DateLib

Dipl.-Inform. Kai Hofmann

COLLABORATORS

	TITLE : DateLib	

ACTION	*NAME*	*DATE*	*SIGNATURE*
WRITTEN BY	Dipl.-Inform. Kai Hofmann	April 15, 2022	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

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DateLib

1.1 DateLib (TM)

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If you have AmigaDOS® 2.0 or 2.1, you will have to scroll to the right in order to read the text. AmigaGuide® for these versions of AmigaDOS® is unable to wordwrap the text.

1.2 Copyright

Copyright

1.3 Distribution

Distribution

1.4 License

DateLib --- PRODUCT LICENSE AGREEMENT KH990901

FOR NON-COMMERCIAL USE ONLY

THIS AGREEMENT, made as of the 27. September 1999

BY AND BETWEEN:

Dipl.-Inform. Kai Hofmann

Software Engineering International

Arberger Heerstr. 92

28307 Bremen

Germany

(hereinafter referred to as "Copyright holder")

AND:

the party installing the DateLib (TM) on their respective computer system

(hereinafter referred to as "Licensee")

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"This software contains/uses the DateLib copyright © 1994-1999 Dipl.-Inform. Kai Hofmann"

Licensee agrees to place a hyperlink in the following form on his products webpage:

<A href="http://www.hofmann-int.de/products/DateLib/"><IMG align=middle src="http://www.hofmann-int.de/products/DateLib/pics/
width=88 height=31 border=0 alt="DateLib (TM) button"></A>

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§21.8 All executed copies of this Agreement are deemed to be originals.

§21.9 This Agreement shall be governed by and construed in accordance with the laws of Germany.

§21.10 This Agreement shall become effective after Licensee has installed the LICENSED PRODUCT(s) on his/her DESIGNATED HARDWARE GROUP(s).

SUPPLEMENTS attached hereto form an integral part of this Agreement.

END OF AGREEMENT

SUPPLEMENT TO PRODUCT LICENSE AGREEMENT KH981102

BETWEEN

Dipl.-Inform. Kai Hofmann

Software Engineering International

Arberger Heerstr. 92

28307 Bremen

Germany

(hereinafter referred to as "Copyright holder")

AND

the party installing the DateLib (TM) on their respective computer system

(hereinafter referred to as "Licensee")

1. TRADEMARKS

All trademarked names used herein are used for the purpose of identification and for the benefit of the trademark holder. No infringement of trademarks is intended. Trademarks remain the property of the trademark holder.

2. FACILITY REQUIREMENTS

The LICENSED PRODUCT(s) operates on Amiga® computers based on Motorola 680x0 microprocessors.

3. DELIVERABLES

One archiv including the DateLib shared-library, interfaces for different programming languages as well as the related Autodocs.

4. DESIGNATED HARDWARE GROUP

SYSTEM NAME(S):

- Amiga® computers based on Motorola 680x0 microprocessors

5. DESIGNATED SOFTWARE GROUP

SOFTWARE NAME(S):

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6. DESIGNATED DISTRIBUTION AREA

DISTRIBUTION AREA NAME(S):

- Planet earth

7. LICENSED PRODUCT DESCRIPTION

The DateLib (version 33.310) is an Amiga shared-library developed for low level date and time calculations. All functions are documented via Autodocs.

For date calculations the following features are available:

- Support for six different date/time-systems:

Julian calendar, Gregorian calendar, extension of the Gregorian calendar after N. Heis for a historical correct date range from the year 8 to the year 8000 (minimum), Julian Date, Modified Julian Date, Scaliger years.

- Support of 21 languages (English, German, French, Spanish, Portuguese, Danish, Italian, Dutch, Norwegian, Swedish, Polish, Finnish, Hungarian, Greek, Esperanto, Turkish, Latin, Russian, Czech, Catalonian, Serbian) for names of months, weekdays and some other date/time specific strings.

- Handling of the Gregorian calendar reform (in October 1582 ten days were removed from the calendar).

- Calculation of leap years.

- Calculating the number of days for a month, a year or between two dates.

- Calculation of the weeknumber and the weekday for a date.

- Verification if a date is valid.

- Calculation of the next valid date for an invalid value.

- Calculation of Easter Sunday --- from which other holidays like Pentecost etc. will be calculated.

- Comparison of two date values.

- Powerful functions to handle differences between two dates (date + range = new date, date - date = range in days or in days, months and years).

- Conversion of date values from one calendar system into all others.

- Calculation of the age of the moon (within a month) and of the moonphase (new moon, full moon, quarter moon, three quarter moon).

- A week can start with any day of the week (Monday---Sunday).

- It's possible to expand two digit year values to four digits. Using the 'sliding window' technique it is possible to use this for any century.

- Conversion of weekday/week/year into day/ month/year and reverse.

- Very flexible formatting of a date into a string by using many formatting codes.

- Parsing of date strings via templates or via automatic analyses of more than 40 date-string-formats.

When calculating time, the following features are available:

- Verify the validity of time.

- Comparison of two time values.

- Conversion of the 24 hour time-format into seconds and reverse.

- Conversion of the 24 hour time-format into the Julian time-format and reverse.

- Calculating the local time zone from the correct position on the earth.

- Very flexible formatting of time (including time zone and dst) into a string via many formatting codes.

- Parsing of time strings (including time zone and dst) via templates or via automatic analyzing.

- Correct handling of the dst change days (summer to winter and reverse).

- Converting a date/time pair from local to GMT and vice versa while taking daylight saving time into account.

8. FEE AND METHOD OF PAYMENT

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END OF SUPPLEMENT

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Trademark

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1.6 Support/Updates

Support/Updates

- Updates will be available via Aminet®

- Support will be available via the authors email address and via

http://www.hofmann-int.de/products/DateLib/

- The PDF Manual is available via

http://www.hofmann-int.de/products/DateLib/man.en.html

1.7 Author

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WWW : http://www.hofmann-int.de/

1.8 Description

Description

A portable library that gives you low level functions for date calculations.

Includes the following features:

- Support for six different date/time measurement systems:

Julian, Gregorian, Heis, Julian Day, Modified Julian Day,

Scaliger Year (other systems will follow).

- Month/Weekday and other date/time string support for 21 languages.

- Support for different countries (implementation not finished!).

- Calculating leap years.

- Functions to calculate the days of a month or a year or between

two dates.

- Functions to calculate the weeknumber and the weekday.

- Check the validity of a date.
- Calculating Easter.
- Comparing dates.
- Powerful functions to handle differences between dates.
- Transformations from one time measurement system to the others.
- Calculating your local time zone out of your position on the earth.
- Calculating the age of the moon and the moon phase.
- Check the validity of a time.
- Comparing times.
- Transforming 24h time format into seconds and back.
- Transforming 24h time format to Julian Day time format and back.
- Every weekday can be the first day of the week.
- Supplement two digit years to four digit years.
- Formatting of date and time values into strings.
- Parsing date and time values from strings via templates or
powerful autoanlysation.
- Converting weekday/week/year to day/month/year vice versa.
- Converting a date/time pair from local to GMT and vice versa while taking
daylight saving time into account.
- Autodocs describing all functions of the library.
- Interfaces for: C/C++, Modula II, Oberon, Amiga-E, Assembler,
Cluster, Blitz Basic 2, ARexx.
- Including ANSI-C test example.

1.9 Requirements

Requirements

- OS 1.2

1.10 Installation

Installation

Only use the installer script!

(The Installer must be in your system-path!)

If you use an Installer prior to V42 you should set the LANGUAGE Tooltype to your language. Installer V42 and better automatically use your current locale.

Please note that the installer-script is very special, because:

- It features uninstallation

- It is automated

- It is very flexible

- It is very intelligent (for an installer-script ;-)

- It uses WrapGuide (if present) for the Amigaguide

documentation if running under a pre V39 system.

- It can be reused by (hopefully) many other Amiga shared libraries, because

the authors of shared libraries need to only change a few things:

* The #copyright variable

* The #min_os_version and #min_os_revision variables

* The #language variable

* The P_CustomExists, P_CustomInstall and P_CustomUninstall procedures

* The 'APPNAME' tooltype within the MCC-Install icon.

1.11 Localization

Localization

The DateLib supports the following languages for the moment:

English, German, French, Spanish, Portuguese, Danish, Italian, Dutch, Norwegian, Swedish, Polish, Finnish, Hungarian, Greek, Esperanto, Turkish, Latin, Russian, Czech, Catalonian, Serbian

If your language is none of these, I need a translation of the following words:

Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday (including the short versions: Mon, Tue, Wed, Thu, Fri, Sat, Sun)

January, February, March, April, May, June, July, August, September, October, November, December (including the short versions: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec)

day, month, year, week, weekday, hour, minute, second, yesterday, today, tomorrow

days, months, years, weeks, weekdays, hours, minutes, seconds

daily, monthly, yearly, weekly, hourly, per minute, per second

The DateLib also supports the following countries for the moment:

Italy, Germany, Switzerland, Denmark, Netherlands, Great Britain, USA, Sweden

If you want your country to be supported, I need the exact days that where removed from the calendar by the Gregorian calendar reform.

Pope Gregor XVIII removed the days 5.10.1582-14.10.1582 from the calendar, but this reform happened at different times in different countries.

1.12 Developer Information

Information for Developers

- Every function name as well as every datatype name starts with a prefix

"date_", "time_" or "datetime_". This makes the library more portable.
- For the three calendar systems (Julian, Gregorian, Heis) all functions
with the same usage have the same name as well as the same parameters
(in the same order). Normally you would only need to use the Gregorian or
Heis version (I prefer the last one).
For some functions only the initials (J, G, H) are used to identify the
calendar system.
- Read the Autodocs carefully for each function, some have limitations for
the date range!
- Read the PDF manual which can be downloaded from
http://www.hofmann-int.de/products/DateLib/man.en.html
- JD means Julian Day (Date) calendar system.
- MJD means the historical(!) Modified Julian Day (Date) calendar system.
- Scaliger is a special calendar system for counting years - used for JD.
- The country support is not implemented as yet since this is rather
complicated.
Please report all problems with the software or its documentation! Also please
let me know if and how this documentation could be improved. Are there open
questions or things that are not clear?

1.13 History

Release history

13.04.1994 : 33.087 - First release on Aminet3 & SaarAG 707
13.08.1994 : 33.088 - Second release on Aminet4, SaarAG 793,
Fred Fish & SimTel
18.12.1994 : 33.093 - Third release on Aminet
06.02.1995 : 33.100 - Fourth release on Aminet (CD 5), Amiga-PD-1
03.08.1995 : 33.158 - Fifth release on Aminet (CD 8, Set2a, Set2c), SaarAG,
Fred Fish & SimTel
12.12.1997 : 33.286 - Sixth release on Aminet
22.12.1997 : 33.288 - Seventh release on Aminet
26.12.1997 : 33.290 - Eigth release on Aminet
29.01.1998 : 33.297 - Ninth release on Aminet
* General code optimizations
* Autodocs fixed
* Extended HSYearToJD() implementation
* Changed JYearToScaliger() implementation

* Added JulianDiffDateRange(), GregorianDiffDateRange(),
HeisDiffDateRange(), JulianRangeDiff(),
GregorianRangeDiff(), HeisRangeDiff()
* Declared JulianDiffDate(), GregorianDiffDate() and
HeisDiffDate() as OBSOLETE
* Renamed date_Calendar to date_Calendars
* Added two countries: USA and Sweden
21.04.1998 : 33.301 - Tenth release on Aminet
* Added LocalToGMT() and GMTToLocal()
* Fixed ARexx var length bug
* Exchanged BOOL with bool, TRUE with true and FALSE
with false to fit the C++ ISO standard.
28.10.1999 : 33.310 - Eleventh release on Aminet
* Fixed bug in Latin translation that might result in a
crash when using ParseDate()
* Added multi calendar functions
* Added debugging code
* New EMail address
* New WEB-Site
* New License
* Added hint about the PDF manual

1.14 Todo

Todo

- Country daylight saving support
- Country dependend for 1582
- Locale.library catalogs
- Country strings for TextEngine
- DATE/ECHO like shell command
- EVAL like shell command
- TimeZoneDiff
- A function to compare date/time of different time zones!
- More intelligent var/fix length date/time parser format detection
- Rising/setting of moon and sun
- Other calendars, like the Islamic and the Jewish

1.15 Known problems

Known problems

- See Autodocs

1.16 Technical notes

Technical notes

A tropical year is 365.2422 days! / 365d, 5h, 48min, 46sec

A moon month is 29.53059 days! / 29d, 12h, 44min, 2.9 sec

A moon phase is 7.38265 days!

The calculations are historical and NOT astronomical!

Here are the offsets for days that depend on Easter:

Carnival Monday : Easter Sunday - 48

Mardi Gras : Easter Sunday - 47

Ash Wednesday : Easter Sunday - 46

Palm Sunday : Easter Sunday - 7

Maundy Thursday : Easter Sunday - 3

Good Friday : Easter Sunday - 2

Easter Monday : Easter Sunday + 1

Ascension of Christ : Easter Sunday + 39

Whitsunday : Easter Sunday + 49

Whitmonday : Easter Sunday + 50

Feast of Corpus Christi : Easter Sunday + 60

Rules for other days:

New Year : 01.01.

Epiphany : 06.01.

Valentine : 14.02.

Begin of daylight savings time in Germany : Last Sunday in March

May first observed : 01.05.

Day of Europeans : 05.05.

Mother’s day : Second Sunday in May

Grandhawk in Germany : 27.06.

Peter and Paul : 29.06.

Marie’s ascention : 15.08.

German day of unity : 03.10.

Thanksgiving in Germany : First Sunday in October

End of daylight savings time in Germany : Last Sunday in October

Reformationday : 31.10.

All Saints Day : 01.11.

Memorial Day : 4. Advent -35

Penitential and Prayer Day : 4. Advent -32

Death Sunday : 4. Advent -28

1. Advent : 4. Advent -21

2. Advent : 4. Advent -14

3. Advent : 4. Advent -7

4. Advent : Sunday <= Christmas Eve

Christmas Eve : 24.12.

Christmas Day : 25.12.

Second Christmas Day : 26.12.

New Years Eve : 31.12.

1.17 Acknowledgments

Acknowledgments are going to the following people:

Rita Reichl - For correcting my English, for the

three magic books, for helping in general

and especially for being my inspiration.

Daniel Amor - For his hint about the Oberon-2 SHORT

command

Jim Rickman - For reporting a bug

Christian Schaefer - For spending time on this lib with his

Borland C++ 4.5 compiler

Heinz Zemanek - For his great book

Jacco van Weert &

Frans Slothouber - For the 'Robodoc' utility

Martin Huttenloher - For MagicWB

Udo Schuermann - For WrapGuide

Stefan Kost - For ag2txt

Jürgen Kohrmeyer - For the rexxtricks.library

James Cooper,

Steve Krueger,

Doug Walker - For supporting SAS/C® after SAS suspended support.

Heinz Wrobel - For reopening my eyes

Mathew Wilson - For his text about the calendar

Sandor Pogacsas - For the translation into Hungarian

Pantelis Kopelias - For the translation into Greek

Holger Duerer - For the translation into Esperanto

Berend Ozceri - For the translation into Turkish

Christian Hujer - For the translation into Latin

Eugene Stepanoff - For the translation into Russian

Anders Bakkevold - For additional translations into Norwegian

Paolo Menichetti - For additional translations into Italian

Ole Friis - For additional translations into Danish

Nuno Namora - For additional translations into Portuguese

Pedro Luis Mieza - For additional translations into Spanish

Francis Labrie - For additional translations into French

Eric Krieger - For additional translations into Dutch

Marcus Alanen - For additional translations into Finnish

Marcin Orlowski - For additional translations into Polish

Thomas Andersson - For additional translations into Swedish

Patrick Delaere - For fixing the nederland translation &
for bug reports

Vit Sindlar - For the translation into Czech

Pedro Kuis Mieza - For the translation into Catalan

Ljubomir Jankovic - For the translation into Serbian

Erwan Fouret - For his help with the BB2 interface

Henning Thielemann - For his help with the Cluster interface

1.18 Please rate

Please rate

Please rate DateLib and Lib-Install. To do so, send an email to aminet-server@wuarchive.wustl.edu with the following content:

RATE dev/misc/Lib-Install.lha <num>

RATE util/libs/DateLib.lha <num>

where <num> is a mark from 0..10 with 10 being the best.

You can rate several programs in one mail.

Thank you!

1.19 A short History of the Calendar

A short History of the Calendar

The calendar is a very big part of our everyday life yet we often forget the centuries of patient study along with trial and error that went into creating the thing that now controls our lives. This method of recording time, that started with the Babylonians, has gone through many changes to evolve into the modern day calendar we use today.

The first calendars were based on the movements of the moon. Later on this was proved to be inaccurate as man learned that the Earth travelled around it's star. The Sun became the base for time recording as the lunar year did not match the cycle of the Earth around the Sun. Although there are still some calendars in use today that are based on the Moon cycle. These ones are usually well entrenched in tradition and would be difficult to change without affecting the culture; especially if it involves religion. The current Jewish calendar is still based on the Moon's movements which begins with the year of creation, set at 3760 BC. The Islamic calendar is also based on the Earth's meteorite impacted satellite.

The Egyptians were the first to adopt the Sun as a guideline. Theirs is the long descendant of the Gregorian calendar we use today. The month became an arbitrary unit that was previously related to the cycles of the moon. The Egyptians used a 365 day year. It is thought that they first adopted this calendar in the year 4236 BC.

Later on people learnt that the Earth revolved at a period of 365 and about a quarter days around the Sun. Pharaohs and other leaders made many attempts to alter their calendars to reflect this but failed either because of tradition or miscalculations from the priests that were assigned to look after the motions of the calendar.

Next came the Romans. They had originally used a Moon based system that was very complicated. It's accuracy was entrusted to the `College of Pontiffs' who often misused this privilege to their own gain. By the time Julius Caesar became virtual dictator of Rome the calendar was in a mess. In 47 BC he called upon famous Greek astronomer Sosigenes to try and correct things. After suggestion by Sosigenes, Caesar decided to adopt the Solar year as the Egyptians did. He gave the year a length of 365 and a quarter days. This quarter day was with held for 4 years and then added as a 'leap year.' To honor Julius, the Senate changed the name of the month Quintilis to Julius (July). Julius also had to make corrections due to the errors in the old calendar. The problems did not end there, for after he was assassinated in 44 BC the Pontiffs in charge of the calendar decided to insert the leap every third instead of every fourth year.

When Augustus Caesar came on the scene he restored the correct leap-year in 8 AD. As you may have guessed the Senate also honored this change by renaming the month Sextilis to Augustus (August). This calendar is also referred to as the Julian calendar, for obvious reasons.

In 321 AD the Emperor Constantine created the seven day week discarding the old complicated system of `Calends' the Romans had developed to make reference to days within a month.

As technology became available it was discovered that the real length of the Solar year is 365.242199 days, or 365 days, 5 hours, 48 minutes and 46 seconds. This meant the Julian calendar was too long by about 11 minutes. After a few centuries this soon amounted to several days. Again the calendar began drifting from the seasons.

In 1582 Pope Gregory XIII commissioned the services of the mathematician Christopher Clavius and the astronomer-physician Luigi Lilio Ghiraldi to fix the error. They found the error to amount to 10 days. In October 1582 the calendar was re-adjusted to fix the error. The 4th day was followed by the 15th to loose the 10 days. This created problems for people born on the 5th but they made reference to those dates either using OS (Old Style) or NS (New Style) systems.

Then the leap-year rule was changed to avoid further errors. Now any centurial year (ending in `00') was only a leap year if it was divisible by 400. Therefore 1600 was a leap year but 1700,1800 and 1900 were not. This became the `Gregorian' calendar, the one we use today.

All Roman Catholic countries immediately adopted the Gregorian reform, but others were slow to follow. The English didn't start using it until 1752. The French originally followed the Gregorian way but changed in 1792 and returned to it in 1805. Japan followed in 1873, China 1912, Greece 1924 and Turkey 1927. Russia had a similar experience to France during the Bolshevik revolution but returned to it in 1940.

Since then a few people have been dissatisfied with the calendar and have attempted reforms but a major change has not been affected because the entire world cannot agree on a new system. In 1923, 500 new reforms were heard at the League of Nations. Two new calendars emerged as favourites: the Thirteen Month Calendar and the World Calendar. But these did not get a majority acceptance by the nations due to conflicts with nationalistic dates of importance and the business community said it would complicate things. There were others that came close but they are too many to list.

So it seems we are to keep the Gregorian calendar for a while yet.

You must therefore remember that dates previous to October 15th, 1582 cannot be calculated by just going back in time a certain amount of days from today. Time is not linear in this sense because of all the changes that have been made.

1.20 References

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English books which were consulted in creating this library:

Mathematical Astronomy with a Pocket Calculator

Aubrey Jones Fras

Unknown (first) Edition

David & Charles Newton Abbot, London 1978

ISBN 0-7153-7675-6

Astronomical Algorithms

Jean Meeus

Unknown Edition (I use the German second edition ;-)

Willmann-Bell, Inc., Ruchmond, Virginia (USA) 1991

ISBN 0-943396-35-2

ISO 8601-1988

International Organisation for Standardization, Genf 1988

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Kleine Naturwissenschaftliche Bibliothek, Band 23

Ewige Kalender

A.W. Butkewitsch & M.S. Selikson

5. Auflage

Teubner, Leipzig 1974

ISBN 3-322-00393-0

Tag und Woche, Monat und Jahr: eine Kulturgeschichte des

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Kalender und Chronologie: Bekanntes & Unbekanntes aus der

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Heinz Zemanek

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Oldenbourg, München 1987

ISBN 3-486-20447-5

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Johann Ambrosius Barth, Berlin 1994

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Astronomie mit dem Personal Computer

Oliver Montenbruck & Thomas Pfleger

2. Auflage

Springer, Berlin 1994

ISBN 3-540-57701-7

Handbuch der mathematischen und technischen Chronologie

Das Zeitrechnungswesen der Völker

Band I

F. K. Ginzel

1. Auflage

J. C. Hinrichs'sche Buchhandlung, Leipzig 1906

Handbuch der mathematischen und technischen Chronologie

Das Zeitrechnungswesen der Völker

Band II

F. K. Ginzel

1. Auflage

J. C. Hinrichs'sche Buchhandlung, Leipzig 1911

Handbuch der mathematischen und technischen Chronologie

Das Zeitrechnungswesen der Völker

Band III

F. K. Ginzel

1. Auflage

J. C. Hinrichs'sche Buchhandlung, Leipzig 1914

1.21 Software

Software

The following software products use the DateLib:

Date : By Dipl.-Inform. Kai Hofmann <hofmann@hofmann-int.de>

Aminet:dev/mui/MCC_Date.lha

http://www.hofmann-int.de/products/amiga/mui/Date.shtml

DateString : By Dipl.-Inform. Kai Hofmann <hofmann@hofmann-int.de>
Aminet:dev/mui/MCC_DateString.lha
http://www.hofmann-int.de/products/amiga/mui/DateString.shtml
DateText : By Dipl.-Inform. Kai Hofmann <hofmann@hofmann-int.de>
Aminet:dev/mui/MCC_DateText.lha
http://www.hofmann-int.de/products/amiga/mui/DateText.shtml
MonthNavigator : By Dipl.-Inform. Kai Hofmann <hofmann@hofmann-int.de>
Aminet:dev/mui/MCC_MonthNavi.lha
http://www.hofmann-int.de/products/MonthNavigator/MonthNavigator.shtml
Time : By Dipl.-Inform. Kai Hofmann <hofmann@hofmann-int.de>
Aminet:dev/mui/MCC_Time.lha
http://www.hofmann-int.de/products/amiga/mui/Time.shtml
TimeString : By Dipl.-Inform. Kai Hofmann <hofmann@hofmann-int.de>
Aminet:dev/mui/MCC_TimeString.lha
http://www.hofmann-int.de/products/amiga/mui/TimeString.shtml
TimeText : By Dipl.-Inform. Kai Hofmann <hofmann@hofmann-int.de>
Aminet:dev/mui/MCC_TimeText.lha
http://www.hofmann-int.de/products/amiga/mui/TimeText.shtml
UpToDate : By Francesco Agnoli <Francesco.Agnoli@gmx.net>
Aminet:util/time/UpToDate.lha

1.22 MagicWB

This product is based on or uses parts of
MagicWB - The Workbench Enhancer

If you use and like this product you should very much consider to take a look at MagicWB, which is the authentic source of the style, colors and design elements contained in this package. It features hundreds of original icons, patterns, image-drawers, dock-brushes and some specially designed high-quality fonts to improve the comfort & legibility of your daily Workbench session.
What is MagicWB? MagicWB is a full replacement for the Graphical User Interface of the Workbench and has become the standard visual interface on the Amiga. Over the last years MagicWB has received various merits and an overwhelming response from Amiga magazines and users worldwide proclaiming it "a must for all Amiga users". Even commercial applications are supporting the multi-colored look & style of MagicWB.

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DM 30.- or US$ 20.- (cash, no checks!)

to

Martin Huttenloher

Am Hochstraess 4

D-89081 Ulm

Germany

You may also choose to visit the official MagicWB homepage on the world wide web. There you can find the latest news & support and even register your MagicWB online (which is much more comfortable and faster). You can even benefit from various special offers & discounts for MagicWB if you order through our website! Come and visit MagicWB at:

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http://www.sasg.com/

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1.23 WrapGuide

1.24 Index