# Online Java Compiler Using Cloud Computing

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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 java compiler. The main aim of this project we can easily to write a java program and compile it and debug in on-line. The client machine doesn't having java development kit.The paper aims todescribe 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 builds on decades of research invirtualization, distributed computing, utility computing, and more recently networking, web and software services.Cloud Computing describes a new supplement, consumption and delivery model for IT services based on Internet protocols and it typically involves provisioning of dynamically scalable and often virtualized resources. It is a byproduct and consequence of the ease-of-access to remote computing sites provided by the Internet according to their own needs.

It implies a service oriented architecture, reducedinformation technology overhead for the end-user, greatflexibility, reduced total cost of ownership and on-demandservices among other advantages.

The National Instituteof Standards and Technology (NIST) defines 'CloudComputing' as 'a model for enabling easy, on-demandnetwork access to a shared pool of configurable computingresources (e.g., networks, servers, storage, applications, andservices) that can be rapidly provisioned and released withminimal management effort or service provider interaction.'It does not require the end-user to know the physicallocation and configuration of the system that provides theseservices to the end-user.

The main disadvantage of cloudcomputing is the loss of control over the infrastructure usedby the users.However, this disadvantage is eclipsed bymany an advantages that cloud computing offers. Some ofthem are lower costs, better computing, locationindependence, better security (althoughthis advantage in clouded with doubts of loss of somesensitive data).
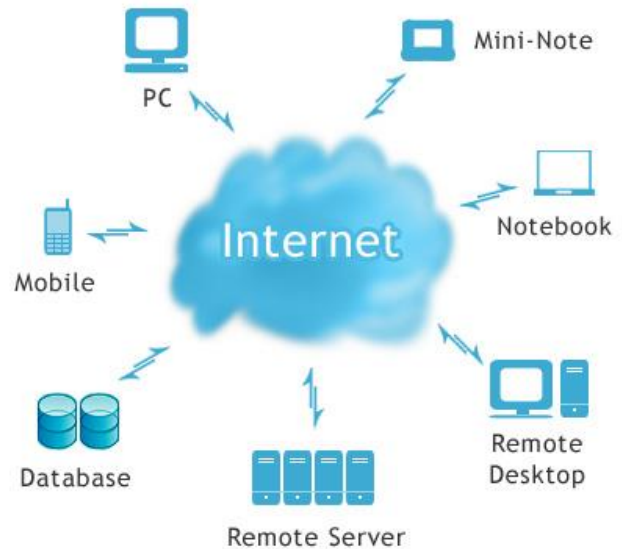


**Fig. 1 Cloud Computing**

## II. RELATED WORK

Cloud computing implies a serviceoriented architecture, reduced informationtechnology overhead for the end-user, greatflexibility, reduced total cost of ownership and ondemandservices among other advantages. TheNational Institute of Standards andTechnology (NIST) defines ‗Cloud

Computing‗ as ‗a model for enabling easy,on-demand network access to a shared poolof configurable computing resources (e.g.,networks, servers, storage, applications, andservices) that can be rapidly provisioned andreleased with minimal management effort orservice provider interaction.

Some of them are lower costs, bettercomputing, location independence, bettersecurity (although this advantage in cloudedwith doubts of loss of some sensitive data).The concept of computing comes fromgrid, public computing and SaaS. It is a newmethod that shares basic framework. Thebasic principles of cloud computing is tomake the computing be assigned in a greatnumber of distributed computers, rather thenlocal computer or remoter server. Thisarticle also introduces the application fieldthe merit of cloud computing, such as, it donot need user‗s high level equipment, so itreduces the user‗s cost. It provides secureand dependable data storage center, so userneedn‗t do the awful things such storingdata and killing virus, this kind of task canbe done by professionals. Users can enjoythe service even he knows nothing about thetechnology of cloud computing and theprofessional knowledge in this field and thepower to control it.

The characteristics ofcloud computing are much more complexin. There are nineteen characteristics whichcan be used to distinguish cluster, grid andcloud computing systems. Cluster'sresources are located in singleadministrative domain with single entity.Resources of grid system are distributed andlocated in administrative domain with multientity and management policies. And cloudcomputing platform possessescharacteristics of both cluster and grid. Thecloud computing platform provides servicesto users without knowing much about theinfrastructure. The service oriented, loosecoupling , strong fault tolerant, businessmodel and ease use are main characteristicsof cloud computing Clear insights intocloud computing will help the developmentand adoption of this evolving technologyboth for academe and industry. In practice,there are many cloud computing systemswith their own characteristics. Amazon EC2etc. supplies their infrastructure as a service.Google App Engine and Microsoft supplytheir platform as services. In academe, thereare many cloud computing projects underconstructing or fully run. Cloudcomputing can be viewed from two differentaspects. One is about the cloudinfrastructure which is the building block forthe up layer cloud application. Theother is of course the cloud application. Bymeans of three technical methods, cloudcomputing has achieved two important goalsfor the distributed computing: highscalability and high availability. Scalabilitymeans that the cloud infrastructure can beexpanded to very large scale even tothousands of nodes. Availability means thatthe services are available even when quite anumber of nodes fault. SaaS providesInternet application to the customer, also provides the software the off-line operationand the local data storage, lets software andservice which the user all may use it anytime and anywhere to order.

### III.SYSTEM DESIGN

Technology is applied to generate online java compiler using CloudComputing in 3 tier architecture.

*A. Data Layer (Back End):*

Available in the Web Server which contains account information about the user.

*B. Business Layer (Middle End)*

Decision making layer from the application layer.

*C. Application Layer (Front End)*

User Interface, showing data to the user, getting input from the user.

*D. Compile Option*

This would take the code in the text box to the server side for its compilation and at the server side the compiler package has been imported.

*E. Execute Option*

The user is provided withthe links of all the executable files that werepresent in his or her folder and were alreadycompiled at least once without errors.

### IV.IMPLEMENTATION

The online java compiler provides a feature that enables the output ofsource code in multiple programminglanguages at run time, based on a singlemodel that represents the code

to render. Wecan generate assemblies dynamically atruntime and execute.It was assumedthat the user will use his or her favoritetext editor to create and correct programfiles. This assumption allowed to create avery simple front-end that loads quickly andis platform independent. Although the frontend is designed to be as simple as possiblewith only a few commonly used options, itis sufficiently functional and can be usedquickly.Checks whether the text area is emptyor not. If it is empty, displays warning message. Otherwise use CompileResultsclass to represent the result of compilation that are returned from a compiler, CompilerError class to represent a compiler error or warning and Compiler Parameters class to represent theparameter to invoke the compiler. Aftersuccessful compilation compiler generate either .class file. This .class file produce the desired output for the given source code.
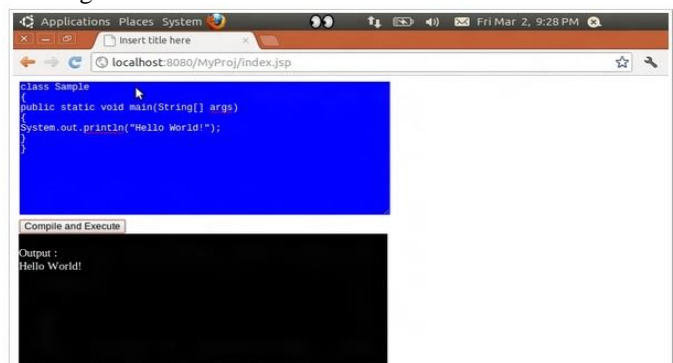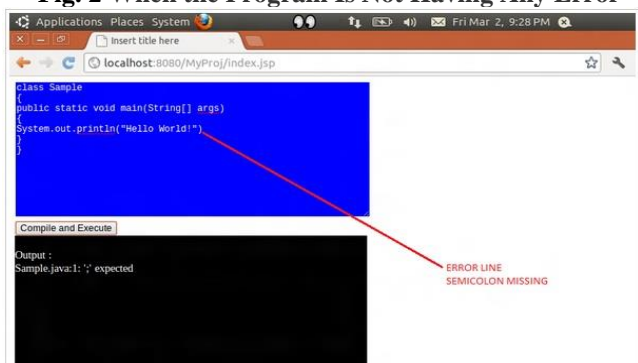


**Fig. 2 When the Program Is Not Having Any Error**



**Fig. 3when There Is Error in Entered Program**

### V. CONCLUSIONS

As compared to the current scenario whereeach machine need to install compilersseparately. This would eliminate the need toinstall compilers separately. So we cancheck our code at the centralized server.Another advantage of such project is thatwhenever the compiler package is to beupgraded it can be done easily without againinstalling it on each and every machine.

### VI.ACKNOWLEDGMENT

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