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Name of the project

GNU Clisp

Summary

Implementing thread safe hash tables in the core of GNU Clisp.

Benefits

The community: Having threading support is necessary everywhere from normal computing tasks to larger applications running on production environments like servers. The problem arises when the data being used in threads are not atomic in nature. Most of data structures are thread safe in GNU Clisp except the hash tables which are also extensively used in CLOCC.

Me: Since I am doing this project I will get to know how threads, mutexes and hash tables are used in writing a program like GNU Clisp. And overall I would be communicating with great people in the community I would learn other side stuff too which will be an additional gift for me.

Things to be delivered

Since, my work consists of threading and hash table support so the files to be dealt with are `src/zthread.d`, `src/xthread.d` and `src/hashtabl.d` and may be other lisp files.

Preventing segfaults in MT builds while improving the hash table support. If possible reimplementation of hash table will be done using Leapfrog probing method so they will probably be implemented.

Plan

Date	Work
04-May to 30-May	Talking to the developer team, fixing small bugs and get acquainted with the p
31-May to 11-June	Writing the lisp code to make simple threads and find out where the hash table
09-June to 30-June	Write functions to handle the thread safety in the hash tables.
25-June to 15-July	Have the functions run against the test cases
10-July to 20-July	Write the tests that were missed beforehand
18-July to 25-July	Make the code more portable to run on different platforms
23-July to 30-July	Polishing the code to be more readable for future development

Communication

clisp-devel mailing list archives on source forge is subscribed both via email and RSS feeds. clisp-announce is the place where announcements are made. User bugs are available on clisp-list.

I have also asked some questions to the GNU Clisp developers who have helped me most of the time but I am loving the new things that I learn when I communicate.

Qualification

I have written a mathematical expression calculator, convex hull problem, AVL trees and simple matrix operations. So, I am well acquainted with programming in C/C++ using Makefiles. I also like designing/programming core stuff like a compiler or a kernel or a DBMS.

Since, I am an Emacs user for around a year so I have started to like ELisp and gradually lisp too.

- National Institute of Technology, Durgapur
- Bachelor's course in Information Technology
- Second(2nd year or 4th semester) year

- Multi threading concept is in 4th semester
- Hash Tables were taught in the 3rd semester
- Basics of `pthread.h`