

Improving Web Portal FreeGIS.org

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Chapter 1

Introduction

The task is to create a new website for freegis.org. To give the reader a hint what this site is all about, first of all an excerpt from the currently existing website:

The FreeGIS Project aims to promote the freedom in the scope of Geographic Information Systems (GIS). A GIS can be defined as an information system that is designed to work with data referenced by spatial or geographic coordinates.

“Free Software” is a matter of liberty, not price. To understand the concept, you should think of “free” as in “free speech” or “free markets,” not as in “for free” (*gratis*).

1.1 About GIS

Here is a definition for GIS, taken from www.colorado.edu

GIS is a special-purpose digital database in which a common spatial coordinate system is the primary means of reference. Comprehensive GIS require a means of:

1. Data input, from maps, aerial photos, satellites, surveys, other sources
2. Data storage, retrieval, and query
3. Data transformation, analysis, and modeling, including spatial statistics
4. Data reporting, such as maps, reports, and plans

1.2 About the FreeGIS project

1.2.1 Aims

The FreeGIS Project seeks to reach its aim through:

1. promoting the use, development and support of Free GIS Software,

2. promoting the use and release of publicly available geographic data in the same sense of freedom as for Free Software,
3. promoting the use, writing, translation and extending of free documents in the GIS field.

1.2.2 Services

The FreeGIS projects concentrates mainly on these three services:

1. the web portal, which summarizes the said software, data and documents with additional infos and search opportunities,
2. a community discussion list, where the news and releases are announced and synergy is sought among the interested community members and projects
3. the FreeGIS-CD, which offers a compilation of Free GIS Software and geographic data (which can itself be distributed and multiplied further).

1.3 User

These people are using the portal:

- People looking for Free GIS Software in order to use it for their scientific, economic or administrative purposes
- Developers of Free GIS Software who want to distribute their software to users and are looking for testers or other developers who may help them with their projects. Developers are also using the portal in order to find libraries that they can use for their projects.

1.4 Terminology

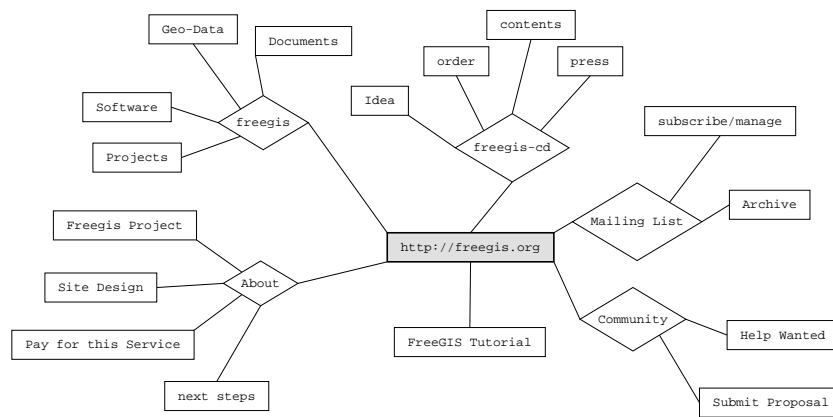
- A *FreeGIS-object* is a description of a software/geo-data/project or document which is stored in the FreeGIS database.
- A *User* is everyone who uses the portal without having to authenticate himself.
- A *Contributor* is a user, who can propose new objects for the database himself.
- A *Maintainer* is a trusted user, who reviews changed and inserted entries.

Chapter 2

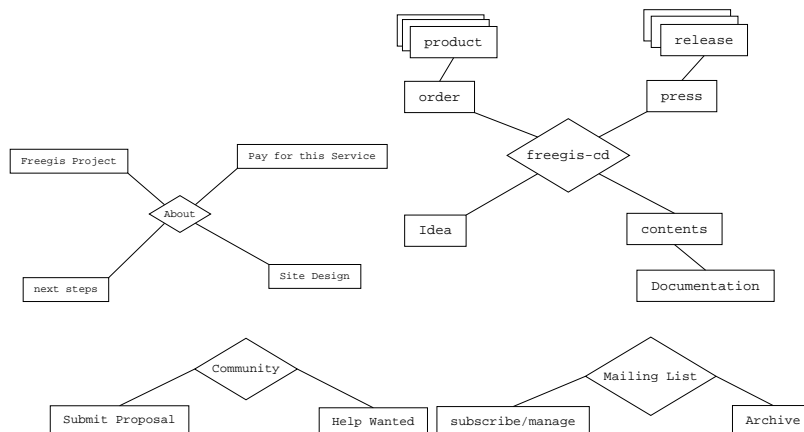
Current System

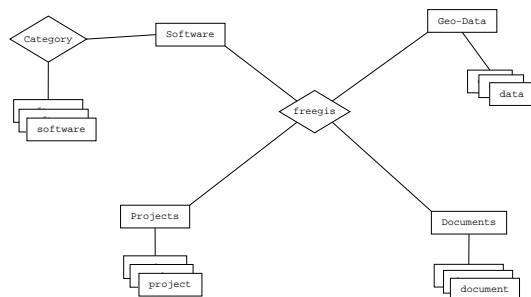
2.1 Site Structure

2.1.1 Overview



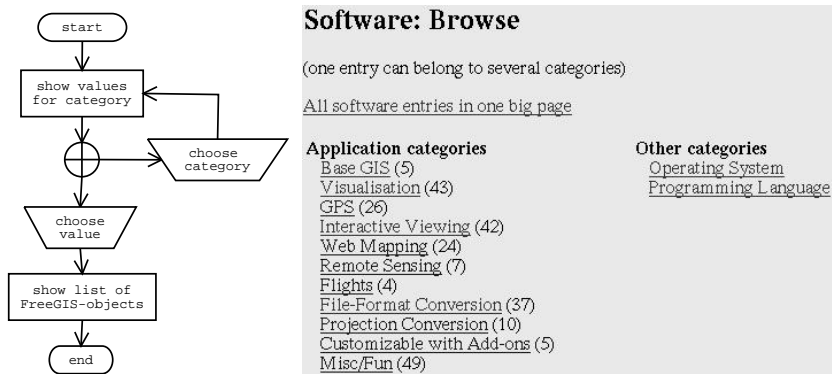
2.1.2 Details





2.2 Use Cases

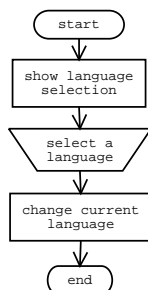
2.2.1 user: browse FreeGIS-objects



It is not

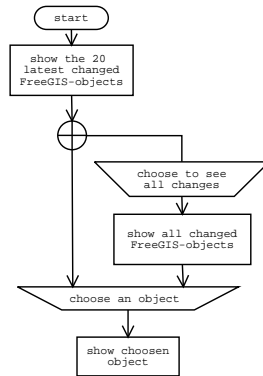
so easy for a new user to understand the functionality of the "other categories" links. The hierarchical connection is not clear.

2.2.2 user: change language

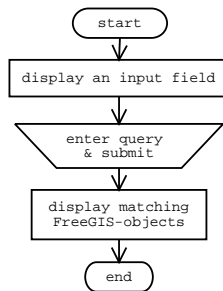


The selection is stored and used for all FreeGIS pages.

2.2.3 user: view recent changes

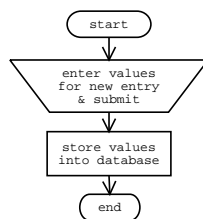


2.2.4 user: search FreeGIS-objects



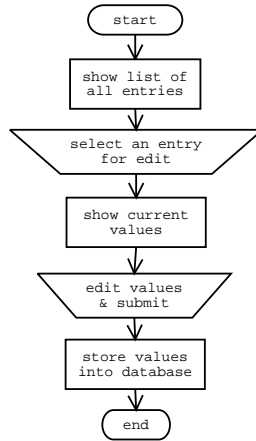
Not considered are the mailing list archive, the web pages of this site and the changelog for the entries.

2.2.5 maintainer: insert a new FreeGIS-object



It is very to easy to submit an incorrect entry, because it is possible to allocate an entry simultaneously to all of the possible object types, just by checking all their checkboxes.

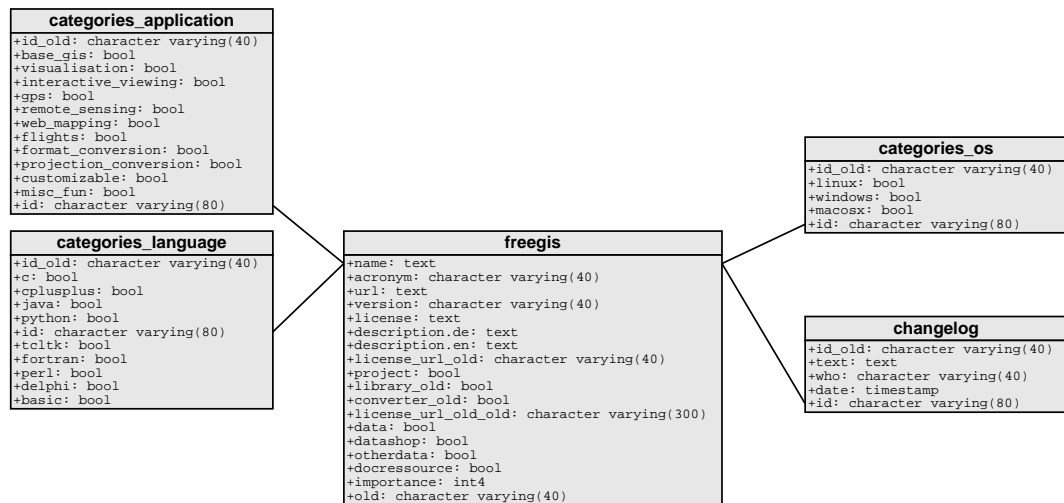
2.2.6 maintainer: update an FreeGIS-object



Here appears the same problem like in inserting a new FreeGIS-object.

2.3 Data Model

The main entity here is freegis, which contains information about the projects. The other entities provide information about categories and are referenced about the attributes id and name. It is not possible to dynamically add some categories, because they are statically included in the data structure, not in the data itself. For the 'software' category there is actually no attribute, so 'software' are implicit the objects which are in category_application. The attributes with suffix old are not used any more.



2.4 Architecture

The site uses the Zope web application framework. The information about the objects is stored with a PostgreSQL database. There is only one user role who has full access to all contents and the database.

2.5 Design

2.5.1 Description

The application is pure text with no graphical elements. The UI consists of three areas: title bar, main area and a navigation bar on the right hand side. All documents are present in German and in English, the section about the FreeGIS-CD also in French.

2.5.2 Screenshots

Homepage

The screenshot shows the FreeGIS homepage with a navigation bar at the top containing 'Intervention » FreeGIS', a search box, and a language selector '→ Deutsch'. The main content area is divided into several sections:

- FreeGIS**: A large heading for the main site.
- Latest updates**: A list of recent updates with dates, including [Mapyrus](#) (2004-04-01), [gpspoint](#) (2004-03-18), [GpsDrive](#) (2004-03-05), [Mobilmaps](#) (2004-03-04), [Geometry Engine Open Source](#) (2004-02-27), [Geometry Engine Open Source](#) (2004-02-27), [Geometry Engine Open Source](#) (2004-02-27), [SAMT](#) (2004-02-26), [GpsDrive](#) (2004-02-25), [QGIS](#) (2004-02-25), [SAMT](#) (2004-02-24), [OpenMap](#) (2004-02-19), [GPSBabel](#) (2004-02-13), [GPSBabel](#) (2004-02-12), [Position](#) (2004-01-20), [Geoserver](#) (2004-01-20), [GpsDrive](#) (2004-01-19), [GMT](#) (2004-01-14), and [Mapyrus](#) (2004-01-09).
- The FreeGIS Project provides**: A list of services including software overview, development communication, and direct use software/data.
- Software entries (top 60)**: A grid of links to various software projects such as GRASS, PROJ, GMT, GDAL, iGMT, MapServer, MapServer Workbench, GEOTRANS, OGR, GEOTRANS Library, GpsDrive, US Census 2000, TIGER/Line, gen2shp, Gen2shp, JEEPS, KFlog, NCAR Graphics, PMS, OpenMap, VisSD, VisSD+, PostGIS, GeoTools, GFC, EDBS extra, wayp2shp, GEO, BBBike, TARDEM, g3DGMV, VTP, kdem, OGD1, GIS Viewer, SDTS++, gpspoint, libgeotiff, E00compr, e00pg, tkgeomap, AVECE00, DGNLib, MITAB, gpsutils, GPStrans, Atlas, GPSMan, GPS3D, QGIS, Thuban, Grid, GARNIX, and retep Graph.
- FreeGIS (227 entries)**: A list of site sections including [Homepage](#), [Software](#) (196), [Geo-Data](#) (28), [Projects](#) (4), and [Documents](#) (12).
- Mailing list**: Links for [subscribe/manage](#) and [Archive](#).
- About**: Links for [FreeGIS project site design](#), [pay for this service](#), and [next steps](#).
- Community**: Links for [Submit proposal](#) and [Help wanted](#).
- FreeGIS CD**: Links for [Idea and Concept](#), [Contents](#), [Order!](#), [Press Releases](#), and [-v1.2.3 Released](#).

Example Software Entry

[Intevation](#) » [FreeGIS](#) » [FreeGIS-summary](#) [-> Deutsch](#)

FreeGIS-summary on Geographic Resource Analysis Support System

Name: GRASS (Geographic Resource Analysis Support System)
Homepage: <http://grass.itc.it/index.html>
Version: 5.0.3
License: GPL
Last update: 06.11.2003 16:14:15.00 CET

Description:
GRASS GIS (Geographic Resources Analysis Support System) is a Free Software Geographical Information System (GIS) with raster, topological vector, image processing, and graphics production functionality that operates on various platforms through a graphical user interface and shell in X-Windows.
Books about GRASS:
[Open Source GIS: A GRASS GIS Approach](#) by Markus Neteler and Helena Mitasova (2002)

Description (german):
Geographisches Informationssystem für die Bearbeitung von Rasterdaten, topologischen Vektordaten und Bilddaten. Eine graphische Benutzerschnittstelle für Unix/X-Windows ist vorhanden. Bücher zu GRASS:
[Das GRASS-Handbuch](#) von Markus Neteler.
[Open Source GIS: A GRASS GIS Approach](#) von Markus Neteler and Helena Mitasova (2002)

FreeGIS (227 entries)
[Homepage](#)
[Software](#) (196)
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- [v1.2.3 Released](#)

FreeGIS-CD

[Intevation](#) » [FreeGIS](#) » [FreeGIS CD](#) » [Idea and Concept](#) [-> Français](#) [-> Deutsch](#)

Mission

To offer and promote free software alternatives for proprietary Geographic Information Systems (GIS) and geographic data.

This includes GIS environments, applications, geo-data and tools for GIS development and education. Private and commercial use is explicitly allowed. The CD can be distributed and multiplied further.

Editorial Board

The contents of the FreeGIS CD is discussed by the FreeGIS Team. This team consists of free software authors, users and service providers. Everyone who likes to contribute is welcome.



Along with the FreeGIS CD the team also discussed the future of the web portal of FreeGIS as well as the future of the tutorial.

Email archive of FreeGIS Team: <http://intevation.de/pipermail/team/>
Management of the mailing list: <http://intevation.de/mailman/listinfo/team>

"Free" GIS and Geodata

The mentioned freedom of software and data is a significant advantage for software engineers and users. It is the same principle which works for the GNU/Linux operating system.

FreeGIS CD
» [Idea and Concept](#)
[Contents](#)
[Order!](#)
[Press Releases](#)
- [v1.2.3 Released](#)



Submit Proposal

Intevation » FreeGIS » Submit proposal Search [-> Deutsch](#)

Submit proposal

If you have a suggestion for a new project which should be listed on FreeGIS.org or if you think, that the information about an already inserted project has to be updated, then submit a proposal with this form. This helps us to improve transparency of the new entry/update requests for FreeGIS.org.

- ◆ [Open FreeGIS issues \(resolved issues\)](#)

Send a proposal:

Please make sure that your suggestion is not simply a gratis software but fulfills the [criteria for Free Software](#) as defined by the Free Software Foundation. Read more [about the FreeGIS Projects aims](#). If you are not sure about the status, we'll try to find out ...
Please make even more sure not to ask questions about software or solutions on the proposal submission. The [FreeGIS Mailing List](#) is available for discussions and questions. You will reach a much wider audience there.

Area:

Estimate the priority of your proposal:

Your Email address:

Short description:

Your proposal:

FreeGIS (227 entries)
[Homepage](#)
[Software \(196\)](#)
[Geo-Data \(28\)](#)
[Projects \(4\)](#)
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[Press Releases](#)
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Example Document Entry

Intevation » FreeGIS » FreeGIS-summary Search [-> Deutsch](#)

FreeGIS-summary on FreeGIS Tutorial

Name: FreeGIS Tutorial
Homepage: <http://freegis.org/freegis/tutorial/>
Version: 0.2.0
License: FDL
Last update: 23.11.2001 11:10:48.00 CET

Description:
The main intention of the FreeGIS Tutorial is to show the possibilities of solving tasks around GIS, surveying, and remote sensing by using free software under the terms of the GNU General Public License as published by the Free Software Foundation. Currently the Tutorial is in German only, but translations are aspired (support wanted).

Description (german):
Das FreeGIS Tutorial entsteht als Teil des FreeGIS Projektes neben dem FreeGIS Portal und der FreeGIS CD. Eine Intention ist es, dem Nutzer von GIS-Software, mit der beispielhaften Bearbeitung von Aufgaben aus den Bereichen Geoinformation, Vermessung und Fernerkundung die Vielfältigkeit freier Software und ihre praktische Anwendung in diesen Bereichen nahezubringen.

Application: **Operating System:** **Programming Language:**

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[- v1.2.3 Released](#)

Chapter 3

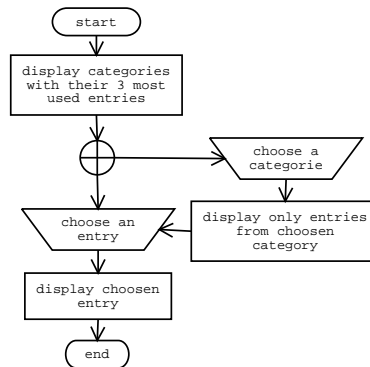
Improved System

3.1 Site Structure

```
http://freegis.org
+--+FreeGIS
  +---Software
  +---Geo-Data
  +---Documents
  +---Projects
+--+Mailing List
  +---Subscribe/Manage
  +---Archive
+--+FreeGIS-CD
  +---idea
  +---contents
  +---order
  +---press
+--+About
  +---Project
  +---Website
  +---Others
  +---Imprint
+--+Contribute
  +---Proposal
  +---Buy
+---Tutorial
```

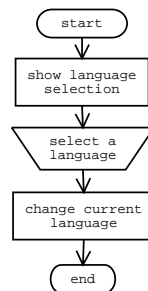
3.2 Use Cases

3.2.1 user: browse FreeGIS-objects



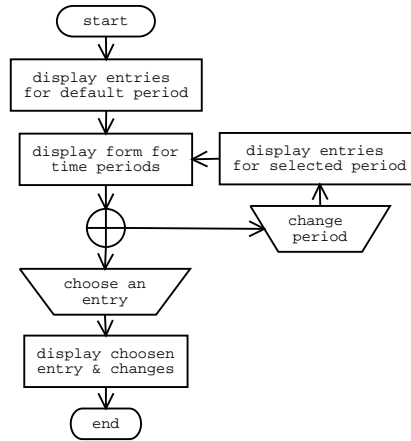
This is an improvement because the hierarchy of the categories is more obvious. Also it is possible to get with 2 clicks to the most used entries in each category.

3.2.2 user: change language



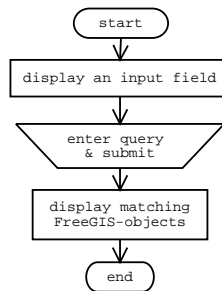
The selection is stored and used for all FreeGIS pages. This is exactly the same procedure as in the old system.

3.2.3 user: view recent changes



The user may now specify the time period he is interested in.

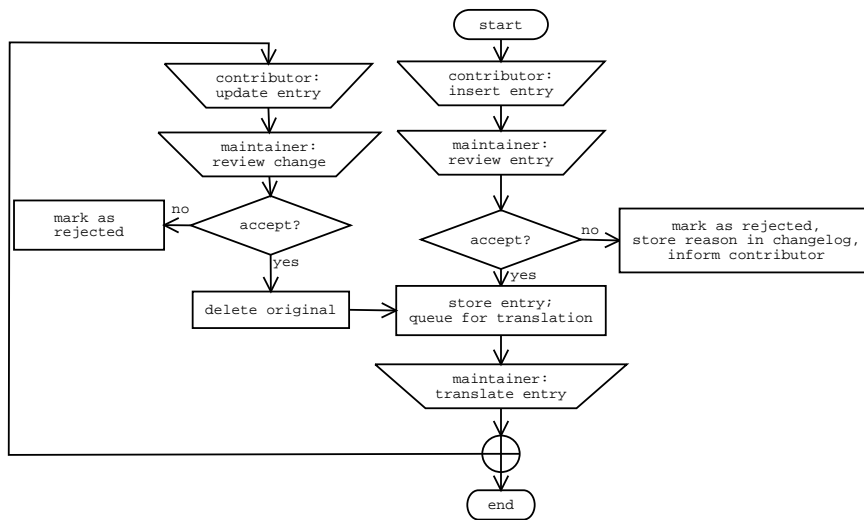
3.2.4 user: search contents



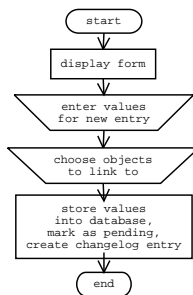
The procedure of the search will not be changed, but the search will be extended to also search the mailing list archive and the static site contents.

3.2.5 insert/review/translate/update FreeGIS-objects

Here is first a summary for these functionalities.

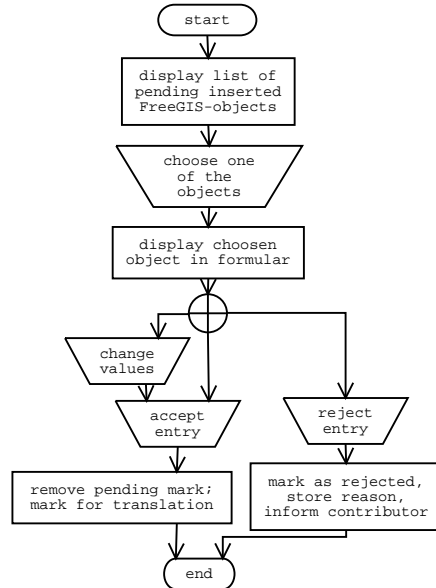


contributor: propose an insertion of a FreeGIS-object



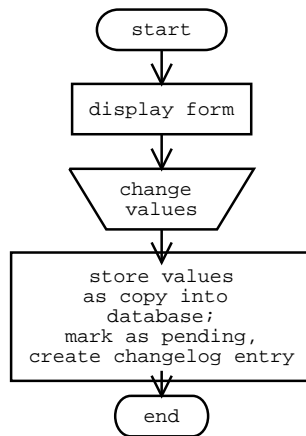
The new role contributor can make a proposal for new FreeGIS-objects. They are marked as pending, because an maintainer has to look at it before it is finally recorded in the catalogue.

maintainer: review inserted FreeGIS-objects



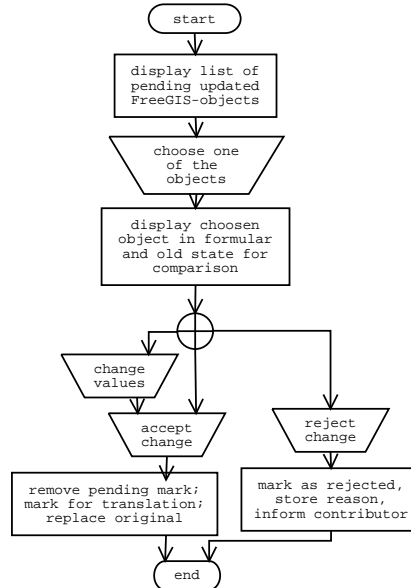
This is a new one, because we want to introduce this feature in the improved system.

contributor: update FreeGIS-object



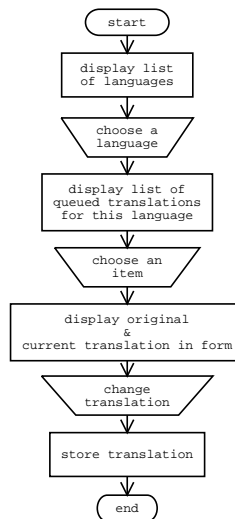
We won't lock the original, but store a copy with the changes and a reference to the original entry - so we can track all pending changes. The contribute should also get a hint that someone (and who!) changed this entry already, so they are able to synchronize each other.

maintainer: review updated FreeGIS-object

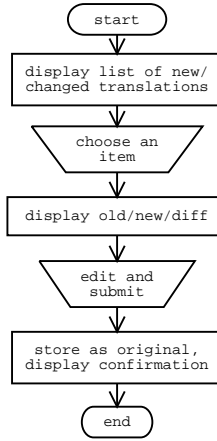


This one is new, because we want to introduce this feature in the improved system. The maintainer should also get a list of all changes for this object in order to compare them and eventually merge some changes.

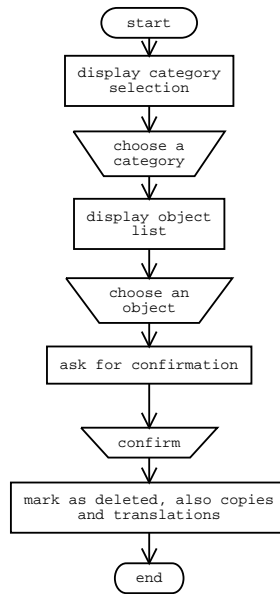
contributor: change translation



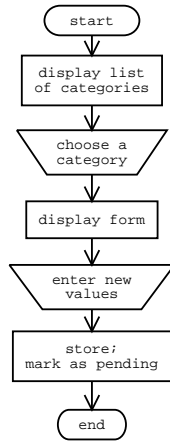
maintainer: review new/changed translations



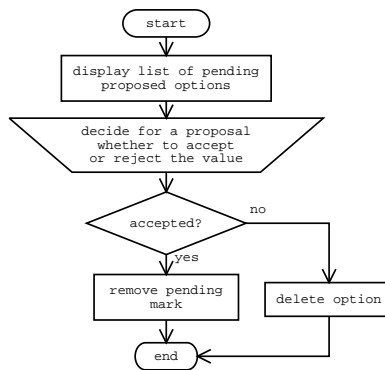
3.2.6 maintainer: delete FreeGIS-object



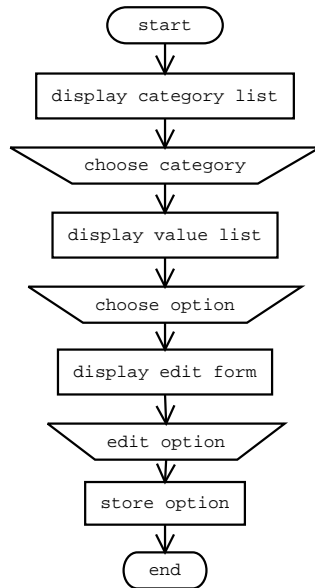
3.2.7 contributor: propose new options



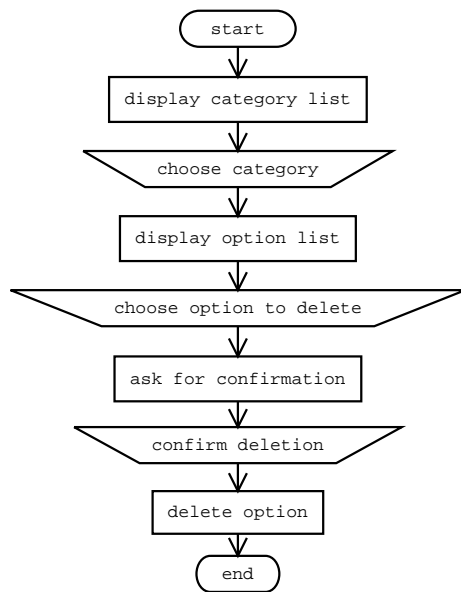
3.2.8 maintainer: review new options



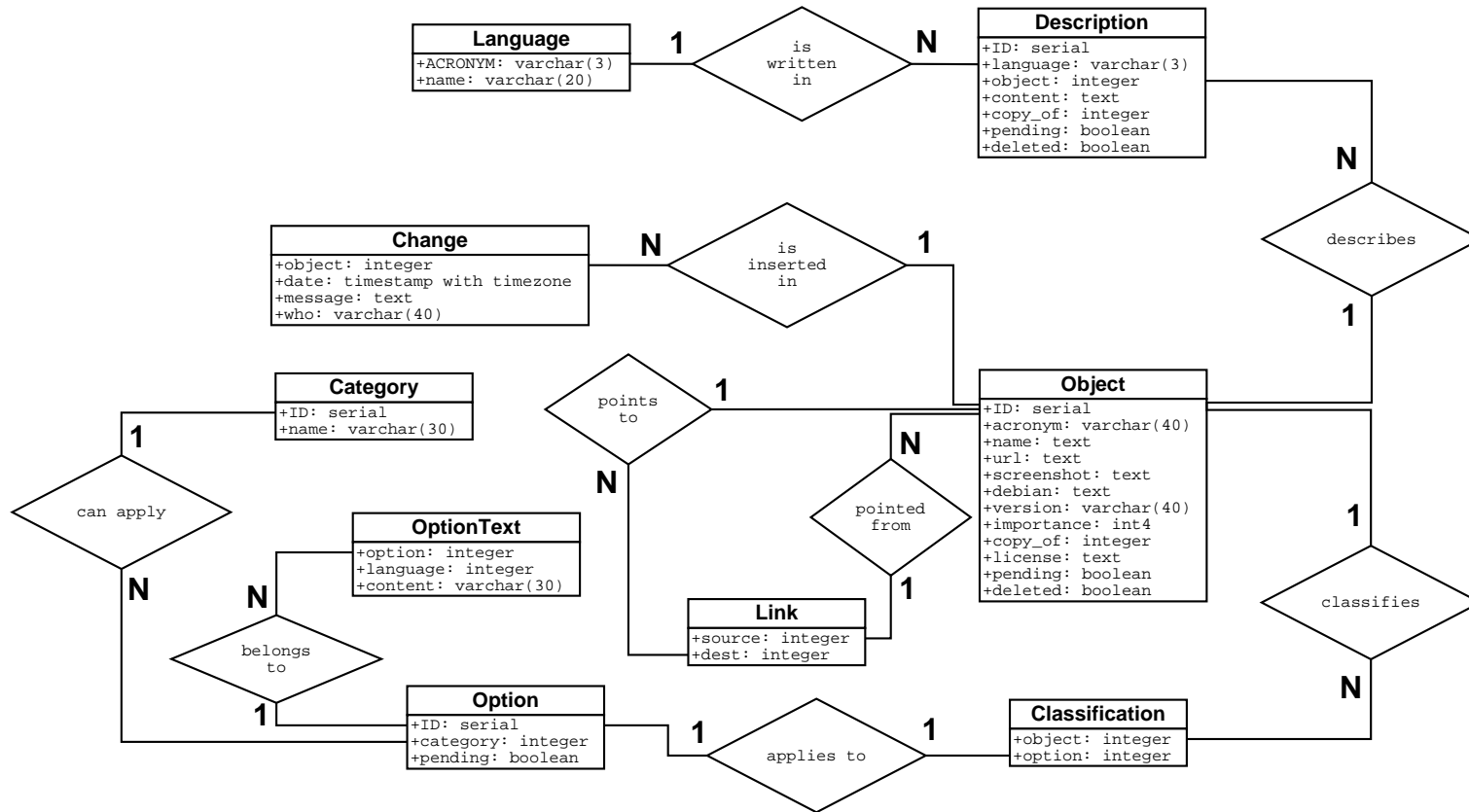
3.2.9 maintainer: edit options



3.2.10 maintainer: delete options



3.3 Data Model



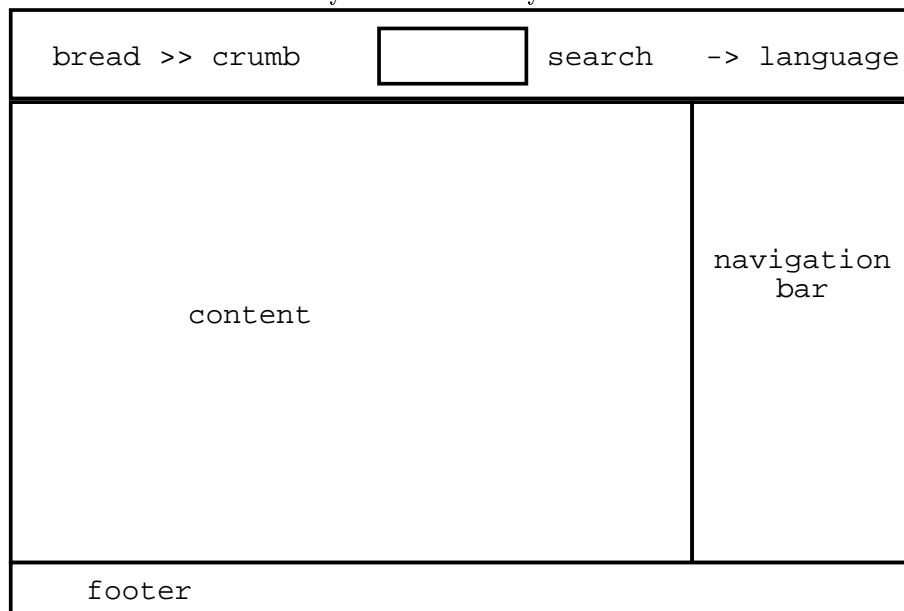
3.4 Architecture

The Zope Web-Application-Framework will be used for the improved system. The pages will be built using ZPT (Zope Page Templates). The FreeGIS data will be stored in a PostgreSQL database. The connection to the database is done with the Psycpg_database_connection. I18N of messages will be achieved by the Zope product Localizer. There will be 2 user roles: contributor and maintainer.

3.5 Layout

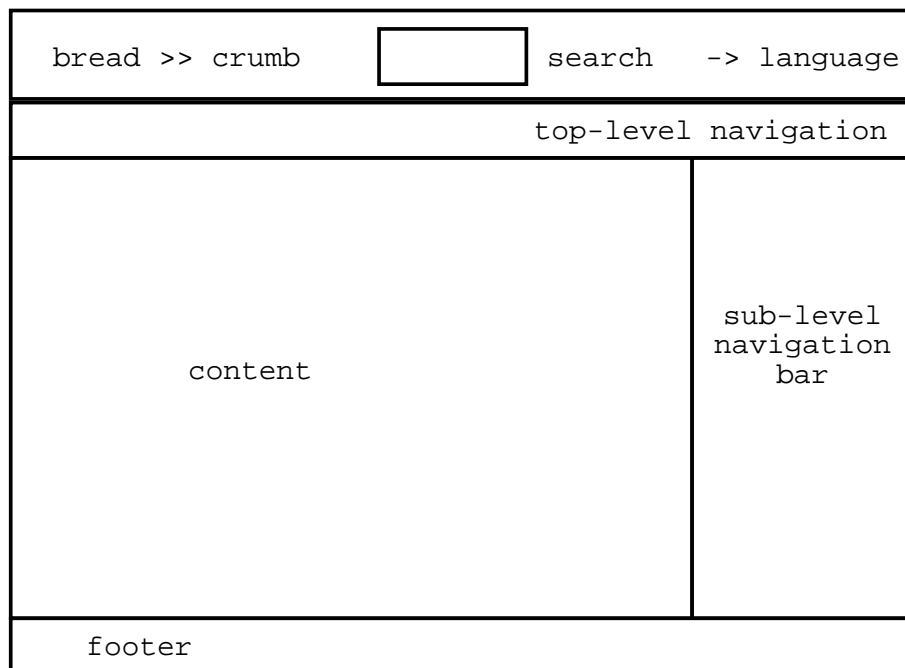
3.5.1 Proposal 1: conserve current layout

We will conserve the current layout as it is today.



3.5.2 Proposal 2: implement a 2-level navigation

The navigation is splitted into a (static) top-level navigation bar on top of the page contents which is accessible all the time and a (dynamically adapted) 2nd-level navigation at the right hand side of the contents.



3.5.3 Proposal 3: careful introduction of graphical elements

The navigation bar on the right hand side will be dropped in order to have more space for the content. The navigation will be a 2-level hierachical navigation. The goals of this are to reach all main pages by 2 clicks from the homepage while preserving for the user the possibility to find out at any time in which context he is and where was coming from.

