

Development of Project with Combined Efforts Using Cloud Computing

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Abstract: Gone are the days of local host, digital world is switching to cloud. IT industry is adapting cloud computing as root with a terrific rate. Songs, games, documents, calendars and what not, every stuff has made its place at cloud. Cloud computing emerged as "Everything as a service" i.e. XaaS and enthralled the entire routine of software developers. Not only the desktop applications reached to internet, but even the development of softwares started at cloud. At this stage, a new problem took birth i.e. Team Work at cloud. This paper presents the study of a project which would eradicate this menace to a great extent and would provide a platform for developers, where they can code, compile, run, share and above all, work as a team.

Keywords: IDE, SDK, XaaS, VCS

I. Introduction

The standard definition of cloud computing says that it is basically a model which involves storing, managing and sharing of resources over a remote server through network. Upon implementing this model, the end user gets the access to the resources hosted at some remote server (centralized location). The best part of the concept is that the user is not bounded to access the stuffs with a particular device viz. PC. The end user is facilitated with an anytime, anywhere access and with any device having internet. The concept of cloud computing came into existence in late nineties, and the actual implementation was witnessed in year 2006 with the Elastic Compute Cloud by Amazon. Extending the same theory, IBM brought cloud services and by the end of decade, the terms like private-public cloud, cloud clients and XaaS (everything as a service) evolved. [2][3][5][6] According to the official NIST definition, "cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction." [4]

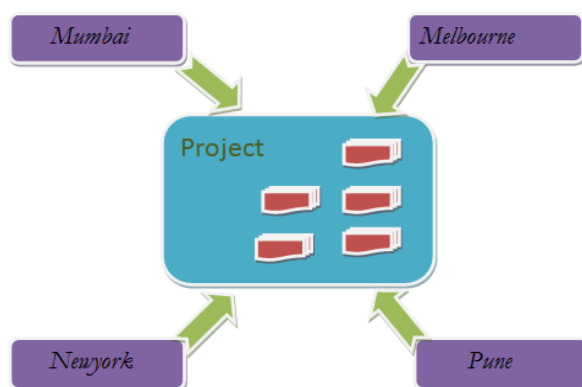


Fig.1 Introduction to Project

II. Work Already Done

As, working in a team over internet has been a problem, programmers took it as top priority job and put gave efforts to solve. Different approaches were adopted to set up a team which could work over a common project. Concern was not only about the formation of a team, but the issues like mutual exclusion were also taken in account. Few of the works are listed below:

A. Team Viewer: -

Team Viewer is a proprietary computer software package for remote control, desktop sharing, online meetings, web conferencing and file transfer between computers. This is one of the best efforts ever made in the field of team formation over internet. A remarkable software, one of its type but the programmers didn't liked it much as it didn't fulfilled their need. Though Team Viewer allows file sharing, it do not facilitates with online compilation, storage pool, development tools etc. [7b]

B. GitHub:

GitHub is a web-based Git repository hosting service, which offers all of the distributed revision control and source code management (SCM) functionality of Git as well as adding its own features. GitHub is enriched with the graphical user interface and overcomes the problem of exclusive access method through command line. It is the repository, exhaustively used by coders and in some way, encourages team work. But it too lacks when online development is taken in account. [7c]

C. Koding :

Koding is a developer community and cloud development environment, evolved by programmers of San Francisco. Here developers can come together and code in the browser with a real development server to run their code. Developers can work, collaborate, write and run apps together and that too without jumping through hoops and spending unnecessary money. The best part of the Koding is that along with the brilliant development environment, it facilitates with a social network of developers, with features enabling team formation. It also provides a chat server for the developer community at Koding to consult and discuss about the modifications being made at project. [7a]

Apart from these two, there are several other communities of researches putting efforts in the field, but the mentioned two have set benchmarks.

III. Future Prospects

The concept of working as a team over internet is not too old and thus there exist a lot more to be discovered. Researchers felt that cloud computing can bring some drastic changes in the current fashion of working and the innovations may lead to the tremendous savior of resources. Though the work done in the field is commendable, it is not sufficient yet. There is no such service or product available yet, which brings the development tools, repositories, sharing of projects and working as a team on a same platform. [1]

Due to the lack of such platform, developers need to visit and work at different web addresses causing various problems. Thus, one of the aspects where work is to be done is the development of a platform which brings everything at a same place. Such a platform will be of great use for the MNCs too, who want a project to be developed by the employees at different locations, but do not wish to invest resources in bringing them at a common place.

IV. Our Methodolgy

Extending the work done by various communities in the field of online project development, project named "Code Share" will add up some damn useful features like sharing of code, formation of a team and would put efforts to bring everything at a common platform. The system would eradicate the flaws of other projects like and would bridge the gap between the expectations and outcomes of users. User Interface of koding is not very user friendly and difficult to understand. Thus, "Code Share" emphasis on an interactive user interfaces making it easy to understand for beginners too. In contrast to GitHub, which just provides a repository, the project provides a facility to develop stuffs at cloud. "Code Share" would blend the best features of different service providers like Git, Koding etc. and would collectively build a more useful platform.

To achieve the team formation and enable the members to access and modify the file, the team members will have to download the file and upon editing, it would be uploaded back to the server with incremented version number. This would not only facilitate with the editing of generated file but will also save the previous versions of the file so as to recover it back in future. Entire folder structure and the work would be shared with the team members provided that the creator of file does not set any privacy over it. The flow chart on next page shows how the generation of project in a team takes place, right from logging in to downloading of the compiled code. After logging in, when the user opts for project, it is either asked to start a new project or switch to an existing one. When the user starts a new project, it sets the sharing properties, and add the other users as team members. Once they approve as a team member, they get the rights to write and edit the code. The code written in the editor is saved in a file at some storage pool from where it is fetched back when the user asks for its compilation.

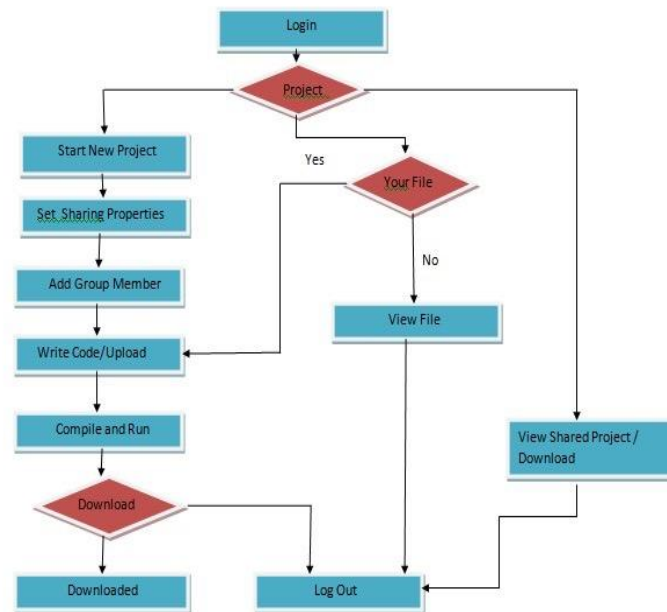


Fig. 2 Flowchart representing the flow of Project

As soon as files are saved, user is facilitated with downloading option. On the completion of Project, it can also be shared with the other registered members on the site, even if they are not the part of the team. In the storage pool, separate directories are made for the projects of different technologies. Likewise, separate directories exist for the compilers of different technology too. The compilations of the files are achieved by implementing the following architecture. In this way, an integrated platform would be made which would enable the users to develop and share their projects in team.

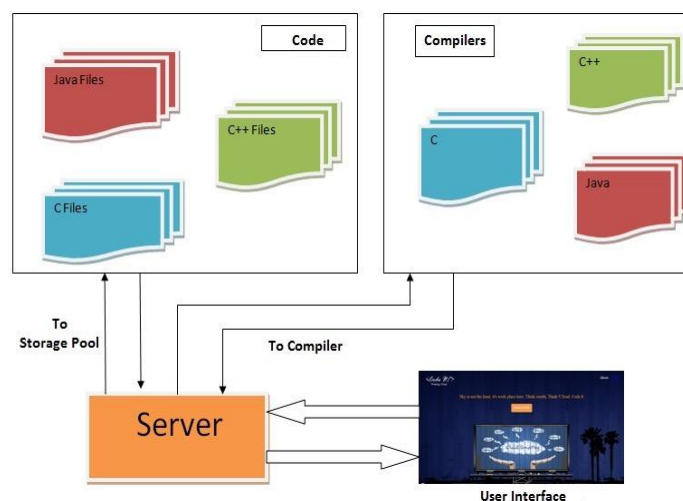


Fig. 3 Overview of Project

V. Conclusion

It can be concluded that project that is a useful application implementing cloud computing dedicated to programmers. Through this project, the users will not only be able to perform the compilation and execution of the project online, but would also be facilitated with sharing and team work. Compilers, IDE, SDK, repository, SCM, all at one place will not only prove an attraction to programmers, instead it would tremendously improve the hectic way of programming and project development at cloud. The project would be one of its kind and would increase the efficiency and utilisation of resources at a remarkable extent.

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Acknowledgements

This study could not have been possible without the efforts and incredible support of Pallav Trivedi, Rahul Kaushal (Students of Ujjain Engineering College, Ujjain). They helped us in various aspects of research and thus take the credit for the completion of this study. We are thankful to them.