



gvSIG Desktop:
written in Java, extendable
through Scripting

gvSIG Desktop

Main Features

- Open Source
- Java (jts, gdal, geotools...)
- Pluggable
 - Java Plugins
 - Scripting Plugins
- Actual version 2.4.1
- Road to 3.0
 - Improvements in Raster



Development

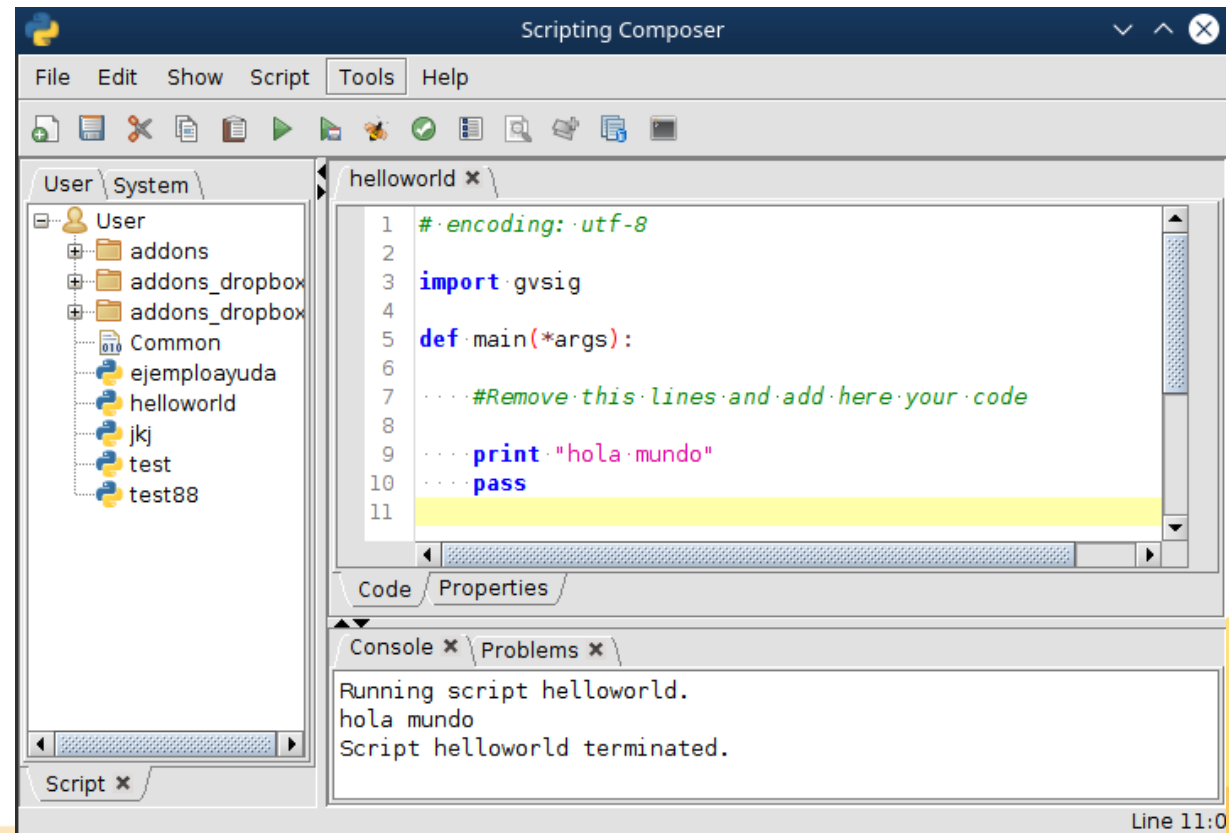
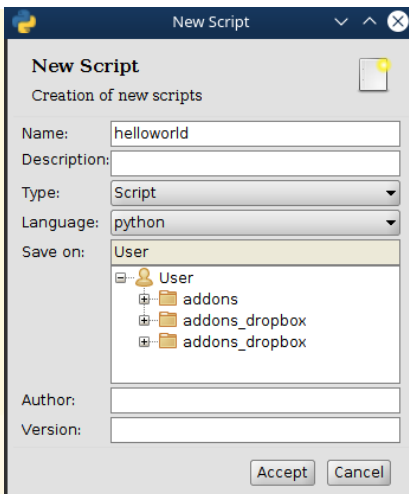
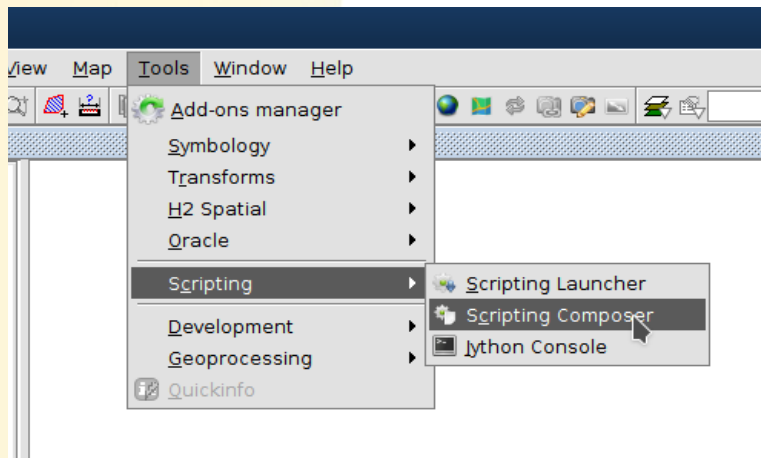
Choose wisely

- Do you need to create a new plugin for gvSIG Desktop?
 - Java
 - Good for architecture (gvSIG core)
 - Bad for a helloworld
 - **Scripting**
 - Easy (Less code with Jython)
 - Fast (gvSIG libraries for Python, gvp.py,...)
 - IDE inside gvSIG (Integrated development environment)
 - Test and run without leaving/restarting gvSIG
 - Other integrations (R)

Development

Hello World

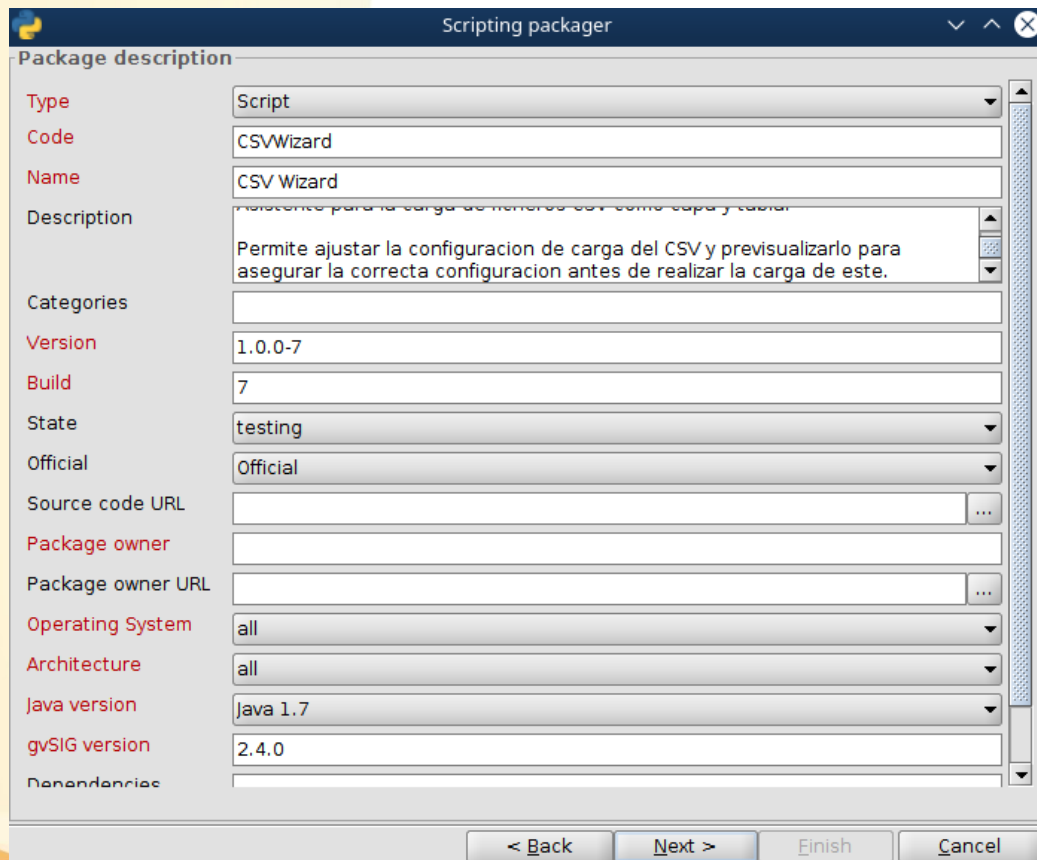
- Basic script



Development

Hello World

- Easy to share



Scripting packager

Package description

Type: Script

Code: CSVWizard

Name: CSV Wizard

Description: Permite ajustar la configuración de carga del CSV y previsualizarlo para asegurar la correcta configuración antes de realizar la carga de este.

Categories:

Version: 1.0.0-7

Build: 7

State: testing

Official: Official

Source code URL:

Package owner:

Package owner URL:

Operating System: all

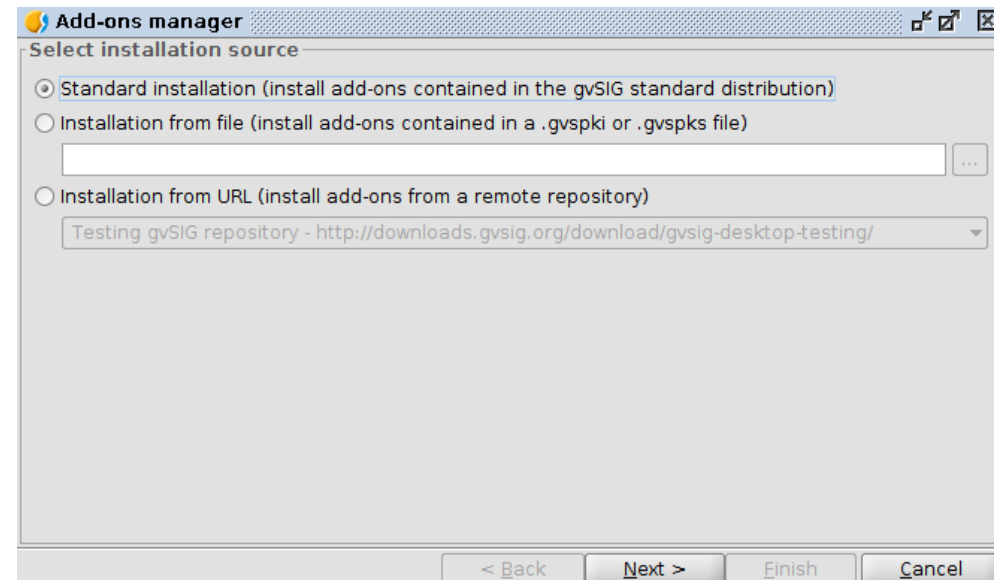
Architecture: all

Java version: Java 1.7

gvSIG version: 2.4.0

Dependencies:

< Back Next > Finish Cancel



Add-ons manager

Select installation source

☒ Standard installation (install add-ons contained in the gvSIG standard distribution)

☐ Installation from file (install add-ons contained in a .gvspki or .gvspks file)

☐ Installation from URL (install add-ons from a remote repository)

Testing gvSIG repository - <http://downloads.gvsig.org/download/gvsig-desktop-testing/>

< Back Next > Finish Cancel

Development

Easy

- **Jython**
 - Implementation of Python in Java
 - Work with Java using Python syntax
 - Available with Java & Python libraries (some limitations)
- **Easy to learn** for people without programming knowledge
 - Create a geoprocess in a few lines
- **Powerful** → Not limited for not using Java
- Easy to create buttons, toolbox, menus,.. for execution



Development

Fast



- **Less code with Jython**
 - Compared with Java
- **Libraries in Python for gvSIG**
 - Only access from Jython
 - **gvSIG**
 - Utils: createShape(), currentLayer()
 - Added methods to Java classes
 - **gvpy**: execute a geoprocess with one line of code
 - **Formpanel**: easy and fast to create UI and events

```
gvpy.runalg("randomvector",10, 0)  
gvpy.runalg("randomvector",10, gvpy.TYPE_POLYGON)
```

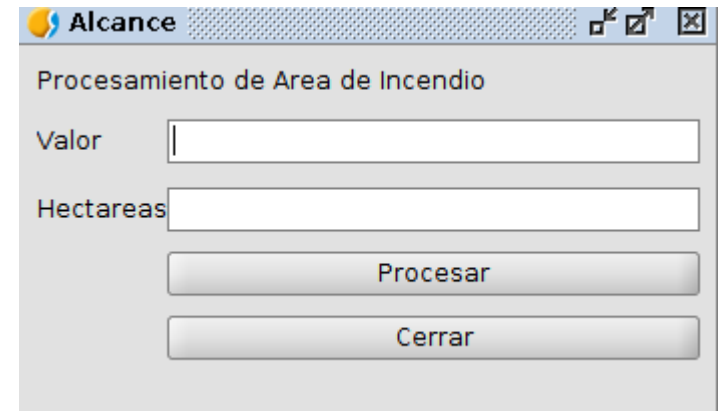
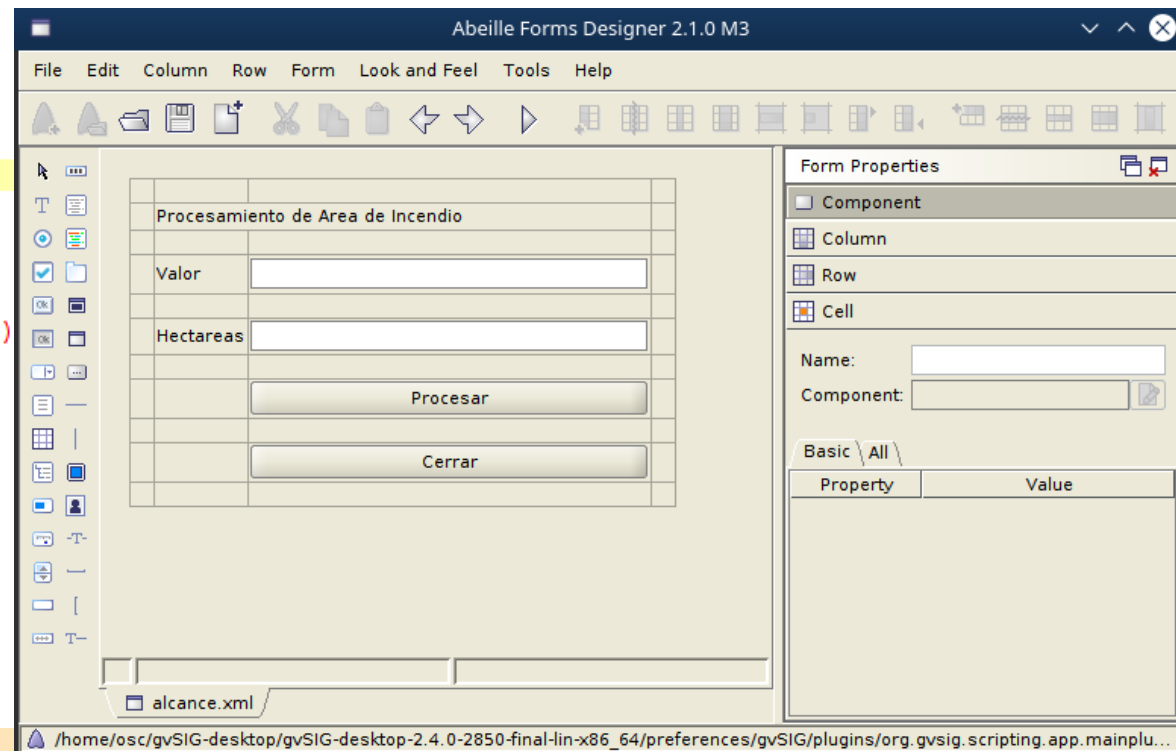
Development

Fast

- Formpanel

```

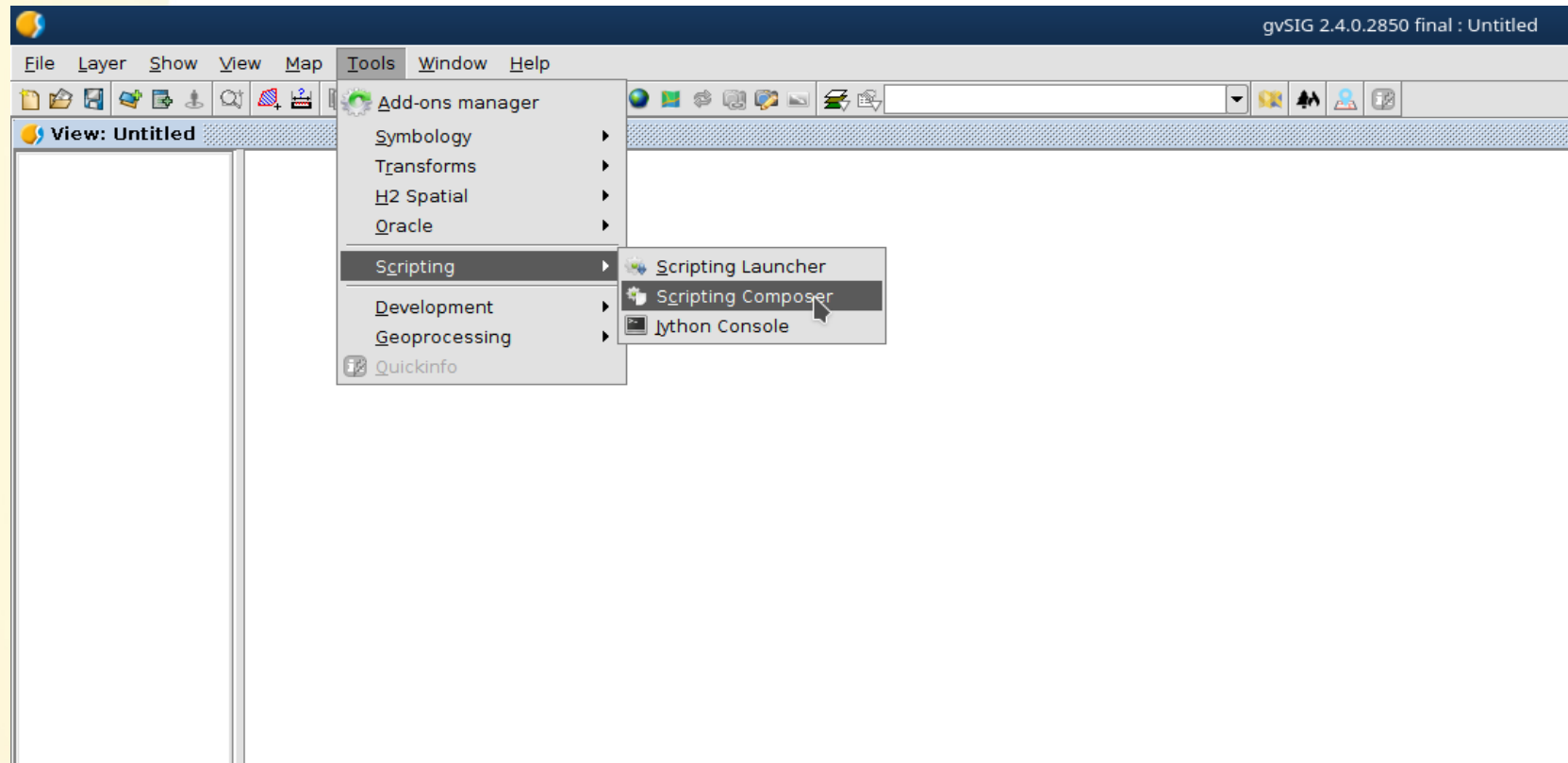
1 #·encoding:·utf-8
2
3 import·gvsig
4 from·gvsig·import·geom
5 from·gvsig.libs.formpanel·import·FormPanel
6 import·os
7
8 from·process·import·countCells
9
10 class·Alcance(FormPanel):
11     ····def·__init__(self):
12     ····FormPanel.__init__(self,·
13     ····gvsig.getResource(__file__,"alcance.xml"))
14
15     ····def·btnProcess_click(self,·*args):
16     ····rasterLayer·=·gvsig.currentLayer()
17     ····if·rasterLayer·==·None:
18     ····self.txtH.setText("Ninguna·capa·seleccionada")
19     ····return
20     ····valueLimit·=·float(self.txtValue.getText())
21     ····store·=·rasterLayer.getDataStore()
22     ····h·=·countCells(store,·valueLimit)
23     ····self.txtH.setText(str(h))
24     ····print·"Hectareas:·",·h
25
26
27 def·main(*args):
28     ····l·=·Alcance()
29     ····l.showTool("Alcance")
30     ····pass
    
```

Development

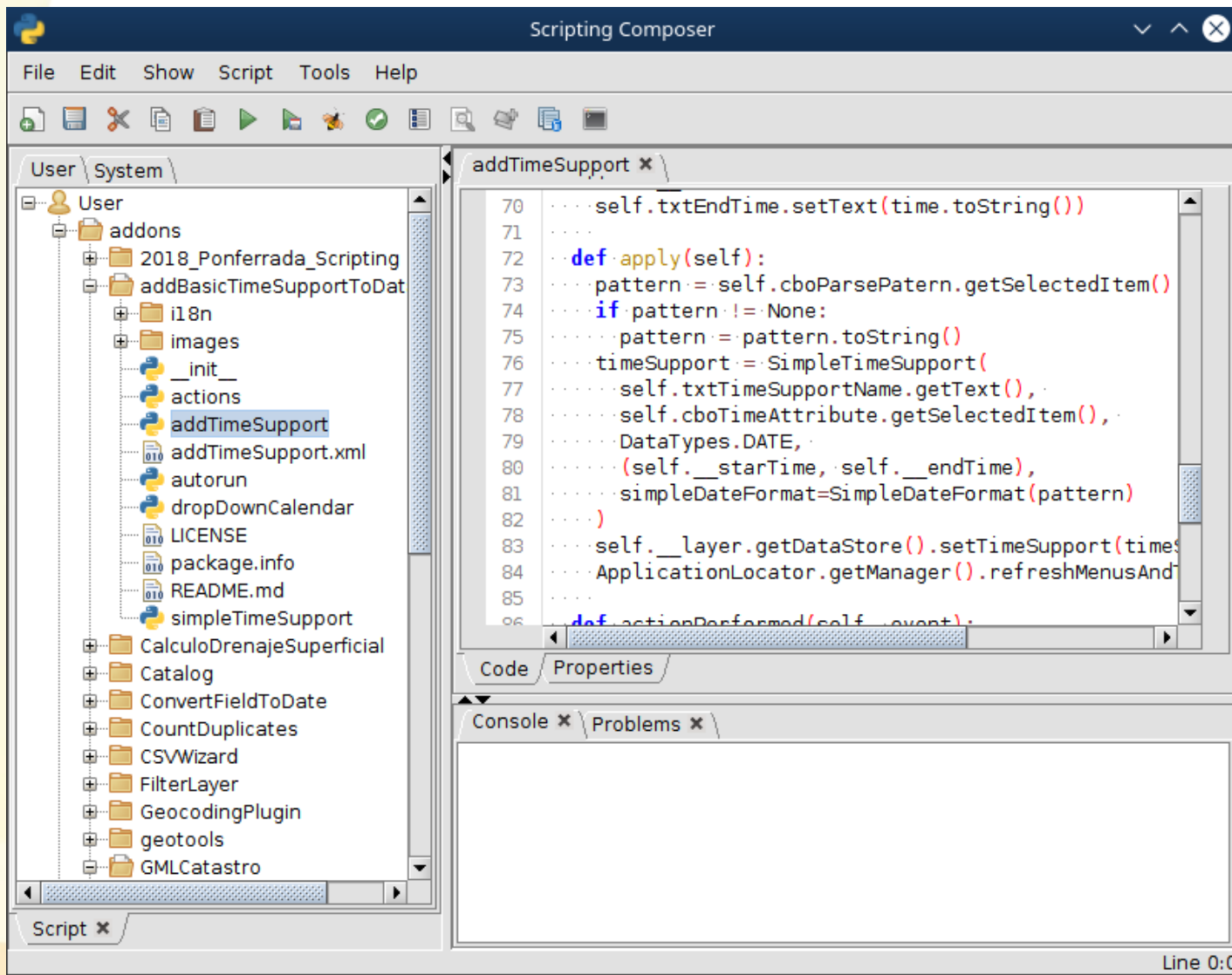
IDE inside gvSIG

- Already in your installation



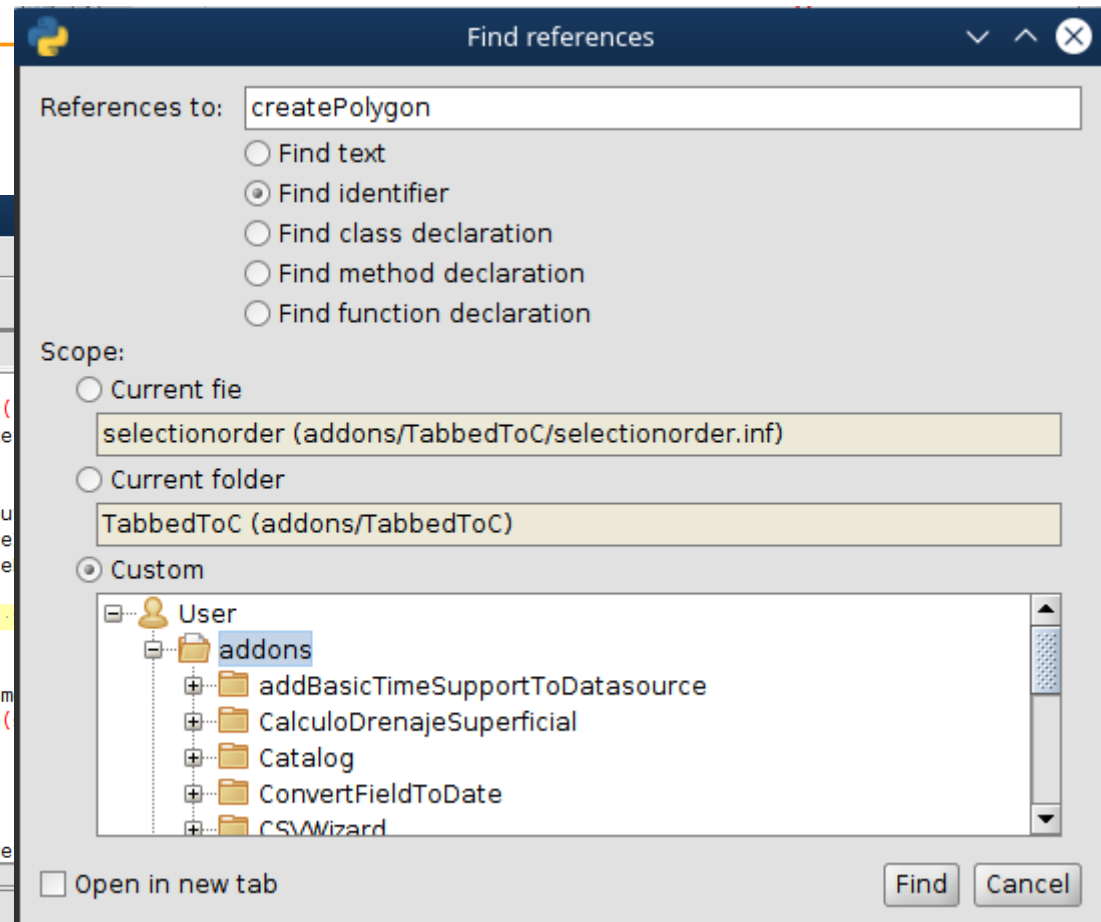
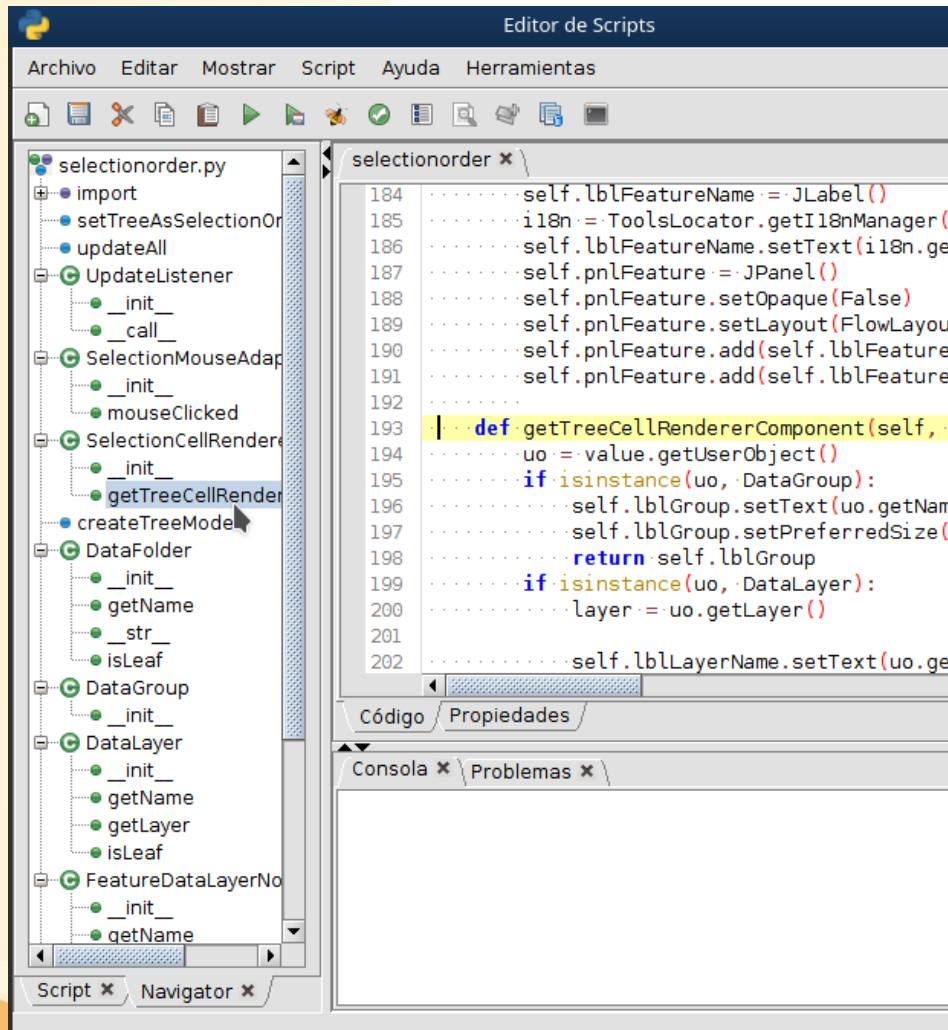
Development

IDE inside gvSIG



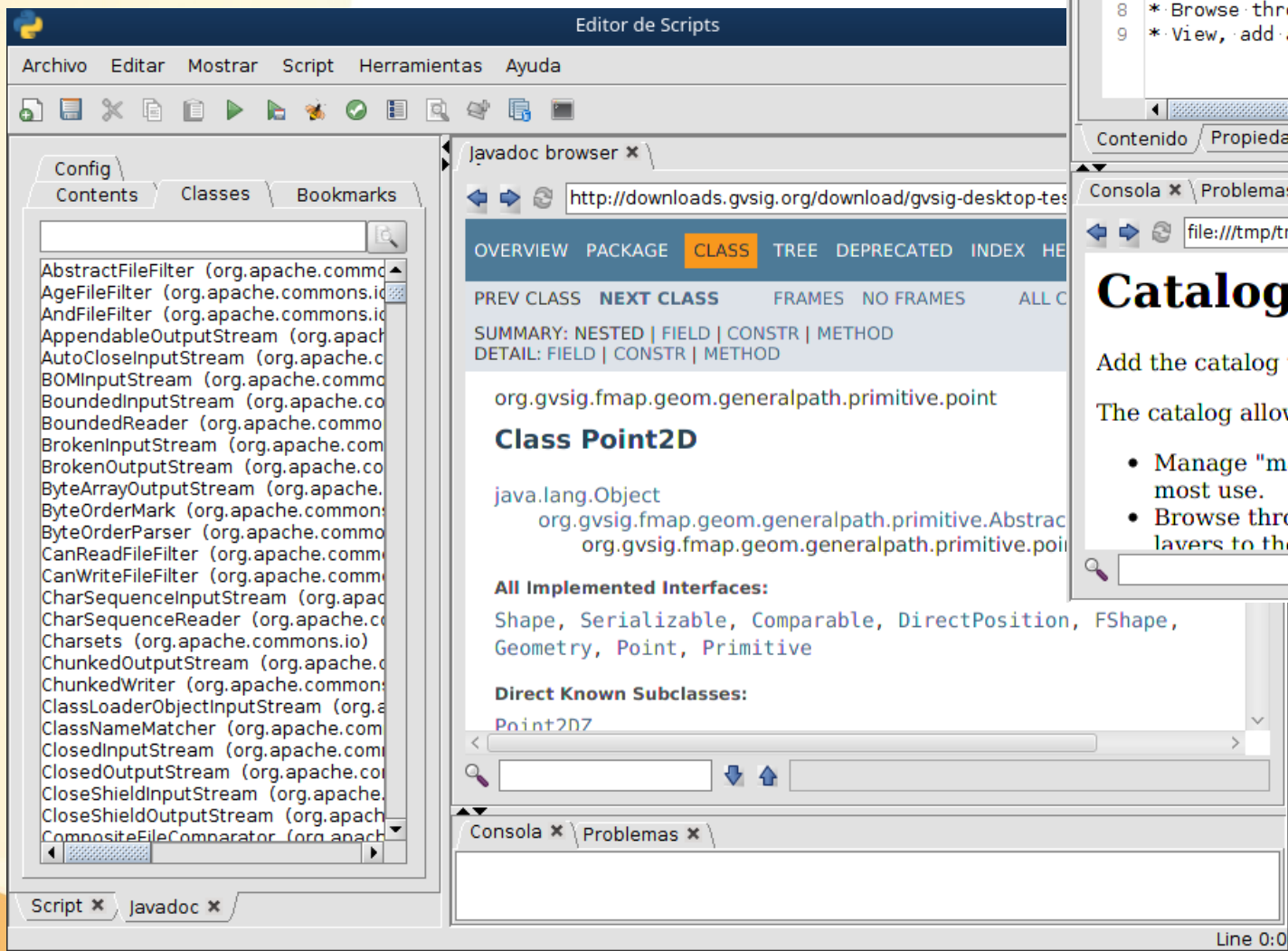
Development

ScriptingComposerTools



Development

ScriptingComposerTools



Editor de Scripts

Archivo Editar Mostrar Script Herramientas Ayuda

Config Contents Classes Bookmarks

AbstractFileFilter (org.apache.commons.io) AgeFileFilter (org.apache.commons.io) AndFileFilter (org.apache.commons.io) AppendableOutputStream (org.apache.commons.io) AutoCloseInputStream (org.apache.commons.io) BOMInputStream (org.apache.commons.io) BoundedInputStream (org.apache.commons.io) BoundedReader (org.apache.commons.io) BrokenInputStream (org.apache.commons.io) BrokenOutputStream (org.apache.commons.io) ByteArrayOutputStream (org.apache.commons.io) ByteOrderMark (org.apache.commons.io) ByteOrderParser (org.apache.commons.io) CanReadFileFilter (org.apache.commons.io) CanWriteFileFilter (org.apache.commons.io) CharSequenceInputStream (org.apache.commons.io) CharSequenceReader (org.apache.commons.io) Charsets (org.apache.commons.io) ChunkedOutputStream (org.apache.commons.io) ChunkedWriter (org.apache.commons.io) ClassLoaderObjectInputStream (org.apache.commons.io) ClassNameMatcher (org.apache.commons.io) ClosedInputStream (org.apache.commons.io) ClosedOutputStream (org.apache.commons.io) CloseShieldInputStream (org.apache.commons.io) CloseShieldOutputStream (org.apache.commons.io) CompositeFileComparator (org.apache.commons.io)

Javadoc browser

http://downloads.gvsig.org/download/gvsig-desktop-test

OVERVIEW PACKAGE CLASS TREE DEPRECATED INDEX HELP

PREV CLASS NEXT CLASS FRAMES NO FRAMES ALL CLASSES

SUMMARY: NESTED | FIELD | CONSTR | METHOD
DETAIL: FIELD | CONSTR | METHOD

org.gvsig.fmap.geom.generalpath.primitive.point

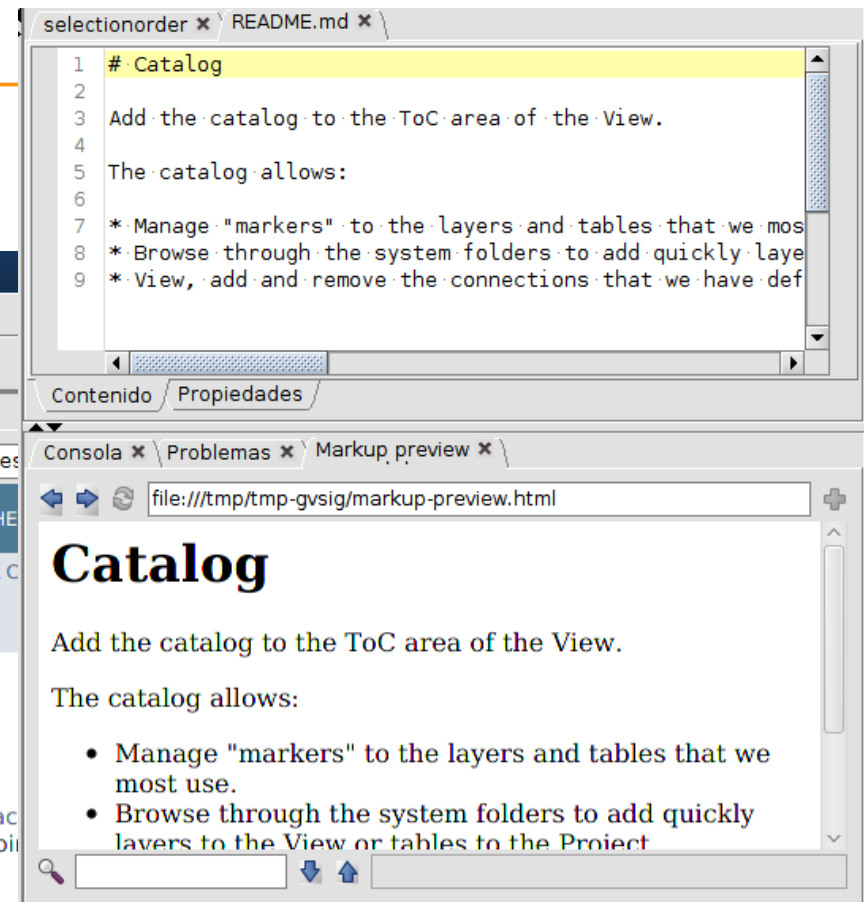
Class Point2D

java.lang.Object
org.gvsig.fmap.geom.generalpath.primitive.AbstractPoint
org.gvsig.fmap.geom.generalpath.primitive.Point

All Implemented Interfaces:
Shape, Serializable, Comparable, DirectPosition, FShape, Geometry, Point, Primitive

Direct Known Subclasses:
Point2D7

Script Javadoc



selectionorder x README.md x

```
1 # Catalog
2
3 Add the catalog to the ToC area of the View.
4
5 The catalog allows:
6
7 * Manage "markers" to the layers and tables that we most use.
8 * Browse through the system folders to add quickly layers to the View or tables to the Project
9 * View, add and remove the connections that we have defined
```

Contenido Propiedades

Consola x Problemas x Markup preview x

file:///tmp/tmp-gvsig/markup-preview.html

Catalog

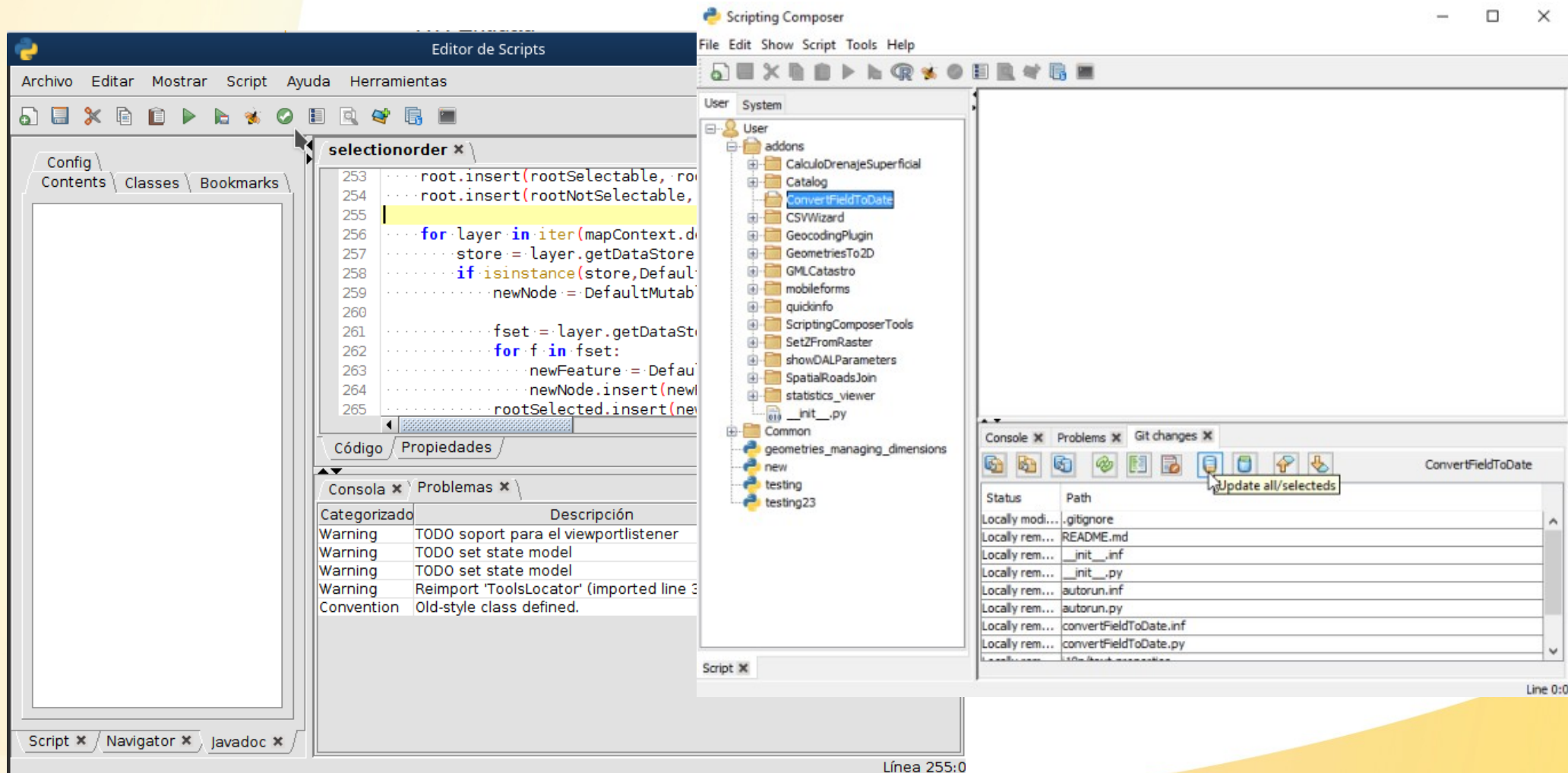
Add the catalog to the ToC area of the View.

The catalog allows:

- Manage "markers" to the layers and tables that we most use.
- Browse through the system folders to add quickly layers to the View or tables to the Project

Development

ScriptingComposerTools



The screenshot displays the Scripting Composer IDE interface. The main window is titled "Editor de Scripts" and shows a Python script for the "selectionorder" class. The script includes methods for inserting and selecting features. The left sidebar contains a "Config" panel with tabs for "Contents", "Classes", and "Bookmarks". Below the editor, there is a "Código" / "Propiedades" tab and a "Consola" / "Problemas" tab. The "Consola" tab shows a list of warnings and errors related to the script. The right sidebar features a "File Explorer" showing the project structure, including folders like "addons", "Catalog", "CSVWizard", "GeocodingPlugin", "GeometriesTo2D", "GMLCatastro", "mobileforms", "quickinfo", "ScriptingComposerTools", "Set2FromRaster", "showDALParameters", "SpatialRoadsJoin", "statistics_viewer", and "Common". The "ScriptingComposerTools" folder is highlighted. Below the file explorer, there is a "Console" tab showing the output of the script, including a table with columns "Status" and "Path". The table lists various files and their status, such as "Locally modified", "Locally removed", and "Locally added". The "Update all/selected" button is visible in the console area.

Scripting Composer

File Edit Show Script Tools Help

User System

User

- addons
 - CalculoDrenajeSuperficial
 - Catalog
 - ConvertFieldToDate
 - CSVWizard
 - GeocodingPlugin
 - GeometriesTo2D
 - GMLCatastro
 - mobileforms
 - quickinfo
 - ScriptingComposerTools
 - Set2FromRaster
 - showDALParameters
 - SpatialRoadsJoin
 - statistics_viewer
 - __init__.py
- Common
 - geometries_managing_dimensions
- new
- testing
- testing23

Editor de Scripts

Archivo Editar Mostrar Script Ayuda Herramientas

Config Contents Classes Bookmarks

selectionorder

```

253 ...root.insert(rootSelectable, root)
254 ...root.insert(rootNotSelectable, root)
255
256 ...for layer in iter(mapContext.getLayers()):
257 ...    store := layer.getDataStore()
258 ...    if isinstance(store, DefaultMutableTreeNode):
259 ...        newNode := DefaultMutableTreeNode(layer.getName())
260 ...        fset := layer.getDataStore()
261 ...        for f in fset:
262 ...            newFeature := DefaultMutableTreeNode(f.getName())
263 ...            newNode.insert(newFeature)
264 ...            rootSelected.insert(newNode)
265 ...rootSelected.insert(newNode)
  
```

Código / **Propiedades**

Consola / **Problemas**

Categorizado	Descripción
Warning	TODO soporte para el viewportlistener
Warning	TODO set state model
Warning	TODO set state model
Warning	Reimport 'ToolsLocator' (imported line 3)
Convention	Old-style class defined.

Console / **Problems** / **Git changes**

ConvertFieldToDate

Status	Path
Locally modified	.gitignore
Locally removed	README.md
Locally removed	__init__.inf
Locally removed	__init__.py
Locally removed	autorun.inf
Locally removed	autorun.py
Locally removed	convertFieldToDate.inf
Locally removed	convertFieldToDate.py
Locally removed	tools_locator.py

Update all/selected

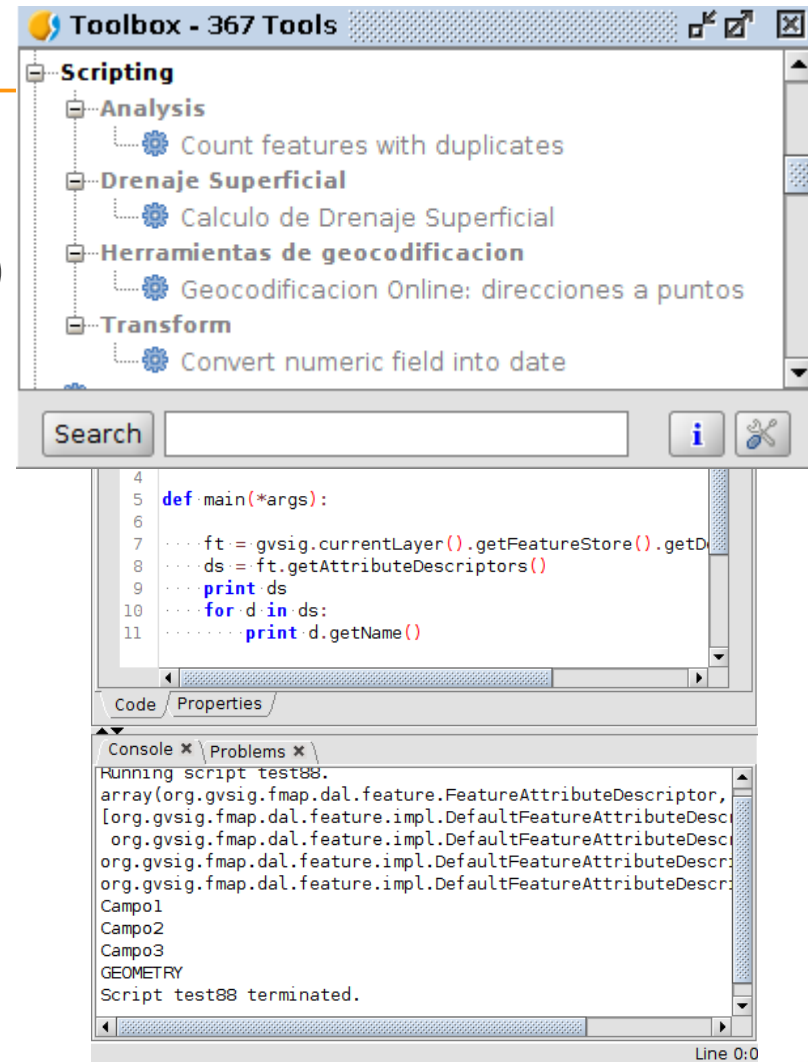
Script

Línea 255:0

Development

Test and run

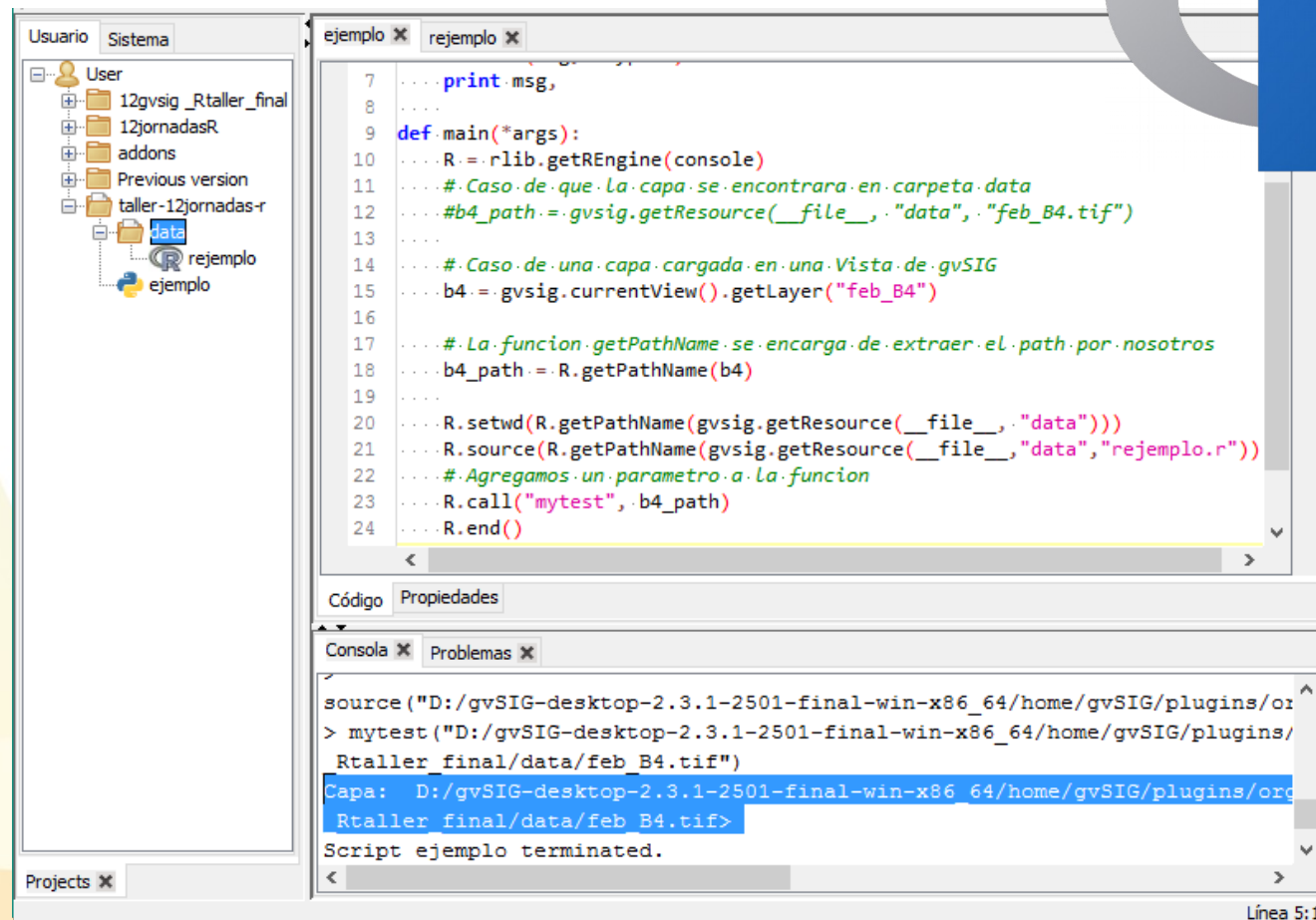
- Workflow (depending of the plugin)
 - Create
 - Execute
 - Test and check result
 - Modify
 - Execute
 - Test and check result
 - ...
- Work directly with gvSIG
 - Access to the active Layer, selected features, ...



Example

Integration with R

- Install R plugin from Addons Manager
- Execute R code from a script



```
7 ... print msg,  
8 ...  
9 def main(*args):  
10 ... R = rlib.getREngine(console)  
11 ... # Caso de que la capa se encontrara en carpeta data  
12 ... #b4_path = gvsig.getResource(__file__, "data", "feb_B4.tif")  
13 ...  
14 ... # Caso de una capa cargada en una Vista de gvSIG  
15 ... b4 = gvsig.currentView().getLayer("feb_B4")  
16 ...  
17 ... # La funcion getPathName se encarga de extraer el path por nosotros  
18 ... b4_path = R.getPathName(b4)  
19 ...  
20 ... R.setwd(R.getPathName(gvsig.getResource(__file__, "data")))  
21 ... R.source(R.getPathName(gvsig.getResource(__file__, "data", "rejemplo.r")))  
22 ... # Agregamos un parametro a la funcion  
23 ... R.call("mytest", b4_path)  
24 ... R.end()
```

```
source("D:/gvSIG-desktop-2.3.1-2501-final-win-x86_64/home/gvSIG/plugins/or  
> mytest("D:/gvSIG-desktop-2.3.1-2501-final-win-x86_64/home/gvSIG/plugins/  
Rtaller_final/data/feb_B4.tif")  
Capa: D:/gvSIG-desktop-2.3.1-2501-final-win-x86_64/home/gvSIG/plugins/or  
Rtaller_final/data/feb_B4.tif>  
Script ejemplo terminated.
```

Example

Geoprocess

- Add a geoprocess to the Toolbox

autorun

```

13 def selfRegister(*args):
14     i18nManager := ToolsLocator.getI18nManager()
15     i18nManager.addResourceFamily("text", File(gvsig.getResource(__file__, "i18n")))
16     ...
17     process := Desplazamiento()
18     process.selfregister("INEGI")
19     process.updateToolbox()
  
```

process

```

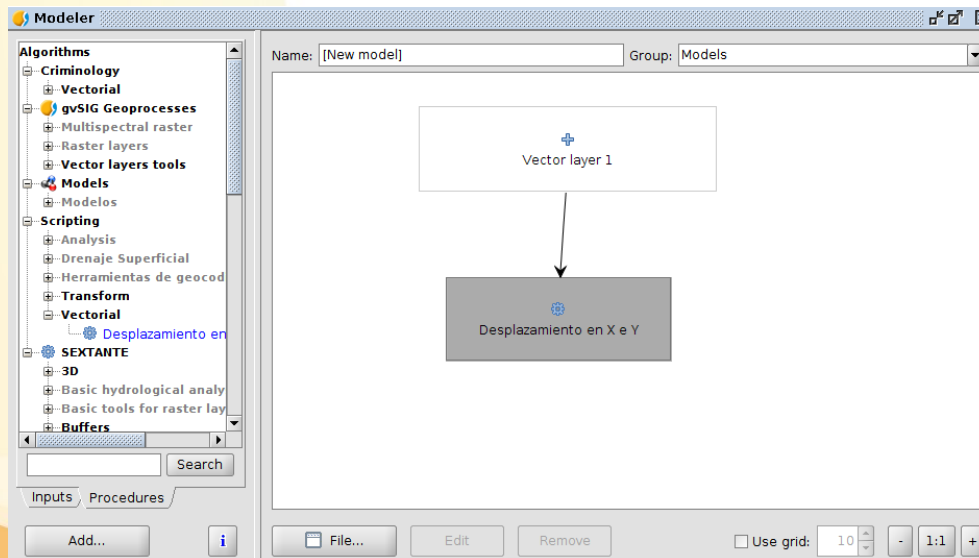
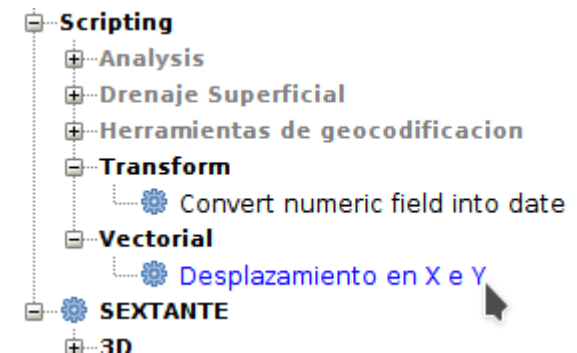
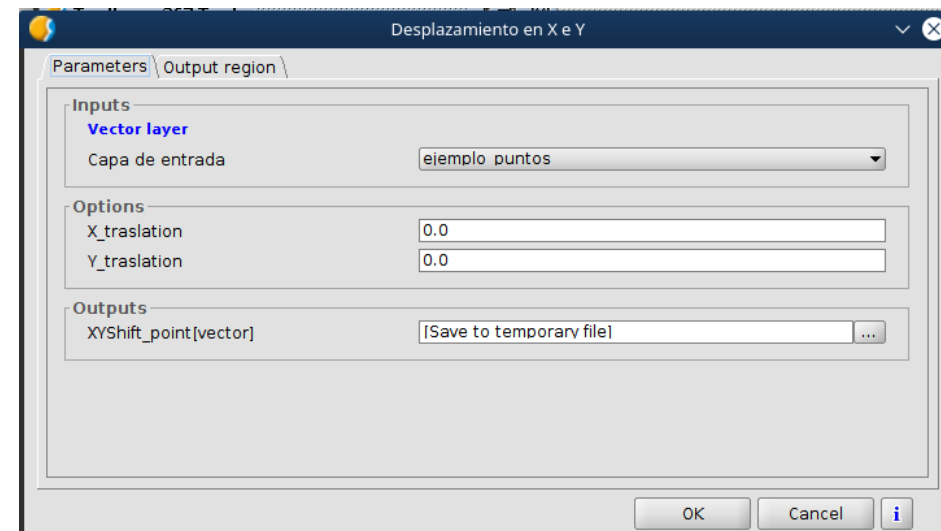
14 class Desplazamiento(ToolboxProcess):
15     def defineCharacteristics(self):
16         self.setName("Desplazamiento en X e Y")
17         self.setGroup("Vectorial")
18         params := self.getParameters()
19         params.addInputVectorLayer("LAYER", "Capa de entrada", SHAPE_TYPE_POINT, True)
20         params.addNumericalValue("X", "X traslation", 0, NUMERICAL_VALUE_DOUBLE)
21         params.addNumericalValue("Y", "Y traslation", 0, NUMERICAL_VALUE_DOUBLE)
22         self.addOutputVectorLayer("RESULT_POINT", "XYShift_point", SHAPE_TYPE_POINT)
23
24     def processAlgorithm(self):
25         features := None
26         try:
27             params := self.getParameters()
28             layer := params.getParameterValueAsVectorLayer("LAYER")
29             x := params.getParameterValueAsDouble("X")
30             y := params.getParameterValueAsDouble("Y")
31             input_store := layer.getFeatureStore()
32             features := input_store.getFeatureSet()
33             output_store := self.buildOutputStore(
34                 features.getDefaultFeatureType(),
35                 SHAPE_TYPE_POINT,
36                 "XYShift_points",
37                 "RESULT_POINT"
38             )
39             self.setRangeOfValues(0, features.getSize())
40             n := 0
41             for feature in features.iterator():
42                 if self.isCanceled():
43                     print "Proceso cancelado"
44                     break
45                 newfeature := self.createNewFeature(output_store, feature)
46                 geom := newfeature.getDefaultGeometry()
47                 geom.move(x, y)
48                 output_store.insert(newfeature)
49                 n+=1
50             self.setCurValue(n)
51             output_store.finishEditing()
52             finally:
53                 DisposeUtils.disposeQuietly(features)
54                 print "Proceso terminado %s" % self.getCommandLineName()
55                 return True
56
  
```


Example

Geoprocess

- Use it from the model builder or gvpn

```
gvpn.runalg("randomvector",10, 0)
gvpn.runalg("randomvector",10, gvpn.TYPE_POLYGON)
```

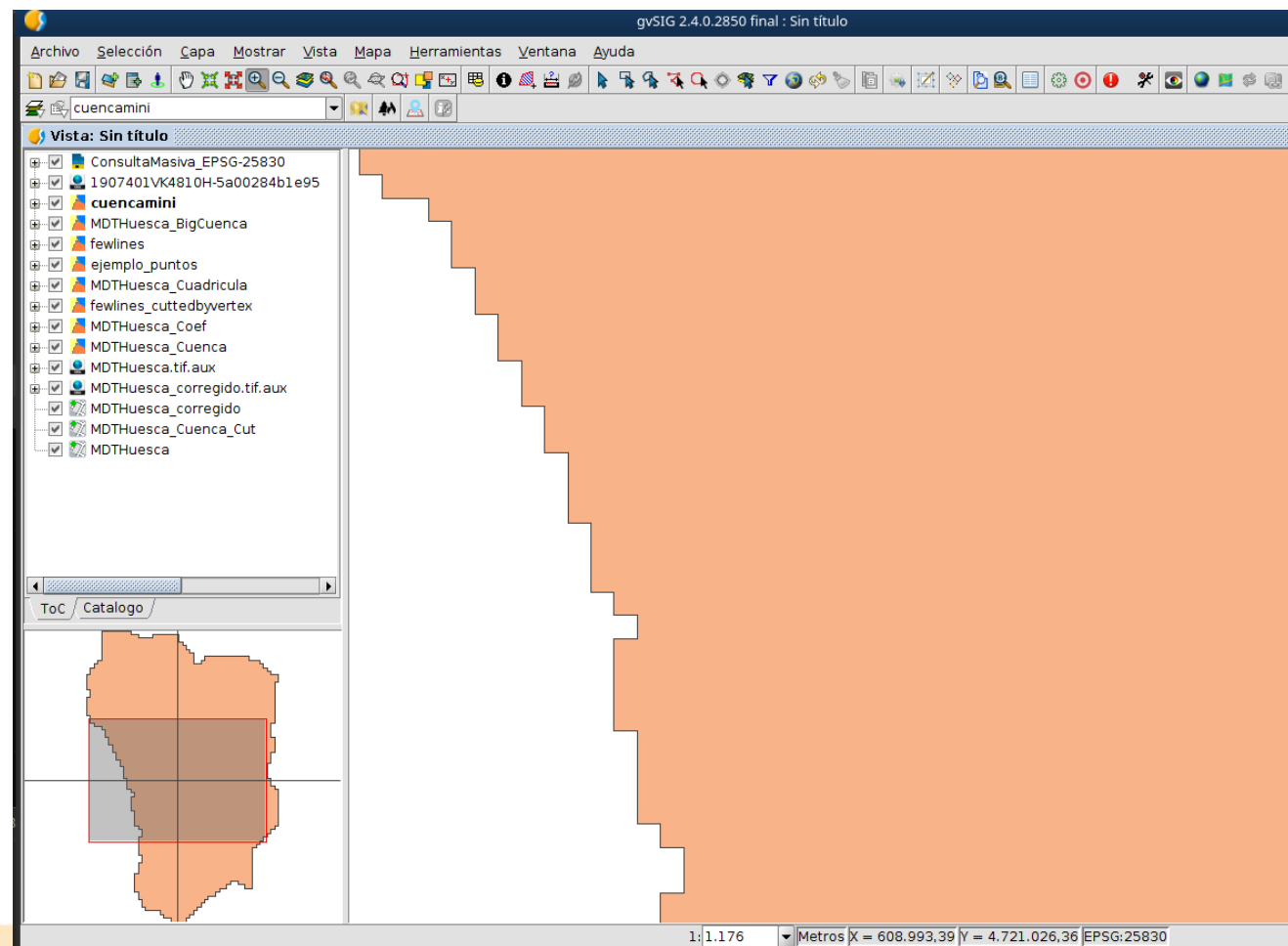
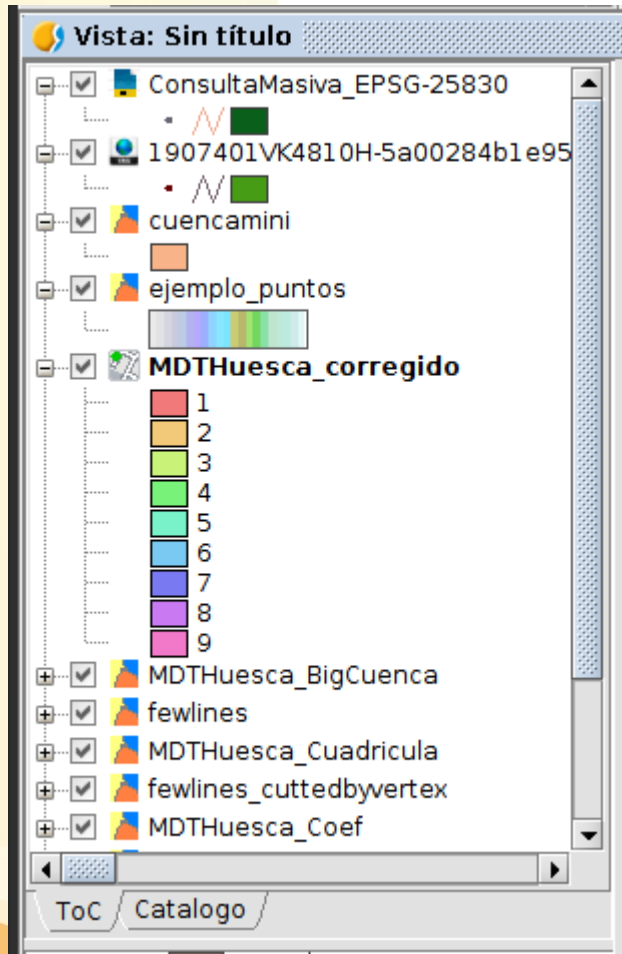



The screenshot shows the 'Desplazamiento en X e Y' tool parameters dialog. The 'Parameters' tab is active, and the 'Output region' is set to 'ejemplo puntos'. The 'Inputs' section shows 'Vector layer' as the input. The 'Options' section shows 'X_traslation' and 'Y_traslation' both set to 0.0. The 'Outputs' section shows 'XYShift_point[vector]' with a button to save to a temporary file.

Example

Table of Contents (ToC)

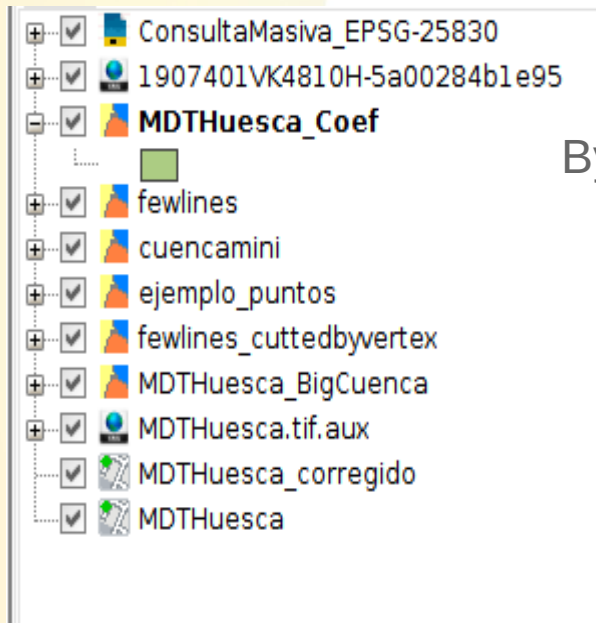
- Basic from Java



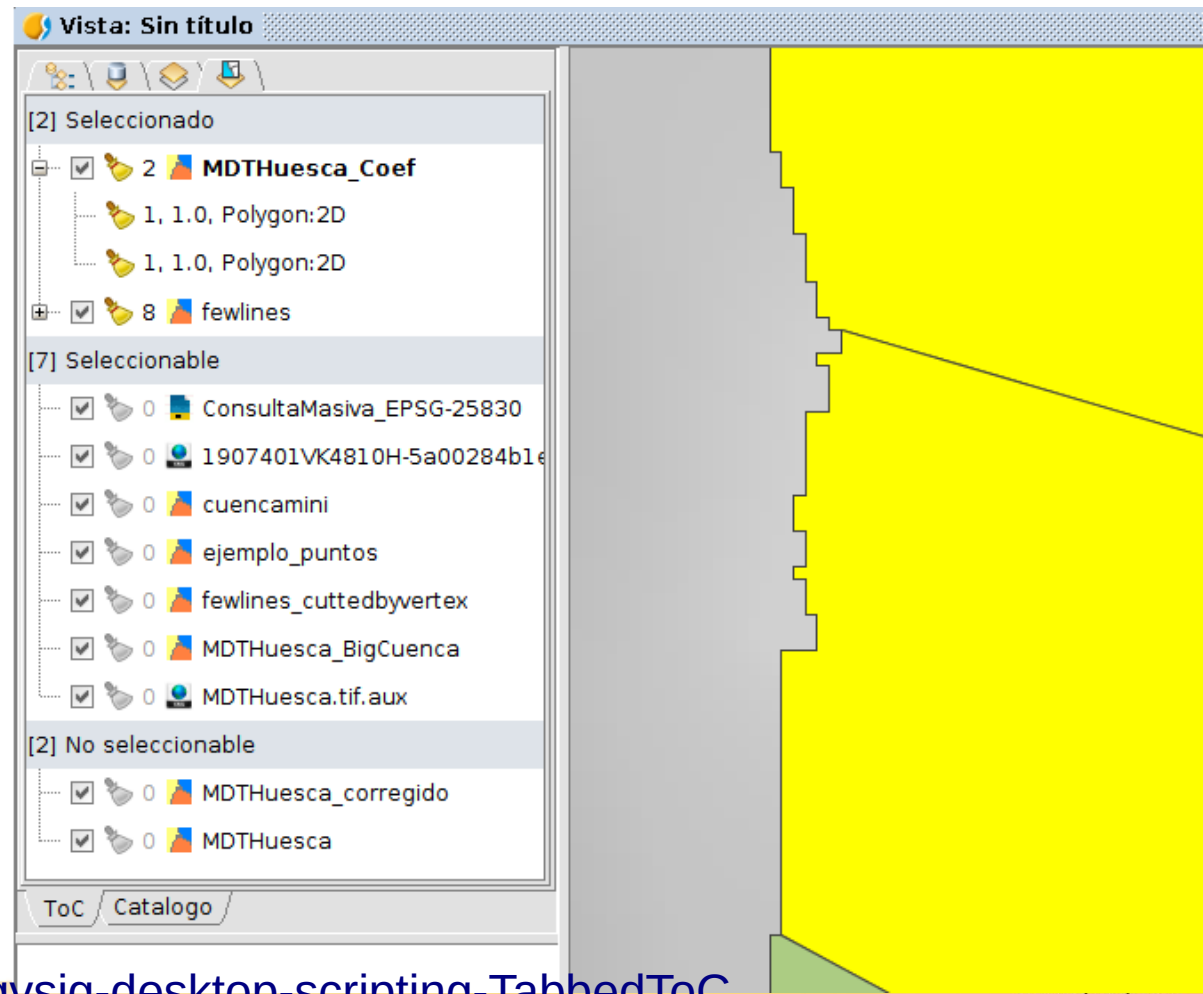
Example

Table of Contents (ToC) → TabbedToC

- Advanced plugin created from Scripting



By selection

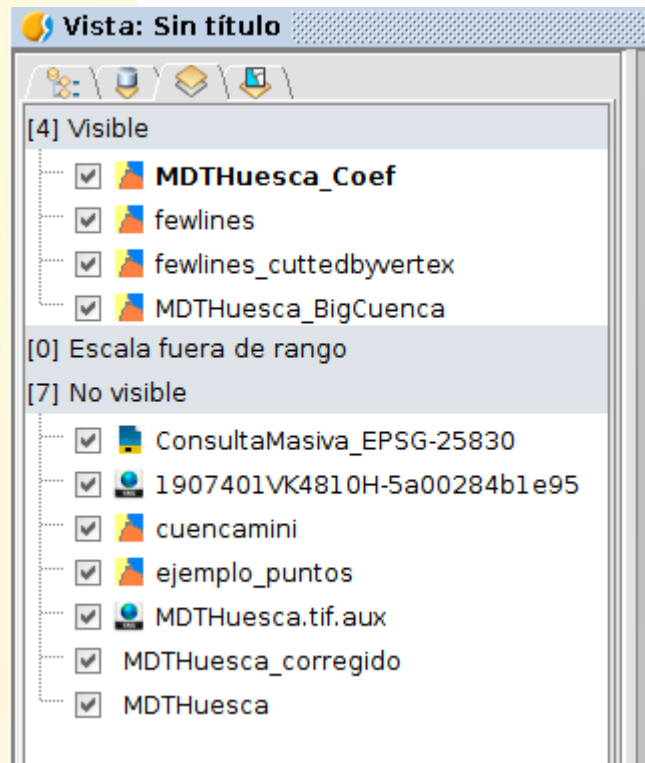


Example

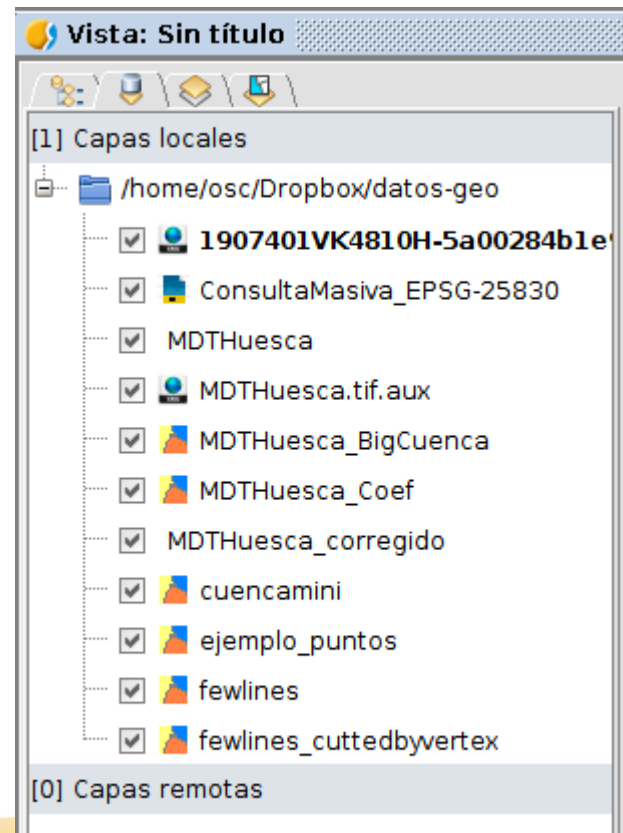
Table of Contents (ToC) → TabbedToC

- Advanced plugin created from Scripting

By visibility



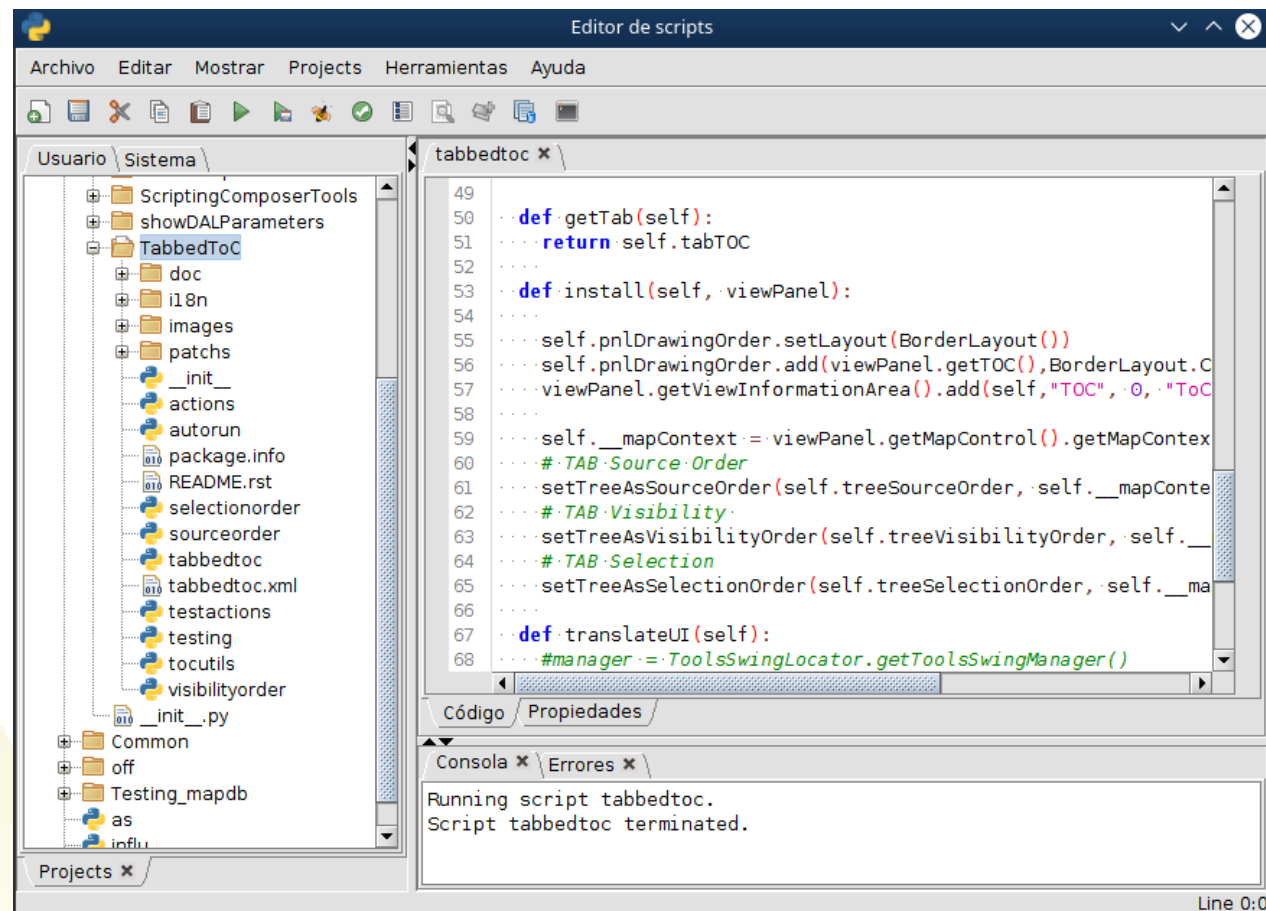
By source



Example

Table of Contents (ToC) → TabbedToC

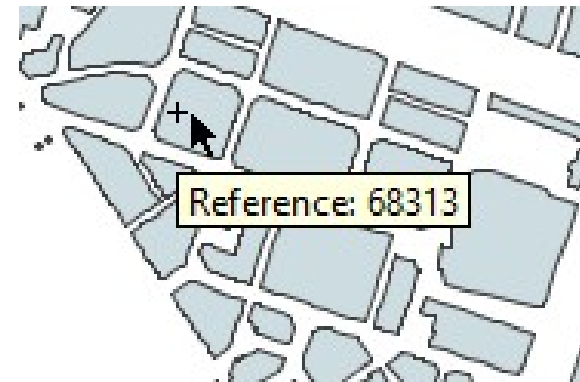
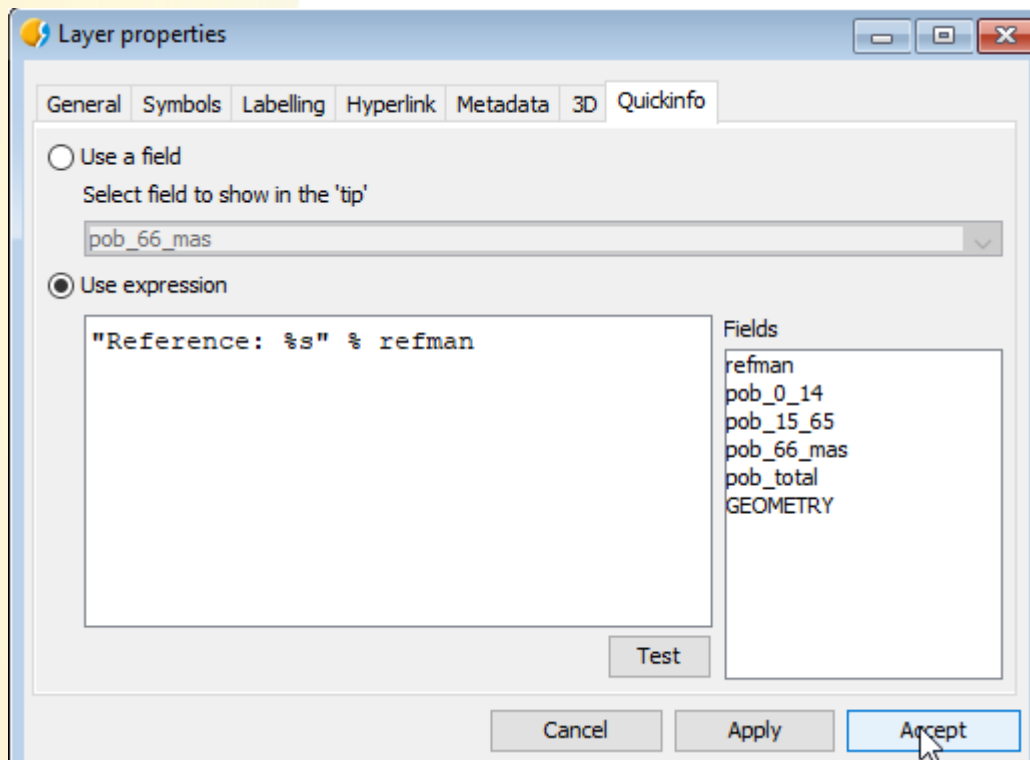
- Advanced plugin created from Scripting



Example

Quick Info

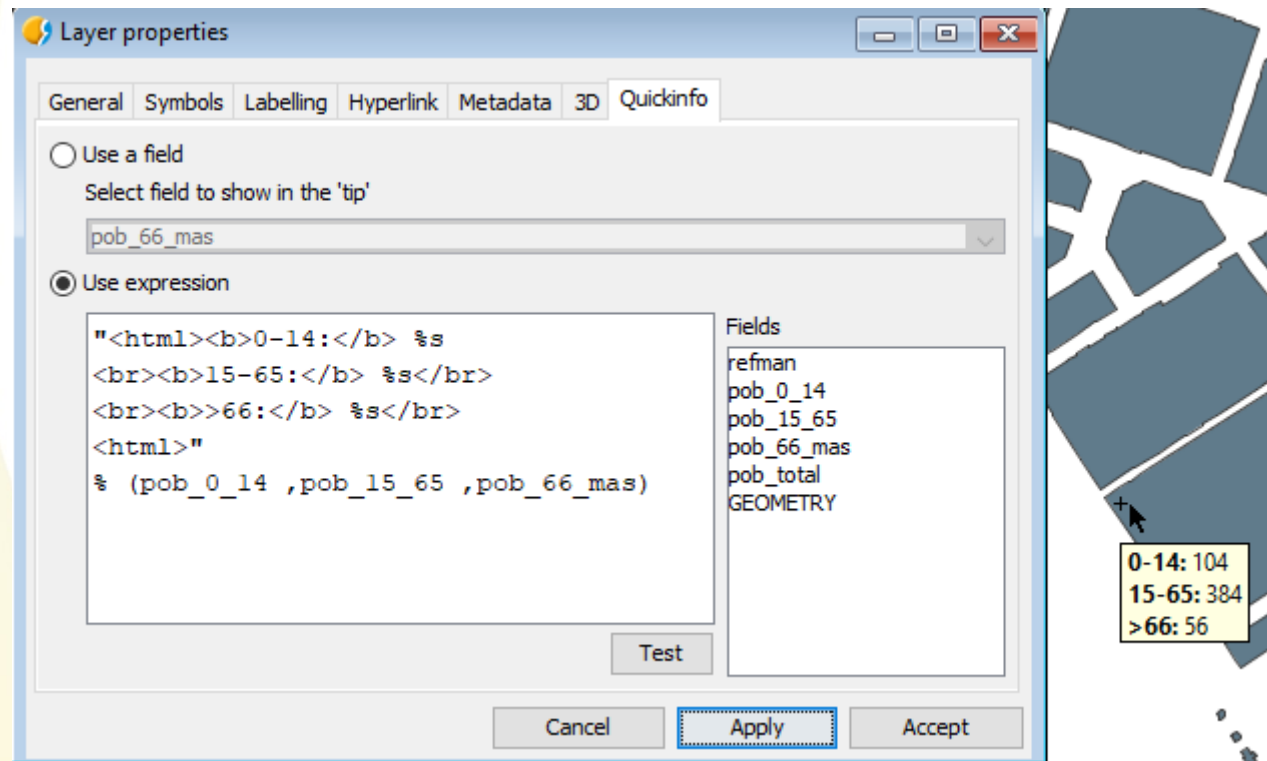
- New type of data visualization



Example

Quick Info

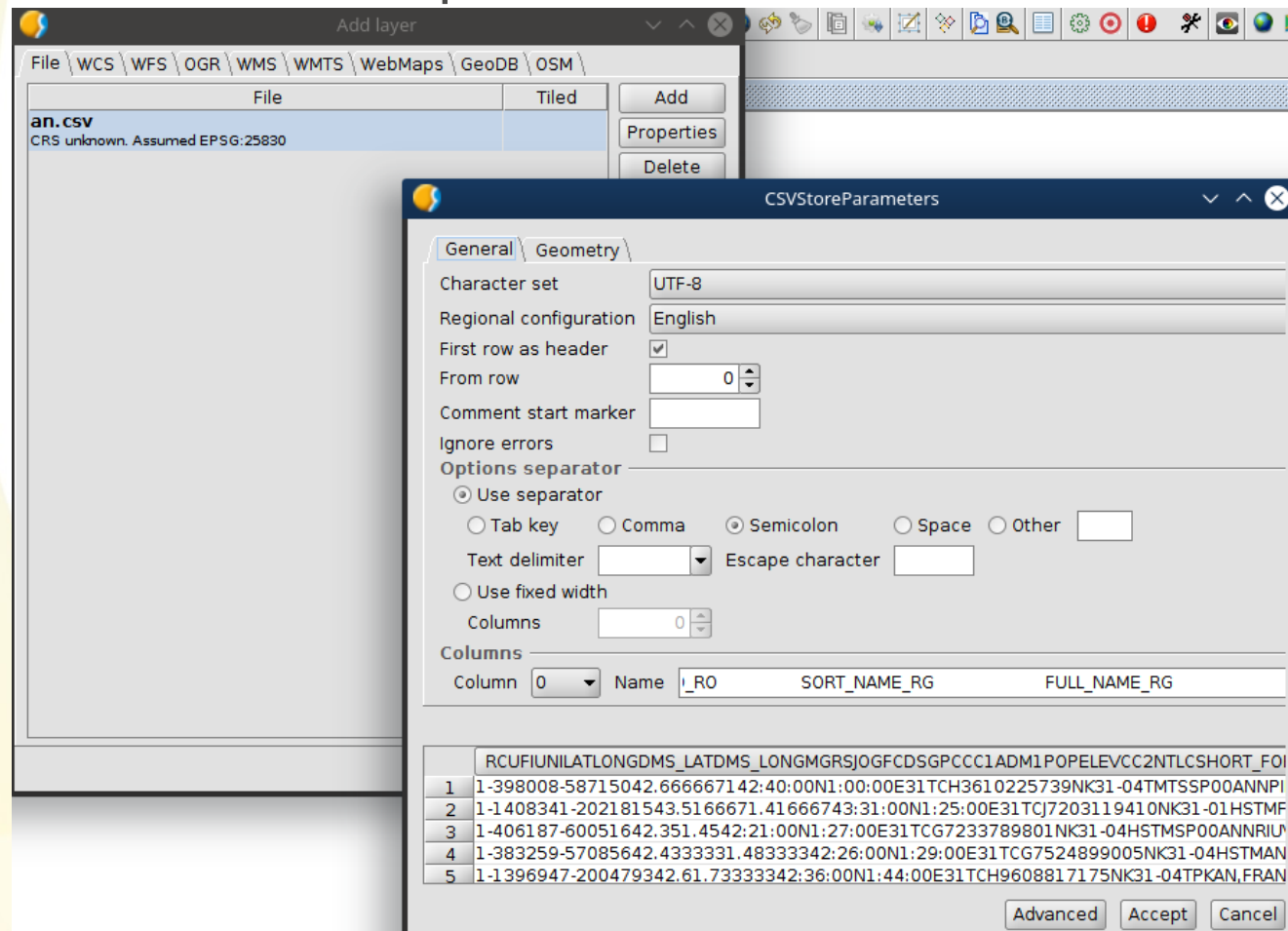
- New type of data visualization



Example

CSV Wizard

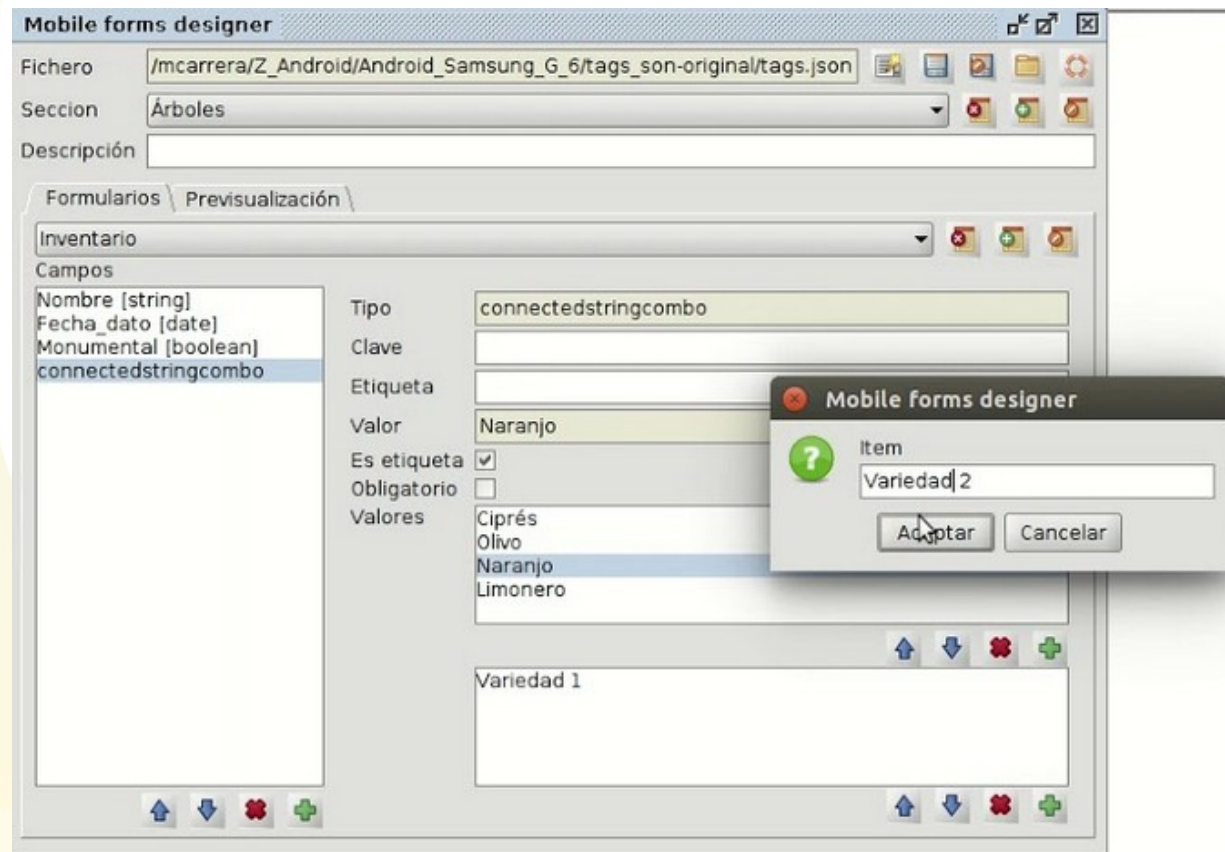
- Advanced tool for import CSV



Example

Mobile forms

- Create mobile forms



Example

Report by point

- Generate a point with the info in all the layers in a view

Propiedades de la capa

General | Simbología | Etiquetados | Hiperenlace | Metadatos | 3D | **_Reportbypoint**

_Table_name_to_use: MDTHuesca_BigCuenca

Campos

_Field_name	_Name_to_show	_Show
ID	ID	<input checked="" type="checkbox"/>
Área aguas	Área aguas	<input checked="" type="checkbox"/>
GEOMETRY	GEOMETRY	<input checked="" type="checkbox"/>

☐ _if_only_one_record_generate_report

_Type_of_report: **By_table**

JButton

Cancelar Aplicar Aceptar

ReportByPointPanelReport

_Report

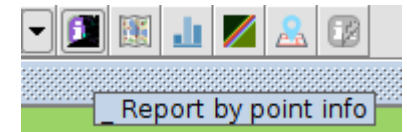
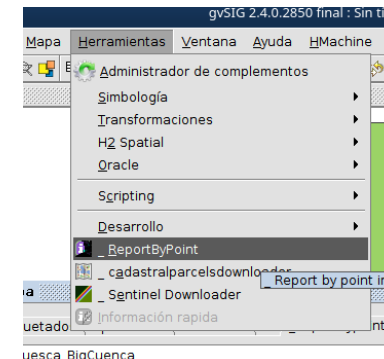
Report for point: POINT (480649.8580743211 6203454.93365588)

MDT_sin_depresiones

Band	Value
0	59.6743296842

TM_WORLD_BORDERS-0.3

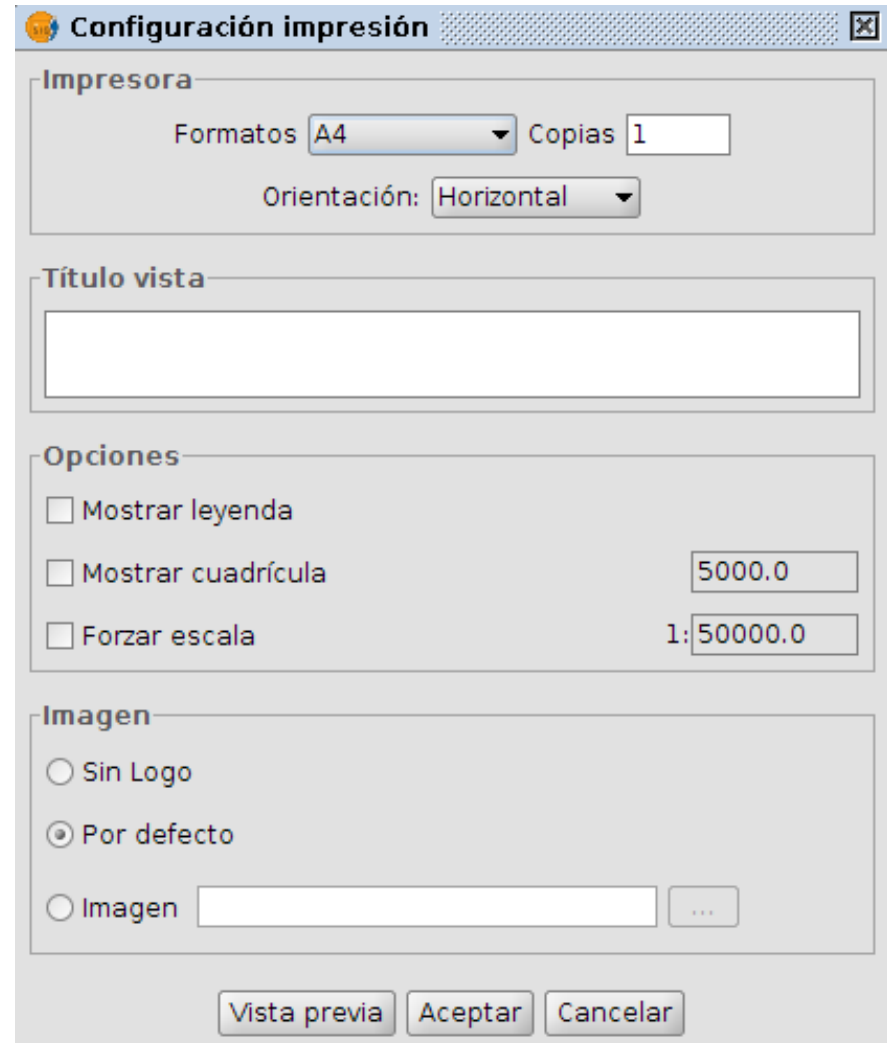
FIPS	ISO2	ISO3	UN	NAME	AREA	POP2005	REGION	SUBREGION	LON	LAT
UK	GB	GBR	826	United Kingdom	24193	60244834	150	154	-1.6	53.0



Example

Quick Export Map

- Create quick map



Configuración impresión

Impresora

Formatos: A4 Copias: 1

Orientación: Horizontal

Título vista

Opciones

☐ Mostrar leyenda

☐ Mostrar cuadrícula 5000.0

☐ Forzar escala 1:50000.0

Imagen

☐ Sin Logo

☒ Por defecto

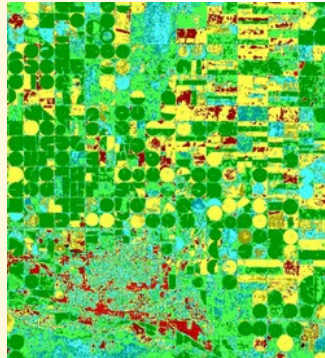
☐ Imagen

Vista previa Aceptar Cancelar

Example

Sentinel Downloader

- Search and download Sentinel products



Sentinel Search Panel

Sentinel search parameters

_Query_parameters

Filename

_Platform

_Polarisation

_Sensor

_Cloud_cover

☐ Use Query

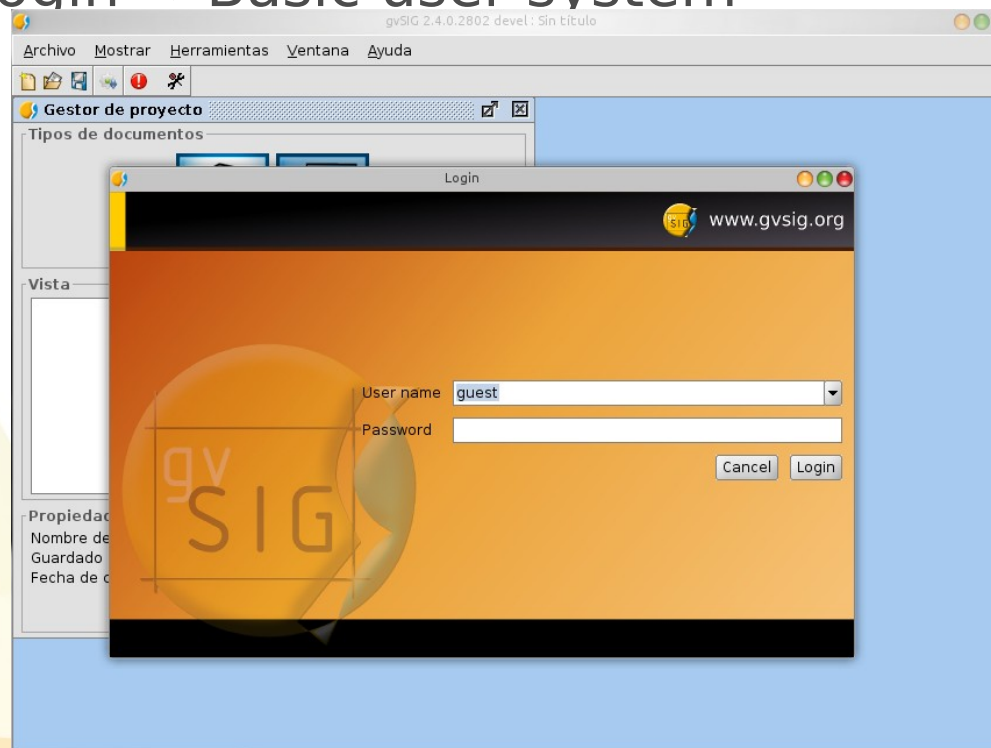
Result Info Preview

Done!

Example

Other type of plugins

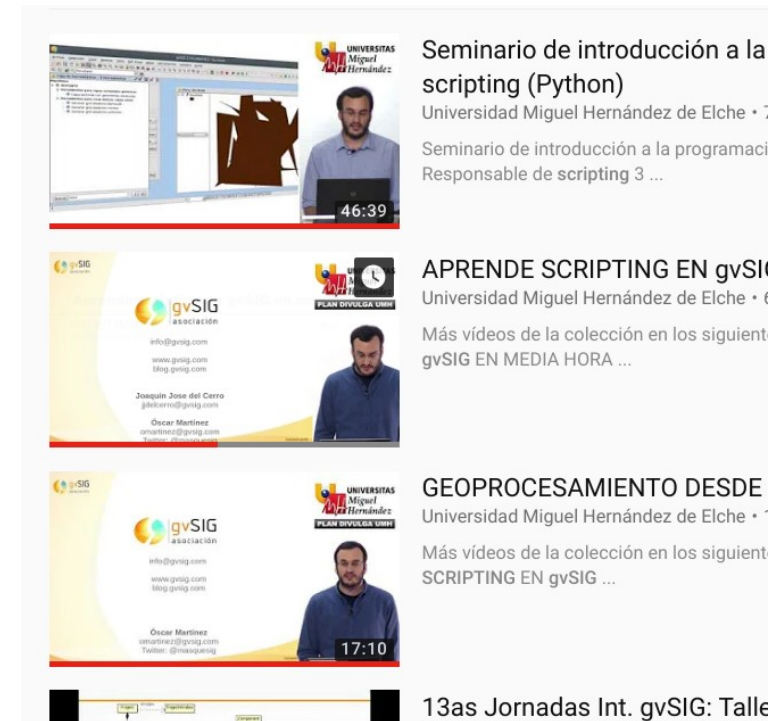
- GMLCatastro → create new export format file
- CadastralDownloader → download municipalities
- Geocoding Online → using python libraries
- SimpleLogin → Basic user system



+Info

Official docs

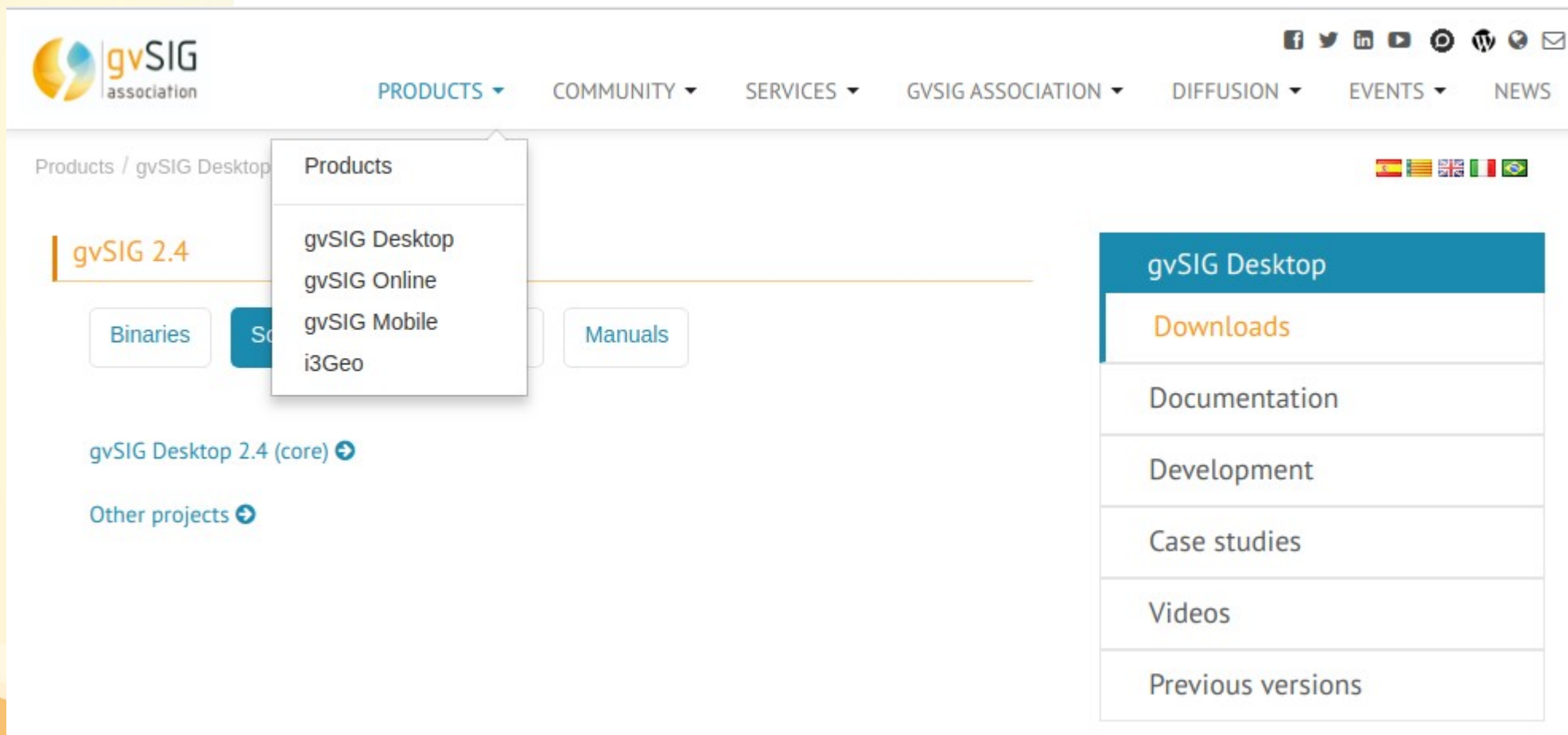
- gvSIG.com
- blog.gvsig.com
 - Workshops
- Mailing list
- Scripting guide 2.4
- Youtube
 - Gvsig + scripting



+Info

Code

- Source code



The screenshot displays the gvSIG website's navigation structure. At the top, the header includes the gvSIG asociación logo, a main navigation bar with links for PRODUCTS, COMMUNITY, SERVICES, GVSIG ASSOCIATION, DIFFUSION, EVENTS, and NEWS, and a row of social media icons. Below the header, the breadcrumb trail reads 'Products / gvSIG Desktop'. A dropdown menu for 'Products' is open, listing 'gvSIG Desktop', 'gvSIG Online', 'gvSIG Mobile', and 'i3Geo'. The main content area features a section for 'gvSIG 2.4' with buttons for 'Binaries', 'Source code', and 'Manuals'. Below this, there are links for 'gvSIG Desktop 2.4 (core)' and 'Other projects'. On the right side, a sidebar for 'gvSIG Desktop' contains a list of links: 'Downloads', 'Documentation', 'Development', 'Case studies', 'Videos', and 'Previous versions'.

Products / gvSIG Desktop

Products

- gvSIG Desktop
- gvSIG Online
- gvSIG Mobile
- i3Geo

gvSIG 2.4

Binaries Source code Manuals

gvSIG Desktop 2.4 (core) →

Other projects →

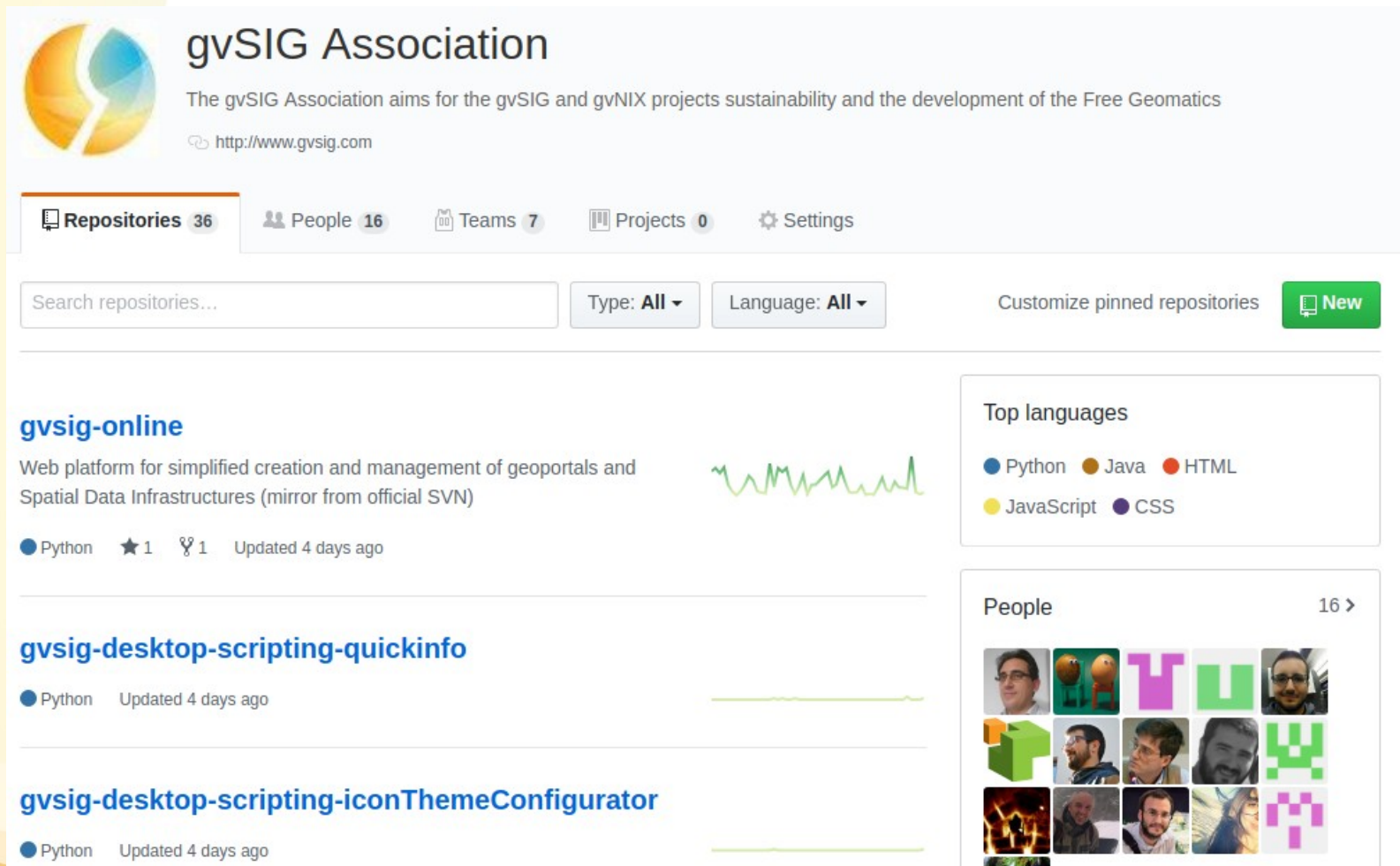
gvSIG Desktop

- Downloads
- Documentation
- Development
- Case studies
- Videos
- Previous versions

+Info

Code

- Github <https://github.com/gvSIGAssociation>



The screenshot shows the GitHub profile of the gvSIG Association. The header includes the organization's name, a description, and a website link. Below this is a navigation bar with tabs for Repositories (36), People (16), Teams (7), Projects (0), and Settings. A search bar and filters for repository type and language are present. The main content area lists three repositories: 'gvsig-online', 'gvsig-desktop-scripting-quickinfo', and 'gvsig-desktop-scripting-iconThemeConfigurator'. Each repository entry shows its description, programming language (Python), star count, fork count, and update date. A sidebar on the right displays 'Top languages' (Python, Java, HTML, JavaScript, CSS) and a grid of 'People' (16 members).

gvSIG Association
The gvSIG Association aims for the gvSIG and gvNIX projects sustainability and the development of the Free Geomatics
<http://www.gvsig.com>

Repositories 36 | People 16 | Teams 7 | Projects 0 | Settings

Search repositories... | Type: All | Language: All | Customize pinned repositories | New

gvsig-online
Web platform for simplified creation and management of geoportals and Spatial Data Infrastructures (mirror from official SVN)
Python ★ 1 🍴 1 Updated 4 days ago

gvsig-desktop-scripting-quickinfo
Python Updated 4 days ago

gvsig-desktop-scripting-iconThemeConfigurator
Python Updated 4 days ago

Top languages
Python Java HTML JavaScript CSS

People 16 >

¡Thanks!

Óscar Martínez

@masquesig / masquesig.com

omartinez@gvsig.com