

Equalin v 1.0.0

Equalin is copyright 1994

Salvatore Roberto Panetta - Italy.

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Shareware distribution is permitted.

Commercial distribution is permitted charging a minimal fee .

**I'll be happy to know this software is distributed inside commercial
"shareware and freeware" collection but note:
BEFORE DO THAT YOU MUST INFORM ME !**

Equalin is distributed with the shareware method.

Don't you know what it means?

Shareware means that this software is free copyable by users.

You can give a copy of this program to all people you like.

When someone uses this program more than a week and think this program does its work, you have to send me the amount I indicated in the info dialog, to my address:

Salvatore Roberto Panetta

via Valsesia, 28

20152 Milan - Italy

You will be signed as 'registered users' and you will be authorized to use the program.

You will receive in addition the last version of the other programmes I developed.

But why do you have to send me some money?

You can use the program without inform me, without any trouble!

Well, as you understand, shareware method is principally based on the "honor" and "cleverness" of people who use the Macintosh, and computers in general.

Maybe "honor" of people in the world are not too high, sometime is very low, but in this particularly example, shareware authors report that computer users represent a better subset of humanity.

Supporting shareware encourages developers to do better and to make software available worldwide without additional cost.

A Linear Equation System is a group of linear equations "bundled" in a "system".

This means that the equations are linked between them by a relation condition, in which the value of some variables must be the same in these different equations. example:

$$5x + 2y + 3z = 12$$

$$6x - 9y + 1z = -8$$

$$3x + 10y - 10z = 1$$

In this case one and only one is the solution:

The value of x , y and z which can satisfy the system.

You can write the problem in a matrix manner:

$$[A] * [X] = [B]$$

where:

[A] is the coefficient of the variables

[X] the perfect solution

[Xes] (estimated) are the values of solution calculated by the program

[B] is the known coefficient

[C]=[A]*[Xes] are the known coefficients recalculated using the estimated solution

[Δ] is the difference between [C] and [B] and when this difference is 0 that means that [Xes] is perfectly estimated

Er is the sum of all the elements of [Δ] so it is better to represent the quality of the result in a single number.

The use of Equalin is very simple.

Click on the desired matrix in the main window

the matrix will be opened in a "spreadsheet view"

analyze and insert the desired value.

To perform a calculation, click on the buttons or chose the "solve" menu

You can do principally 2 jobs:

1)

Insert the desired values in [A] and [X]

Generate the [B] vector

Calculate [Xes] using [A] and [B]

In this case you can observe directly which was the solution because you know the [X] values.

or

2)

having an system without knowing the solution

Input [A] and [B]

Calculate [Xes] using [A] and [B]

evaluating how exact was the solution looking at the Er value.

A better solution requires Er very near or equal to 0.

Menu

- File Menu

- New

- Open a new document

- Open

- Open a document from disk

- Close

- Close a document

- Save

- Save the current document with the last change

- You are allowed to save on disk and get back later all contents of a Equalin document, value of all the matrix and other setting as the coloumns width.

- Save as...

- Save the current document under a new name

- Page Setup

- Choose the page size and other in the standard dialog

- Print

- Print the selected matrix

- Quit

- Quit from Equalin

- Edit Menu

- Undo

- Undo last action

- Cut

- Cut value selected and put the value in the clipboard

- Copy

- Copy value selected and put the value in the clipboard

- Paste

- Paste the value in the clipboard to the selection

- Clear

- Erase the value selected

- Show Clipboard

Show the clipboard with its contents 'TEXT'

- Preference

Select some preferences you will find next time you lunch Equalin

- General Menu

- Order

Size of System (Row x Column)

- Gauss Base

- Gauss Pivot Partial

- Gauss Equilibrated

- Gauss Pivot Tot

- Cholesky Method

- Gauss Seidel

Apply this method when calculation is requested

- Solve Menu

- B $f(A,X)$

Calculate [B] from [A] and [X]

- Xes , C , Δ , Er

Calculate [Xes] , [C] , [Δ] , Er , from [A] and [X]

- Window Menu

- Show [A]

- Show [X]

- Show [B]

- Show [Xes]

- Show [C]

- Show [Δ]

Show the requested matrix in a 'spreadsheet' format

- Columns Width

Change the columns width of the selected matrix

Gauss Base

This is the simplest and the fastest method, too.

It can fail very easy if the [A] matrix does not have preponderance of diagonal terms

Gauss Pivot Partial

Gauss method in which e permutation between coloumns and rows are used

Gauss Equilibrated

Gauss method in which a permutation between coloumns and rows are used in a better manner.

This is the slowest of the Gauss method but the precisiest, too.

Gauss Pivot Tot

Gauss method in which e permutation between coloumns and rows are used

Cholesky Method

Very fast method usable only when the [A] matrix respects some circumnstance. There are lot of problems in which this case is true.

This method when applicable is extremly fast but when not applicable give results completely wrong .

Check the Er value, if this is 0 or very near the results are right.

Gauss Seidel

Iterative method. It requires preponderant value of the diagonal value

There are lot of problems in which this case is true.

The internal values used to check the convergence iteration are fixed.

they will be modifiable by users in the next version of Equalin.

If you find some bug, you can help me to eliminate it reporting the bug!

Thanks!

Suggestions will be welcome from users!

Please, let me know your impressions and your suggestions about the program.

Often, (always) users can see what the programmer can't in his work.

Let me know in which direction you like Equalin will evolve.

There is lot of space for future improvement of Equalin.

Other features are already planned to make easier to import export results and do other 'matrix' calculation.

You can contact me at this address:

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I'm involved in a lot of software for scientific and technical applications all for Macintosh and Power Mac (there is some other?) all developed in C++
Look for my other production (Shareware and Commercial).

Register Form

Equalin 1.0.0 Registration Form

Please find enclosed the registration for Equalin 1.0.0

Name:

Address:

Registration Fee: ___ units @ US\$19 per unit

Total: \$ _____

It would be helpful for future development and support if you would take the time to answer the following questions:

-What type of Macintosh(s) do you have ?

-What is your use of Macintosh(s) ?

-Do you plan to use Power Mac ?

-What improvements can you suggest for Equalin? <-VERY IMPORTANT!

Thank you for supporting the shareware distribution method and registering Equalin.

Please send via mail to:

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Warranty

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