

# Cloud Based Java Development Environment for Android

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## ABSTRACT

Cloud era brought revolution of computerization world. One can access the data from anywhere and at any time with different android devices. In this we are using one of the cloud services that is SaaS (Software as a Service) which is capable of providing a platform for android application to access the cloud service. The services include running java applications without installing java API in our mobile and just by getting interacted with server. In this paper, we propose system that without installing software in smart phone using and accessing that software through the cloud server. We are using the java software in cloud server and accessing that software through the smart mobile phone and execute the program in smart phone. The smart system using the java software in server side and connect through the internet. All these services are provided in secured way as we are giving IP address based authentication. Nobody can share the provided service with others and abuse the services by sending false messages.

**Keywords:** Cloud Computing, Mobile Computing, SaaS.

## I. INTRODUCTION

Cloud computing builds on decades of research recently in networking, web and software services. It is also byproduct and on sequence which makes it easy to access to remote computing sites which are provided by the internet according to their needs. The number of Smartphone users and mobile application are growing rapidly. There are several mobile Operating Systems (OSs), such as symbian, iOS, Android, and Windows Mobile. Because thousands of application developers construct many kinds of application for these platforms, users can easily enjoy their individual Smartphone lifestyle.

Though smart phones are expected to provide PC-like functionality, hardware resources such as CPUs, memory, and batteries are still limited. Therefore, many application developers are forced to take these constraints into consideration. To solve this resource problem, some researchers have proposed solution of using server resources in the cloud for smart phones.

We can use Android, an open-source mobile OS as a Server Platform which enables many users to use

resources on remote cloud servers. Using this mobile OS enable the reuse of much mobile application that is designed to be used on Smartphone interfaces, such as software keyboards, touch panels and many sensors. Since a resolution of mobile OS is small, it is better to use a remote application via a network than a desktop OS. The main reason to use Android as a server platform is that it is able to run not only for smart phones but also for the x86 platform including servers.

## II. METHODS AND MATERIAL

Stylish and versatile phones packing hardware features like GPS, accelerometers, and touch screens are nice platform to create innovative and attractive mobile applications. The existing mobile development which have been built with normal operating systems are restricted to third-party applications, Android offers an open and equal alternative. Without artificial barriers, Android developers are free to write applications that take full advantage of increasingly powerful mobile hardware. Cloud computing is the upcoming area in the real Networks and providing the cloud services, but using this Cloud Computing Resource only Computer like Hardware is required. Managing the Cloud

Computing through Mobile is not an easy job till now. Cloud integrative Mobile Applications are not in Use. Smart mobile users using the mobile applications and day to day increase the social network applications but smart phone are not providing the pc like functionality. A mobile does not providing the pc type of function and create the so many problem. In this paper for solve the existing of the problem. Smart phone user does not use so many software. Smart phone does not providing the function than pc because processor and hardware resource are limited. Cloud computing is not easy to manage though the mobiles and it is very generate the problem for services. Smart phone user using mobile internet connection it is not easy to connect with remote network and user face the so many problems. Smart phone user does not user for easily ways of the connect through the cloud.

### A. Software as a Server

Cloud Computing, as the name suggests is a style of computing where dynamically scalable and often visualized resources are provided as a service over the internet. These services can be consumed by any user over a standard HTTP medium. The user doesn't need to have the knowledge, expertise or control over the technology infrastructure in the "cloud" that supports them. Cloud Servers offer increased flexibility and higher quality than dedicated server solutions. Cloud servers are highly available and will automatically respond to crashes and hardware failures. Upgrading is much easier with Cloud Servers. Pay for the horsepower you need today and if you find that your cloud server needs more resources you can instantly add additional computing power, RAM or Storage with a click of your mouse. The SAAS implementation is achieved using Java software. We all understand that without java software we cannot compile our java program. The Software as a Service (SAAS) is that the software are uploaded in the cloud server, whenever the client request the software to the cloud server, the cloud server will provide the software, which is chargeable in rental manner. This process will be of use to reduce the client system load. User is not required to purchase the software but then client will be paying the rental charges for the utilization.

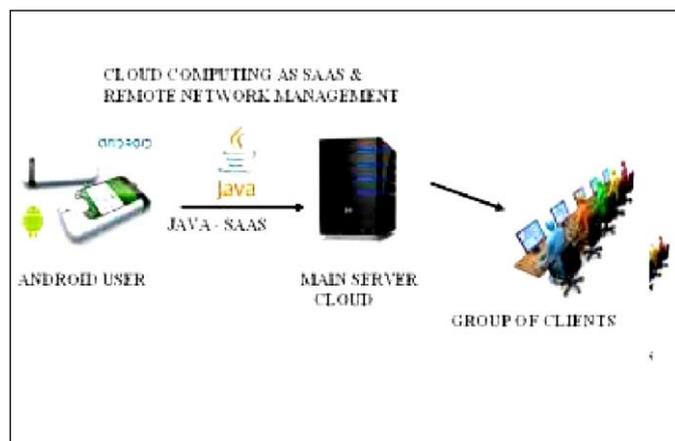


Figure 1: SaaS Implementation

### B. Mobile Client

An Android mobile client is an application that access a service made available by a server. The server is often (but not always) on another computer, in which case the client accesses the service by way of a network. The term was first applied to devices that were not capable of running their own stand-alone programs, but could interact with remote computers via a network.

### C. Unicast and Multicast

Unicast is a type of transmission in which information is sent from the android client to the Remote system. In another words, Unicast transmission is between one-to-one nodes (involving two nodes only). Send the instant message to a single user. Multicast is a very much different from Unicast. It is a type of transmission or communication in which there may be more than one servers and the information sent is meant for a set of receivers. For example choose more than one remote user and send some messages to the entire selected user.

## III. RESULTS AND DISCUSSION

In this java compiler application, so many works are performing like login, creating Program, saving, reset, updating error checking and executing. Here, in this project fist we are doing login with user id and password. If suppose that we are giving wrong id or pass then it will flash the message that user id and password is wrong. When user id and password is correct then it will go to next page. After that we will create a java program and we will save that program .Then we will compile the program if any error will occur then it will give the message and we can update that program and after compiling it will automatic generate class file on server .And last step is execution after doing compiling we can execute that file and it will show the output on

user Android mobile. For doing this all process internet connection is necessary. Without using cloud server we can't access this application. In this project we are using cloud computing as SAAS (software as a service).It means without installing the java software in user device we can compile and execute the java code in Android mobile. In Challenge mode user can challenge another user as if he/she does not able to solve the error in java code. And the other user can take it as challenge and solves the problem in code and helps the user with the solution that he was unable to solve. SAAS is a cloud computing resource.

Here that all process is as follows:

- Write a java code
- Compile code
- Execute code
- Challenge mode

#### A. System Architecture



Figure 2 : System Architecture

In System Architecture the android user shown in fig 2 is the android application which is an apk install on android mobile which is used as front end i.e the graphical interface of our project which contains user login, user registration, after login user has to write java code in the editor and after that the file is sent for compilation on server through network if remotely connected else if cloud is used one should have internet connection for connecting to the cloud. After the java code sent for the compilation then if code runs successfully then the server gives result as the output on the android mobile and if the error occurs then the server gives the error message and in this we have introduce a challenge mode which can be used to speed

up java development . In challenge mode a user can challenge another user if he /she is not able to solve the error in java code , hence the another user solves the error and helps the challenger that where he was wrong and explain him the error and solves the problem ,Hence in resulting in this mode a user can solve error more rapidly without any difficulty.

#### IV.Future Work

Online Java Compiler Using cloud computing has allots of advantages that provide effective, efficient and simple technology for java program execution on the android mobile. This can be more flexible if it direct access or compile the java code without the internet, if the facility of our proposal inbuilt with android phones or other devices.

#### V. CONCLUSION

Thus, we must have a system which will combine each above system's advantages and will discard their disadvantages for the better future use of cloud computing. Moreover, in today's world we require everything online so this all systems provide the best solution to these problems. By integrating and enhancing the capabilities of these essential technologies, we hope to introduce the 'Online Compiler' and to contribute to the current Examination system. It would provide a platform for students to give practical examinations online. A cloud will be available where a server will be present which handle codes of all students and will compile codes separately sitting on another system.

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