



## Online Editor for Compiling and Executing Different Languages Source Code

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### Abstract

As it is a competitive world and very fast world, everything in the universes is to be internet. In this internet world all the things are on-line. So we created software called On-line compiler. The main aim of this project we can easily to write different program and compile it and debug in on-line. The paper aims to describe an online compiler which helps to reduce the problems of portability and storage space by making use of the concept of cloud computing. The ability to use different compilers allows a programmer to pick up the fastest or the most convenient tool to compile the code and remove the errors. Moreover, a web-based application can be used remotely throughout any network connection and it is platform independent. The errors/outputs of the code are stored in a more convenient way. Also, the trouble of installing the compiler on each computer is avoided.

**Keywords:** cloud computing, compiler, online compiler.

### I. Introduction

Cloud computing is the storage of data which is large amount of capacity and also cloud computing provide a different types of services to the user to access the services of cloud. Cloud computing is differ from client server technology in which one server provide the services to many user but in this technique many problems are occurred like server is overloaded hence to slow down the process. This problem is overcome into the cloud computing where many cloud stations are situated in state by state which is link with main cloud station i.e central cloud station. This reduces the problem of overloading of data into the cloud and services provided by cloud is very fast and convenient. The five ways of providing cloud computing currently viz. public, private, community, combined and hybrid cloud computing. Cloud computing is not only simply collecting the computer resources but it also provides a management mechanism with services for millions of user simultaneously and get the output on client side.

Cloud computing provide the information technology for end user and also provide great flexibility to the user reduce the total cost and also enabling the on demand services to use the services of cloud by user. The National Institute of Standards and Technology (NIST) defines „Cloud Computing“ as a model for enabling easy, on-demand network access to a shared pool of configurable computing resources. Cloud computing provide the following computing resources like networks, servers, storage, applications, and services that can be rapidly provisioned and released with minimal management effort or service provider interaction. The main disadvantage of cloud computing is the loss of control over the infrastructure used by the users. However, this disadvantage is eclipsed by many an advantages that cloud computing offers. Cloud computing has provide lower costs, better computing, location independence, better security (although this advantage in clouded with doubts of loss of some sensitive data). Cloud computing has services of SaaS (software as a service), PaaS (platform as a service) by using this services we access the data to the cloud at the end user or client side to get the output to the client machine.

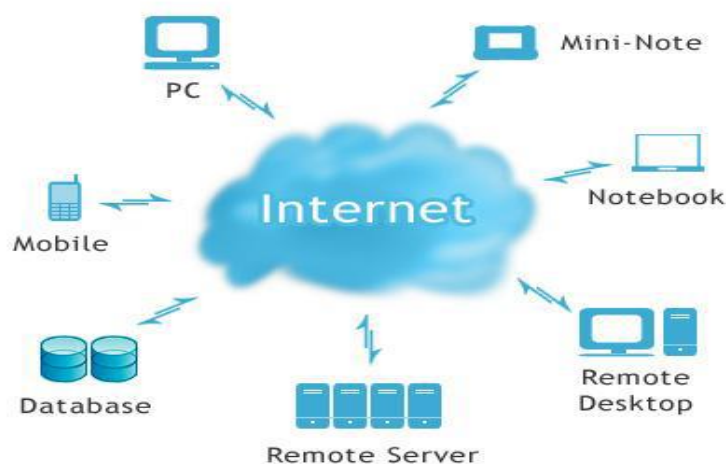


Fig. 1 Cloud Computing

## II. Related Work

The cloud computing are lower costs, better computing, location independence, better security (although this advantage in clouded with doubts of loss of some sensitive data). The concept of computing comes from grid, public computing and SaaS and PaaS. It is a new method for sharing basic framework. The idea of cloud computing is to make the computing be assigned in a great number of distributed computers, rather than local computer or remote server. Cloud provides security and dependable data storage center, so use needn't do the awful things such storing data and killing virus, this kind of task can be done by professionals. Users enjoy the service of cloud even he knows nothing about the technology of cloud computing and the professional knowledge in this field and the power to control it. The cloud computing are much more complex. There are nineteen characteristics which can be used to distinguish cluster, grid and cloud computing systems. Cluster resources are located in single administrative domain with single entity. Resources of grid system are distributed and located in administrative domain with multi entity and management policies. cloud computing platform include characteristics of both cluster and grid. The cloud computing platform provides services to users without knowing about the infrastructure. The main characteristics of cloud is service oriented, loose coupling, strong fault tolerant, business model and ease use. Clear insights into cloud computing will help the development and adoption of this evolving technology both for academe and industry. In practice, there are many cloud computing systems with their own characteristics. Amazon EC2 etc. supplies their infrastructure as a service. Google App Engine and Microsoft supply their platform as services. In academe, there are many cloud computing projects are developed and which are fully run. Cloud computing can be viewed from two different aspects. One is about the cloud infrastructure which is the building block for the up layer cloud application. The other is of course the cloud application. By means of three technical methods, cloud computing has achieved two important goals for the distributed computing which are high scalability and high availability. Scalability means that the cloud infrastructure can be expanded to very large scale even to thousands of nodes. Availability means that the services are available to the user or client even when quite a number of nodes fault. SaaS provides Internet application to the customer, also provides the software the off-line operation and the local data storage, lets software and service which the user all may use it anytime and anywhere to order.

## III. Problem Definition

- The main problem of existing system is Complex structure in existing system.
- No storage facility is on existing online cloud compilers.
- Use of another cloud so it cost as per use.
- Program does not get store on cloud.

## IV. Project Objectives

- Compile a centralized mechanism for the institution or system is the primary objective of project. Codes and scheduling of the transmission of codes for the application are stored in the database. An online compiler cum interpreter (OCC), an easy cooperation and it is also easily executes code for the client side or machine.
- The main objective of this project is to provide very convenient online tool which compile and execute program into a single editor which is common for all languages.
- It can use on mobile device.
- User can execute the program anywhere.
- Independent of the OS for smartphones as well as computers.
- No need to install any software on devices.
- Support for compiling various languages source code.
- User Friendly Interface.

## V. Proposed Approach

### Overview

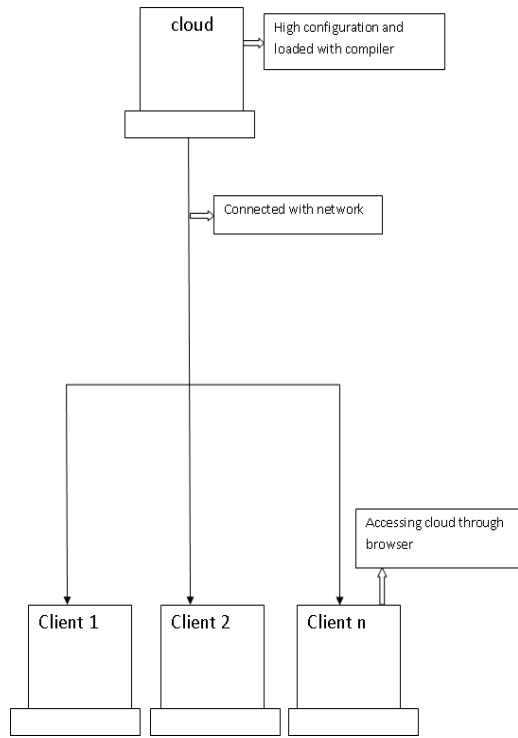
Now-a-days, requirement for executing the practical is compilers and the editors, but it has been observed that sometimes the system gets hang and slow down the process, so the programs are unable to execute in the practical. To overcome this problem, a private cloud has been designed where all the directories and libraries of compilers gets store individually and simply user want to type the code with the help of browser and when the program gets executed then the output will be generated on client machine. The main use of this project is if you have an internet connection and if you don't have any compiler and editor so you can easily write the code and execute the program and output will show on client machine.

In this project, seven online compilers namely, Online C, C++, java, perl, python, latex and R language compiler using cloud computing which reduces the problem of portability and storage space by making the use of cloud computing, online java compiler using cloud computing, which provides most convenient tool to compile code and remove the errors. These seven compilers provide online compiler service, so no need to install separate compiler on each system machine.

To generate PaaS service using cloud computing for compilation purposes in college campus. A centralized server will have all legal data and software's and other systems can access it online. Platform as a Service allows clients to create and manage software applications using tools supplied by the provider.

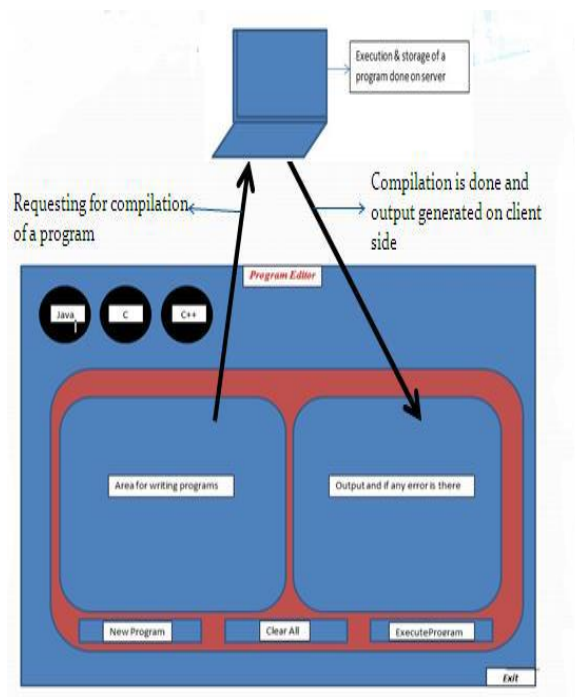
### Architecture

The system uses a dual-layered architecture. The lower layer consists of clients, which are of lower configuration. The upper layer consists of the server. The important components of the upper layer are describe as below:



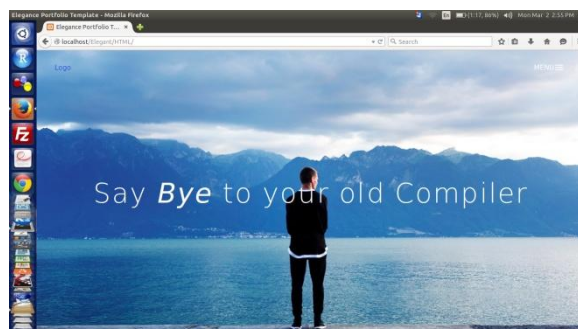
**Fig. 2 Overview Of Online Compiler**

- GlassFish Server which handles the work of scripting and compilation of code.
- Database which stores the client information.
- The ‘cloud hard disk’ is a shared resource.



**Fig. 3 Execution On Client Over Browser**

SST approach



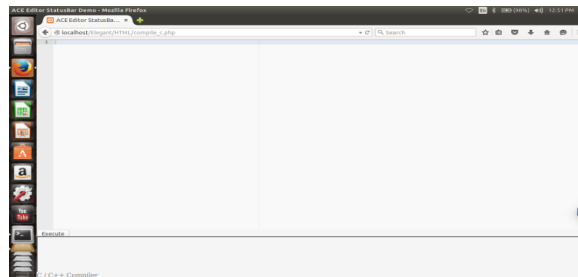
**Fig.4 Home Page**

This is the home page of our project which says that, say buy to your old compiler. To open this page the user just enter the url to the browser.



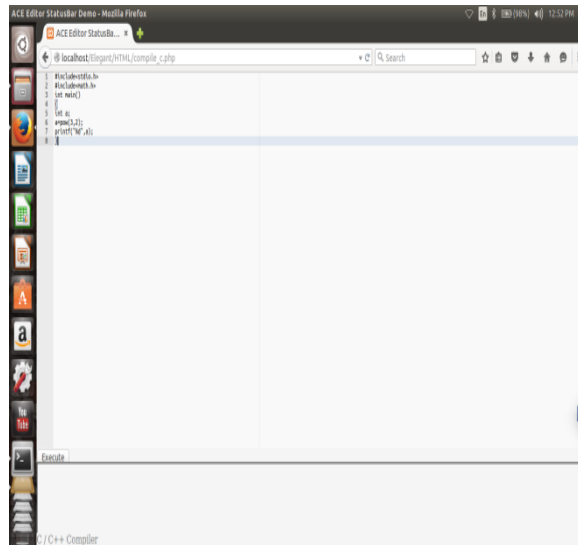
**Fig5 Different types of compiler**

After entering the url or address this page is open where seven compilers are present, the user just choose or select one of the compiler in which user want to compile the code .



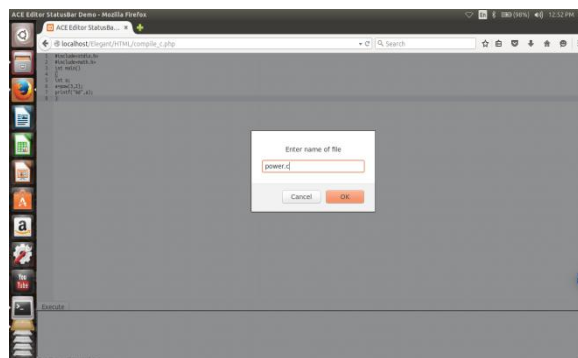
**Fig6 single editor**

After user select compiler, this editor is open which is common for all languages to compile and execute the code.



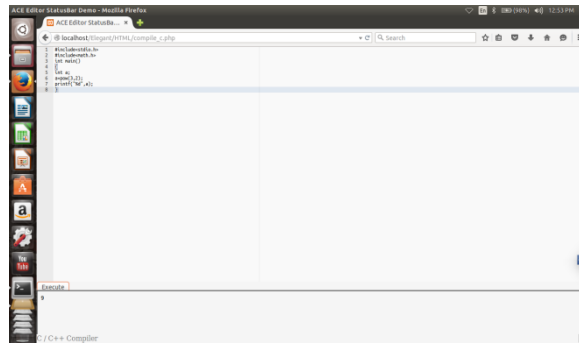
**Fig7 Example of C code**

This is the example of c program, the user type the code and if the error is occurred then user edit the code at the editor.



**Fig8 Save program**

After type the program user want to save the program into the database.



**Fig9 Output**

After saved the program , user just press execute button and output will be shown below of editor. This will happen for all the compiler which is present here.

## VI. Conclusion

- By using the services of cloud and characteristics of cloud computing and compiler, we develop a system which compile the different language source code such as c, c++, java and many more.
- compared to the current situation where each machine need to install compilers separately. This project would eliminate the need to install compilers separately on each machine.

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