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A PATH FOR HORIZING YOUR INNOVATIVE WORK

## COMPILATION SERVER

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**Abstract:** Compilation Server (CS) is a server-assist mechanism to eliminate or reduce the compilation overhead. CS can compile and optimize code on behalf of clients. Modern JVM implementations interleave execution with compilation of “hot” methods to achieve reasonable performance. Since compilation overhead impacts the execution time of the application and induces run-time pauses, we explore offloading compilation onto a compilation server. In this paper, we present the design and implementation of compilation server which compiles and optimizes Java byte codes on behalf of its clients. CS provides the following benefits: (i) lower execution time by reducing the overhead of optimization; (ii) lower memory management load on the client by eliminating allocation coming from optimizing compilation and by reducing the footprint of the optimizing compiler; (iii) lower execution time of the application due to sharing of profile information across Different runs of the same application and runs of different applications.

**Keywords:** Compilation server, Design, Implementation, Overhead



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## INTRODUCTION

Now a day's languages like C, C++ and Java are very commonly used in various computer teaching institutions and educational organizations. These languages have become the part of school syllabus and colleges. These languages need compilers for the execution of programs. Thus the schools and colleges buy these compilers and install them on every system so that student can perform their programs. The newer version of these compilers is available frequently in the market and new features are added to them time to time. So every time the educational organization need to upgrade their compilers or need to reinstall the latest version of those compilers not on the single system but they have to do these tasks on every system. Thus it becomes an overhead for those organizations and also becomes costlier for them.

This overhead can be reduced by the use of the application "Compilation Server". This web application will be useful for the educational organizations where the compilers will be installed on a single server. The users will be able to write their programs on their remote system and these programs will be stored on the server. Users will be able to compile their programs and view the output of these programs on their system only. But these programs will be actually compiled and executed on the server. Also user will be able to download the executable (.exe) files of their C and C++ programs. For every user separate workspace will be created on the server.

### Working

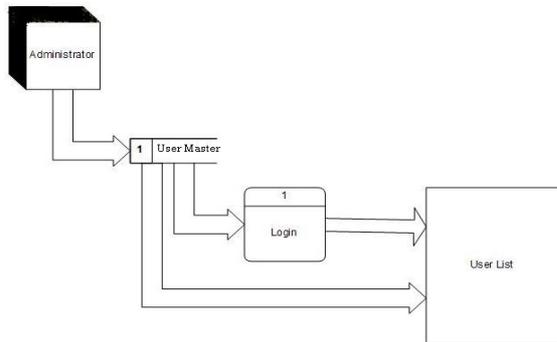
We have divided our paper "Compilation Server" into two modules,

- Administrator
- User

### Administrator

Administrator will be a single person who will administrate whole system. As this application is being implemented or can be used in educational organizations or can be used in the computer laboratories, the administrator role will be played by the instructor or the teacher of that organization.

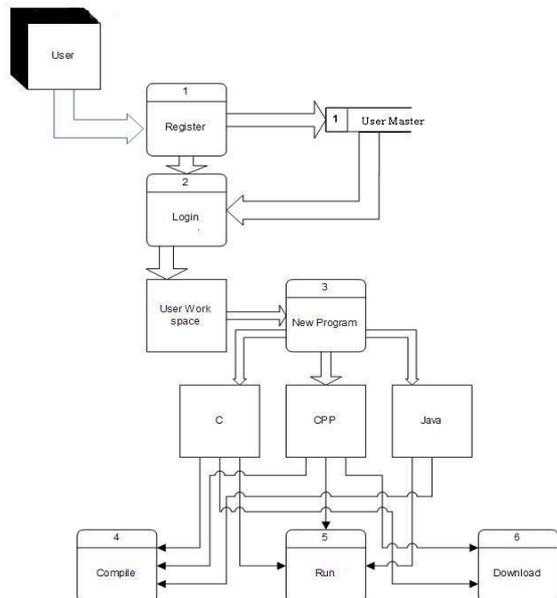
He will be provided with a unique user id and password. When the administrator will login he will get all the information of every user. The administrator will be able to delete the user through this login. When the administrator will delete any user, the record of that user as well as the directory associated with that user will get deleted.



## User

First of all the user who wishes to use this application will have to sign up and acquire a unique user id and a password. This user id and password will help the user to get logged in. Hence for the registration of the user we have created a form through which we will get all the detail information about the user and this information will get stored in the database. When the user gets registered at the same time a new directory is created for the user and this directory is named by the user id given by the user. After this three sub directories are created inside this directory named as C, CPP and JAVA. The programs written by the user gets stored in those respective directories.

When the user gets logged in, he/she will be provided with separate work space.



### **Feasibility:**

Before going for the implementation, we should consider the system for its feasibility. Feasibility study is a high level capsule version of the entire system analysis and design process. The purpose of feasibility is not to solve the problem but to determine if the problem is worth solving. The system has been tested for feasibility on the following points:

- 1. Technical Feasibility**
- 2. Economical feasibility**
- 3. Operational Feasibility**

#### **Technical Feasibility:**

The paper entitles "Compilation Server" is technically feasible because the paper is developed in java and it runs on all the Operating Systems. The unique feature of java is 'Compile once, run anywhere'. So once we compiled then we can run that on any type of Operating System without any type of modifications in the source code.

#### **Economical feasibility:**

It is an evaluation of the development cost weighted against the benefit derived from the developed systems. Economical feasibility is measured to check that the proposed system having sufficient benefits in the economic point of view. The cost to conduct system investigation and the cost of hardware and software of application is feasible. Economically, this paper does not raise any problem. Resources required for this paper are bare minimum.

#### **Operational Feasibility**

The operational feasibility is measured by the usage of the system after implementation and resistance from the user. This system is proved for its operational feasibility in the presence of the user who is actually going to use the system. This feature that will meet all the organizational requirements is achieved after conversation with the users of the system, there is a support needed from the management as well as from the users.

#### **Future Scope**

- In future few more compilers can be added to this application and can be enhanced.
- Also syntax highlighting for different languages can be implemented.

### **CONCLUSION:**

Using this application it will be helpful for various organizations to reduce the overhead of installing compilers on every system and will also reduce the software cost. Also it will be an easier task to maintain their computer laboratories.

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