

# **AMIGLOBE**

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**COLLABORATORS**

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# Contents

<b>1</b>	<b>AMIGLOBE</b>	<b>1</b>
1.1	Introduction to Amiglobe . . . . .	1
1.2	IMPORTANT . . . . .	1
1.3	about MUI . . . . .	2
1.4	About the fastsincos library . . . . .	3
1.5	about MUIBuilder . . . . .	5
1.6	about the CIA . . . . .	5
1.7	Requirement . . . . .	5
1.8	The Tutorial . . . . .	5
1.9	The authors... . . . .	7
1.10	Thomas Landspurg . . . . .	7
1.11	Olivier Collard . . . . .	7
1.12	Flat projection . . . . .	8
1.13	Mercator's Projection . . . . .	8
1.14	Spherical Projection . . . . .	8
1.15	Detail levels . . . . .	8
1.16	Selecting a Country . . . . .	8
1.17	Info on a Country . . . . .	9
1.18	The informations on a Country . . . . .	10
1.19	The Project Menu . . . . .	11
1.20	The Selection Menu . . . . .	12
1.21	The Preference Menu . . . . .	12
1.22	The Display Parameters . . . . .	12
1.23	The Localization Window . . . . .	13
1.24	The Elements . . . . .	14
1.25	The Datatypes . . . . .	14
1.26	The path . . . . .	14
1.27	The Source and the Destination Point . . . . .	15
1.28	The Functions Menu . . . . .	15
1.29	The utilities menu . . . . .	16
1.30	The data... . . . .	16
1.31	The compound data . . . . .	18
1.32	The Command Panel . . . . .	18

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## Chapter 1

# AMIGLOBE

### 1.1 Introduction to Amiglobe

Amiglobe is a geographical atlas for Amiga.  
It requires 2 megabytes of free memory, a hard drive and  
MUI  
. A FPU is welcome!

Amiglobe allows you to browse the map of the world in different projections: flat, Mercator's, spherical or perspective. You can zoom everywhere on the map, Amiglobe shifts the detail level according to the zoom level. You can navigate on the map, select a country and obtain information about it, and print the map or country information.

You can toggle the display of rivers, lakes, country names, paths and elements (cities, mountains, monuments).

You may associate a picture to any element: it will be displayable when obtaining information on this element.

Amiglobe has been developed by two Amiga programmers, Thomas Landspurg and Olivier Collard (see:  
the authors  
) in the years  
1994 and 1995.

Amiglobe is giftware. If you like this piece of software, you can send 70 Francs or US\$15 to Thomas Landspurg or to Olivier Collard.

Now we propose you to read the  
IMPORTANT  
paragraph, then to follow the  
tutorial  
...

### 1.2 IMPORTANT

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Amiglobe is Giftware. It is Copyrighted ©1994 Thomas ↔  
Landspurg and  
Olivier Collard and is freely distribuable if you respect the following rules:  
\* the "Amiglobelof2" and "Amiglobe2of2" archives must not be modified.

\* It is strictly forbidden to make profit in selling Amiglobe copies. The only fees you may ask for pay for are duplicate disk fees. These fees should not exceed 20 (twenty) French Francs or US\$ 4 (four) per disk.

\* Amiglobe needed the help of the following programs:

Magic User Interface  
by Stefan Stuntz.  
MUI must have been installed on your Amiga before you can use Amiglobe.  
Unregistered version of MUI fits well.

MUIBuilder  
by Eric Totel.

Fastsincos.library  
by Ricardo Temporal.

The World Map and most of the economic data come from the

Central Intelligence Agency  
ruled by James Woosley.

## 1.3 about MUI

This application uses

MUI - MagicUserInterface

(c) Copyright 1993/94 by Stefan Stuntz

MUI is a system to generate and maintain graphical user interfaces. With the aid of a preferences program, the user of an application has the ability to customize the outfit according to his personal taste.

MUI is distributed as shareware. To obtain a complete package containing lots of examples and more information about registration please look for a file called "muiXXusr.lha" (XX means the latest version number) on your local bulletin boards or on public domain disks.

If you want to register directly, feel free to send

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DM 30.- or US\$ 20.-

to

Stefan Stuntz  
Eduard-Spranger-Straße 7  
80935 München  
GERMANY

## 1.4 About the fastsincos library

This is Ricardo Temporal speaking

fastsincos.library v2.0  
-----

Rio, 1 Sep 1994.

Copyright (c) Ricardo Temporal.

E-mail: temporal@novel.nce.ufrj.br

WHAT IS IT  
-----

This is a run time shared library (really shareDware) that has only two math functions, they are: sin & cos.

--> Why?

It's very usefull for computer graphics related programs and demos, if you want to rotate a vector and so on.

--> Advantages?

Well, I have tested on a A1200 HD standard with only 2Mb of chip memory and no math co-processor, it was about 11 times faster than standard functions.

I'm working on precision, v2.0 has an error < 0.002 , but if an optimization causes a time lost, I will not do it because this error is acceptable for most applications.

The functions works with double, it wouldn't exist any time diference if it was float. Because It works with an almost hash algorithm.

This kind of thing should be avoied for obvious reasons:

```
k = (float)fastsin((double)j);
```

--> Advantages from v1.0?

Well, there's not so much to say, v1.0 was 4.34 times faster, but v2.0 is 11 times faster than standard functions.

---

--> Disk and Memory?

This library takes about 8Kb of disk and 20Kb of memory, and I really think it's ridiculous, even for who are short of memory, a dir command takes about 10Kb.

If the number of calls to OpenLibrary and CloseLibrary are the same then at any moment the Operational System can automatically Expunge the library from memory if it needs memory, or you can force it with "flushlibs" or "avail flush" commands.

#### DISTRIBUTION

-----

The programs and files in this distribution can be freely distributed, by any mean that preserves it's Copyrights. The code and files cannot be changed or removed.

If you're going to write a program that is freely distributable or it's a commercial program and you want to use "fastsincos.library", you must declare in your documentation that your program uses "fastsincos.library" and it's Copyright (c) by Ricardo Temporal, registration is also required with just US\$15.00 fee, for time and work spent.

#### DISCLAIMER

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NO WARRANTIES ARE MADE. ALL USE IS AT YOUR OWN RISK.  
NO LIABILITY OR RESPONSIBILITY IS ASSUMED.

The author has no responsibility for any damage it can cause.

#### BUGS & SUGGESTIONS

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You can contact me by the E-mail address, some times I'm on Internet Amiga channel.

E-mail: temporal@novel.nce.ufrj.br

I study mathematics at Rio de Janeiro Federal University (ufrj) - Brasil.

Now I'm working on a project with C++ classes for linear transformations, they are not only arrays but linear operators with n parameters.

Thank's for the support to shareware authors.

this is Olivier Collard speaking

#### CRITICS

-----

Well, fastsincos library is very fast. Ricardo made a good job here, but the precision is low. In Amiglobe, this library can only be used when watching the entire map in spherical projection.

---

## 1.5 about MUIBuilder

MUIBuilder is a very good MUI application builder. MUI+MUIBuilder is the best interface builder I have ever seen on any platform (Amiga, PC/Windows, X-Window) ... and it is on Amiga! The version 2.0, which includes the notifications, has been used.

It generates the application's code in different languages, including the C language used for Amiglobe.

## 1.6 about the CIA

The "Central Intelligence Agency" is an American Government Intelligence Agency. It produced the map of the world and the economic data in a file called the World Fact Book.

If you have appreciated the CIA's work, you can send US\$10 or its equivalent in any other currency (except Cuban Pesos) to:

James Woosley  
Central Intelligence Agency  
Washington, District of Columbia  
USA

e-mail:woosley@cia.gov

## 1.7 Requirement

Amiglobe works on Amiga systems having:

- \* at least 2 megabyte of memory.
- \* a hard drive
- \* Workbench 3.0 or better
- \*

Magic User Interface  
, even the unregistered version

Amiglobe does NOT require:

- \* the AGA chipset

## 1.8 The Tutorial

Switch on your Amiga. Once the Workbench is loaded, take the mouse and move the pointer on the Amiglobe icon, then quickly press 2 times the left mouse button; Amiglobe is then started...

... OK, let's talk about less silly things...

---



The World Map should appear, along with the Command Panel. This Command Panel contains the main commands to navigate on the map and to obtain information.

**Zoom:** Click on Zoom and draw a rectangle around a country (France, for example). The map will now show the part you have drawn.

**Elements:** In the Preference menu, choose Display Parameter and click on show: element. Then click on Redraw: cities, monuments and mountains should be drawn on the map.

**Moving:** Use the arrow keys (like on a silly PeeCee) to move on the map.

**Information:** Click on a country; it will be filled in green. Then click on Info: a window is opened with the map of the country and data about it. You can let this window open, but reduce its size for the next operations.

**Localization:** In the Functions Menu, select Localization Window. A small map of the world will appear. Click anywhere on Africa: you will be moved to Africa with the same zoom level.

**Display with background:** In the Functions Menu, choose Display with Background. Make the file requester appear, and choose any iff picture (or GIF, JPEG, etc... if you have the corresponding datatypes installed). A sample background should have been supplied in the Backgrounds/ directory. Click then on Redraw to watch the result.

**Source Point:** in the Functions Menu, select Source Point/Set and click anywhere on the map. The Source Point will be set there. In Preference/Display Parameters, check distance: on the upper left corner of the screen the current distance between Source point and mouse pointer will be displayed.

**Select a Element:** in the Selection Menu, choose Element; the element list will appear. Choose a city or a mountain that you have never heard before and double-click on its name; some information about it will appear. Click on Target Point: the target point will be set on this element and the distance will no longer change; the distance shown is the distance between Source Point and Target point.

**Scale, Area:** In Preference/Display Parameters, check area and scale. The scale and the area of the current view will be displayed.

**Data comparison:** Select Functions/Data comparison. The data comparison window will appear. Select a data in the data list (for example GNP per capita), and click OK to see a list ranking all the countries with their GNP per capita. Click then on color plages and then on ok: the countries will be filled in a color gradation.

**Add compound data:** Click on add on the data comparison window. Among the Amiglobe data are Female life expectancy and Male life expectancy. You can create a new data, wrtie Life expectancy as the name of the data, select male life exp. on the left list, female life exp. on the right list, and + as the operation. Write 0.5 as the mult. factor, and then click on use. The new data will appear on the data comparison window.

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External data: in Function, select Info about element and click on the map near Amsterdam. You will have information about Amsterdam, and if you click on watch external associated data, a picture of Amsterdam will appear. Click on the upper left corner of the screen to get rid of it.

New Screen: Is the screen too small ? In the Preference menu, choose Screen: a screen requester will appear. If you own an AGA computer, select Super Hires Interlace. The map will be drawn in this new screen.

New Font: It is not possible not change the fonts from Amiglobe. Amiglobe takes the same fonts as MUI. Select a new font from the MUI Preference to change Amiglobe's fonts.

New projection: Use the cycle menu in the Command panel to select a new projection (spherical, for example). Note: the map rendering will be faster if you have the fastsincos.library installed

Quit: select quit in the Project Menu or click on the close gadget of the Command Panel.

## 1.9 The authors...

The authors of Amiglobe,  
Thomas~Landsburg  
and  
Olivier~Collard  
have met in the Saturne Party II in Chelles, France, the 24-26 of ↔  
April, 1994.

Thomas had started the project, and Olivier has continued it.

## 1.10 Thomas Landsburg

Thomas Landsburg  
91, boulevard de la Reine  
78000 VERSAILLES  
e-mail:Thomas.Landsburg@ramses.telesys-innov.fr

computer:Amiga 3000

## 1.11 Olivier Collard

Olivier Collard  
14, rue Marcel Pagnol  
42270 SAINT-PRIEST-EN-JAREZ  
tel: 77-93-59-66

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computer: Amiga 1200 with Blizzard 1220

## 1.12 Flat projection

Coordinates of each point (longitude, latitude) are converted by homothety, in screen coordinates.

## 1.13 Mercator's Projection

Mercator is the author of several projection. We call here the Mercator's projection ONE of his projection.

The latitudes are converted into screen coordinates by calculating the sinus of the angle latitude 0 - Earth's centre - considered point's latitude.

The longitudes are converted as in the flat projection.

## 1.14 Spherical Projection

The spherical projection display the Earth's view from a point in space located at the infinite. This view uses a lot of sin and cos calculations. The Fastsinco library is used on machines without a FPU.

## 1.15 Detail levels

The Amiglobe's World Map is a vectorialised map. It has 5 detail levels. Amiglobe itself rules the detail level when in automatic mode (default): key 0 of the numeric keyboard or auto mode in the Preferences/detail level menu.

You can explicitly choose the detail level in pressing keys 1 (best precision) to 5 (worst precision) in pressing keys 1 to 5 on the numeric keyboard or with the menus.

Level 3,4 and 5 points are stored in living memory while level 1 and 2 points are stored on the disk: the display is therefore slowed when using these levels.

You are not advised to use level 1 when displaying the whole map with Mercator's projection using a DblPal Hires monitor.

## 1.16 Selecting a Country

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You can select a country in two different ways:

- \* the most simple: click on the map on the country which you want to select.
- \* with the menus: In the Selection/Country menu, choose the country by its name in the list.

A selected country is filled in green, and its name appears in white on the Command Panel. One country can be selected at a time. This country becomes the current country. You can deselect a country by re-clicking on it or by selecting another one. To obtain information on a selected country, click on

Info  
on the command panel.

## 1.17 Info on a Country

Click on Info on the Command Panel. A country should have been selected first. ←

A window is then opened showing the map of the country, plus the following information:

Official Name

Abbreviation  
in a nice oval

Population  
in inhabitants

Area  
in km<sup>2</sup>

Density  
in inhab/km<sup>2</sup>

Capital City

GNP  
in millions US\$

GNP/hab  
in US\$

Currency  
with its value in the currency you want!

On the lower right corner the flag is drawn (not for every country).

It is possible to resize the info window. The map will be redrawn accordingly.

Click anywhere on the info window to make an Economic Overview of the country appear. Click on OK to go back to the previous info panel.

## 1.18 The informations on a Country

### Official Name:

It is the official local name.

### Abbreviation:

The abbreviation, as it is used on number-plates. Some abbreviations are unknown. When a country is dependant of a mother country, the abbreviation of the mother country will appear in brackets [].

### Population:

Figures are estimates from the US Bureau of the Census based on statistics from population censuses, vital registration systems, or sample surveys pertaining to the recent past, and on assumptions about future trends.

### Area:

Total area is the sum of all land and water areas delimited by international boundaries and/or coastlines. Land area is the aggregate of all surfaces delimited by international boundaries and/or coastlines, excluding inland water bodies (lakes, reservoirs, rivers).

### Density: (\*)

It is the result of the quotient of the population by the area . This is an absolute density which should be used with precaution in the case of the country has a large uninhabited area like Russia, USA or Algeria... In this case, it is not significative.

When the country area is unknown, this information is not displayed.

### Capital City:

We give the name of the capital city and the size of the whole city (including the suburbs). Sources are official statistics of each country. For French Overseas Territories, the Préfecture is used and not the capital city.

Some countries may have two capitals (South Africa, Bolivia).

For some countries, the capital is unknown.

### Gross National Product:

GNP= Gross National Product.

It is the total of the values added made by the citizens of a country, who live in their country or not. For example, the values added made by a bank office in New York of a French bank is taken into account in the French GNP and not in the American GNP. This figure is supposed to represent the country's wealth.

One should read these data carefully: the autoconsumption is not included in this figure, making poor countries poorer than they are actually.

For some country the GNP is not available, so we show the GDP= Gross Domestic Product. It is the total of the values added in the country borders. In the last example, the bank office of a French bank will be taken into account in the American GDP and not in the French GDP.

### GNP/inhabitants: \*

It is the quotient of the GNP per the size of the population. It

---

reflects the wealth of the inhabitants.

Currency:

There is the name of the local currency, with its value compared to the currency of your home country.

\* : Not always available

## 1.19 The Project Menu

About gives information about Amiglobe and its authors  
Load path allow you to load a path from a file.

Default Pref will restore the default preference. Preference include the current zoom level, the chosen home country, etc...

Save Pref will save your preference on the disk. Preference are loaded automatically when Amiglobe is started.

Sorting output will output the sorting made by data comparison to the printer or to a file

Map output will output the map to the printer or to a file

Info window output will output the info window to the printer or to a file

Help will open the help window, which gives you help (surprise) and tips. This window is opened automatically as long as you have not saved your preference (We assume it is the first time you use Amiglobe).

Quit quit the program (Surprise)

---

## 1.20 The Selection Menu

Country allow you to select a country by its name. The country becomes the

current country

.

Continent allow you to select the continents which should be displayed

The continent list is a multi-selection list. Should you want to select several continent at a time, hold down the shift key and click on the continent you want to select, or refer to the MUI user's documentation.

Element allow you to select a

element

by its name.

You may set the

source

or the

target

point

on it.

## 1.21 The Preference Menu

Display parameters allow you to modify the parameters

.

Screen allow you to select an another screen for the application.

A requester will ask you what kind of available screen you want. You may choose the depth (controls the number of colors), but you may not modify the screen size, which is standard overscan. If some windows were open before changing the screen (localization window, info window), the will not be reopen after. This does not apply to the command panel.

Home country: Select this to make the current country your Amiglobe's home country. Today, it determinates which currency should be used to know the currency value in the info window.

Detail level allow you to manually select the map detail level

Choose level 1 for maximum precision.

Choose level 5 for minimum precision.

You can let Amiglobe choose the best detail level for you: select then auto

## 1.22 The Display Parameters

---

### Display Parameters

~~~~~

Show:

Lakes: show lakes when drawing the map

Rivers: show rivers when drawing the map

Squaring: show squaring of latitudes and longitudes

Country Names: show the name of each country IF the country appears big enough

Coordinates: show coordinates of the mouse pointer in the Command Panel

Fill Countries: fill all countries when drawing the map

Elements: display the

elements

note: according to the zoom level and the importance of each element, ←

they will not all be displayed. The importance of an element is calculated according to its population for a city or a capital, its elevation for a mountain, etc... A element is either not displayed, either drawn as a point, either drawn with its representation and its name.

Regions: display the region name on the map (ex:Mediterranean sea, etc...)

Path: show the

paths

when drawing the map

Distance: when selected, the distance will appear in the top left corner of

the screen. The distance depends on the existence of two points: the source point ←

and the target point (see:

points

).

If the source point is not set, there is no distance.

If the source point is set and not the target point, the distance shown will be ←

the real-time distance between the source point and the mouse pointer.

If both source and target point exist, the distance is the distance between these ←

two points.

Scale: show a scale in the bottom left corner when drawing the map. Warning: a scale may vary on a map, especially when the map area is big. Therefore, the scale is only valid at the center of the map shown.

Area: display the area of the current view.

The 3D parameters

~~~~~

Besides these chekmarks, there are 3 sliders which determines the angle used for the 3D view.

## 1.23 The Localization Window

This window is very useful when you zoom on a small part of the map and want to move to an other place.

As the localization window represents the (known) world, just click on a place on the localization window and you will view this new place with



the same zoom level.

Note: The localization window shows the world in flat projection.

## 1.24 The Elements

For Amiglobe, an element can be: a capital city, which characteristic is its population, a city, which characteristic is its population too, a mountain, which characteristic is its elevation in meters or a monument, which characteristic is its interest, from 0 to 100.

Each element can be edited in the `new_lac.cty` file. The format of the file is:

```
code$name$latitude$longitude$characteristic$
```

the code is:

0 for a capital city

1 for a city

2 for a monument

3 for a mountain

latitudes and longitudes are written in hundredth of degree (45\textdegree{}30' ↔ =>4550)

```
example: 1$Saint-Priest-En-Jarez$4548$439$6500$
```

Saint-Priest-En-Jarez is a city (code=1) of 6500 inhabitants by 45,48 degrees north and 4,39 degrees east.

## 1.25 The Datatypes

The Datatypes were integrated for the first time in the version 3.0 of the AmigaDOS.

Datatypes are a very easy and very powerful way for the AmigaDOS to guess several file format. Picture datatypes provided with your Workbench disks contains iff file format. Other datatypes exist in the public domain such as GIF, JPEG, MacPaint, PCX, BMP, etc...

We strongly urge you to install the GIF and JPEG datatypes, as they are widely used in the picture domain.

## 1.26 The path

The paths are drawn on the map. They allow you to draw yourself paths to show a trip, a zone, etc...

They consist in several points defined by their longitude and latitude, and precision (1: best precision to 5).

The file format is:

```
name of the path
```

```
latitude$longitude$precision$
```

```
latitude$longitude$precision$
```

---

...

## 1.27 The Source and the Destination Point

Amiglobe knows two particular points: the source point and the destination point.

You can set (exactly) a point on an element or anywhere on the map.

The points are used to calculate distances and to show the shortest way

When both source and target points are set, Amiglobe draw the shortest way between the two. It is generally NOT a straight line in the flat and Mercator's projection. In fact, only the spherical projection renders well this way.

## 1.28 The Functions Menu

Localization Window  
opens a new window

Info about element: click near any element on the map and some data about it will be shown. If a view of this element is available, the button view associated data will be enable. Click there to watch the view. Once in the view, click on the upper left corner to exit. You can supply your own pictures by naming them the same name as the element. If their format is one of your installed datatypes, the picture will be usable.

Source Point: if you choose Set the next time you will click on the map, the source point will be set there. Remove will simply remove this point. See

Points  
.

Target Point: if you choose Set the next time you will click on the map, the target point will be set there. Remove will simply remove this point. See

Points  
.

Data comparison will open the data comparison window. Many data are available. See

data  
.

Redisplay comparison will do the same as if you click on OK in the Data Comparison window.

Display with Background will open a file requester. Choose a picture for which you have the datatypes and this picture will be used as the background for the map. Note: a 256 colors picture will not fit on a 16

colors screen! A sample picture is provided in the Backgrounds/ directory.

## 1.29 The utilities menu

Redraw to redraw the map

Select by flag will show you the flags of many countries in a MUI virtual group. Click on a flag to select a country so that it becomes the

current country

.

Organization List will give you information about the different world organizations.

Exchange rate conversion. Use this to know how many Ngultrums are needed to get one Lek.

## 1.30 The data...

You can compare data by list and by color plages.

by list: the chosen data will be sorted in a list, from the greater to the lesser.

by bars: the data will be represented by bars on the map. It works better with the 3D projection.

by color plages: each country will be filled in a color which depends on its data. See the colorfield in the bottom left corner of the screen.

The two lists on the left indicates which countries should be taken into account and which should not. The list on the left is the unselected countries list and the list on the right is the selected countries list. Use the arrow buttons to move a or a group of countries from a list to the other.

Buttons on the bottom:

Select all to select every countries (left list empty).

Unselect all to unselect every countries (right list empty)

Small countries to unselect the small countries

Continent to select only the countries that are in the selected continents (see:

Selection/continent

).

Add to add new

compound data

Delete to delete a data from the data list

Ok to display the comparison

Here is an explanation on how are calculated some data. In general, information available as of 1 January 1993 was used in the preparation of

this database. Population figures are estimates for 1 July 1993, with population growth rates estimated for calendar year 1993.

**Area:** Total area is the sum of all land and water areas delimited by international boundaries and/or coastlines. Land area is the aggregate of all surfaces delimited by international boundaries and/or coastlines, excluding inland water bodies (lakes, reservoirs, rivers).

**Birth rate:** The average annual number of births during a year per 1,000 population at midyear; also known as crude birth rate.

**Death rate:** The average annual number of deaths during a year per 1,000 population at midyear; also known as crude death rate.

**Gross domestic product (GDP):** The value of all goods and services produced domestically in a given year.

**Gross national product (GNP):** The value of all goods and services produced domestically in a given year, plus income earned abroad, minus income earned by foreigners from domestic production.

**Note about GDP/GNP:** The CIA has a very special way to calculate these figure. Sources are the World Bank, which is much more reliable and less US-oriented.

**Growth rate (population):** The annual percent change in the population, resulting from a surplus (or deficit) of births over deaths and the balance of migrants entering and leaving a country. The rate may be positive or negative.

**Infant mortality rate:** The number of deaths to infants under one year old in a given year per 1,000 live births occurring in the same year.

**Life expectancy at birth:** The average number of years to be lived by a group of people all born in the same year, if mortality at each age remains constant in the future.

**Literacy:** There are no universal definitions and standards of literacy. Unless otherwise noted, all rates are based on the most common definition--the ability to read and write at a specified age. Detailing the standards that individual countries use to assess the ability to read and write is beyond the scope of this publication.

**National product:** The total output of goods and services in a country in a given year.

**Population:** Figures are estimates from the Bureau of the Census based on statistics from population censuses, vital registration systems, or sample surveys pertaining to the recent past, and on assumptions about future trends.

**Total fertility rate:** The average number of children that would be born per woman if all women lived to the end of their childbearing years and bore children according to a given fertility rate at each age.

---

## 1.31 The compound data

This allows you to add new data in the data list. The new data is made of two "old" data, with a operation and a mult factor. If you want to add the electricity output per capita in kWh, select electricity on the left list, population on the right list, / as the operation, and a mult factor of 1000000.

Use will makes the new data appear so you can use it for your comparisons. Save will save this new data on the disk.

## 1.32 The Command Panel

The Command Panel is your main interface with Amiglobe. ↔  
Let's see what

it can do:

Zoom In: click there to zoom, then draw a rectangle on the map to select your zoom region.

Zoom Out to zoom out.

Element click on an element to get information about it

Reset to see the entire world

Info will open the

info window

Cycle: this cycle object is used to change to projection

Lon: shows the real-time longitude of the mouse pointer.

E means east (of the Greenwich Meridien)

W means west ( " " " " " " )

Lat: shows the real-time latitude of the mouse pointer.

S means south (of the Equator)

N means north ( " " " " )

Sel: shows the name of the current country, if any.

The other string gadget shows the name of the country that the mouse pointer is on.

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