CSCI-4470 Open Source Software

Summer 2022

Rensselaer Polytechnic Institute

Department of Computer Science

Licensing

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Our Lecture Slides have greatly benefited from the previous classes taught by Dr. William Schroeder and Dr. Luis Ibanez at RPI,

And by Professor Mukkai Krishnamoorthy who succeeded them in teaching the course

Figure 1: image

Reading Material

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- Free Software/Open Source: Information Society Opportunities for Europe?
    - http://eu.conecta.it/paper.pdf
- Brief history of open source software
    - https://bit.ly/2Vxs0vw

A (Very) Brief History of Linux

The Main Characters

- East Coast (MIT) Richard Stallman launched the GNU project – under GNU General Public License (GPL) - Stallman's manifesto:
    - Stated that availability of source code and freedom to redistribute and modify software are fundamental rights.
- West Coast (UC Berkeley) was improving the UNIX system BSD Unix – supported by DARPA

More from the West Coast

- BSD Unix released under BSD License. Kernel requires AT & T Unix license – hence remained proprietary.
- Another important Open Source Project is TeX (a typesetting system by Donald Knuth - Stanford)
- Communities for all of them exist even today

Communities

- USENET newsgroups and communities formed.
- They were able to patch programs and development was possible,
- X windows (Open Source) funded by consortium of companies.

UNIX Kernel

- Bill Jolitz (UCB) was developing kernel for i386 under Net/2 (free of the copyright form AT&T) – 386 BSD https://en.wikipedia.org/wiki/William_Jolitz
- Linus Torvalds (Finland) – unhappy with Prof. Tannenbaum's minix kernel was implementing linux kernel with GNU software.
- 386 BSD evolved into NetBSD, FreeBSD, OpenBSD
- Linux Kernel evolved into many GNU/Linux distributions (Slakware, Debian, Red Hat and many more)

More High Quality Open Source Development

- Apache (Widely used WWW server)
- Perl, (an interpreted language with lots of libraries – bio-informatics)
- R (origin in AT&T Used by Statisticians and Data Analysts)
- Mozilla/Firefox – WWW Browser (origin Netscape)
- GNOME/KDE – Desktop Environment – Used for nonspecialists

More ...

- Python, Java, GO – Programming Languages
- Open Data
- Open Research – Making the data and computations Public

Questions and Discussion