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An Overview on GITHUB

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Abstract: ***GitHub Inc is one of the web-hosting services that are being controlled by git. These are mostly implemented for computer codes. In addition to offering all the distributed version control and SCM (Source Code Management) functionalities, it also provides its own features. In its every project, it offers access control and features like bug tracking, feature request, task manager, wiki's etc. Both private repositories and free accounts (which is mostly occupied for hosing open- source software projects) gains plans with the help of GitHub. According to the report made for June 2018 it is the largest host of the source code containing 28 million users, 57 million repositories which includes 28 million public repositories. GitHub is both version controlled and collaboration platform used for software development. GitHub is being generally delivered as SaaS (Software-as-a-service) business model, is an open source code management system found on Git during 2008 which was created by Linus Torvalds to construct software at a quicker phase.***

Keywords: GitHub, Git, SCM (Source Code Management), SaaS (Software-as-a-Service), private and public repositories.

I. INTRODUCTION

GitHub is mainly used to store huge amount of project source code and also track their history for the change of code if any. It provides tools for developers to collaborate on a project so as to manage possible conflicts that are changing for multiple developers. In order to change, adapt and improve software in a public repository, GitHub allows the developers for free, but whereas for any private repository, it has various paid plans for the changes to inure. All the project files along with the file's revision history are being maintained for each and every public and private repository. Both public and private repository can have any number of collaborations. GitHub facilitates social coding by providing a web interface to the Git code repository and management tools for collaboration [1]. GitHub can be used as series of social networking site in which members can follow each other, rate each other's performance, and communicate either in public or in private. Generally GitHub is a Git repository services with its set of features being embedded to them. It can be specified that Git is a command lie tool, whereas GitHub is a web-based graphical interface.

II. HISTORY

1) Chris Wanstrath, P J Hyett and Tom Preston-Wernes used R-language (Ruby) on rails to develop GitHub in the year 2008. In prior GitHub Inc located in San Francisco existed since 2007.

2) In the year 2009 February 24, GitHub team announced at YAHOO headquarters that within a year, GitHub has accumulate over 46,000 public repositories, 17,000 of it in the previous month alone. Almost 6,200 repositories have been forked and about 4,600 had been merged.

3) By July 5 2009, the site has reached about 100,000 users and on the same month by the date 27, another talk delivered at YAHOO that GitHub had grown to host 90,000 unique public repositories and 12,000 have been forked at-least once. Thus a total of 135,000 repositories exist.

4) By July 25 2010 GitHub hit 1 million repositories. By the next consecutive year 2011 April 20, it got around 2 million repositories.

5) On July 9 2012, Peter Levine, general partner at GitHub investor Andreessen Horowitz, stared that GitHub has been growing revenue at 300% annually since 2008 "profitably nearly the entire way"[2].

6) By the year 2013 January 16, GitHub announced that it has crossed 3 million users and was then hosting more than 5 million repositories. By the end of December 23 2013, it had crossed almost 10 million repositories.

7) By June 2015, first office for GitHub was opened outside US at Japan. End of July in the same year, it raised in funding for about $250 million.

8) In 2016 it was rated 14th in the list of 100 in Forbes Cloud.

9) By February 28, 2018 GitHub was the largest Distributed Denial- of-Service (DDoS) attack in history. It had an incoming traffic which crossed almost 1.35 terabytes per second.

10) By June 19 2018, GitHub extended its free education bundles to all schools for educational purpose.

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A. Acquisition By Microsoft

On June 4, 2018, Microsoft broadcasted its target to promote GitHub for USD 7.5 billion. Under Microsoft, the service will be led by Xamarin's Nat Friedman, narrating to Scott Guthrie, administrative vice president of Microsoft Cloud and AI. Current CEO Chris Wanstrath will be detained as a "technical fellow", also narrating to Guthrie. Microsoft had become a consequential user of GitHub, using it to host open source projects and enhancement tools such as Chakra Core, Power-Shell, and Visual Studio Code, and has endorsed other open source projects such as Linux, and enhanced Git Virtual File System—a Git enlargement for governing large-scale repositories (and itself has been embraced by GitHub).

There have been entangled from developers such as Kyle Simpson, Java-script mentor and author and Rafael Laguna, CEO at Open-Xchange over Microsoft's redeem, citing uneasiness over Microsoft's manipulating of prior acquisitions, such as Nokia's mobile business or Skype.

Some slice this as a climax of Microsoft's recent changes in business blueprint under CEO Satya Nadella, which has seen a larger pivot on the sale of cloud computing services as its predominant line of business, alongside enhancement of and alms to open source software (such as Linux), as divergent to the Microsoft Windows operating system. Harvard Business Review bucked that Microsoft was anticipating acquiring GitHub to get access to its user-base, so it can be used as a loss administrator to encourage use of its other enhanced products and services.

Concerns over the sale bolstered scrutiny in competitors: Bitbucket (owned by Atlassian), GitLab (a commercial open source product that also runs a hosted service version) and Source-Forge (owned by BIZX, LLC) reported that they had seen spikes in new users intending to migrate projects from GitHub to their respective services.

B. Mascot

GitHub's mascot is an anthropomorphized "octocat" with five octopus-like arms[5]. The caliber was synthesized by graphic designer Simon Oxley as clip art to promote on iStock, a website that facilitates designers to promote royalty-free digital images. GitHub became captivated in Oxley's work after Twitter elected a bird that he designed for their own logo. The illustration GitHub embraced was a character that Oxley had labeled Octopuss. Since GitHub required Octopuss for their logo (a use that the iStock license disallows), they negotiated with Oxley to buy elegant authority to the image. GitHub relabeled Octopuss to Octocat, and trademarked the character along with the new name [8]. Later, GitHub drafted illustrator Cameron McEfee to acclimate Octocat for contradictory objectives on the website and informational equipment; McEfee and various GitHub users have since created hundreds of variations of the character.

C. Services

Development of the GitHub manifesto began on October 19, 2007. The site was released in April 2008 by Tom Preston-Werner, Chris Wanstrath, and P. J. Hyett after it had been made acquirable for a few months anterior as a beta release. Projects on GitHub can be tapped into and maneuvered using the approved Git command-line interface and all of the approved Git mandates work with it. GitHub also allows chronicled and non- chronicled users to surf public repositories on the site. Multiple desktop clients and Git plug-ins have also been catalyzed by GitHub and other third parties that incorporate with the platform. The site provides social networking-like functions such as feeds, followers, wikis (using wiki software called Gollum) and a social network graph to expo how developers work on their versions ("forks") of a repository and what fork (and branch within that fork) is latest. A user must coin an account in order to interpose content to the site, but public repositories can be surfed and downloaded by anyone. With a registered user account, users are able to have discussions, manage repositories, submit interpose to others' repositories, and review changes to code.

D. Scopes

GitHub is mostly used for code.

In addition to source code, GitHub supports the following formats and features:

1) Wikis
2) Pull requests with code review and comments
3) Commits history
4) Graphs: pulse, contributors, commits, code frequency, punch card, network, members
5) Integrations Directory
6) Unified and split diffs
7) Email notifications

8) Option to subscribe someone to notifications by @ mentioning them.
9) Emojis
10) Nested task-lists within files
11) Visualization of geospatial data
12) PDF document viewer
13) Security Alerts of known Common Vulnerabilities and Exposures in different packages.

E. Licensing Of Repositories

GitHub's Terms of relevance do not request public software projects hosted on GitHub to meet the Open Source Definition. For that logic, it is important for users and developers denoting to use a piece of software found on GitHub to read the software license in the repository (usually found in a top-level file called "LICENSE", "LICENSE.txt", or similar) to decide if it meets their needs. The Terms of Service state, "By setting your repositories to be viewed publicly, you agree to allow others to view and fork your repositories."

F. Educational Programs

GitHub released a new program called the GitHub Student designer Pack to give students free introduction to popular enhanced tools and services. GitHub partnered with Bitnami, Crowdflower, DigitalOcean, DNSimple, HackHands, Namecheap, Orchestrate, Screenhero, SendGrid, Stripe, Travis CI and Unreal Engine to launch the program [4].

III. DEVELOPED PROJECTS

A. Atom, a free and open-source text and source code editor
B. Electron, an open-source framework to use javascript-based websites as desktop applications.

IV. CONCLUSION

Git and GitHub provide fast and comfortable ways to track projects, whether the project is by one single person or a team of software programmers. Although GitHub has many tangled features available, it's easily approachable for individual and tiny projects that need some kind of trailing mechanism. In owing to version control, GitHub offers users with a social manifesto for project management as well as the ability for users to build Gists and store GeoJson. GitHub allows programmer to launch their files in a '*Git Repository*' so that other people can amalgamate on projects with them, whether they are open for public augmentation (open source) or closed for unique colleagues to work on a private project. The idea is not contradictory to the way Google Docs lets you host your word processing and spreadsheet files and opens them up for amalgamation, though programmer do not job on the same documents together in real time or make changes directly in the search engine. One of the most familiar misconceptions about GitHub is that non-technical professionals, such as marketers, perceive the manifesto as purely a tool for programmer. Interestingly, GitHub's social undercurrents and resource-sharing efficiencies far more closely appear that of a social network - and all marketers can escalate the power and utility of social networks. Thus GitHub is one of the emerging and well-set firm of technology which would led it roots further more into all industrial firms in the near future for the enhanced use of it and for the betterment of the people using them.

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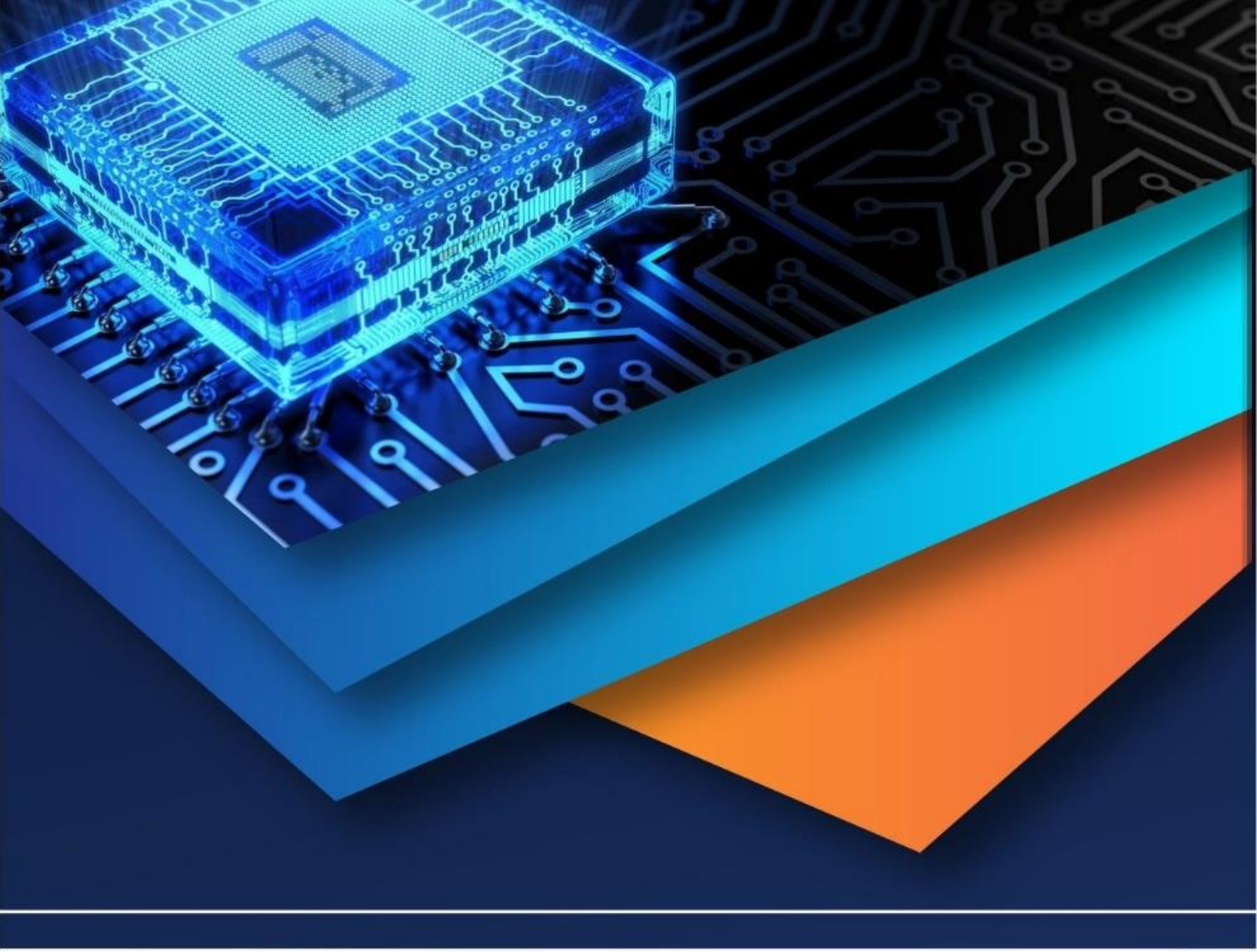

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