ONLINE JAVA COMPILER USING CLOUD COMPUTING

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ABSTRACT  
As it is a competitive environment everything is very fast and with the help of internet. In this internet world all the things are on-line. So, we created the software called On-line Java Compiler. The main aim of this project we can easily write a java program compile and debug it on-line easily. The client machine does not having java development kit. The paper aims to describe an online compiler which helps to reduce the problems of portability and storage space by making use of concept of cloud computing. The ability to use different compilers allows the programmer to pick up the faster or the most convenient tool to compile the code and remove the errors. Moreover, a web-based application can be used remotely through any network connection and it is platform independent. The error/output of the code is store in most convenient way. Also, the trouble of installing the compiler on each computer is avoided.

KEYWORDS  
compiler, online computing, computing.

INTRODUCTION  
The main enabling technology for cloud computing is virtualization. Virtualization software allows a physical computing device to be electronically separated into one or more “virtual” devices, each of which can be easily used and managed to perform computing tasks.
A. CHARACTERISTICS

- It is elastic, meaning a user can have as much or as little of a service as they want at any given time.
- The service is fully managed by the provider. The consumer needs nothing but a personal computer and Internet access.
- Agility: ability to re-provision technological infrastructure resources
- Application Programming Interface (API): accessibility to software that enables machines to interact with cloud software.
- Cost
- Device and Location Independence: enable users to access systems using a web browser regardless of their location
- Maintenance
- Multitenancy: enables sharing of resources and cost across a large pool of users.
- Security: can improve due to centralization of data.

B. SERVICES OF CLOUD COMPUTING

1) Software as a service (SaaS): Cloud based application-or software as a service (SaaS)-run on distant computers “in the cloud “that are owned and operated by other and that connected to user ‘computers via the internet and, usually, a web browser.
2) Platform as a service (PaaS): Platform as a service provides a cloud-based environment with everything required to support the complete life cycle of building and delivering web-based (cloud) application-without the cost and complexity of buying and managing the underlying hardware, software, provisioning and hosting.
3) Infrastructure as a service (IaaS): Infrastructure as a service provides companies with computing resources including servers, networking, storage, and data centre space on a pay-per-use basis.

II. SYSTEM DESIGN
Technology is applied to generate online java compiler using cloud computing using three tier structure.

A. DATA LAYER (Backend):
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 (Frontend):
User interface, showing data to the user getting input from the user.

D. Compile Option:
This would take the code into textbox 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 within links of all executables files that we represent in his/her folder and were already compiled at least once without errors.

III. ADVANTAGES OF ONLINE JAVA COMPILER
1. They are self-contained units ready to be executed.
2. They are already compiled into machine language binaries.
3. There is no second application or package that the user has to keep up-to-date.
4. If a program compiled for windows on an x86 architecture, the end user only needs a windows operating system.
5. A pre-compiled package can run faster than an interpreter compiling source code in a real time.

IV. DISADVANTAGES OF ONLINE JAVA COMPILER
1. A compiler translates the source code into specific machine language.
2. Programs have to specifically compiled for OS x, Windows and Linux, as well as specifically for 32-bit or 64-bit architectures.
3. Problems for maintaining multiple versions of the source code for the same application.
4. More time spent on source code maintenance, extra trouble when updates are released.

V. IMPLEMENTATION
The online java compiler provides a feature that enables the output of source code in multiprogramming languages at run time, based on a single model that represent the code to render. We can generate assemblies dynamically at runtime and execute. It was assume that the user will use his/her favorite text editor to create and correct programfiles. This assumption allowed to create very simple front end that loads quickly and is platform independent. Although the frontend is designed to be as simple as possible with only a few commonly used options, it is sufficiently functional and can be used quickly.Check whether the text area is empty or not. If it is empty, display the warning message. Otherwise, use CompileResultClass to represent the compilation, that are returned from the compiler, CompilerErrorClass to represent a compiler error or warning and CompilerParameterClass to represent the parameters to invoke the compiler. After successful compilation compiler generate either .classfile. The .classfile produce the desired output for the given source code.

VI. CONCLUSION
As compared to the current scenario where each machine need to install the compiler separately. This would eliminate the need to install the compiler separately. So, we can check the code at the centralized server. Another advantage of this project is that whenever the compiler package is upgraded it can be done easily without again installing it on each and every machine.

Fig3. Represents the WORA(Write Once Run Anywhere) technology

REFERENCES