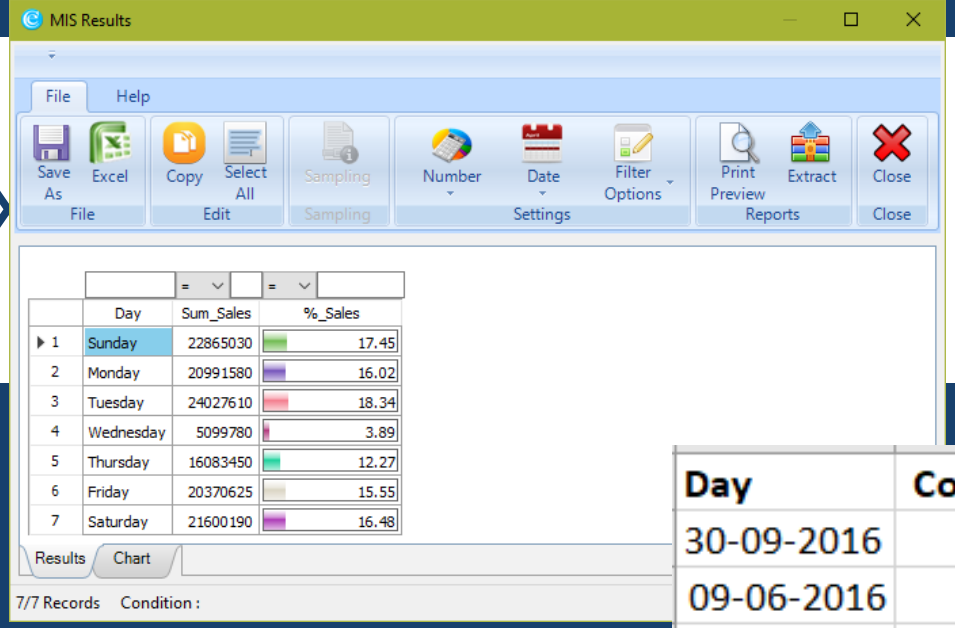
Row Labels	Sum of Sales	Count of Sales2	Max of Sales2	Min of Sales2
AA	3,80,38,100	969	1,00,000	30,150
AR	57,550	2	31,050	26,500
AS	2,26,500	1	2,26,500	2,26,500
MA	17,355	1	17,355	17,355
MM	1,87,22,000	749	1,26,000	20,150
RA	1,16,64,800	764	1,95,000	10,050
RK	8,96,000	8	1,20,000	1,02,000
SA	1,57,16,460	3,406	1,04,000	500
SF	4,54,47,000	756	1,10,000	50,150
(blank)	2,52,500	10	69,900	9,150
Grand Total	**13,10,38,265**	**6,666**	**2,26,500**	**500**

EXA


MIS
Input
MIS
Group By
Select Fields
Condition
Select Date Field
STEP 3
Inv_Date
Selected Fields:
STEP 1
InvNo
Sales
STEP 2
Select All
Help
OK
Cancel


MIS
Input
MIS
Group By
Select Fields
Condition
FieldName
Sum
Avg
Min
Sales
STEP 4
Select Periodicity For Analysis :
Day
Day of Week
Month
Quarter
Year
Day of Month
Week of Year
Select All
STEP 5
Help
STEP 6
OK
Cancel

EX



Day	Count_Sales	Sum_Sales	Avg_Sales	Max_Sales	Min_Sales
30-09-2016	65	10,48,860	16,136	63,000	3,100
09-06-2016	62	24,73,850	39,901	69,900	500
29-09-2016	61	4,00,500	6,566	21,000	4,850
05-05-2016	60	4,53,600	7,560	12,900	3,930
31-03-2017	59	9,95,205	16,868	59,000	3,100
04-05-2016	58	9,34,450	16,111	57,000	4,150
09-08-2016	57	5,73,100	10,054	27,500	2,100
30-06-2016	55	5,61,950	10,217	27,500	2,100
10-08-2016	50	23,51,250	47,025	53,150	40,900
30-04-2016	49	9,34,710	19,076	63,000	3,100
20-10-2016	48	1,70,820	3,559	3,800	3,320
23-04-2016	46	15,61,300	33,941	69,900	500
05-08-2016	46	15,76,650	34,275	39,900	28,650
15-09-2016	46	1,58,470	3,445	3,670	3,220

5. IMPLEMENTATION AREAS

PAYABLE AUDIT

ABC-Pareto Analysis of Payments

Profiling of payments into high, medium and low value bands to study maximum value assurance with minimum record checks
Required Fields: Payment Voucher Amount

Vendor Payment Amount Relative Size Factor Test

Deriving vendor ratio of highest to next highest bill payment (i.e. relative size factor) and checking for ratios above 'x' percent which can be defined by the user
Required Fields: Payment Number, Vendor Code, Vendor Name, Payment Voucher Amount

Segregation of Duties Violation – Same Requester and Approver

Payments where the requester and approver are the same
Required Fields: Created By User, Approved By User

Vendor Payments with Blank Memo/ Descriptions

Payments to any vendor where the reference/description field is blank
Required Fields: Memo/Description

Duplicate Vendor Bill Payment – Exact Match

Payments made to the same vendor against the same invoice number, same goods received note and same purchase order
Required Fields: Vendor Code, Vendor Invoice Number, Goods Received Note Number, Purchase Order Number

GENERAL LEDGER

ABC-Pareto Analysis Of General Ledger Voucher Values

Profiling of Voucher Values into High, Medium and Low value bands to study maximum value assurance with minimum record checks.
Required Fields: Voucher Amount

Non-Standard Narrations Like Narrations Containing Only Numbers Or Only Special Characters

Identifying vouchers of different kinds like provision, expense etc., with an all numeric or all special character Reference i.e. Narration Field
Required Fields: Reference Description, GL Account Description

High-Value Round-Sum Vouchers

Identification of high-value and round-sum vouchers
Required Fields: Voucher Amount

Splitting Of Vouchers

Multiple vouchers raised on the same date for the same General ledger Account to the same vendor where the value of the cumulative vouchers per date is more than the approval limit of the creator
Required Fields: Voucher Number, Payee Number, Voucher Date, GL Account Number

Vouchers Posted On Weekends

Red-Flag testing of vouchers raised on weekends
Required Fields: Voucher Date

Vouchers With Blank Reference Or Narrations

Identifying vouchers of different kinds like provision, expense etc., with a blank Reference i.e. Narration Field
Required Fields: Reference Description, GL Account Description

PAYROLL

Payroll Deductions; Actual Matches the Master Deduction despite Leave without Pay

Identify payroll deductions from active employees where the actual total deduction matches the master total despite leave without pay

Required Fields: Date of Departure, Leave Without Pay, Master Total Deduction, Actual Total Deduction

Multiple Payments to the Same Employee

Capture past employees who are receiving both actual net pay and retirement benefit pay

Required Fields: Date of Departure, Actual Net Pay, Retirement Benefit Pay Amount

Trend Analysis of Employee Payments for any Month

Bi-weekly (semi-monthly) trend comparison of actual net pay by employee

Required Fields: Employee Number, Employee Name, Bi Week, Actual Net Pay, Date of Departure

Inaccurate Payroll Payments While Employee is on Leave without Pay

Identify employees receiving full-time pay without an adjustment/reduction for their leave without pay

Required Fields: Date of Departure, Actual Total Allowance Master Total Allowance, Leave Without Pay

Employees who have not Taken Leave in more than 'x' Months

Isolate employees who have been working longer than a configurable limit of 'x' months

Required Fields: Employee Number, Payment Reference Date, Date of Departure, Leave Availed

Potential Duplicate Employees

Capture potential duplicates where different active employees have the same bank account number

Required Fields: Employee Number, Date of Departure, Bank Account Number of Employee

TRAVEL EXPENSES

Trend Analysis of Travel Expenses Employee Based across Quarters in the Review Period

Summarizes quarterly trend comparisons of total travel expenses for employees

Required Fields: Employee Number, Employee Name, Date of Travel, Total Amount

Trend Analysis of Travel Expenses Department Base across Quarters in the Review Period

Quarterly trend comparison of total travel expenses by department

Required Fields: Department, Date of Travel, Total Amount

Frequent Traveler Validation

Identify employees who have traveled more than 'x' days in any given month

Required Fields: Employee Number, Employee Name, Department, Designation/Job Title, Date of Travel

Frequent Weekend Travelers (Saturday or Sunday)

Isolate employees who have traveled more than 'x' Saturdays or Sundays in any month

Required Fields: Employee Number, Employee Name, Department, Designation/Job Title, Date of Travel

Delay in Submission of Travel Claims beyond 'x' Days in any Month

Identify employees who have filed their travel claims 'x' days from the date of return

Required Fields: Date of Return, Travel Claim Date

Delay in Approval of Travel Claims beyond 'x' Days in any Month

Identify employees whose travel claims have been approved after 'x' days of claim submission

Required Fields: Approval Date, Travel Claim Date

Segregation of Duties Violation – Same Traveler and Approver of Travel Claims

Isolate travel claims where the claim holder and the approver of the claim are the same individual

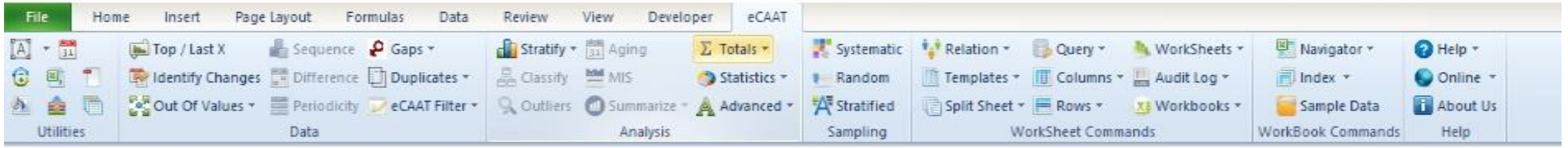
Required Fields: Employee Name, Checker/Approver

Department Based Top Travel Expenses Claim Employees per Month

Capture the top travel claim amount employees per department per month

Required Fields: Employee Number, Employee Name, Department, Total Amount, Date of Travel

FEW TOOLS



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OpenRefine

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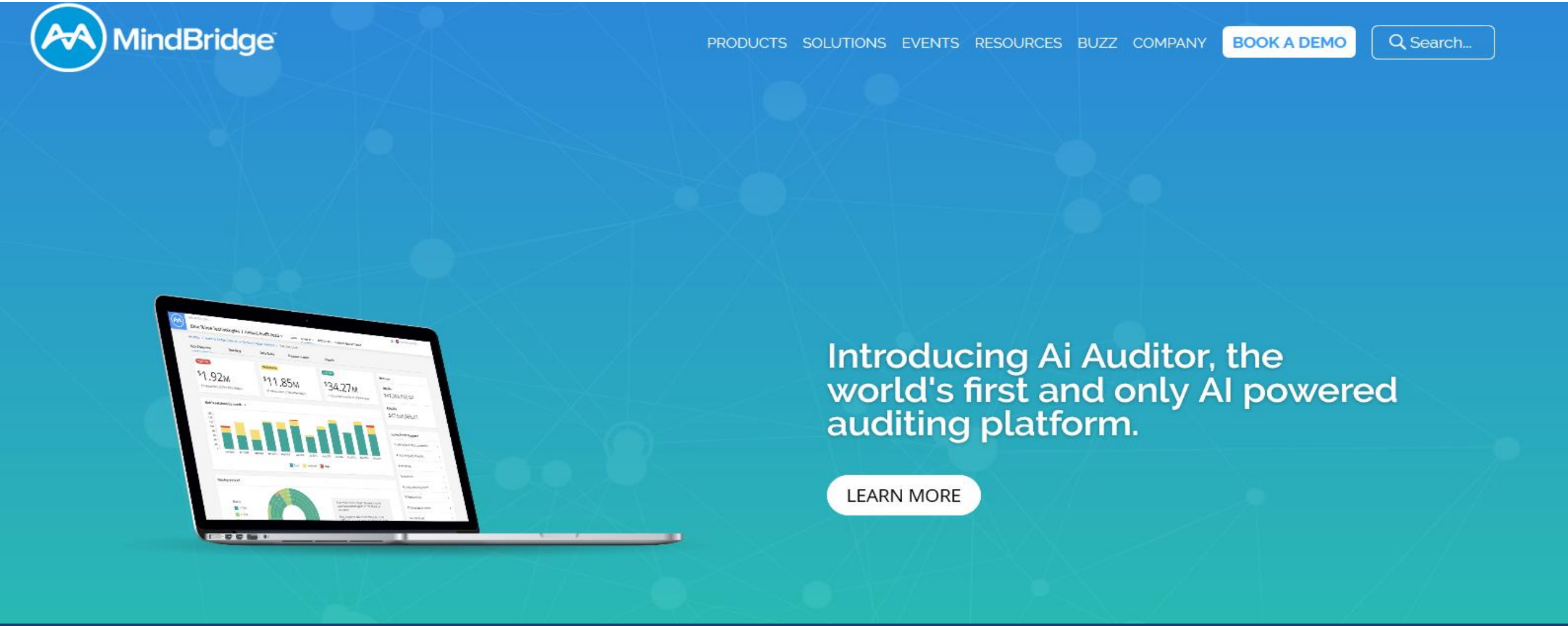
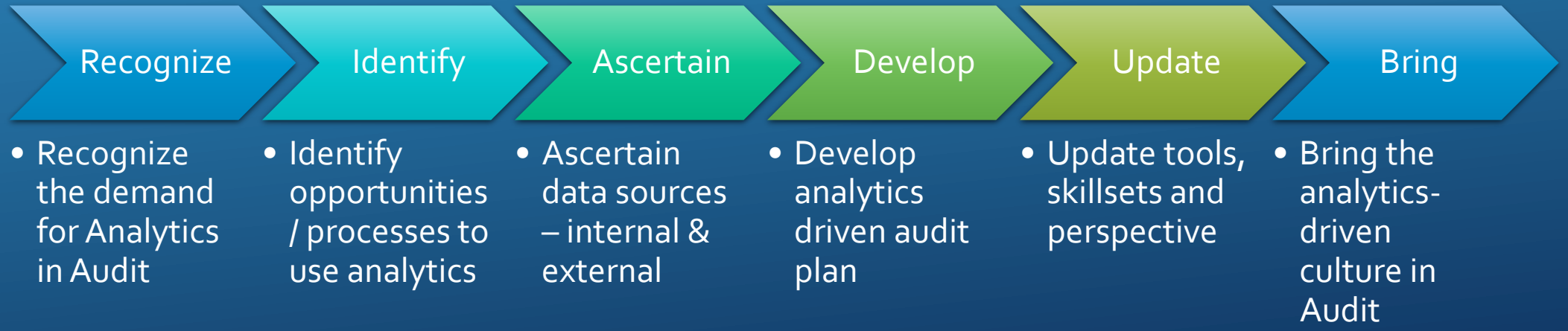
IDEA
Data Analysis Software

Power BI

USING AI POWERED DATA ANALYTICS



ACTION ITEMS FOR AUDITORS



Always Remember…

WHEREVER THERE IS A MOUSE..

THERE IS A CAAT ☺

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Thank You!
Questions?

Narasimhan Elangovan

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