

Cloud Based Java Development Environment for Android

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ABSTRACT

As there is a cloud computing era that it is used when it comes to storage and Implementation servers. There are many advantages of using cloud computing one of that is cloud can be used anywhere anytime the only limitation of cloud is it requires internet connection for communication and to connect data center . In this paper we have mention that we are using a cloud service that is SaaS (Software as a server) .This service can be used by any android mobile at any time anywhere. Using this service we are introducing java development environment in which we are compiling java code in mobile phone without installing java software in the mobile phone. In this paper we are introducing an android app which is connected with cloud server where the java software is installed on server and accessing that software from mobile phones in which we are writing the java code in the mobile and sending that code to server for compiling and after compiling the code the server sends the output of that code on mobile phone if the code if it runs without any errors. And also in this app we have added some feature like challenge mode in this mode we can take help of other user to solve any error in java code.

Keywords: Cloud computing, Mobile Computing, SaaS.

I. INTRODUCTION

As we know there are many apps available for android phones which make the phone smarter and keeps you up to date with the world. You get all news stuffs and all the day today things on your one click but the mobile device has its own limitations such as storage, battery and performance. As we know if the performance increases the battery life decreases. And also the resources of smart phones are limited and the could not provide pc like functionality. So to overcome this limitation we introduce Cloud in this project as backend so what happens is we doesn't require installing any java software on the phone to run or develop any java code in android phones. In this project we are introducing cloud as a server where we will install the java software and the database on server and connect the android mobile with the cloud as we can write the java code on the mobile and send code to the server for compiling and after code is

compiled the server gives the output of code on the phone if the code runs successfully. We can use Android, an open-source mobile OS as a Server Platform which enables many users to use resources on remote cloud servers.

II. PROPOSED SYSTEM

In this android app it is proposed that it doesn't require any java software to run java code. This can compile java code without any java software installed in android phone this app is directly connected to the cloud. SAAS that's what this app work on SAAS is a cloud service. SAAS acts as a server for this app where the java software is installed and the app is connected to that SAAS by public IP. The only drawback of this app is that it requires the internet connection to connect to the cloud. There is a register option which registers the new

ARTICLE INFO

Article History

Received: 13th May 2016

Received in revised form :

13th May 2016

Accepted: 16th May 2016

Published online :

17th May 2016

user. After registration the user has to login with his own username and password when the username and password is authenticated the user gets a dashboard screen on his/her android mobile in that dashboard there user can see four icons that are compile code which takes the user to the editor where the user can edit or write java code in that editor. After the user type the code there is a compile button below the editor and below the compile button there is a text area where the user can see the result of code the is typed in the editor. If suppose in such case a user doesn't get the output or user gets the error and that's where the user is stuck he can directly take help of friends who are using this app and are registered user. After user's friend sees the users request to solve the errors the friend then immediately starts work on it and after solving the user's error the friend recompiles the code and send it back to user. User can see this solution by just clicking on "My Solutions" button on the user's dashboard. Here that all process is as follows:

- Edit or Write java code

III. 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 problems. In this paper for solve the existing of the problem. Smart phone user does not use so many softwares. 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.

Software as a Server:

Software as a service is service provided by the cloud computing which is not free every SAAS provider has its own charges as it differs. SAAS providers provide this service on hourly or weekly basis. What its actually means is whatever we wants to run on server is executed by SAAS and we can connect our client that can be pc or android phones to that server and can make our app working. But Android phones requires internet connection to connect to the server i.e. SAAS. 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. 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.

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.

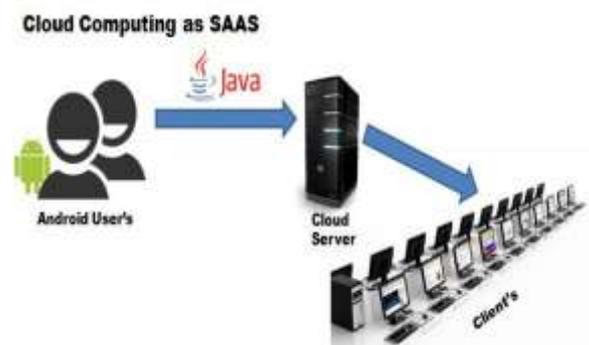


Fig 1. Seas Implementation

Unicast and Multicast:

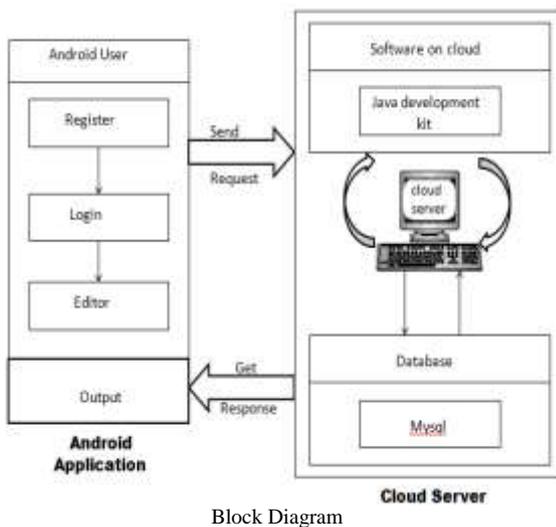
Unicast is a type of transmission in which information is sent from the android client to the Remote system. In another words, Unicast transmission is between one-to-one nodes (involving two nodes only). Send the instant message to a single user. Multicast is a very much different from Unicast. It is 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.

IV. SYSTEM ARCHITECTURE



Fig 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



V. IMPLEMENTATION

The following are snapshots of our projects. The below is of home page of our project in which the page contains of two buttons i.e. Register and Login.



Fig 3. Home page

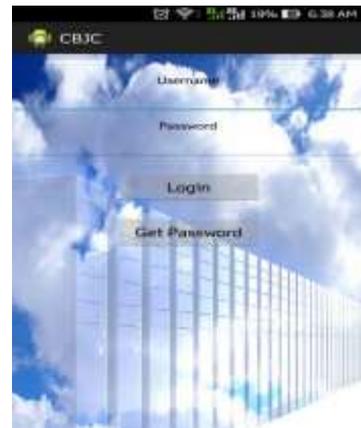


Fig 4. Login page

The above figure 4 is of login page after the user has registered the login page appears. Here user has to enter username and password if the user is already registered then user will be checked once if the user’s data is correct as it is entered at the time of registration then the user is allowed to menu page. If not then user has to register to login after successful registration user is done. And ready for coding using this app.

After login is successful the menu page appears is as below.



Fig 5. Menu page

After the menu page is appears here there three buttons i.e. Compile Code , History , Challenge Code . So in compile code we can write java code in the editor and click on compile buttons as shown in below figure 6.



Fig 6. Editor

Here after the code is written the user has to click on compile button as shown in the figure. The code is then stored in the database which after can be retrieved to see the history of the user which stored with the specific user id. Apart from this we have kept an challenge code mode in which user can use this mode to solve any error in code which user is not able to solve the error in his code. So in this mode the user can help another user to solve the error and implement the code successfully.

VI. 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.

VII. 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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