OmniCon 3.0

<u>What OmniCon is</u>

    - Explains what **OmniCon** is and what **OmniCon** does.

<u>How OmniCon is different</u>

    - Tells you why you're better off using **OmniCon** rather than ANY other conversion program.

<u>How OmniCon is useful</u>

    - Explains what kind of people would find **OmniCon** useful, and why.

<u>Features of OmniCon 3.0</u>

    - Lists some of the features of the program.

<u>A bit of the history behind units</u>

    - Tells you a tiny bit of the way units developed.

<u>Instructions</u>

    - Gives detailed instructions on how to use **OmniCon**.

<u>Contacting the author</u>

    - How do I get in touch with Phil in order to tell him about some stupid bug he's incorporated into his little program?

<u>Version History</u>

    - Version History of OmniCon

<u>Registration form</u>

    - What it is and why it benefits you and I.

What OmniCon is

OmniCon 2.0 is a very useful and powerful program that allows the user (that's YOU!) to convert any unit of virtually any physical quantity into another unit of the same quantity.   In other words, it allows you to very quickly convert between teaspoons and tablespoons, litres and gallons, or torr's and psi's.   I have included practically every physical quantity (such as volume, mass, length, time etc.) known to man, and within those quantities, I've included many, many units.

OmniCon provides you with a simple and convenient way to interchange between these units very quickly with a high degree of accuracy (actually, in most cases, it's up to you to pick just how accurate you want the result to be since there are sometimes 10 decimal places staring you in the eye!).   Anybody that uses physical quantities in their field of work will find **OmniCon** invaluable.

How OmniCon is different

There are a lot of conversion utilities out there, but NONE can match the ease-of-use, the speed, and the breadth of **OmniCon**.   **OmniCon** is super-easy to use, very powerful, and offers many conveniences to the user.   I wrote **OmniCon** because I'm in a science program at university, and I find it a BIG pain in the butt to always have to look up conversion formulae and factors in order to convert units back and forth.   **OmniCon** gets away from all of that hassle.   You simply choose a physical quantity, indicate what unit the initial value is in, and choose the unit you want the final value in.   PRESTO! You've got your converted value!   It's very easy, convenient, and a REAL time-saver if you're ever doing many (or even a few!) conversions!

How OmniCon is useful

Many people, ranging from doctors, scientists, homemakers, engineers, teachers, and students to surveyors, architects and computer nerds are potential users of **OmniCon** because their daily lives often involve conversion.

Students can ALWAYS find something to convert (or their teachers can GIVE them something to convert!), and engineers breathe conversion.   Just think how useful and easy it would be to just tap in a couple of numbers to instantly convert between one unit and another. This power is **right here** in **OmniCon**.

Features of OmniCon 3.0

There are many features in this program; some of which are listed below:

ability to choose which units you want available!

- ease-of-use - **OmniCon** is THE easiest converter to learn how to use. The format is basically self-explanatory, and most users do not need ANY explanation (including this help file - am I wasting my time?).

- functionality - **OmniCon** is very versatile - handling quantities such as length, time, and mass as well as conductance, capacitance, and dynamic viscosity - ALL with MANY units.

- always-on-top - All of the screen elements (the main window, the *small* window, the metric prefix table, and the physical constants table) have always-on-top capability that can be switched on or off at your convenience. (See Always on top)

- a "small" screen - Since the program is designed to be used in conjunction with other programs such as graphing programs or spreadsheets, the data can be represented in a very tiny box - wherever you want it, so that you see the results of your conversion as well as the "other" program at the same time. (See Small View)

- a metric prefix table and a physical constant table - With one click of the mouse, you have access to ALL of the metric (SI) prefixes as well as many physical constants so that you can speed up your work (See The Metric prefix table and the physical constant table)

- instant updates to calculations - If you change a unit, the result is INSTANTLY updated.   There is no need to click on a "Convert" button to have the calculation take place.   This makes you work even FASTER!

- copy and paste capabilities - Copy a number from a spreadsheet to **OmniCon**, convert it and then ship it out again - all with a couple of keystrokes!! (See Copying and pasting)

- right-button functionality - The right mouse button is fully implemented to allow you to work quickly - there's no need to ALWAYS go up to the main menu to access the most common functions.

- full representation of SI and imperial units - Instead of **(A^2 * s^3 / kg * m^2)   you get   (A² · s³ / kg ·m²)** - isn't that a lot nicer?

- a clock   - that is able to turn on/off at your command (in order to watch the time carefully while you're preparing your final term paper on conversion methods!). (See Clock)

- formattable results - YOU can decide how many decimal places YOU want the output to have (this allows you any degree of accuracy that is needed, and not 5 trailing decimals to get in the way!). (See Formatting output)

- user-configurable 'shell' program - If you suddenly forget what 2x5 is, then just two clicks will (by default) bring up the calculator for some quick calculations . Or, you can set it up so that your favourite PIM is loaded.   Whatever you want! (See Calculator)

- INI file - OmniCon v2.0 remembers where your window was on the screen, whether the clock was on or off when you exited the program, how many decimals places you wanted, whether or not you want the tables to be pre-loaded or not (preloading saves a bit of time if you're constantly calling on these windows, but it also eats up more resources), and what application you'd like to start when you click on "Run Shell Program..."

A bit of the history behind units

Everything we produce and consume, everything we buy and sell, and everything we see and feel is measured and compared by means of units.   Units enable us to measure the distance we walk, run, or RollerBlade®, the land we own, the time of day, and the brightness of the stars.

Some of these units have become so familiar to us that we take them for granted, seldom stopping to think about how they started, or why they were given the names which they now bear and the sizes which they have.

Centuries ago, the foot was defined as the length of 36 barleycorns strung end to end, and the yard was the distance from the tip of King Edgar's nose to the end of his outstretched hand!   The sun and the moon gave a precise measure of time, but for years the units of volume and weight were in a state of flux and confusion.

Since then, we have come a long way in standardizing our units of measure and weight.   Many standards are now based upon the physical laws of nature, which are reproducible, invariable and neutral. The yard and metre are now measured in terms of the wavelength of light, and time by the durations of minute atomic vibrations.   This improvement in our standards of measure went hand in hand with the advance of technology, and the one could not have been achieved without the other.

But, even though the basic standards of reference are now recognized by all countries of the world, the units of everyday measure are FAR from being universal.   In many (most) countries, the unit of length is the metre, while in some it is still the yard.   Astronomers enjoy the parsec, physicists use the angstrom, and surveyors use the rod and chain.   But these units of length can be compared with great accuracy because the standard of length is based upon the wavelength of light.

Such standards of reference make it possible to compare the units of measure in one country, or in one speciality, with the units of measure in any other.   Standard units of length, mass and time are the anchors which tie together the different systems of units used in the world today.

Over the years, systems of units have been devised to meet the needs of commerce, industry, and science.   In the English system of units, the inch, foot, and yard are related to each other by the numbers 12, 3 and 36.   And again, in the same system, the ounce, pound, and short ton are related by the numbers 16, 2000, and 32 000.

The same correlation between units exists in the Metric system of measure, except that all units are related to each other in multiples of ten.   Thus, the centimetre, metre and kilometre are related to each other by the numbers 100, 1000, and 100 000.   It is therefore easier to convert metres into centimetres than it is to convert yards into feet.

The English system is very old, and its origins may be traced back to the time of the Egyptians.   By comparison, the Metric system is a newcomer, having been started only about 175 years ago.

The premise behind the Metric system is that once the prefixes to the units are known (such as centi, milli, deca, etc.) then all of the other units can be derived from them.   Therefore, in this program, some of these units are omitted because of simplicity.   (It is rather trivial to convert centimetres into metres or millimetres if a table is provided, which in this case, it is.)

Well, there you go, a brief but interesting (??) portrait of units of past and present.   Hope you enjoyed it, but let's get on to the main event eh?   (Sorry, I'm Canadian!!)

Instructions

   OmniCon 3.0 is so easy to use I seriously doubt that anyone will need this, but just in case, here she goes!

Starting out

Your first conversion

Copying and pasting

The Metric prefix table and the physical constant table
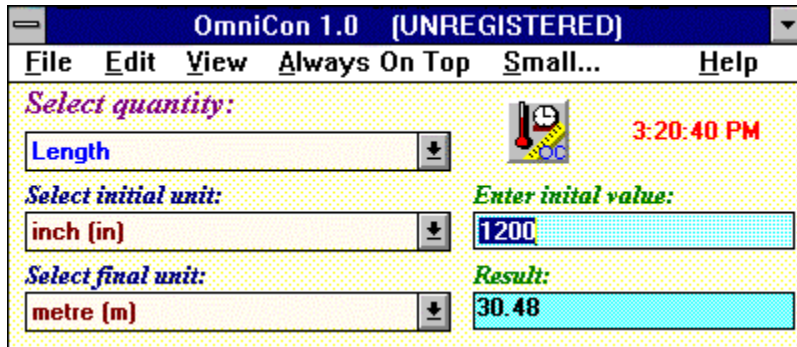
Always on top

Small View

Formatting output

Clock

Calculator

Starting out

When you first execute **OmniCon**, you will see the main window.

This is where most of the action goes on.   Along the top is the menu bar which provides access to six menus that perform many functions.

The **File** menu provides a nice way for you to get the heck out of **OmniCon** when you need to go pick up your kids/hand in your thesis etc.

The **Edit** menu allows you to copy values out of the *result* box, and paste values into the *initial value* box.   [Please don't fret because of these names - their names are trivial as you will have noticed if you've already looked at the screen.   The difference between the *result* and the *initial value* boxes is that the *result* box does not accept input (i.e. you can't type a value to be converted there!).   The *result* box only displays results, therefore it is the *initial value* box that you will enter to ready-to-be-converted values into. Sound difficult?   It really isn't.]

The **View** menu allows you to view the Metric prefix table and the physical constant table so that you can do some quick Metric conversions in your head, or so that you can see if Planck's constant is really to the 34th power or not!

The **Always On Top** menu allows you to make the main window "float" on top of every other window, so that you can copy in a number from a window you're looking at, convert it, and re-enter the new number onto your spreadsheet without switching back and forth between applications, or resizing a million windows to get them all arranged perfectly!

The **Small** menu gives a small representation of all the information contained within the main window in a small box that is movable to any part of your screen. This gives you even MORE space to work with!   Try it to see what I mean.

Just guess what the **Help** menu does!!!

On the main window, you will see three drop-down boxes and two blue boxes.   The drop down boxes allow you to choose a quantity (volume, mass, length etc.) and the other two allow you to select which units you want to convert between (i.e. centimetres to feet, kilometres to miles etc.).

That's basically all there is to it!

Click on **Back** to figure out the rest of this program!!

Your first conversion

1. To perform your first conversion, click on the drop down box below the label "Select quantity".

Fig. 1 - The "Select quantity" drop-down box

Select quantity:

| Length | ± |

   Scroll down until you see "Length" and click it.

2. Now click on the first drop-down box labelled "Select initial unit:" and choose metre.

Fig. 2 - The "initial unit" drop down box

Select initial unit:

| metre [m] | ± |

3. Click on the drop-down box labelled "Select final unit" and choose foot.
4. Enter in a value for metres in the box adjacent to it (i.e. the initial unit box).   Say maybe 10 metres.

Fig. 3 - The "initial unit" box

Enter inital value:

| 10 |

5. There you go, YOU'VE DONE YOUR FIRST CONVERSION!!!
6. If you now change either of the drop-down boxes (i.e. change either the initial OR final units), then the calculations will immediately reflect the change.   Try it by changing metres to yards and then feet to inches.   The values will INSTANTLY change to reflect the new units!

Copying and pasting

The copy and paste features of **OmniCon** integrate it well with other applications.   Say, for instance, you're doing some work on a spreadsheet.   You have a value for kilometres that needs to be switched into miles.

First, you select the value in your spreadsheet that is in miles, and then you paste it into **OmniCon**.   In order to do this, the first drop-down box would be in kilometres, and the second drop-down box would be in miles.   When   you select **Edit/Paste** from the menu bar, (or, click on the right mouse button and select Paste), the value (in kilometres) is pasted into the initial value box, and the corresponding value in miles is calculated and then displayed in the result box.

If you were to now select **Edit/Copy**, (or, again, click the right mouse button and select Copy), the value for miles (i.e. the **result** box) would be copied to the clipboard.

So, in review, the **Edit/Copy** function copies the value from the result box to the clipboard, and the **Edit/Paste** function pastes the value on the clipboard to the **initial value** box.   Try it a few times to get the hang of it.

Another quick way of copying and pasting (besides the already convenient right mouse button method) is to double-click the result box or the initial value box (to either paste or copy, respectively).

The Metric prefix table and the physical constant table

The metric system is generally easy to use - IF you can remember all of the prefixes!   In order to help you with this *arduous* task, I've included a prefix table to help you.   At any time, you can click on **View/Metric Prefix Table...** to see all of the prefixes and their corresponding powers of 10.   This window allows you to select either the full table or just a part of it that is scrollable so that it takes up less screen space.   This window also has an <u>Always on top</u> feature.   To get back to the main window, just click on **Back...**

You can also access the Metric prefix table using the **right mouse button**.   Just click the right mouse button anywhere on the main window, and select the option you want.

Fig. 1 - The metric prefix table

Another table that is included is the physical constant table - which shows you many fundamental constants of nature that you can use as a quick reference in your work (for all you scientists/engineers out there - I'm thinking of you!).   Again, you can either access this window by using the menu bar (**View/Physical constants**) or by clicking the right mouse button anywhere on the main window.   This window is also scrollable or available as a full table that takes up most of the screen.   Your choice...

Fig. 2 - The physical constant table

Double-clicking on any of the constants will copy that value to the clipboard!!   This is potentially very useful.   If you need the value for Pi to 10 decimal places and don't feel like copying it all out, then just call up the physical constants table and double-click the value (in the 2nd column) for Pi.   Its value will be copied to the clipboard, and you can then **paste** it into OmniCon to perform a conversion on it, **OR** you can paste it into any other application to perform ANY operation on it (use it in text, spreadsheet etc.)..
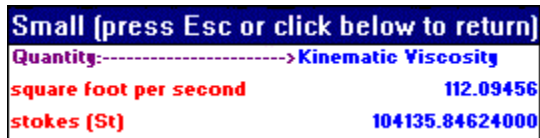
Always on top

The always on top feature is available for all of the main windows (the main window, the metric prefix table, and the physical constant table) within **OmniCon 3.0**.   For instance if (while working on a spreadsheet or in a word-processor) you wanted to do many conversions while keeping the other application in view, you could just click on **Always On Top/On**, and the main window of **OmniCon** would always be visible.   This is **very** useful, so try and make the most of it.   This feature virtually eliminates having to switch back and forth all of the time between several application to find the one you want!

Small View

This feature is very useful if you just want a small display of the quantity, units, and values that you have converted.   If you use this (by clicking on **Small...** or by clicking the right mouse button on the main window and clicking **Small...** then you will get a very small window that is movable to anywhere on your screen that will always stay on top.   Useful if you want to copy some information into another application... but always forget what the values were!   One click of the mouse on the white area beneath the title bar, or a press of the "Esc" or "Enter" keys will return you to the main window.

Fig. 1 - Small view

Small (press Esc or click below to return)	
Quantity:---------------------->Kinematic Viscosity	
square foot per second	112.09456
stokes (St)	104135.84624000

NOTE: Small view is ONLY available when your screen resolution is less than or equal to 640x480. (The reason for this is that most users with resolutions greater than this (i.e. 1024x728) could easily tile a spreadsheet and OmniCon on their screen, whereas it's MUCH harder on a lower resolution (i.e. 640x480)).

Formatting output

If you don't like the way the numbers look when they're calculated (i.e. the resulting number has 3 decimal places!!), then you can change this by specifying the number of decimal places that you would like the output to have.   To do this, just click on the menu **File/Options/Numeric** format menu and specify how many you would like.   Also, the limit of decimal places is 3...This is because of the accuracy of the info that I designed OmniCon with (the information for creating OmniCon v2.0 was taken from tables that I received from the Government of Canada)..

To do this, either enter in a number manually from the keyboard, use the **Up/Down cursor arrows** to move the number displayed up or down, or **click on the "+" or "-" buttons** to change the number. When you have finished, just click on OK and your numbers will now have the correct number of decimal places.

TECHNICAL NOTE: If the calculated result is larger then 1x E9 (i.e. 1 billion), or less than 1x E-3 then the result automatically defaults to scientific notation (to save space!).   However, you can still control the accuracy of your result - when in scientific notation, the number of decimal places gives the number of digits BEFORE the exponential sign (E).   Therefore it is the same thing as specifying the number of decimal places that you would like.

Clock

The clock function in OmniCon is only for your convenience.   In order to turn the clock **OFF** (the default is **ON**), just go to the **File/Options/Clock** main and select **OFF**.   Or, if you want a faster way, just double-click the OmniCon icon:

and it will disappear.   In order to turn it back on, just double-click on the OmniCon icon again or use the **File/Options/Clock** routine.

'Shell' Program

If you need to perform a calculation or two, just click on **View/Run Shell Program** to bring up the generic Windows calculator, or whatever program you wish.   (SHORTCUT KEY: Ctrl & R)

Contacting the author

It is not hard to contact me.   My name is Phil Jones, and here are my addresses:

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Kingston, Ontario
CANADA
K7L 2C7

Please feel free get into touch with me if you have any problems, bugs to report, or suggestions/comments for the next version.   I will get back to you as soon as possible if you leave me e-mail.   I'd love to hear from everyone that uses this program- whether they decide to register it or not. Thanks again for evaluating **OmniCon 3.0**!!

Phil

Version History

This is the second version of OmniCon.

Version 1.0a: June,1994

a) Changed clock so that no flickering when updated (i.e. EVERY second!).
b) Added registration key to Registered version.
c) Changed scrolling algorithm altogether to use less system resources and speed scrolling up.
d) Updated Help file so it now allows browse sequences and searches.

Version 1.0b: July, 1994

a) Added INI file support for preloading of metric and physical constant forms to save system resources.
b) Added INI file support for the clock (on/off), the numeric formatting setting, and the main window position on the screen.
c) Changed dialog box so that all options (except for clock on/off) are set form one main options dialog.   Added the ability to select which program would run when CTRL-R is pressed. (Instead of forcing Windows Calculator applet.)

Version 1.0c: September, 1994

a) Fixed a few minor bugs, changed max. number of decimal places to 5
b) added "Help with Help" menu item

Thanks!

Contacting the author

Registration form

There are many opinions concerning the "Shareware concept".   Personally, I think it's great that people can try out software that they may potentially like before they actually buy it.   However, the system ONLY works if everybody plays fair.   A lot of work has gone into this program, and I wouldn't like to think that hundreds of people were all using it for free.   The price is NOT expensive ($20 CDN or U.S. funds), and for your money, you get quite a bit of code.   I will uuencode this program (upon receiving payment through the mail) and send it to all registered users so that the Shareware "nag" screen is no longer present and I will also add any units/quantities that you may wish.   If I have to send you a disk through the mail, there will be an additional $5.00 fee to cover mailing expenses and disks.   So, it's a lot easier to get them through the I-Net if you have access.   I accept cash or cheque.   I imagine that for most users a post-dated cheque would be sufficient security that I will not snake you into sending 20 bucks and not receiving any disks.   In this case I would suggest post-dating the cheque for around three weeks after you send it.   In most cases, you will have your disks even before I cash the cheque (again, I'm trusting you) depending on Canadian and other postal services.

I thank you for your integrity, and hope to hear from you soon.

Registration Form

NAME:_____
_____

ADDRESS:_____
_____

PROVINCE/
STATE:_____

POSTAL/ZIP CODE _____

COUNTRY:_____

TELEPHONE NUMBER: (___)_____-_____

e-mail address _____

METHOD OF SHIPMENT:

( )   3.5"   DISK   @ $20 (CDN **or** U.S. funds) **+** $5 S&H_____

( )   5.25" DISK @ $20 (CDN **or** U.S. funds) **+** $5 S&H _____

( )   UUENCODE THROUGH INTERNET @ $20 (CDN **or** U.S. funds)_____

SEND TO:

      Philip Jones

      117 William St. Unit#1   Total:$_____

      Kingston, Ontario

      CANADA

      K7L 2C7

Thank you for your order!