ANALISI STATISTICA DEI DATI

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UNITA' 1:

Strumenti e ambienti informatici per la valutazione di parametri statistici

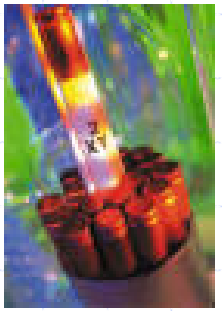
- Excel
- Matlab
- R

EDITING DATI

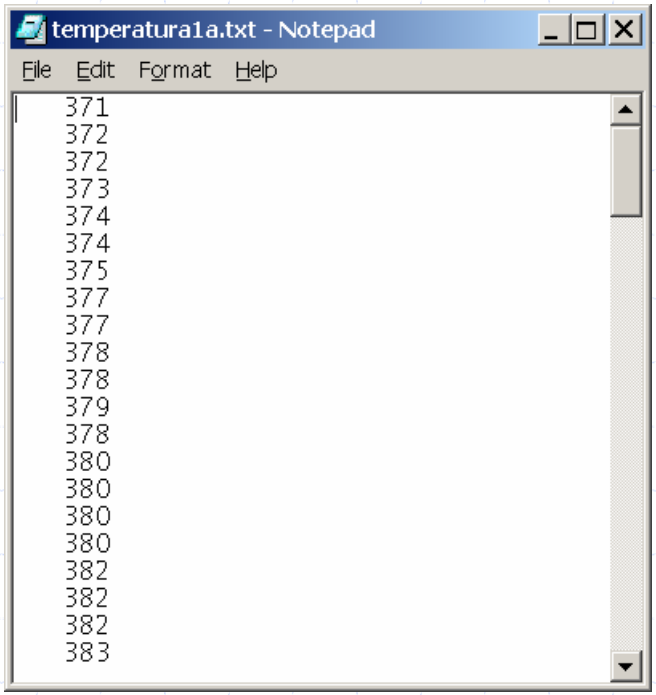
- Esaminiamo la sequenza temporale di temperature
- Dati in un file TESTO (temperature1.txt)

- Visualizzazione/Editing
  - Notepad
  - Word (...no)
  - Editor testuali
  - Excel

EDITING DATI

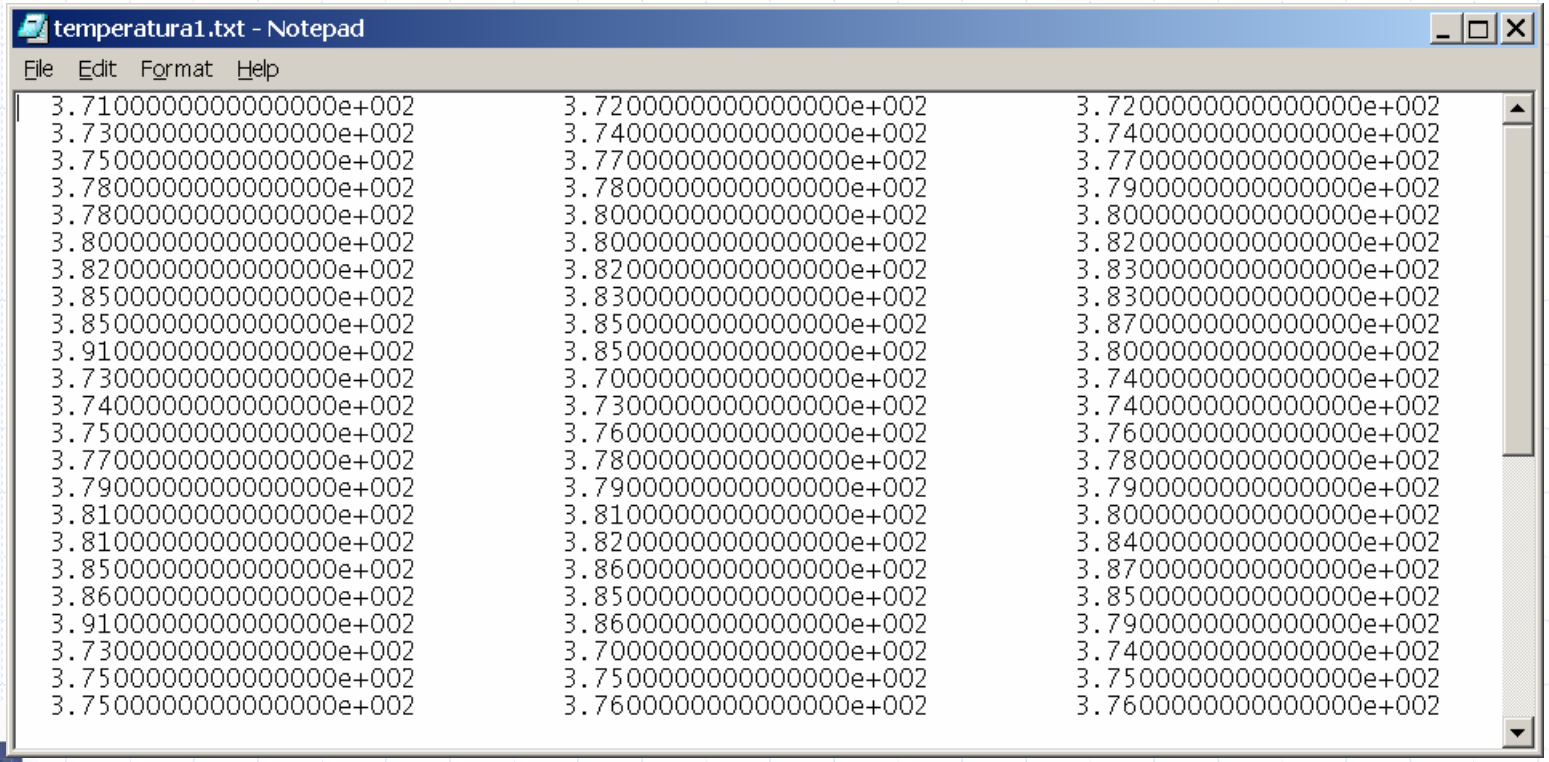


- Esempio ad una variabile



EDITING DATI

- Esempio ad una variabile (tab separated)



EDITING DATI

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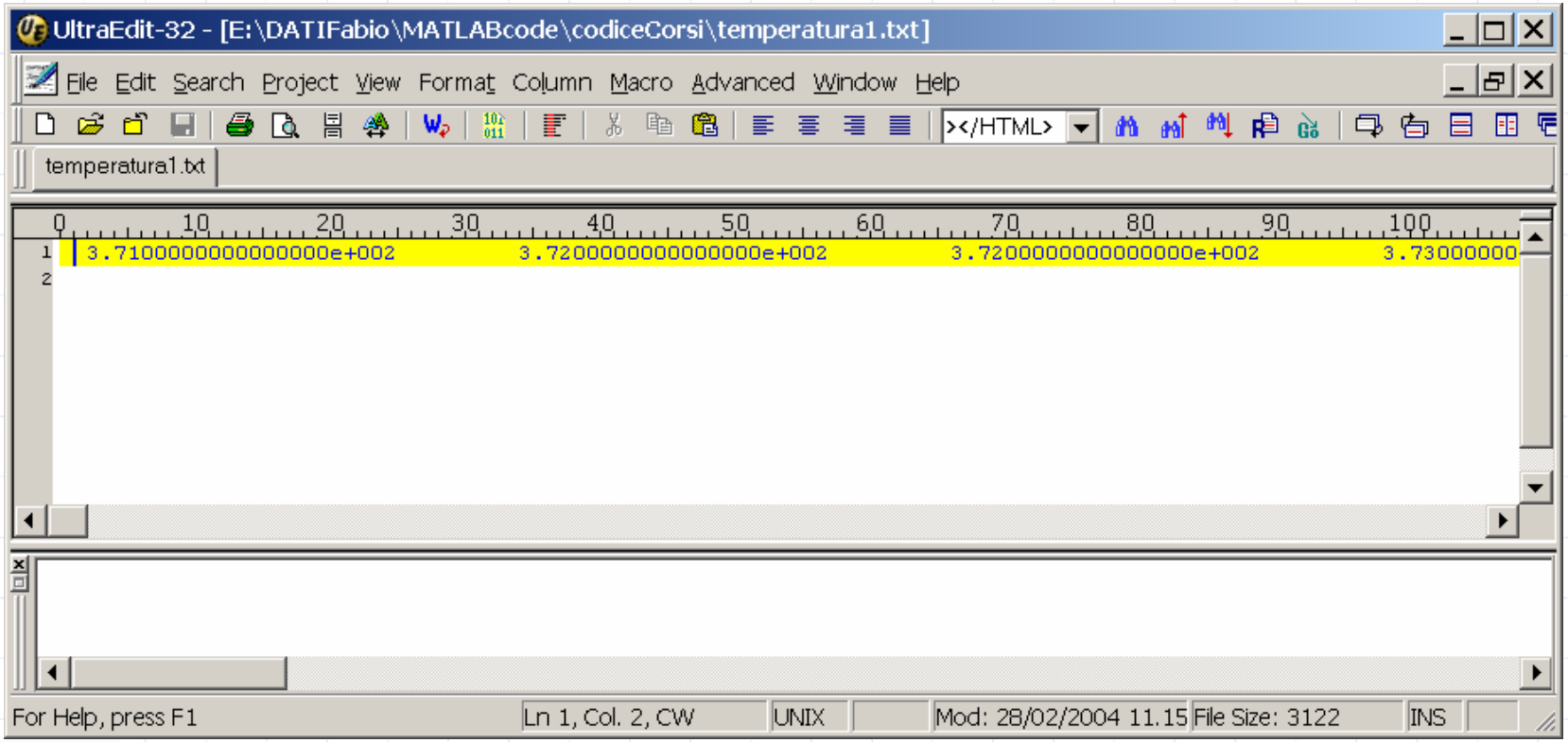

EDITING DATI

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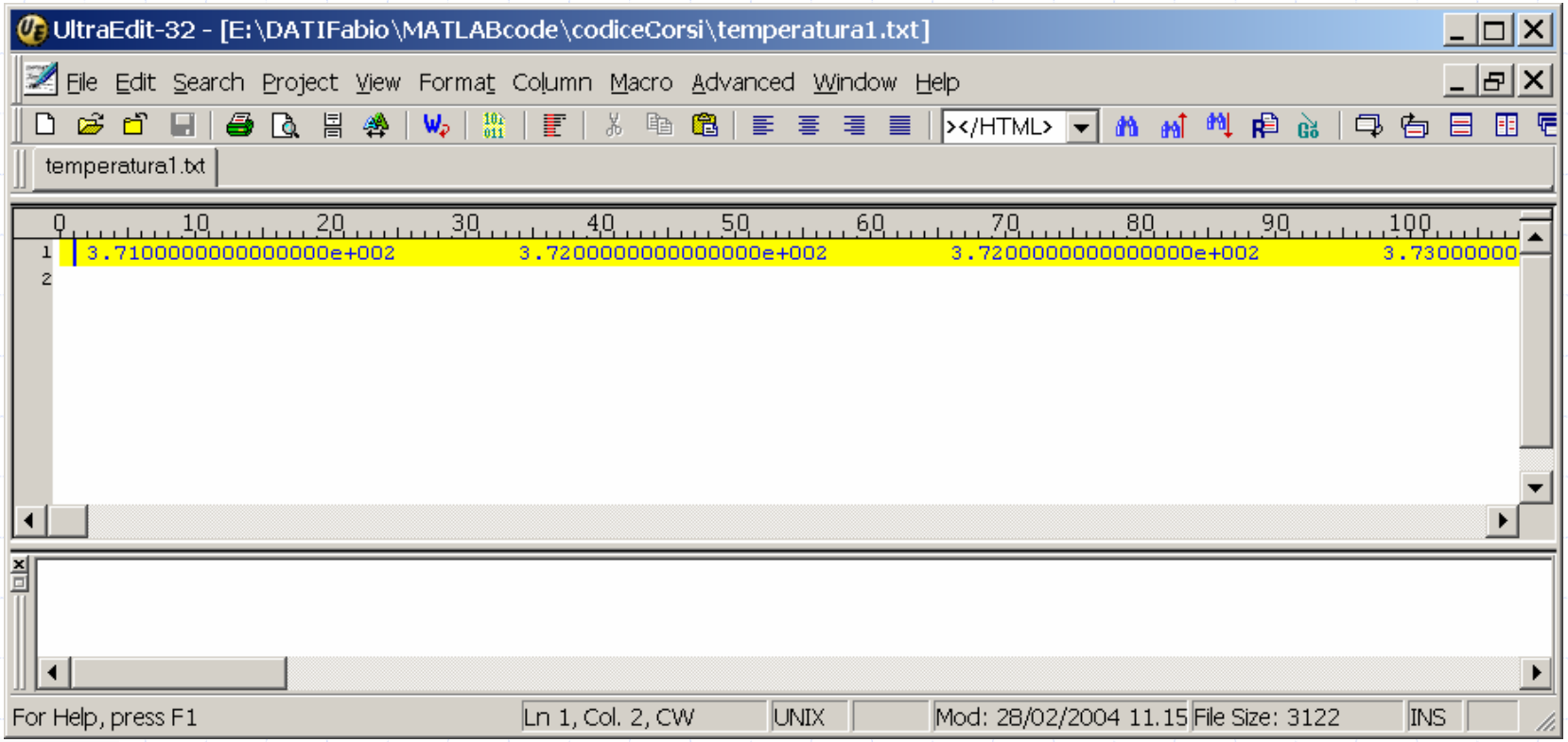
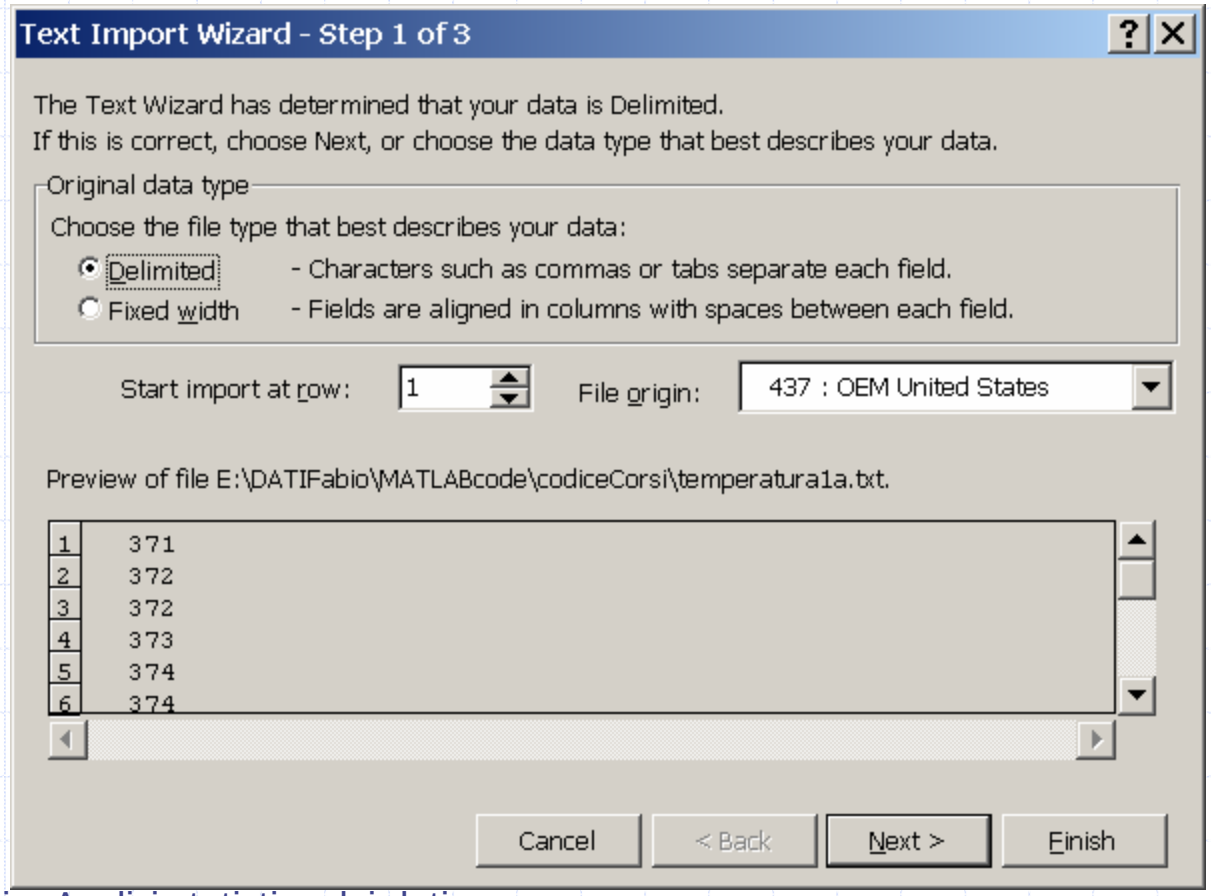


GESTIONE DATI EXCEL

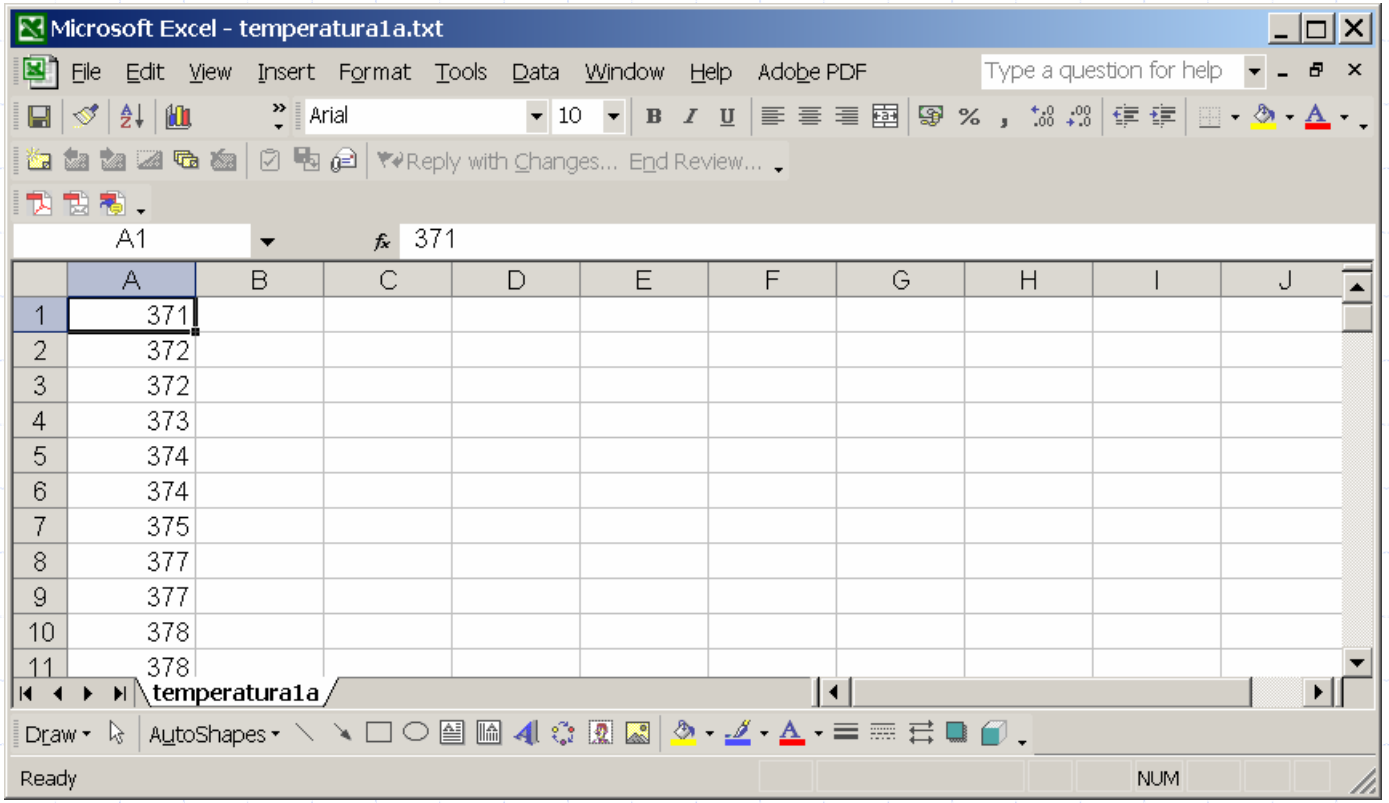
- CARICARE IL FILE (open, all files)



EXCEL

GESTIONE DATI EXCEL

- Abbiamo i dati.

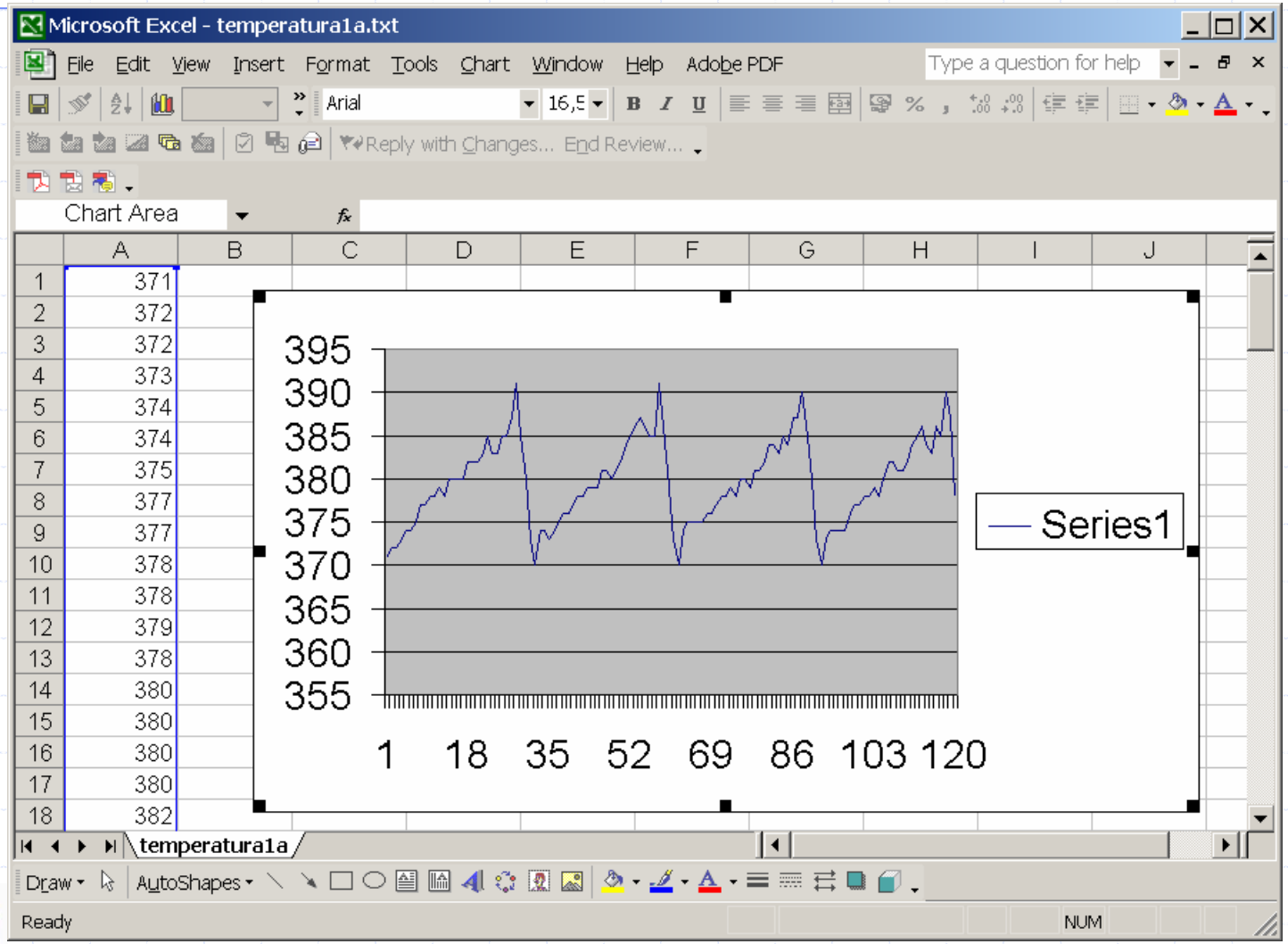


Media e varianza

- Sequenza temporale di dati
- Dati da superfici e volumi

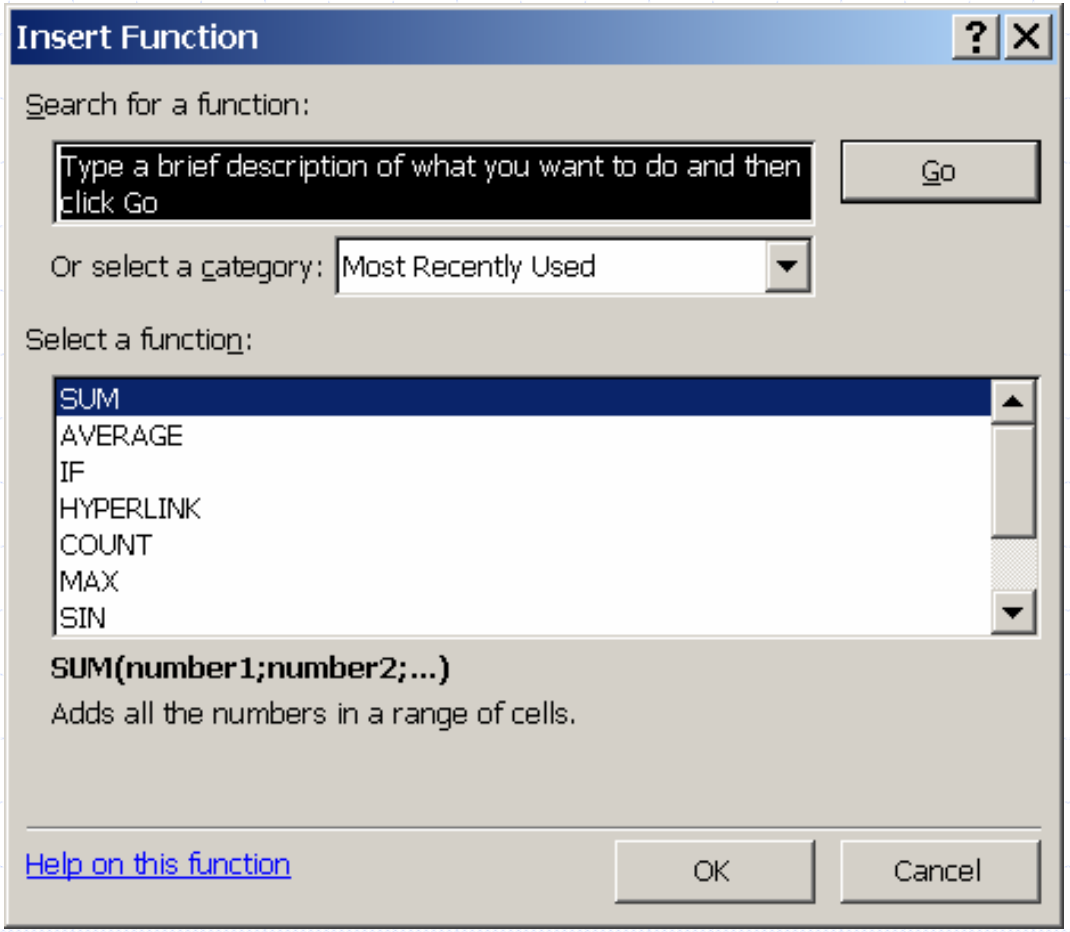
- ES: Un fermentatore ed un sensore di temperatura.
- ES: Dati degli esami ematici di un gruppo di laboratori.
- Es: la temperatura di un corpo misurata con immagini all'infrarosso

Media e varianza EXCEL



Media e varianza EXCEL

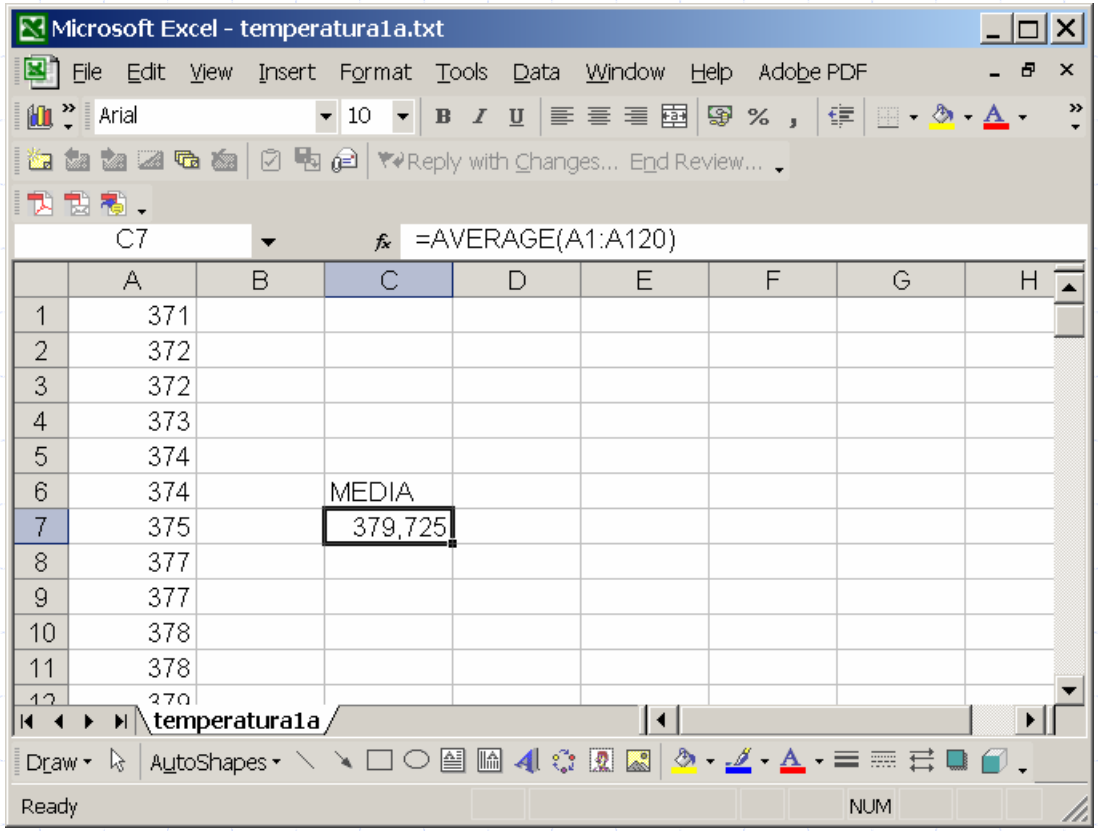
- Inseriamo la funzione



Media e varianza EXCEL

- Uppure inseriamo il comando a mano

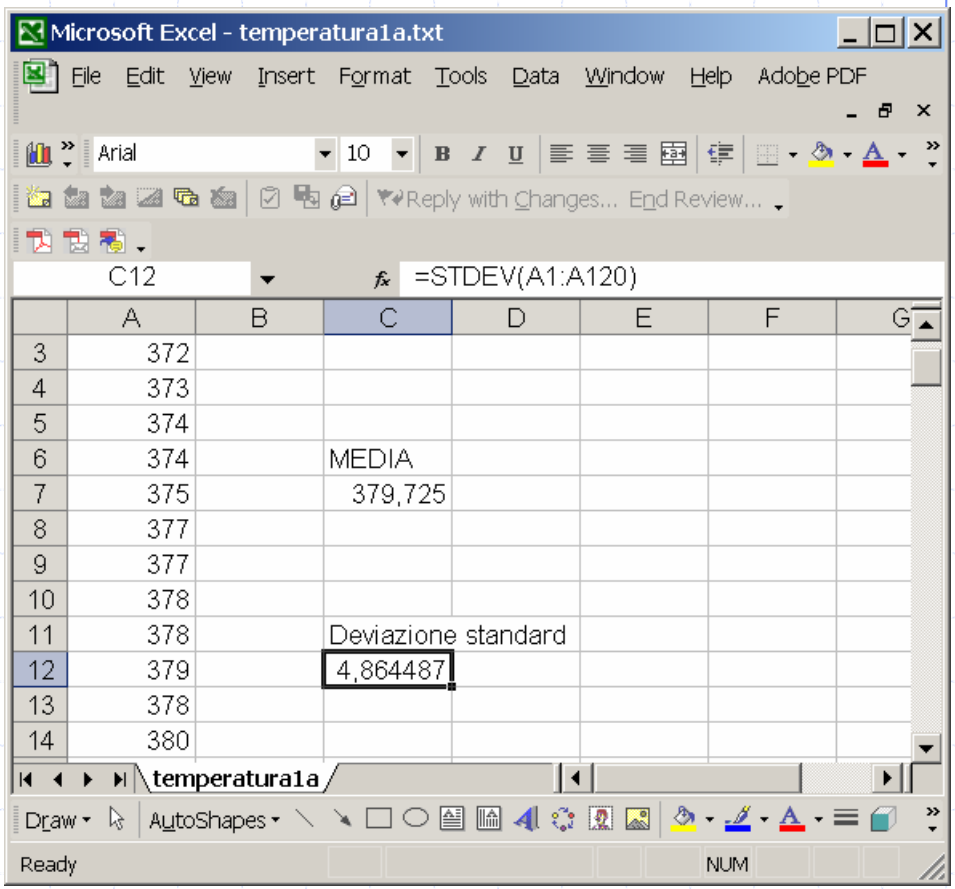
=AVERAGE(A1:A120)



Media e varianza EXCEL

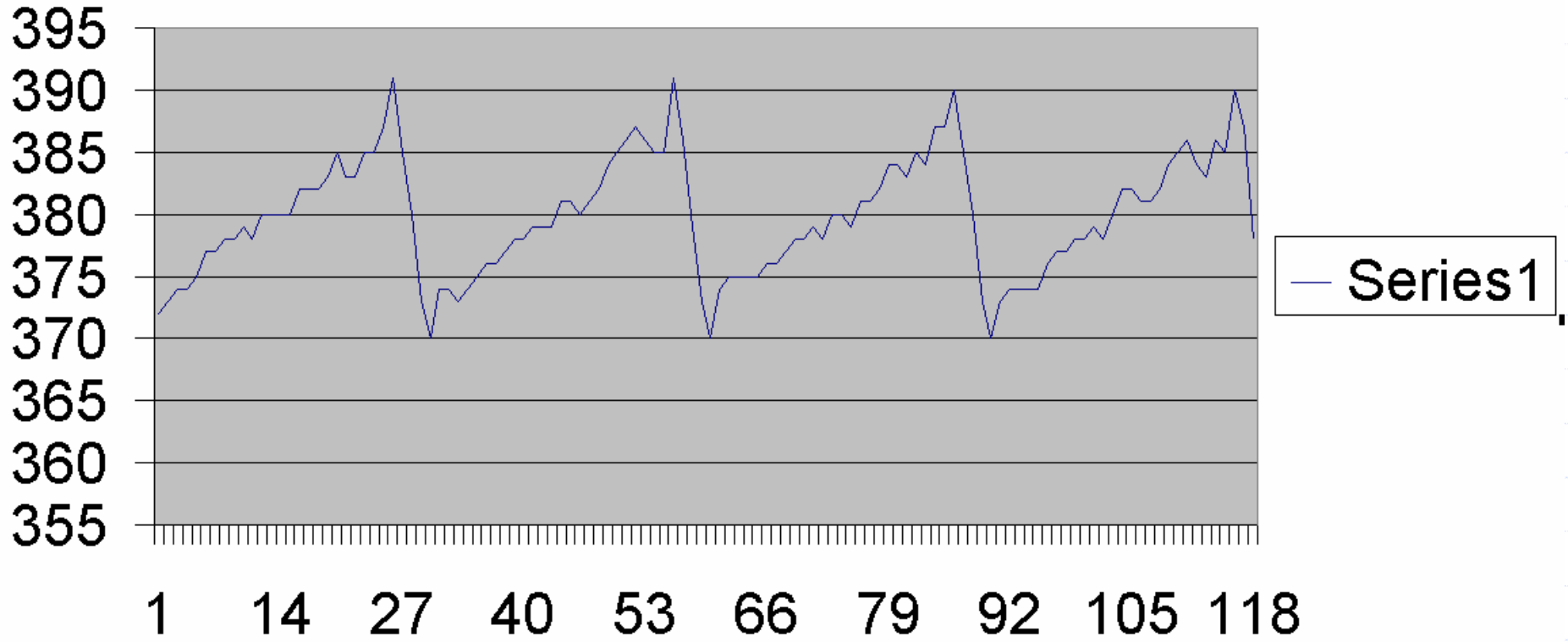
- Deviazione standard

=STDEV(A1:A120)



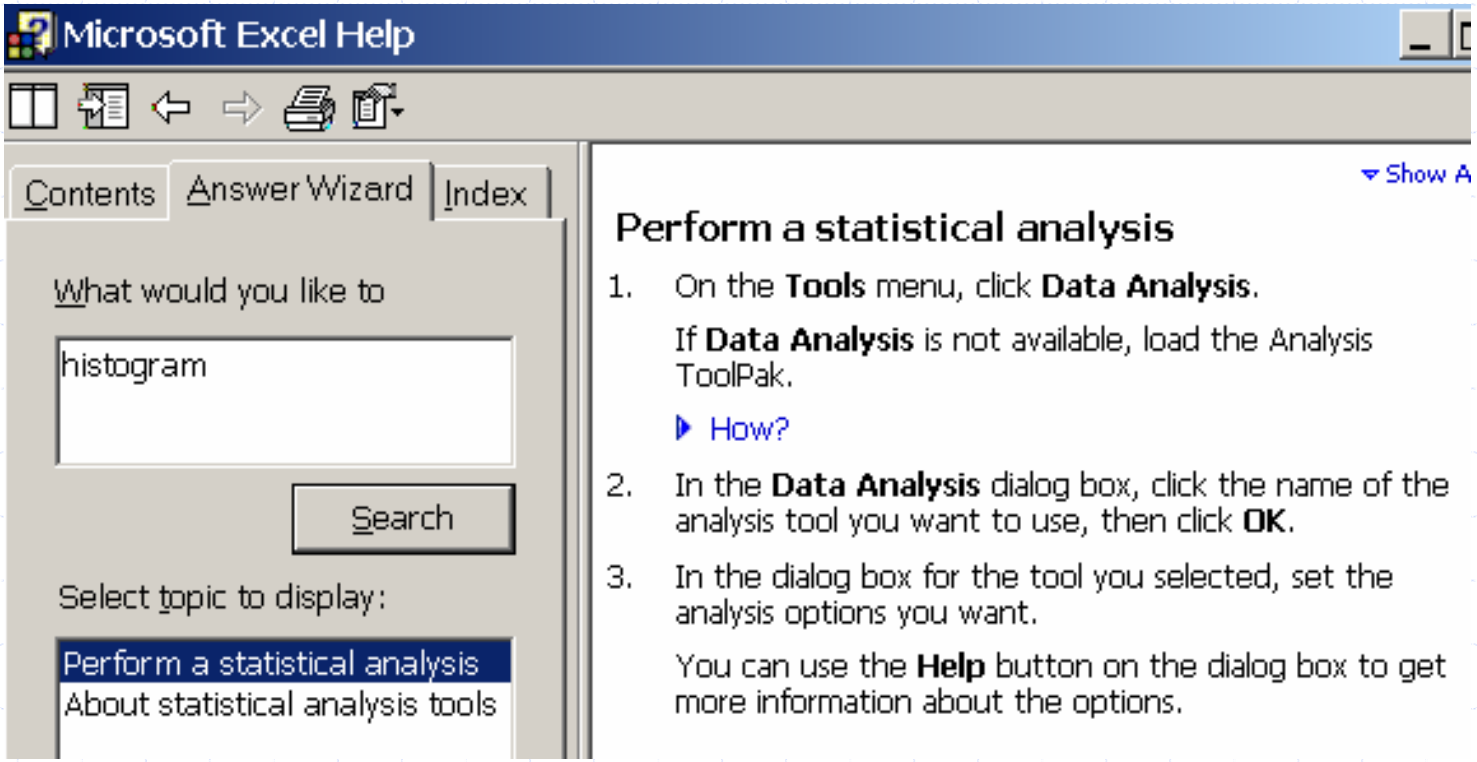
Media e varianza EXCEL

- Il sistema e' controllato adeguatamente in temperatura?



Media e varianza EXCEL

- Per rispondere meglio possiamo avvalerci del toolbox statistico di Excel

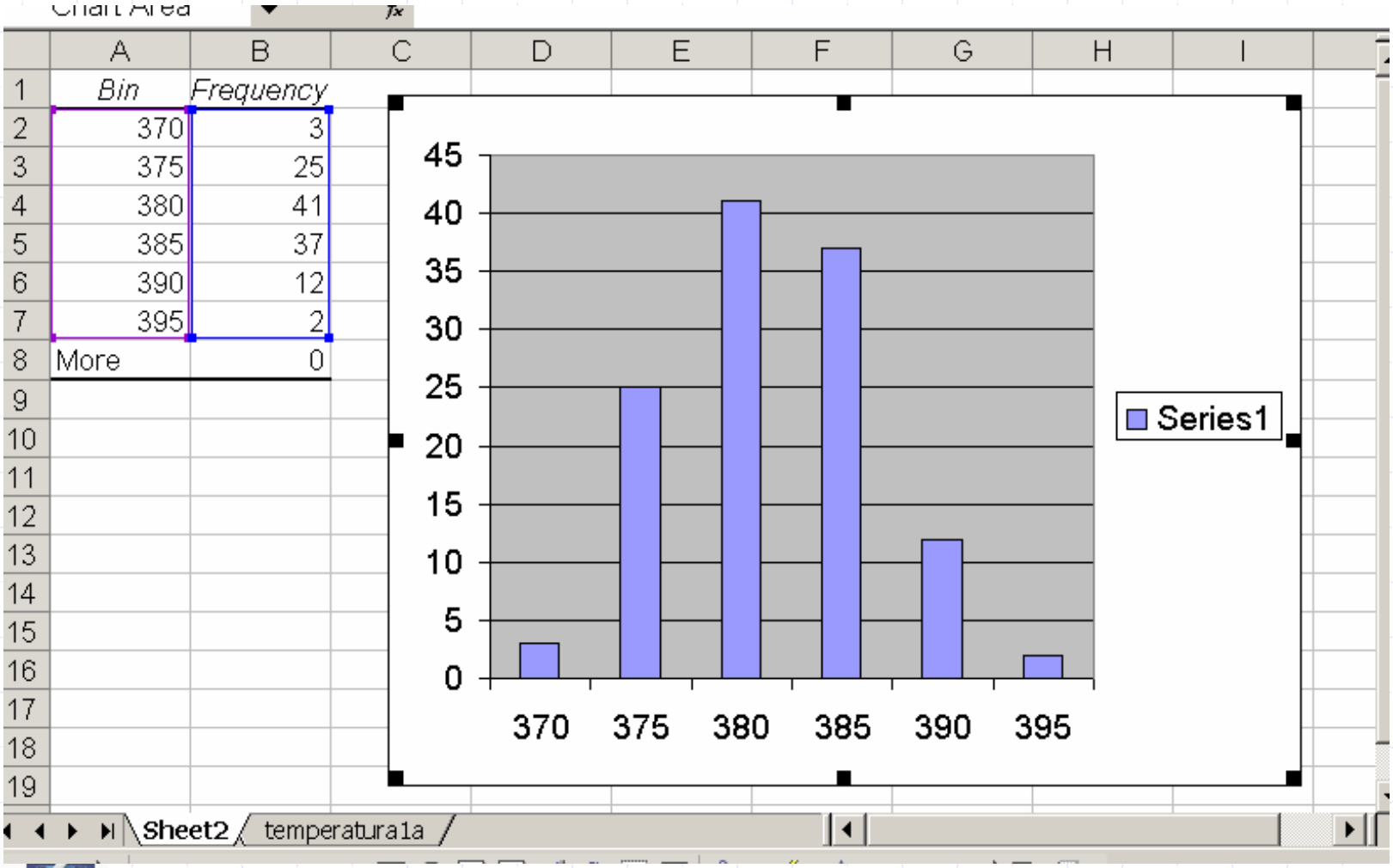


DISTRIBUZIONE con EXCEL

- Per rispondere meglio possimo avvalerci del toolbox statistico di Excel (Tools→Addins→Selezionare Analysis tool)
- Inserite il toolPAK
- Preparate i “bin” dell’istogramma
- Selezionate istogramma

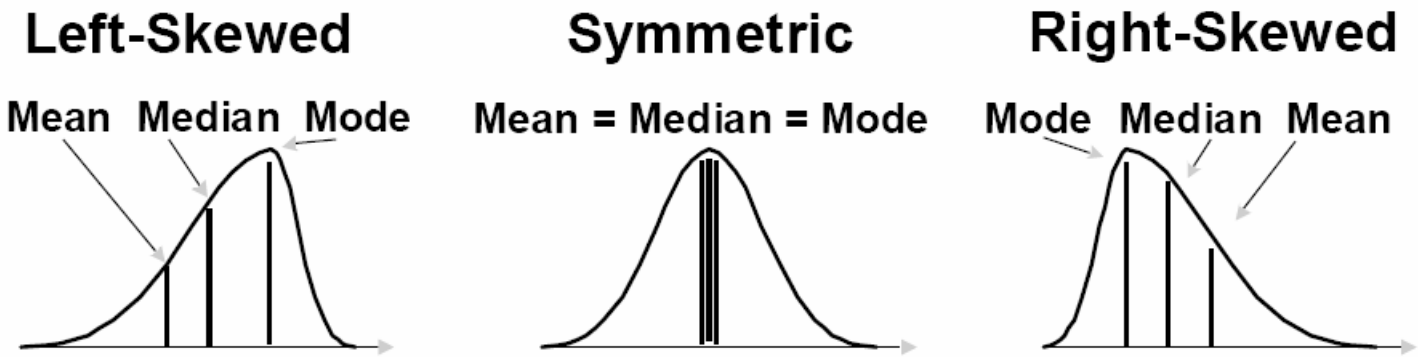
78		Deviazione standard	
79		4,864487	
78			
80			
80		BIN	
80		370	
80		375	
82		380	
82		385	
82		390	
83		395	

DISTRIBUZIONE con EXCEL

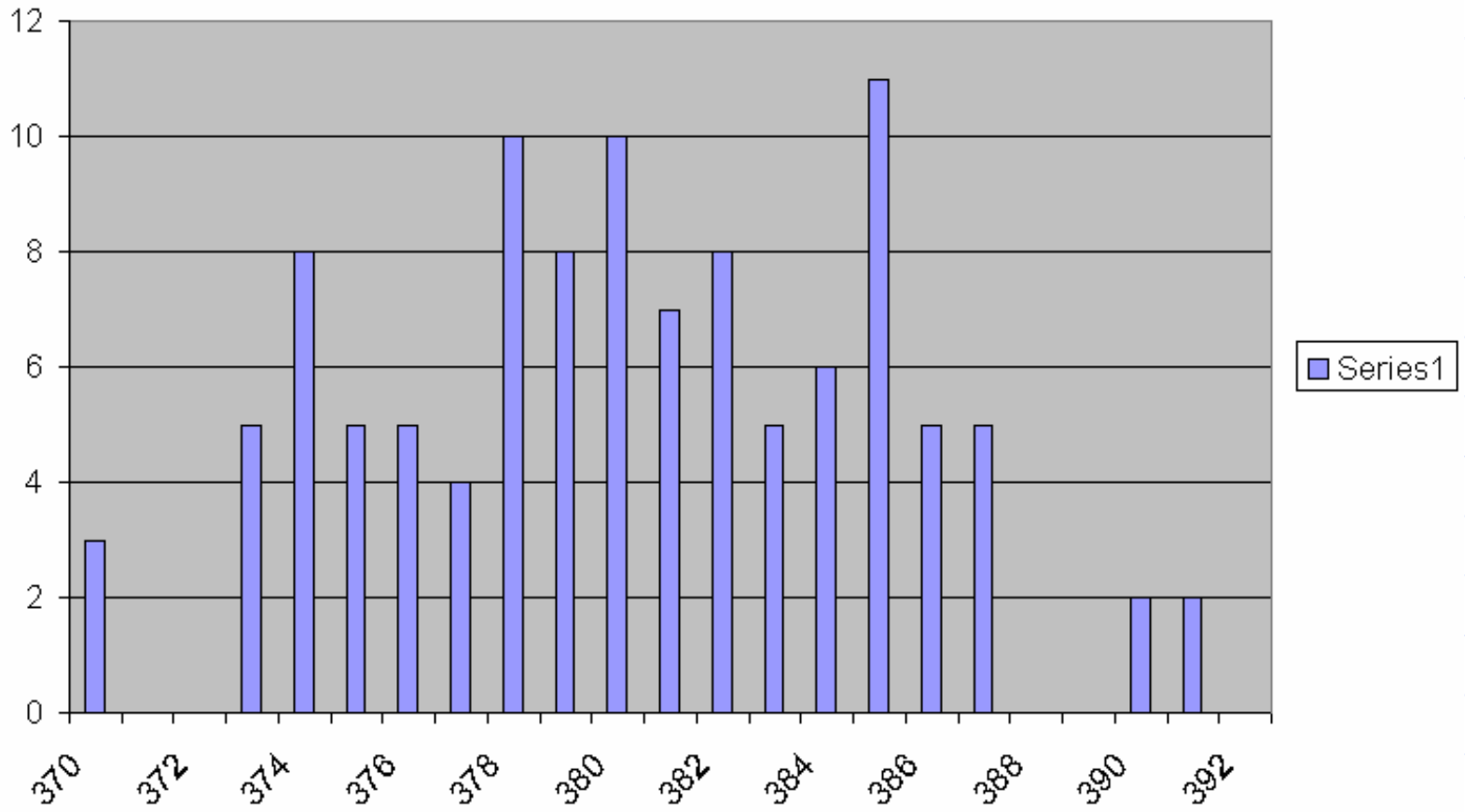


Valutazione Della forma della distribuzione con EXCEL

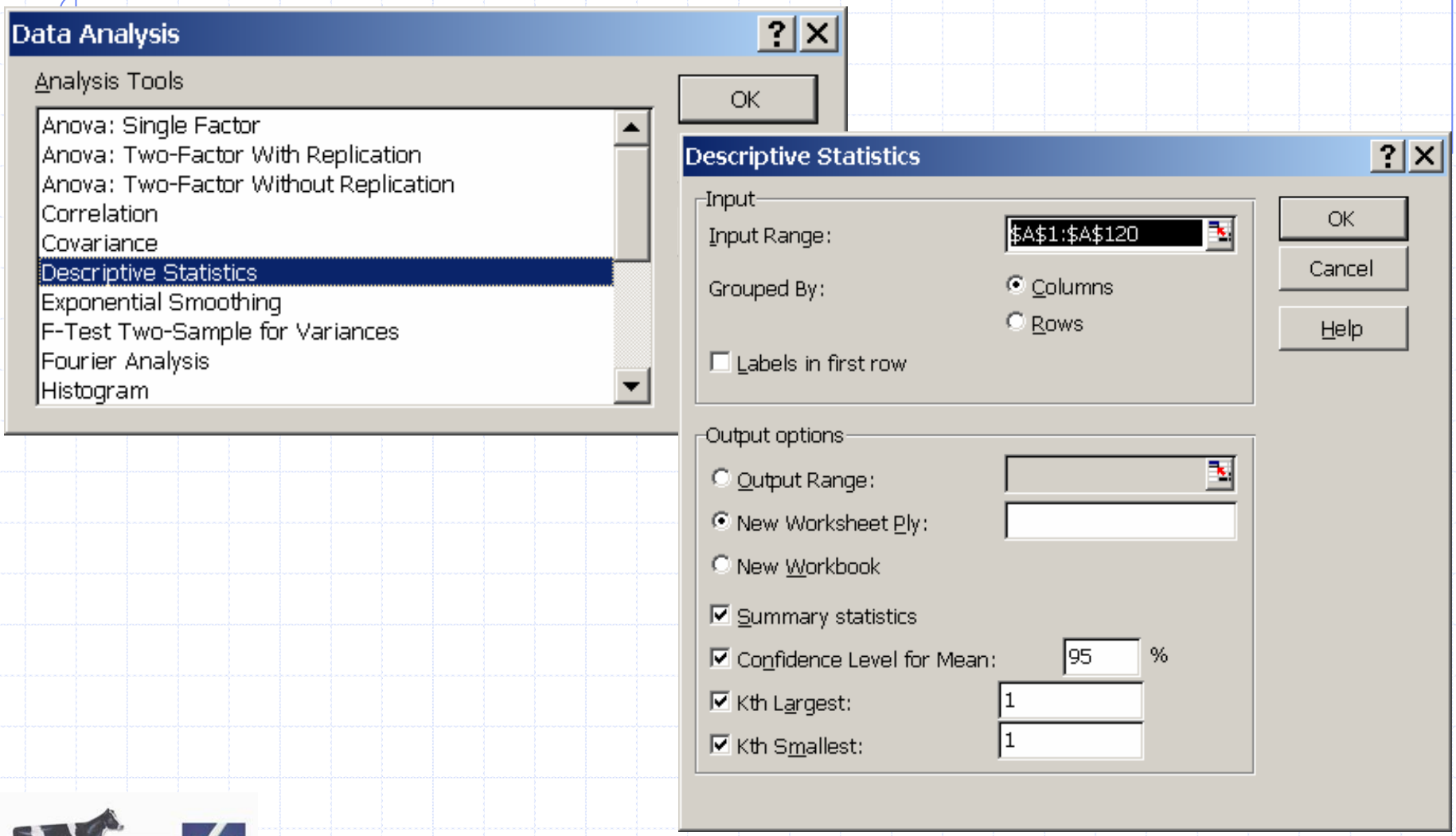
1. Describes How Data Are Distributed
2. Measures of Shape
   - Skew = Symmetry



Valutazione Della forma della distribuzione con EXCEL



RIASSUNTO STATISTICO con EXCEL



Risorse in rete

(**http://www.mathtools.net/MATLAB/Statistics/Excel/**)

Mathtools.net >

The technical computing portal for all your scientific and engineering needs

Mathtools.net > MATLAB > Statistics > Excel

- SolverStat - SolverStat is an Excel add-in (xla) for Microsoft Excel 97, 2000, XP th Microsoft Excel, the built-in optimization package Solver yields minimized least sc worksheet functions makes Excel a flexible tool to solve linear and non linear regr
- Analyse-it, a statistics add-on - Analyse-It for Microsoft Excel now available!! The parametric, and clinical research statistics. Download FREE 14-day trial of Analy
- Blockage Analysis - MaceTech Blockage Analysis is a freeware Excel Add-in. Blo amongst options on account of unawareness, lack of knowledge, unavailability, in both positive and negative impacts of blockage, and, the separate impacts of mult
- CAMPUS - This paper describes the development of a spreadsheet-based CAA p quantitative disciplines. The CAMPUS program (Computer Aided Marking Progra regarding workload, validity and feedback when assessing students.
- DE Histograms - This Excel Add-In provides fast and easy graphical and statistica

MATLAB

Statistica descrittiva MATLAB

```
data = [1 2 3 4 50];

        % The arithmetic mean of the data:
mean(data)  ans: 12

        %The median of the data:
median(data)    ans: 3

        % The standard deviation:
std(data) ans: 21.27

        % The smallest value in the data:
min(data) ans: 1

        % The largest value in the data:
max(data ) ans: 50
```

RIASSUNTO STATISTICO con EXCEL

	A	B
1	*Column1*	
2		
3	Mean	379,725
4	Standard Error	0,444065
5	Median	380
6	Mode	378
7	Standard Deviation	4,864487
8	Sample Variance	23,66324
9	Kurtosis	-0,63292
10	Skewness	0,106953
11	Range	21
12	Minimum	370
13	Maximum	391
14	Sum	45567
15	Count	120
16	Largest(1)	391
17	Smallest(1)	370
18	Confidence Level(95,0%)	0,879292

Risorse in rete

(**http://www.mathtools.net/MATLAB/Statistics/Excel/**)