

# **EXCEL FOR DATA ANALYSIS**

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# Statistics, Data and its types

- The process of **collection**, **organization**, **presentation**, **analysis** and **interpretation** of number facts.



# Collection

## Observation Experiments

## Digital Survey

- Survey Using Special Instruments supported by software
- Online Survey

### सामाजिक जवाफदेहिता अभिवृद्धिका लागि अनुगमन कार्यक्रम

लाभान्वितहरूको सन्तुष्टिस्तर सर्वेक्षण

मस्योदा प्रश्नावली

क. तालिममा सहभागीहरूको व्यक्तिगत विवरण

नाम:		वर्ता नं.:	
ठेगाना:	स्थायी: जिल्ला:	गा.वि.स. / न.प.	वडा नं.:
	अस्थायी: जिल्ला:	गा.वि.स. / न.प.	वडा नं.:
पेशा/ व्यावसाय:		कार्यरत संस्था:	
पद:		योग्यता/ तह:	
अनुभव: <input type="checkbox"/> छ <input type="checkbox"/> छैन यदि छ भने सम्बन्धित क्षेत्रमा कति वर्षको अनुभव छ? <input type="checkbox"/>			
उमेर: <input type="checkbox"/>	लिंग: <input type="checkbox"/> रुष <input type="checkbox"/> जा <input type="checkbox"/>		
वैवाहिक स्थिति: <input type="checkbox"/> विवाहित <input type="checkbox"/> अविवाहित <input type="checkbox"/>			
जाति / वर्ग: <input type="checkbox"/> श्रमिक <input type="checkbox"/> मजदुर <input type="checkbox"/>			
विशेष अवस्था: <input type="checkbox"/> अपाङ्ग <input type="checkbox"/> इकल महिला <input type="checkbox"/> मजदुरी <input type="checkbox"/> मैया <input type="checkbox"/> मा <input type="checkbox"/>			

ख. तालिम प्रदायक संस्था, शूलक सम्बन्धि विवरण

तालिमको नाम	
तालिम सञ्चालन गर्ने संस्था	
तालिम सञ्चालन भएको स्थान	
तालिमको समयावधि	प्रशिक्षकको संख्या
तालिम चारे कडाबाट जानकारी पाउनुभयो? <input type="checkbox"/> पत्रपत्रिका <input type="checkbox"/> एफएम रेडियो <input type="checkbox"/> सापीहरु <input type="checkbox"/> इन्टरनेट	
<input type="checkbox"/> म गरिरहेको संस्थाबाट <input type="checkbox"/> निय कार्यालय अन्य.....	
तपाईंले तालिम पूर्व तालिममा सहभागी हुनको लागि कुनै किसिमको लिखित, मौखिक परिक्षा दिनुभयो?	
<input type="checkbox"/> लिखित परिक्षा दिए <input type="checkbox"/> मौखिक परिक्षा दिए <input type="checkbox"/> हुनै परिक्षा दिए <input type="checkbox"/> नि पनि दिइन	
तपाईंले तालिममा सहभागी हुन कुनै शूलक बुझाउनु भयो? <input type="checkbox"/> बुझाए <input type="checkbox"/> निशूलक थियो बुझाएको भए कति? <input type="checkbox"/>	
तालिममा त्रैतिक भत्ता पाउनुभयो कि पाउनुभएन? <input type="checkbox"/> पाए <input type="checkbox"/> पाइन पाउनुभएको भए दिनको कति पाउनुभयो? <input type="checkbox"/>	

# Organization

- Define Variables
- Arrange in datasheet
  - Paper and pencil tally
  - Word processing table
  - Spreadsheet
  - Custom database
- Coding and Editing
  - Giving specific code
  - (easy to entry data and correct)
  - House editing/Field editing
- By Computer
  - Excel (spreadsheet)
  - Microsoft Access (database mgt)
  - SPSS (statistical software)
  - Epi info (health related)
  - CSV (can be used everywhere)
  - Getstat (Forestry n Food science)
  - R, Python (Freeware)

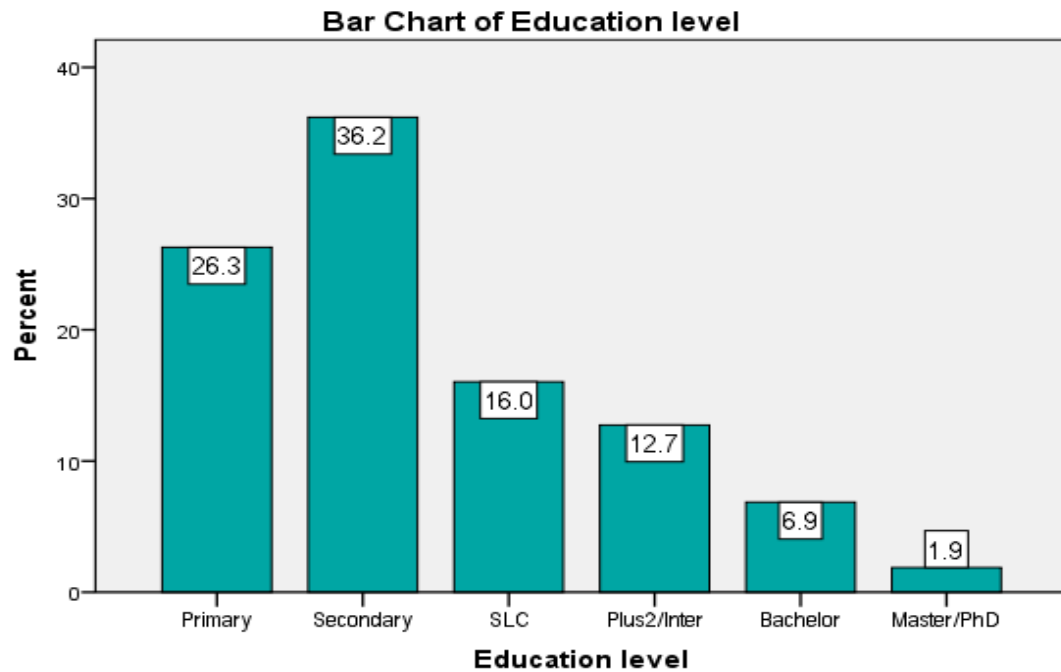


# Data entry

<i>Samples</i>	<i>Variables</i>				
	V1	V2	V3	...	V <sub>i</sub>
1					
2					
3			?		
4					
...					
n					



# Presentation



Freq Distribution of Education Level		
Level	Freq	%
Primary	4635	26.3
Secondary	6383	36.2
SLC	2829	16.0
Plus2/Inter	2248	12.7
Bachelor	1209	6.9
Master/PhD	332	1.9
Total	17636	100.0



# Analysis and Interpretation

Q1	Q2	Q3
13.0	24.0	42.0

The above table approximately says that there are

- 25% individuals whose age is  $\leq 13.0$  years,
- 25% individuals whose age is  $> 13$  years but  $\leq 24$  years,
- 25% individuals whose age is  $> 24$  years but  $\leq 42$  years, and
- 25% individuals whose age  $> 42.0$

Length (mm)	
Mean	23.86666667
Standard Error	0.668093711
Median	25
Mode	25
Standard Deviation	2.587515815
Sample Variance	6.695238095
Kurtosis	0.409411808
Skewness	-0.74439766
Range	10
Minimum	18
Maximum	28
Sum	358
Count	15



# Nominal



Examples:  
Gender  
Caste  
Marital status  
House No  
Brand No





# Ordinal



First....

Second....

Third.....

Examples:

Quality Ranking  
Class

Army Ranking

Market position



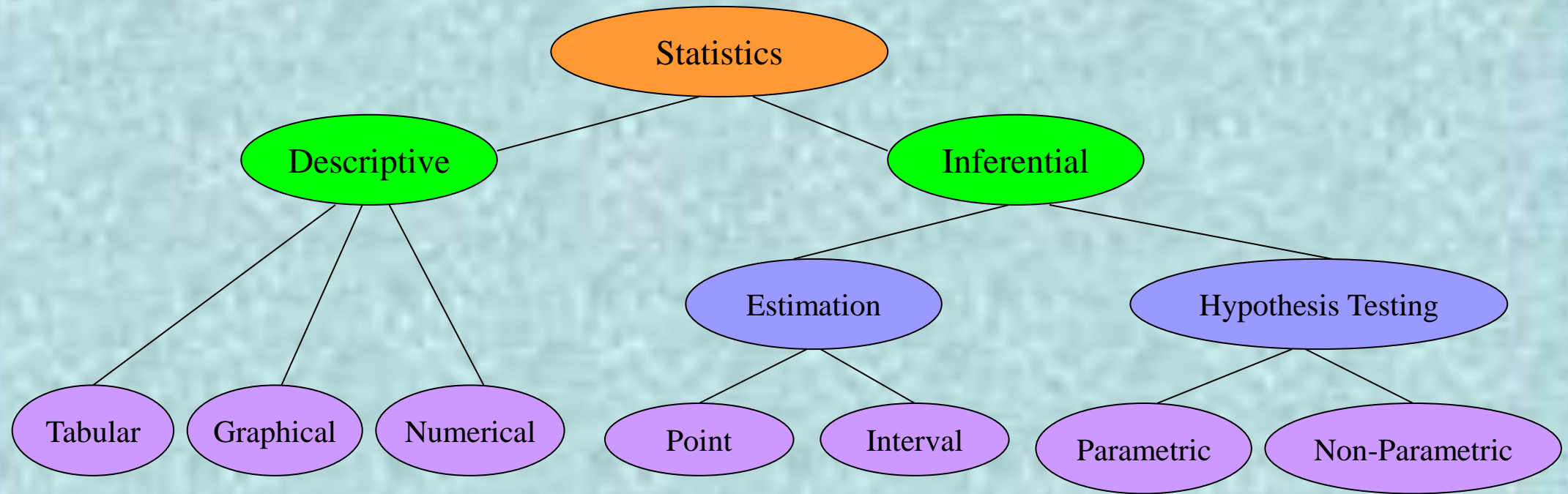
# Scale



Examples  
Length  
Weight  
Height  
Age  
Cost  
Sales  
time



# Descriptive & Inferential Statistics

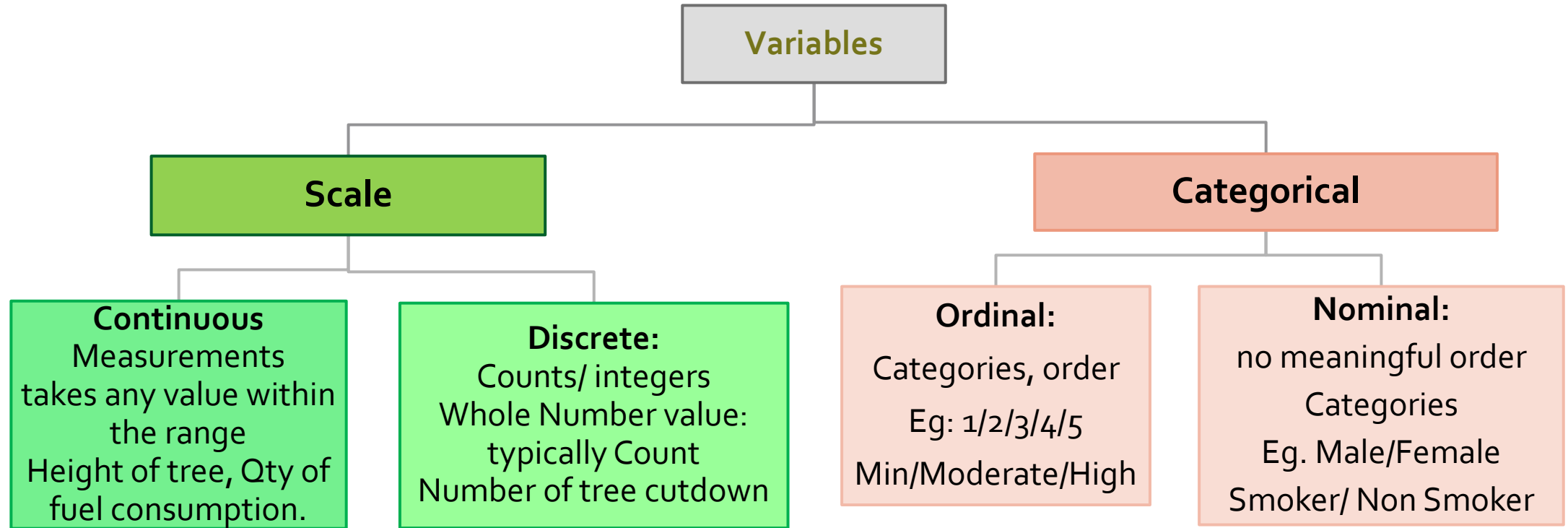


**Methods of inferential statistics are applicable when results are obtained from a random.**

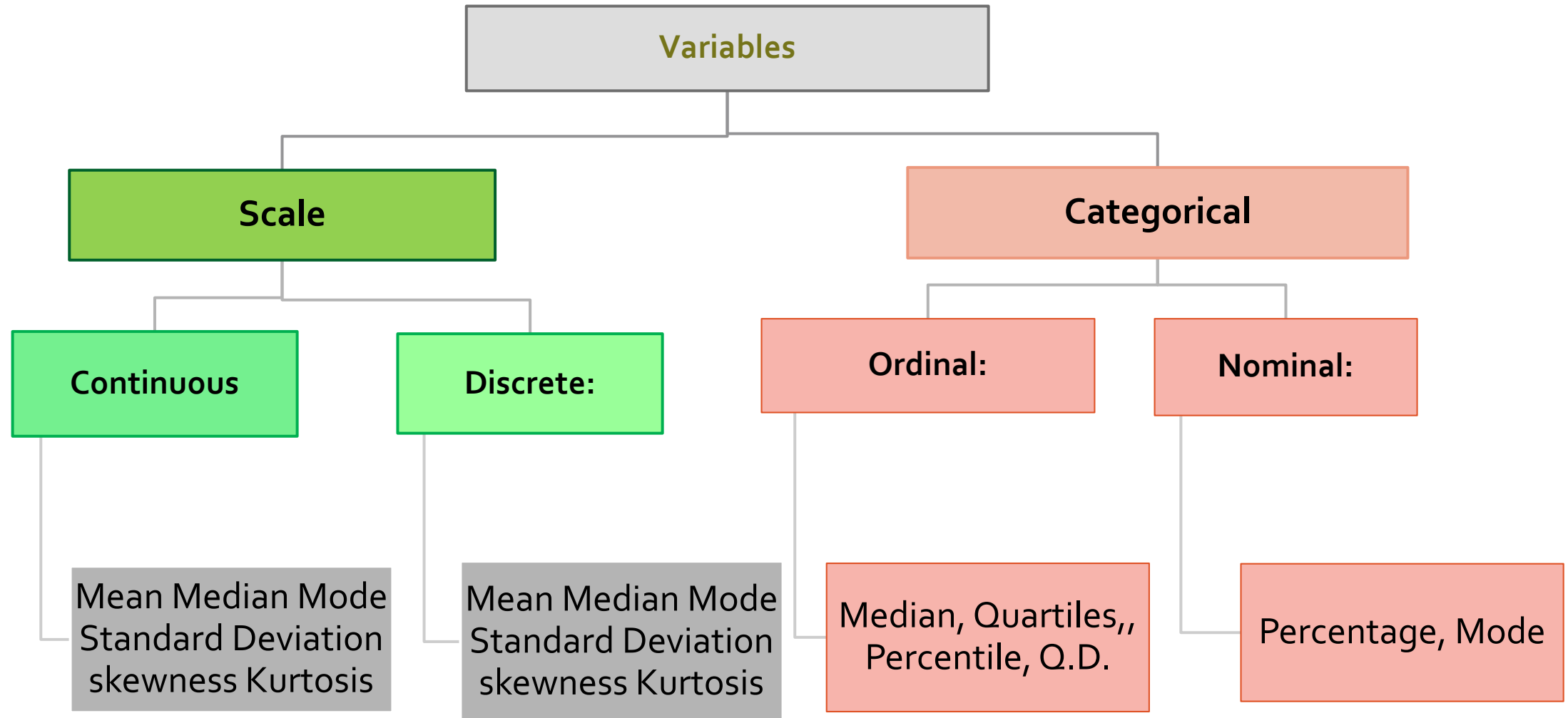
Uncertainty always remains while generalizing results from a sample to a population. The degree of uncertainty is measured in terms of *probability* in inferential statistics.



# Data types



# Descriptive Analysis



# Technical Aspect of Data Analysis

There are many software which are useful for data analysis

- MS Excel (Easily Available almost all PCs and user friendly)
- SPSS
- Stata
- R
- Python
- SAS
- Matlab
- Genstat



# Microsoft Excel

- Microsoft Excel helps you to organize, attractively present and analyze data.
- A spreadsheet is the computer equivalent of a paper ledger sheet. It consists of a grid made from columns and rows. It is an environment that can make number manipulation easy and somewhat painless.



# Excel has many applications

- Sorting and organizing data
- Creating visual representations of the data
- Addition, Subtraction, Division, Multiplication, percentage of Cells
- Statistical analysis
  - Average (Mean)
  - Median
  - Quartile
  - Standard deviation
  - Estimation
  - Test of hypothesis (parametric and non-parametric)
  - Correlation and regressions...
- Matrix Operations
  - Addition/Subtraction
  - Multiplying
  - Inverse
- Optimization
  - Linear programming
  - Transportation
  - Assignments
- And many more...





# Thank you

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