

# Gambas Almost Means BASIC



...really?

# Gambas 2.0 RC 1



- Two years of development since the release of Gambas 1.0.
- Seven years since the first beginning.
- 400,000+ lines of code.
- About 350 classes.

# Quick introduction

- Gambas is a full-featured object language and development environment built on a BASIC interpreter.
- It is released under the GNU General Public Licence.
- Its architecture is largely inspired by Java.

# The Gambas BASIC

- About 250 keywords and native functions.
- Full error management.
- Full process control.
- Full support for watching file descriptors.
- Event loop support with timers.
- Native UTF-8 string support.
- Full internationalization and translation support.
- External function calls in shared libraries.

# The Gambas Object Language

Gambas is a true object-oriented language:

- Objects and classes.
- Properties, methods, constants and events.
- Public and private symbols.
- Polymorphism, i.e. virtual method dispatching.
- Single inheritance.
- Constructors and destructors.
- Array accessors, enumerators, sortable objects.

# The Gambas Object Language

Inheritance is entirely dynamic, and allows you to

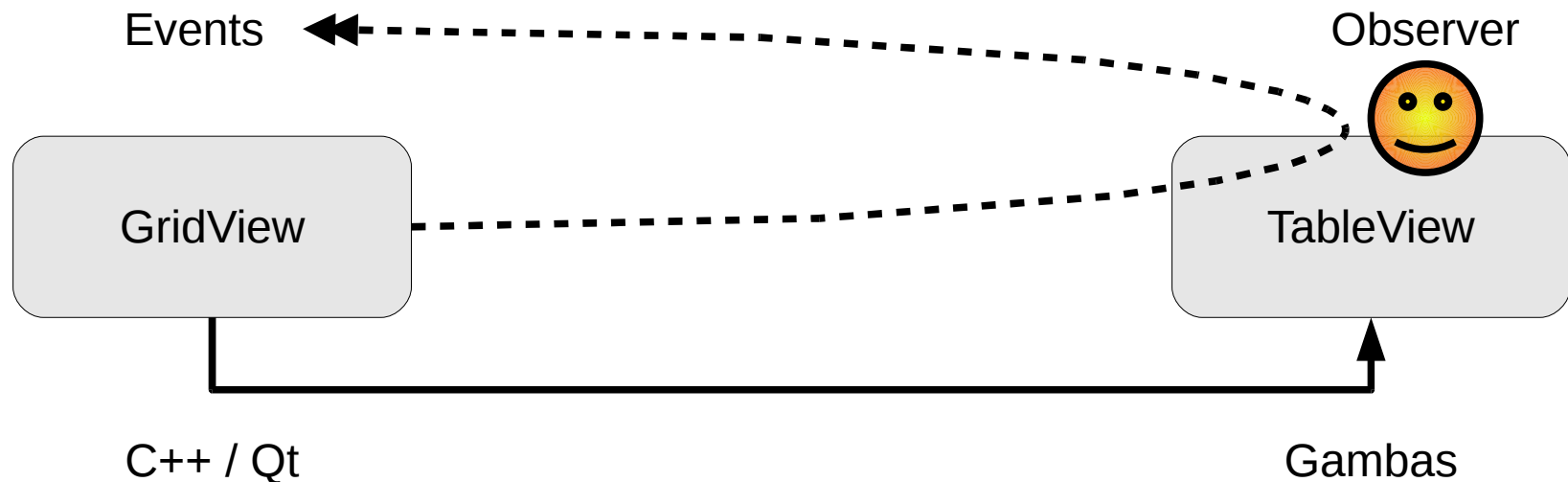
- Create a more specialized version of an already existing class.
- Reimplement a class and extend it.
- Override some methods or properties of a class.



"Inheritance" means  
*how* and *when*  
symbols are linked.

# The Gambas Object Language

- Any classes can be inherited, reimplemented or overridden, even the native ones written in C/C++.
- Finally, a native class named Observer allows you to intercept any event raised by any object.



# The Components

- Access to many database systems: MySQL, PostgreSQL, SQLite, Firebird, ODBC.
- Graphical user interface programming, based on the QT toolkit, or the GTK+ toolkit.
- Network programming, with advanced protocol management: HTTP, FTP, SMTP, DNS.
- SDL and OpenGL programming.
- XML programming.
- CGI programming with session management.



# The Development Environment

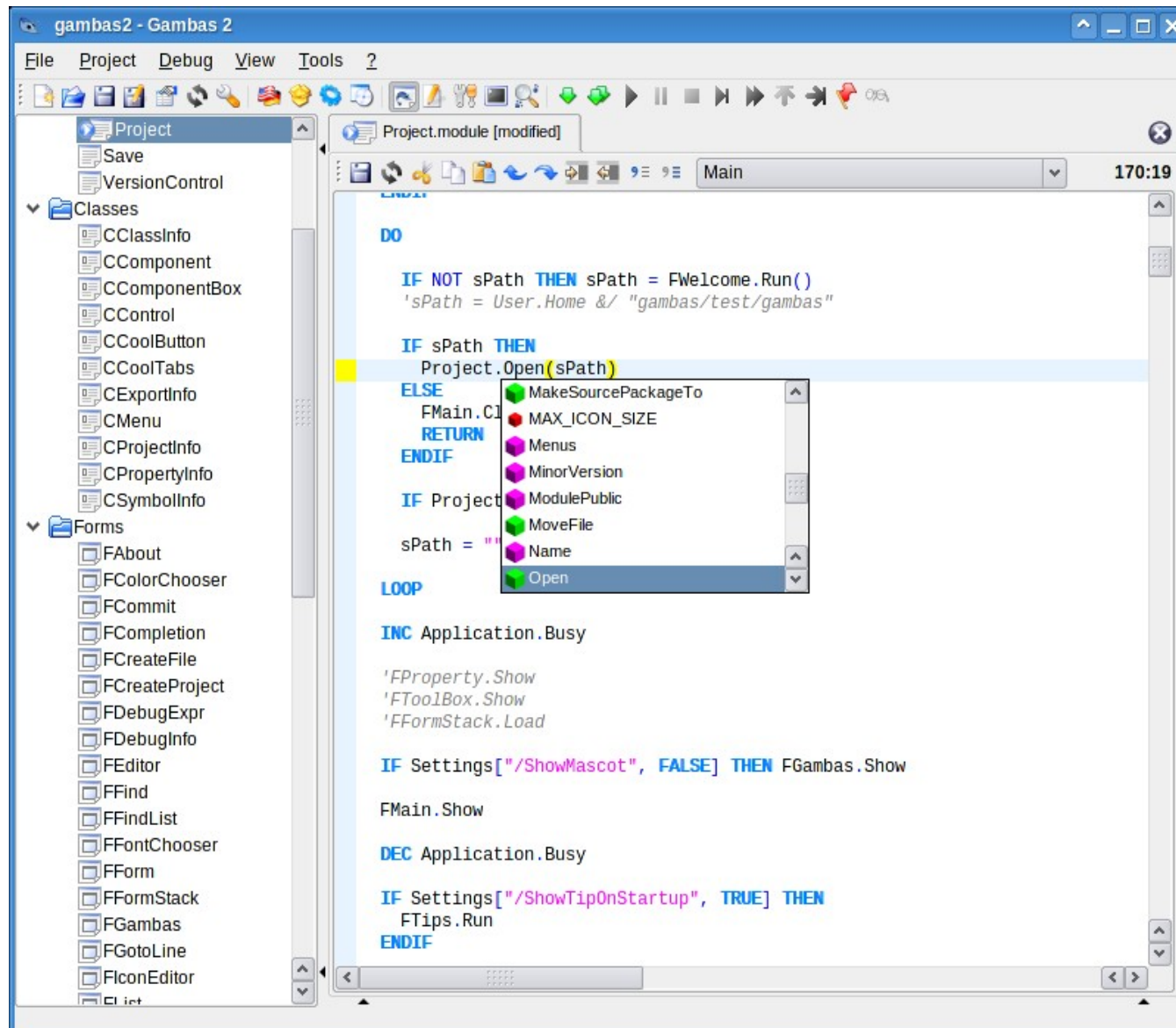
The screenshot displays the Gamas 2 development environment. The main window shows a project named 'gambas2 - Gambas 2' with a file explorer on the left listing various components like 'CComponent', 'FAbout', 'FColorChooser', etc. The central area shows a 'Make installation package' dialog with '1. Package information' and 'Maintainer information' sections. A 'Preferences' dialog is open, showing the 'Editor' tab with options for 'Show tooltips', 'Show project information balloons', 'Show message bar', 'Font size', 'Toolbox size', 'Sort properties', 'Recent projects', and 'Quiet external commands'. A 'Find list' dialog is also open, displaying a table of search results.

Class	Line	Column	Text
	141	9	DEBUG Data
	302	3	Debug.Stop
	490	3	Debug.Write(sCmd)
	710	3	Debug.Start
Project	1767	3	DEBUG "Unable to get version from: "; \
	1828	17	IF ERROR THEN DEBUG Error.Text
CComponent	68	14	\$(Name["gb.debug"]) = ("Application de
	215	3	DEBUG "Unable to read component file
	458	7	DEBUG "Control "; sClass; " not found
CPropertyInfo	359	3	DEBUG sComponent; "; "; sClass; "; sf
FOption	36	9	DEBUG "Unmanaged type: "; Object
FPropertyProject	740	13	DEBUG "Control="; sKey; "?"
	748	13	DEBUG "Virtual="; sKey; "?"
	756	13	DEBUG "Container="; sKey; "?"
	764	13	DEBUG "MultiContainer="; sKey; "

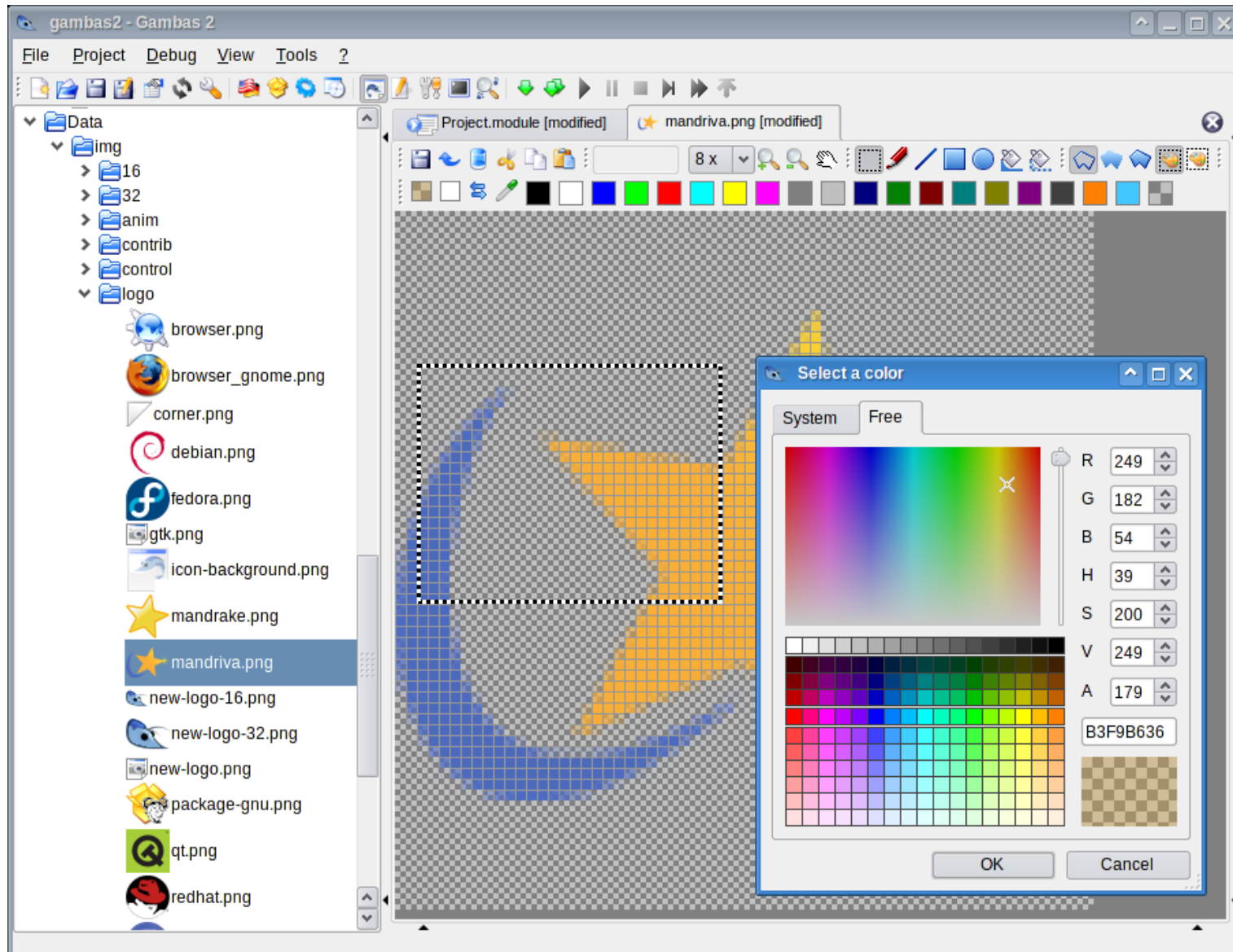
The console window at the bottom shows the following text:

```
Welcome to the Gamas console.  
To evaluate any expression, type '?' followed by  
the expression, then hit return.  
  
?atn(pi/3)  
0.80844879263
```

# The Development Environment



# The Development Environment



# The Development Environment

The screenshot displays the Gambas 2 IDE interface. The main window shows the source code for a project named 'ME'. The code defines a 'Main' subroutine that sets up application properties and example titles. A tooltip is visible over a file path in the code: `"/home/benoit/gambas/2.0/link/share/gambas2/examples"`.

On the right side, there are several panels:

- ME (Project)**: A table of project-wide settings.
- Application (Application)**: A table of application-specific settings.
- ME.ExampleTitle (Collection)**: A table mapping keys to values for example titles.

At the bottom, there are panels for monitoring the execution:

- Stack backtrace**: Shows the current stack frame at `Project.Main.155`.
- Local variables**: A table showing the current values of local variables.

Symbol	Value
AboutToQuit	FALSE
ActiveForm	NULL
Address	""
Arguments	NULL
Authors	""
Browser	""
Categories	NULL
ComponentFromType	(Collection 0x8119040)
ComponentState	0
Config	NULL
ControlPublic	FALSE
CreateComponent	FALSE
CreateShortcut	FALSE
DEFAULT_FONT	"Monospace,10"
DEFAULT_MAX_RECENT	24 / &H18
Description	""
Dir	""
EXAMPLES_DIR	"/home/benoit/gambas/2.0/link"
Environment	NULL
ExampleTitle	(Collection 0x8118f68)
ExecPath	""
FORM_MAGIC	""

Symbol	Value
Application	
ActiveControl	NULL
ActiveWindow	NULL
Args	(ApplicationArgs)
Busy	0
Daemon	FALSE
Dir	"/home/benoit/gambas/2.0/link"
Embedder	0
Env	(ApplicationEnv)
Font	(Font 0x812a910)
Handle	19487 / &H4C1F
Id	19487 / &H4C1F
MainWindow	NULL
Name	"gambas2"
Path	"/home/benoit/gambas/2.0/link"
Return	0
Theme	"kde"
Title	"Gambas 2"
ToolTip	(Application.ToolTip)
Version	"1.9.90"

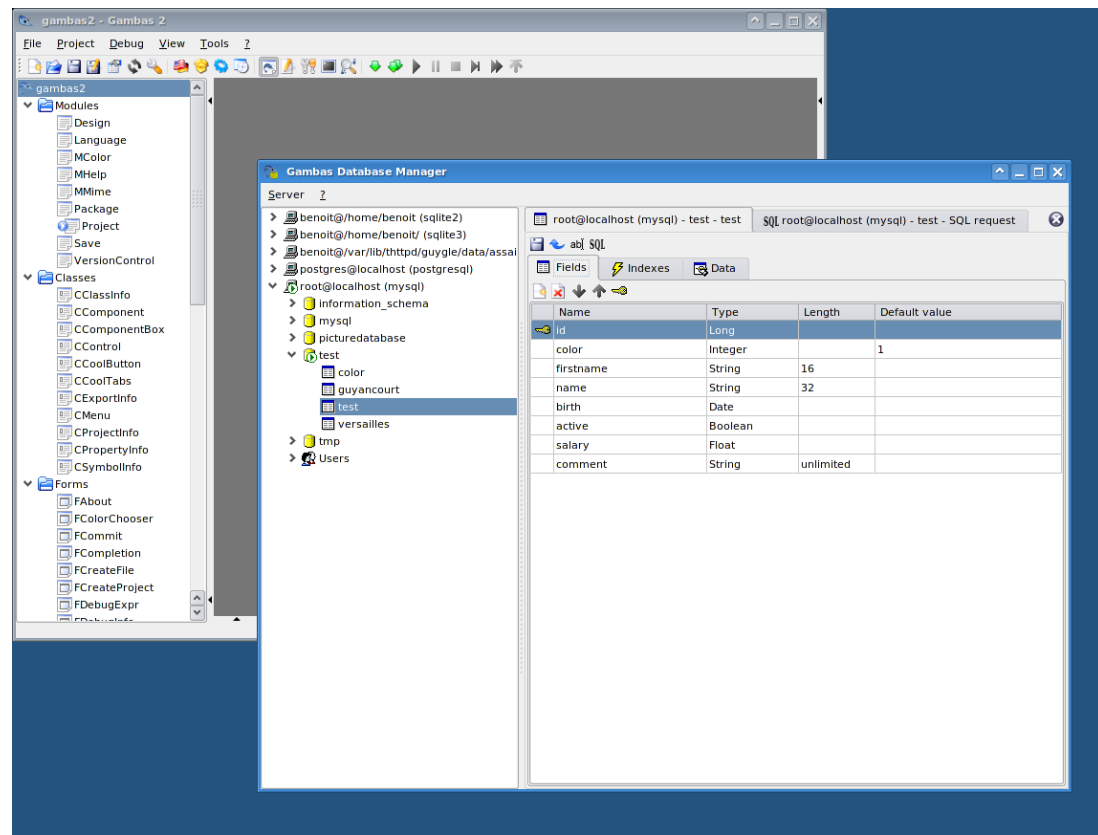
Key	Value
"Automation"	"Automation"
"Basic"	"Basic"
"Database"	"Database"
"Drawing"	"Drawing"
"Games"	"Games"
"Misc"	"Miscellaneous"
"Networking"	"Networking"
"OpenGL"	"OpenGL"
"Printing"	"Printing"
"Sound"	"Sound"
"Video"	"Video"
"Control"	"Controls"

Name	Value
sPath	""
hGambas	NULL
iTest	0

# **The Declaration of Independence**

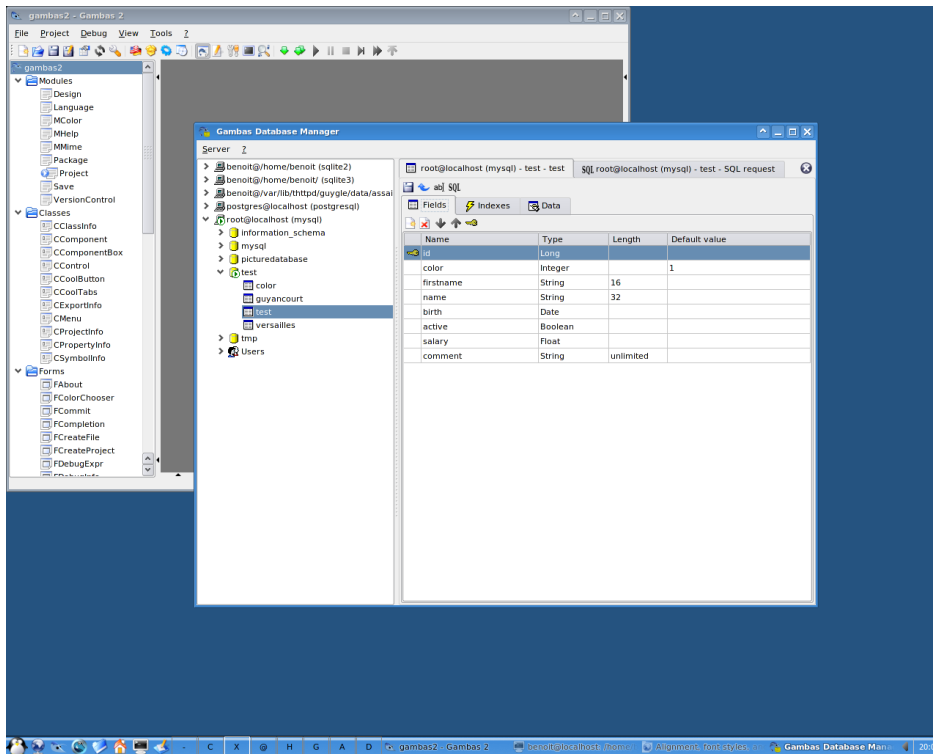
# Database independance

- Every database system is accessed through the same API.

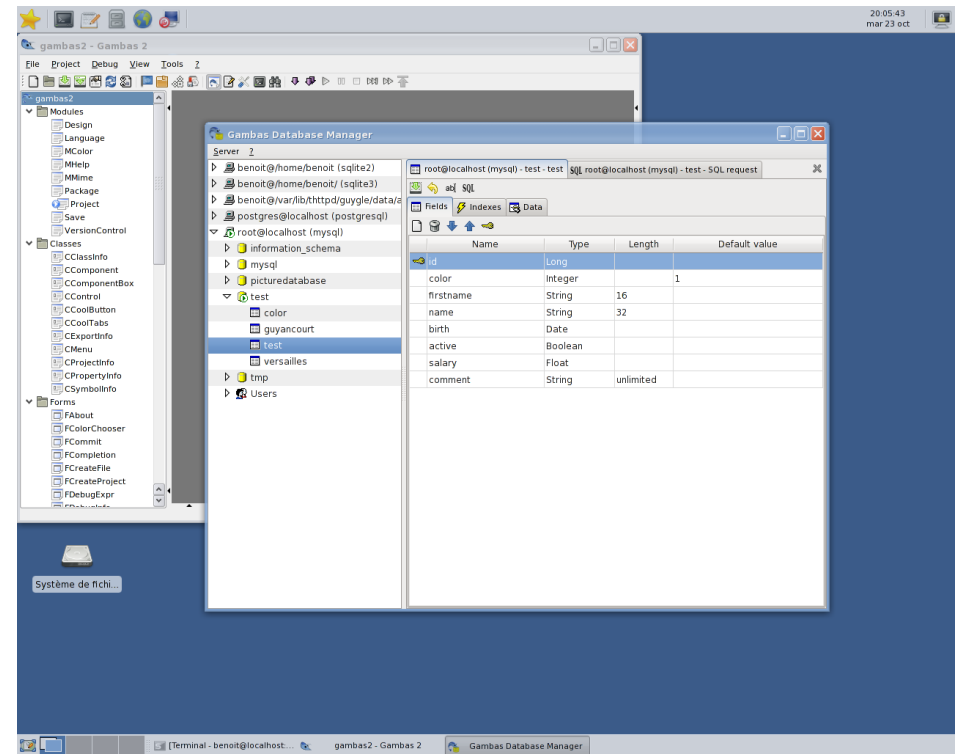


# GUI independance

- The QT component and the GTK+ component have the same interface!



KDE



XFCE

# Desktop independance

- Use icon themes according to the current desktop environment (KDE, Gnome or XFCE).
- The *gb.desktop* component, based on the shell scripts from the Portland project.
- A moving target.

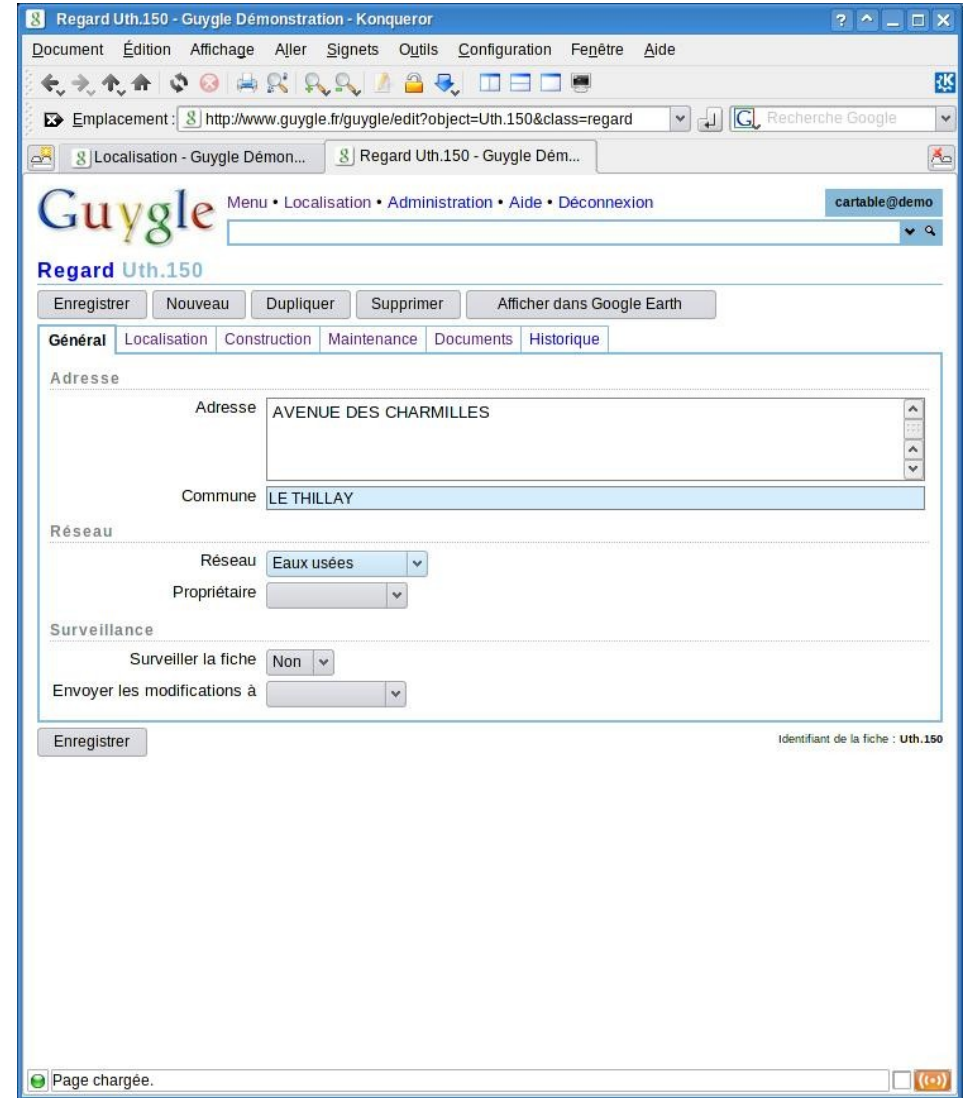
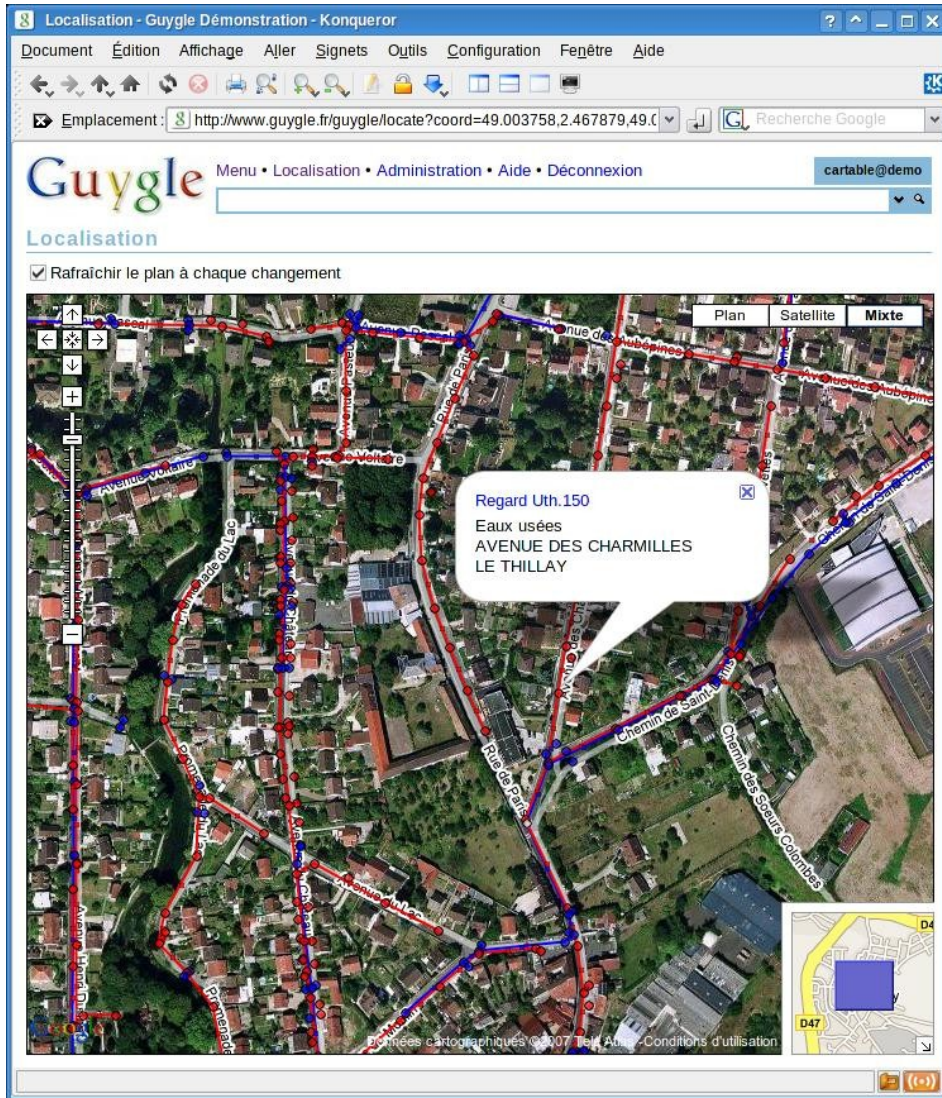


**BASIC... in 2007?**

# Play Flute?



# A Little Gambas Story



# Morality

- You do not have to be modern.
- You do not have to do modern.
- You should do simple.
- You should be simple.



You will have more  
time for your social life!

**Future is not predictable**

Positronic :: Variables

Quantum: : Superposition

# What Next?

- 64 bit support.
- DBus support.
- The merging of the database manager into the development environment.
- A report designer in the IDE.
- QT4 & Cairo support.
- Some KDE4 support.
- OpenOffice document generation helper.

# Thank You!



<http://gambasdoc.org>

<http://gambasrad.org>

<http://gambas.sourceforge.net>

*"When you are doing something, you have against you every people doing the same thing, every people doing the opposite thing, and the very large majority of people doing nothing."*