The Forth Net

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Abstract

CPAN and PECL are impressive ways of sharing custom libraries. Projects are discussed, hosted and downloaded. Their dependencies are clear (no need to search across the web) and also downloaded at once. There is no such web portal for Forth — until now.

1 Introduction

When working on the SWIG - Gforth Extension, we designed a platform independent file format for C interfaces called FSI[1]. Creating such files requires SWIG[2] to be installed and some understanding of the C interface as well as the library. Thats when we thought about having a central place to put FSI files, which are just downloaded and compiled using a normal C compiler (much likelier to meet at the end users system than SWIG). When hosting such libraries on a website, users also want to share code examples, host projects built on top of these libraries, as well as discussing about libraries and projects.

So instead of creating a FSI host and exchange website, we created a Forth portal capable of more than that. We want developers to be able to share their projects, get some feedback, explain the usage of their work and define dependencies to other projects. Users on the other hand should be allowed to browse through all projects, find related projects and download the source code.

2 Related Work

Sourceforge[3] provides easy creation of projects, but the relation between them is not always obvious. Downloading requires human interaction and could be cumbersome if you have to look up dependencies by yourself. Access is granted by using OpenID[4], so if one already precesses an OpenID, no registration is required.

The Comprehensive Perl Archive Network(CPAN)[5] supplies developers with their own web space. Read access is publicly available, write access is only allowed to the author. The registration process is human driven, one is approved as contributer after filling out a registration form and wait for up to 3 weeks. Using modules is easy as the download process will inform you about all dependencies, and allow you to download them at once.

The PHP Extension Community Library(PECL)[6] is similar to CPAN but registration works via normal email confirmation form.

Forth also has a website for sharing libraries called Forth Library Action Group (FLAG)[7]. It is operated by a steering committee which manages the accounts. Every library's "champion" is responsible for keeping his stable release up to date and available through FLAG.

3 Features

In order to attract users, and fit into the social web, we used some Web2.0 techniques, and tried to simplify processes on the website. We also considered related websites and picked up some of their ideas.

Login No registration is required, login is done with OpenID[4], so becoming a user of the Forth net is a matter of seconds. If one owns no OpenID, he is free to choose from many existing providers, or even become provider himself[8].

Projects Every user who is logged in can create a new project. To point out this feature and make people contribute, the "Create" menu is visible at all times. Project names are only allowed to contain alphanumerical letters and minus '-', that way they can directly be used as part of a URI or as definition names in Forth.

Tags As a hierarchical system of categorization can never quite serve the description of a project and sometimes make it even harder to find because one thought of it to be in another category, we only use tags. The author can assign Tags that fit his project, if a tag is not within the database, it will be created as soon as requested. To avoid a big amount of tags, they

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are only allowed to contain letters and numbers and are case insensitive. Popular tags like Forth Systems are marked as popular by the administrators and get better rankings, so users are encouraged to use them.

Personalization When dealing with lots of users within a comment section, its hard to remember who is who. Small avatars allow quick association of replies, to use the social web again, we included Gravatar[9]. It allows users to host multiple avatars at a central place and make use of their fast content distribution network. Once a user has logged on to the Forth net and enters his email address, the MD5 checksum of it used to reference his image on Gravatar. If none is set, Gravatar supplies a random geometric pattern using the email address as seed.

URIs Instead of using old fashioned URIs with lots or parameters, e.g.: `/index.php?display=cont&user=42&si=...` pretty URIs are used: `/projects/the-Forth-net`. This way users and visitors quickly realize how the URI works and could easily link to them.

Every user has his own profile site where projects managed by him are displayed and other users can send him private messages.

4   Conclusion

The Forth net aims to be the de facto standard for sharing forth libraries some day. By using established Web2.0 technologies such as OpenID and Gravatar, the threshold of becoming a project maintainer is much lower than in other networks where contact to the hoster needs to be made first. Using pretty-URIs, search engines and users can easily see the link between the URI and the content and refer to the homepage.

5   Further Work

5.1   fget

Instead of letting the user struggle with keeping his local library copies up to date and resolve any dependencies to others, a download manager – working titled "fget" – could do this for him. The web server will have special access features with no markup for this sole purpose.

5.2   Crawler

To minimize the effort for developers, a crawler could collect the most up to date version of a project from a given URI. As several security issues become

relevant this feature will only be allowed to users who have been approved by the administrators.

References

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