FOSS AND SOCIAL NETWORKS

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Abstract:*In this paper I would like to make the users aware of the FOSS and the use of FOSS in social networking.FOSS-Free and Open Source Softwares are those softwares available for free of cost and provide the users with the source code.FOSS give the users four freedoms.*
Freedom 0- The freedom to run the program, for any purpose.
freedom 1-The freedom to study how the program works, and change it so it does your computing as you wish .
freedom 2-The freedom to redistribute copies so you can help your neighbour.
freedom 3-The freedom to distribute copies of your modified versions to others.

Social networking is the art of connecting with those who share common interests.Social networking helped a lot to develop web 2.0. since they provided the users the facilities for information sharing, interoperability, user-centered design,and collaboration on the World Wide Web.At present most of the social networking sites like facebook and google plus run on linux systems.They uses LAMP frontend.They uses C++, Java, Python, and Erlang as backend.The combination of these frontends and backends make the structure of website robust.All these frontend-backend softwares belong to the category of FOSS.On the other side users are facing serious threats to their privacy while using social networking sites like facebook.These sites track the activities of users through their tracking cookies.This is paradoxical and the users must be aware of these activities.facebook went through many controversies becaues of this single reason.While the company is repeatedly denying the claims of online tracking of user activities by a single click of 'like' there are incidents of storing the online history of users in their servers.Some sites like google plus introduced a better solution.Still they track user activities to some limits.These tracked out data can be somewhat devastasting together with lawsuits lilke sopa/pipa.According to SOPA/PIPA sharing of copyrighted content can be illegal and the accused can be imprisoned or can be imposed a very high fine amount.Diaspora,a completely FOSS based social networking website came as a solution for tracking issues.This is completely based on user interests.Diaspora is still under development.

Index Terms-Web2.0,LAMP,Tracking cookies,SOPA/PIPA.

FOSS is Free and Open Source Software.They are softwares that are free of cost and their source codes are available for the users free of cost for manipulation and improvement.Most common examples for free softwares are vlc media player and firefox web browser.Free softwares provide the users with four freedoms they are freedom 0-The freedom to run the program, for any purpose,freedom 1-The freedom to study how the program works, and change it so it does your computing as you wish (control computing).freedom 2-The freedom to redistribute copies so you can help your neighbour.freedom 3- The freedom to distribute copies of your modified versions to others[1].

Free software permits students to learn how software works. When students reach their teens, some of them want to learn everything there is to know about their computer system and its software. That is the age when people who will be good programmers should learn it. To learn to write software well, students need to read a lot of code and write a lot of code. They need to read and understand real programs that people really use. They will be intensely curious to read the source code of the programs that they use every day.So the real thing that matters do not lies in eye candies its all about code.FOSS enables the users to learn and modify the softwares according to their use if needed.In a country like India even the government dont really care about FOSS.If we let our coming generation use only proprietary softwares it will lead the society to a situation in which people need only proprietary softwares even if there are many free softwares better than these proprietary softwares available.We have to put an end to this .So the government have to promote open standards and FOSS.

Social Networks And Foss

Social networks are those online networks of a group of people spread over a network (internet) to share interests.In modern days social networks are used to build social realations.Social networks thrived the growth of web.Social networking over the internet contributed a lot to the development of web2.0[2].Web 2.0 is the form of developed internet that provided the users a higher level of interaction with other users and different elements in the internet through applications that facilitate information sharing,user centered design,interoperability and collaboration in the world wide web.The impact of social networking sites on the society is great.Social networking over the internet is emerging as a method of showing the interests of the public.Many contemporary issues are being discussed over the social networking sites.Most the portable devices in the market are having real time access to social networking sites.All these made social networking an essential part of the life of common people.

Social networking sites rely on a frontend-backend combination to make
the backbone of the site robust.The frontend generally consists of an os,web server,database generally consists of an os,web server,database and a web programming language.The backend Consists of powerful programming languages like c,c++,java,pyhton or Erlang and protocols for RPC.They also use more powerful databases like Cassandra.All these together make the site work regardless of the operating system or the browser.Here in this paper facebook is taken as an example.Facebook depends upon FOSS to make the entire system work.Facebook uses LAMP(Linux-Apache-MySql-Perl/Python/PHP) frontend[3].Linux means that the operating system used by facebook uses linux kernel.Linux kernel provide a stable system.Apache is the web server used.Apache thrived the growth of web since it a was a free web server.To store the data in a tabular way facebook uses MySql database.MySql is used as a key-value store as the database contains a large amount of user data arranged in a tabular way.MySql is simple to use.In some cases it cannot handle very large complex databases.So in those scenarios a more advanced database cassandra is used. Cassandra can be used to search the inbox of facebook.Programming languages like php,perl and pyhton is used to power the frontend.Facebook uses a protocol called thrift for Remote Procedure Call.Thrift is an open source software framework.It supports python,perl,C,C++, ruby, java and others.Social networking sites contains a log server also.Currently facebook is having logs of approximately 25 terabytes daily.All the activities including every click that link to the site is recorded in the log server.Data streamed in real time are also recorded since social networking sites uses the upload after stream method.Scribe is the log server used by facebook.Another problem to be addressed is caching.Caching is an issue of high priority when working on lower bandwidth. Facebook uses an application memcache to deliver high speed to its users by accessing objects in ram other than searching the entire database.

Facebook itself is built using open source tools and softwares.The softwares used are given below.They are available for the following platforms.

1.Android
2.JavaScript
3.PHP
4.IOS

Developer Tools

Codemod[4] : It assists with large-scale codebase refactors that can be partially automated but still require human oversight and occasional intervention.

Facebook Animation[4] : It is a JavaScript library for creating customizable animations using DOM and CSS manipulation.

Online schema change for mysql[4] :can be used to alter large database tables without taking your cluster offline.

Phabricator[4] : a collection of web applications which make it easier to write, review, and share source code. It is currently available as an early release and is used by hundreds of Facebook engineers every day.

Phpembed[4] : makes embedding PHP truly simple for all of our developers (and indeed the world) we developed this PHPEmbed library which is just a more accessible and simplified API built on top of the PHP SAPI.

Phpsh[4] : provides an interactive shell for PHP that features readline history, tab completion, and quick access to documentation. It is ironically written mostly in Python.

Three20[4] : an Objective-C library for iPhone developers which provides many UI elements and data helpers behind our iPhone application.

XHP [4]: a PHP extension which augments the syntax of the language such that XML document fragments become valid expressions.

XHProf[4] : a function-level hierarchical profiler for PHP with a simple HTML-based navigational interface.

Infrastructure

Apache cassandra[4] : a distributed storage system for managing structured data that is designed to scale to a very large size across many commodity servers, with no single point of failure.

Apache hive[4] **:** is data warehouse infrastructure built on top of Hadoop that provides tools to enable easy data summarization, adhoc querying and analysis of large datasets.

FLASHCACHE[4] : a general purpose writeback block cache for Linux. It was developed as a loadable Linux kernel module, using the Device Mapper.

HIPHOP FOR PHP[4] : transforms PHP source code into highly optimized C++. HipHop offers large performance gains and was developed over the past two years.

OPEN COMPUTE PROJECT[4] : an open hardware project aims to accelerate data center and server innovation while increasing computing efficiency through collaboration on relevant best practices and technical specifications.

SCRIBE[4] : is a scalable service for aggregating log data streamed in real time from a large number of servers.

THRIFT[4] : provides a framework for scalable cross-language services development in C++, Java, Python, PHP, and Ruby.

TORNADO[4] : is a relatively simple, non-blocking web server framework written in Python. It is designed to handle thousands of simultaneous connections, making it ideal for real-time Web services.

A major issue to be addressed with social networking sites is the privacy of the user. Many social networking sites track the activities of the user even after they are logged out of the site.These tracking is made possible with tracking cookies installed to the browser with or without the permission of the user.Social networking sites like facebook track the whole activities of the user if there occur a single click on the like button.The problem is that they track each and every activities of the user even if they are visiting sites that have no links to social networking sites.This is an illegal activity since the private company is tracking the activities of the user without his/her knowledge.They are saving these tracked out data in their log servers. Facebook tracks the user even if the user is not on facebook through a single click on the 'like' link.After clicking on the link a cookie would be installed on to the browser.These cookie is capable of tracking the user every time since the browser starts.This can be prevented by clearing all browsing data including site preferences.But the user who is unknown of all these would be tracked by the site forever.If the log data is transferred on the request of governing authorities of a country,it cannot be stated as anything illegal.But if the company if transferring the logs to any private entity for interests of the company it would be a threat to the user.The log data may contain all the personal details of the user as he is on the social networking site everything including the chat history contain his private matters.These data cannot be disclosed to any private parties without the interest of the user.Providing all the personal information to the social networking web servers have other diadvantages too.If the site is hacked or cracked by the anyone the data could be easily accessed and be published also.The same incident occured 2-3 years back.

The blind photo tagging strategy must be addressed by facebook. They are allowing the users to rag anyone in their friendlist to tag any any photo with the name of their friends. This is because of one single reason that the person is in the friend list of the user. He can tag any photo without the permission of his friend. There is no restriction that the photo must be of any human. This must be addressed by facebook or any social networking site that have the facility of photo tagging.

Another emerging issue is the anti-piracy laws like SOPA/PIPA.SOPA is Stop Online Piracy Act.According to SOPA any copyrighted material over the internet cannot be downloaded.The material can be a video file, audio file or an article.According to this law the person who knowingly or unknowingly download the copyrighted material can be imprisoned.If a reference or link to the copyrighted material is put in the social networking site the site have to stop its functioning and the responsible person can be imprisoned.Social networking sites including facebook and google plus come forward against this.Even wikipedia come against this since their vast database of online articles may contain any names of websites that may provide copyrighted materials like torrent sites.Facebook CEO,Mark Zuckerburg wrote on his wall against these laws.PIPA,Protect Internet Privacy Act is also same as SOPA.People have to raise their voice against these laws.The companies that implemented these laws are trying to get internet under their control.It would be a catastrophe if this happen.The common people will be denied to even browse the web freely.

An open source alternative to existing social networking sites is under development. It is named as Diaspora. Diaspora is a social networking system in which the activities are entirely user centred. Diaspora is completely Free and Open source. Anybody can access the code due to its open architecture and the ease of access to the code. So the founders Dan grippy and Maxwell Salzberg are working hard to make the architecture robust and to reduce the vulnerabilities. Some of the features of Diaspora like privacy settings was copied by facebook and google plus.

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