The American University in Cairo
School of Sciences and Engineering
Department of Computer Science and Engineering
CSCE 345/3401 – Operating Systems

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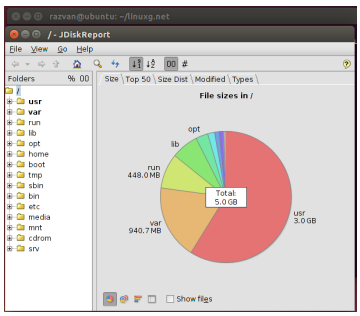
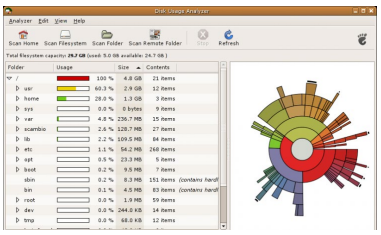
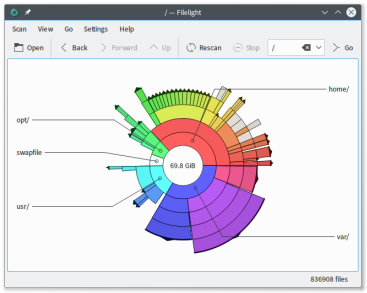
Project I

Due March 15th @11:59PM

In this project you are required to design and develop a disk analyzer for Linux. Its purpose is to scan your file system structure and graphically represent the directory entries with emphasis on size occupied by each entry. It should have the capability to zoom in/out on selected entries (i.e., moving in or out from partitions to subdirectories to files).







Several similar tools exist (as shown above) and you are required to survey them making use of their strengths and avoiding their pitfalls. Results of this survey are to be included in your report; a good recent survey is given here yet yours should be more technical and be distinct. It is expected that your tool will be developed in C, be accurate, efficient and have good GUI to be informative. Such features should be explicitly highlighted and demonstrated in your report. Your report should detail data structures used to represent storage contents demonstrating how it affects performance and efficiency as well as algorithms used for access and listing.

Useful Linux and C Resources

To help you start with Linux, we have compiled a list of Linux resources that would help take you from novice stage to Kernel expert (as needed). The list is the work of the very large community of people who have worked with the Linux kernel.

For Starters

- Kernel Newbies: Intended to help new kernel hackers
- Linux Questions: A civil forum asking Linux questions
- Ubuntu Support Forums: From the best-known consumer distribution of Linux, including a section for absolute beginners

Kernel News

- Linux Weekly News (LWN.net)

Kernel Hacking

- Here is where you can get any kernel you want: Linux Kernel Archives at kernel.org
- The Linux Kernel Documentation Project
- Linux Insides

Source Navigators

The source navigators provide browse-able kernel code, making it easier to read than your ssh window or emacs. However, the kernel is not necessarily the same version as the kernel you will be working with, so watch out for subtle differences.

- Linux Source Navigator

C Language Resources

As Linux is written mostly in C, if you are unfamiliar with the language, we provide you with few links that will jump-start your C capabilities in no time.

- C programming.com
- ANSI C On Unix Systems
- C Frequently Asked Questions
- This includes a tutorial and full reference to C: Programming In C: Unix System Calls and Subroutines in C