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# Online Code Debugging Contest

Mrs. M.Seema<sup>1</sup>, Shivakami. V.C<sup>2</sup>, Suhashini.Y<sup>3</sup>

<sup>1</sup>Assistant Professor, M.E/IT, Velammal College of Engineering and Technology, Madurai-8

<sup>2,3</sup>Department of Information and Technology, Velammal College of Engineering and Technology, Madurai-8, Tamil Nadu, India.

**Abstract:** *Whenever we think of conducting an online code debugging contest, the names like hacker rank, hacker earth comes to our mind. Why do we need to depend on them? Why can't we create a software to host an online debugging contest instead? . In educational institutions programming, training and assessment is essential for students. Conducting coding contest will encourage students in learning programming. Conducting a code debugging contest manually is difficult. So we are going to provide software for conducting online code debugging contest. In this software trainers can conduct online code debugging contest for students and evaluate their answers. This will help for students to asses themselves.*

**Keywords:** *Hacker rank, software, debugging contest, coding*

## I. INTRODUCTION

It is a systematic process of spotting and fixing the number of bugs, or defects, in a piece of software so that the software is behaving as expected. Debugging is harder for complex systems in particular when various subsystems are tightly coupled as changes in one system or interface may cause bugs to emerge in another. Debugging is a developer activity and effective debugging is very important before testing begins to increase the quality of the system. Debugging will not give confidence that the system meets its requirements completely but testing gives confidence. Computer programs often contain defects, or bugs, that need to be found and repaired.

This manual "debugging" usually requires valuable time and resources. To help developers debug more efficiently, automated debugging solutions have been proposed.

One approach goes through information available in bug reports. Another goes through information collected by running a set of test cases. Until now, explains David Lo from Singapore Management University's (SMU) School of Information Systems, there has been a "missing link" that prevents these information gathering threads from being combined. Dr Lo, together with colleagues from SMU, has developed an automated debugging approach called Adaptive Multimodal Bug Localisation (AML).

AML gleans debugging hints from both bug reports and test cases, and then performs a statistical analysis to pinpoint program elements that are likely to contain bugs. "While most past studies only demonstrate the applicability of similar solutions for small programs and 'artificial bugs' [bugs that are intentionally inserted into a program for testing purposes], our approach can automate the debugging process for many real bugs that impact large programs," Dr Lo explains. AML has been successfully evaluated on programs with more than 300,000 lines of code.

By automatically identifying buggy code, developers can save time and redirect their debugging effort to designing new software features for clients. Dr Lo and his colleagues are now planning to contact several industry partners to take AML one step closer toward integration as a software development tool.

Dr Lo's future plans involve developing an Internet-scale software analytics solution. This would involve analysing massive amounts of data that passively exist in countless repositories on the Internet in order to transform manual, pain-staking and error-prone software engineering tasks into automated activities that can be performed efficiently and reliably. This is done, says Dr Lo, by harvesting the wisdom of the masses – accumulated through years of effort by thousands of software developers – hidden in these passive, distributed and diversified data sources.

## II. PROBLEM DESCRIPTION

Whenever we think of conducting an online code debugging contest, the names like hackerrank, hackerearth comes to our mind.

Why do we need to depend on them?

Why can't we create a software to host an online debugging contest instead?

### III. RELATED WORK SYSTEM

SL NO	NAME OF THE JOURNAL	AUTHOR	DATE OF PUBLISHED	DESCRIPTION
1.	Online Editor for Compiling and Executing Different Languages Source Code	Ratnadip Kawale, Pooja Soni, Gaurav Suryawanshi, Prof. Pradip Balbudhe	MARCH 2016	An online compiler which helps to reduce the problems of portability and storage space by making use of the concept of cloud computing.
2.	Online c, c++ & java compilers using cloud computing	Surya Chandra.V, Durga Charan.K, Sudha Rani.P	AUGUST 2015	This research main goal is we can easily write programs, compile and debug in online.

### IV. PROPOSED SYSTEM

We have decided to host two different modes of Online debugging contest.

#### A. MCQs

MCQs (Multiple Choice Questions) are popular and most-preferred way of quizzing.

We will provide random questions based on OOPS concept, popular programming languages like C, C++, etc.

#### B. The Real Debugging Test

Here lies the real challenge...

The contestants can edit and re-write the code.

We will provide them with an universal compiler, using which they can compile and execute the programs.

To add more spice to the contest, we are planning to add timer. and, there is a dedicated tab for Ranking.

We will display the rankings at the end.

The users can see where they stand among the other contestants, through the dedicated tab

### V. THE REAL DEBUGGING TEST

The contestants can edit and re-write the code.

we added timer.

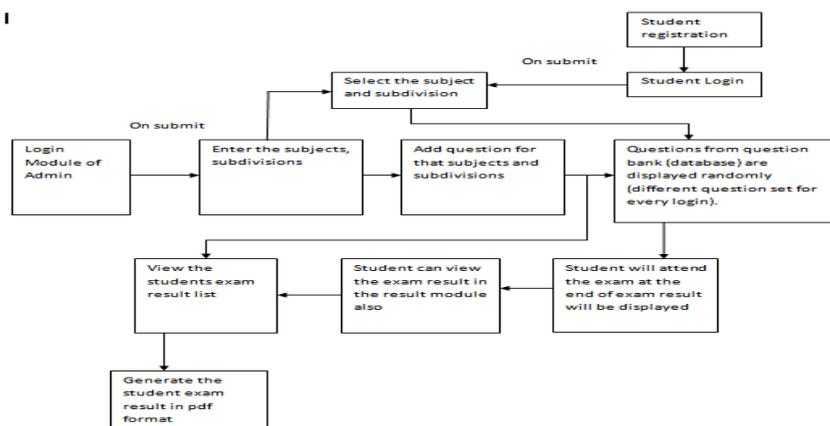


Fig: Software Architecture

## VI. SIMULATION RESULTS

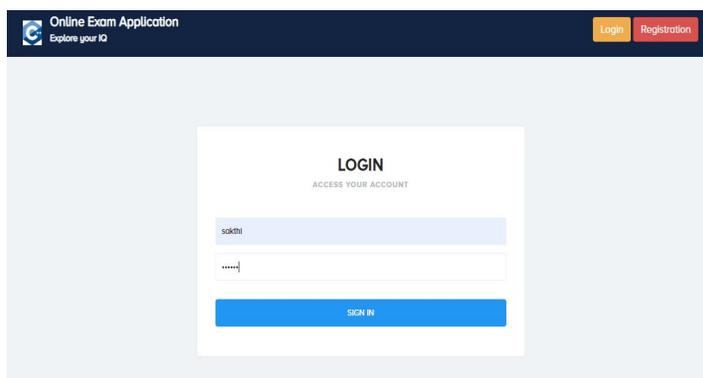


Fig: login page

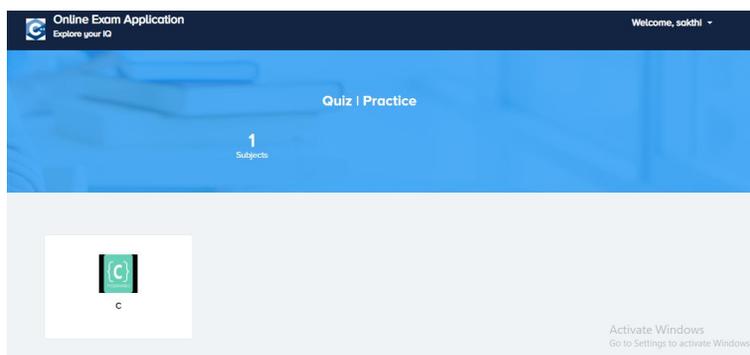


Fig: Subject Selection page

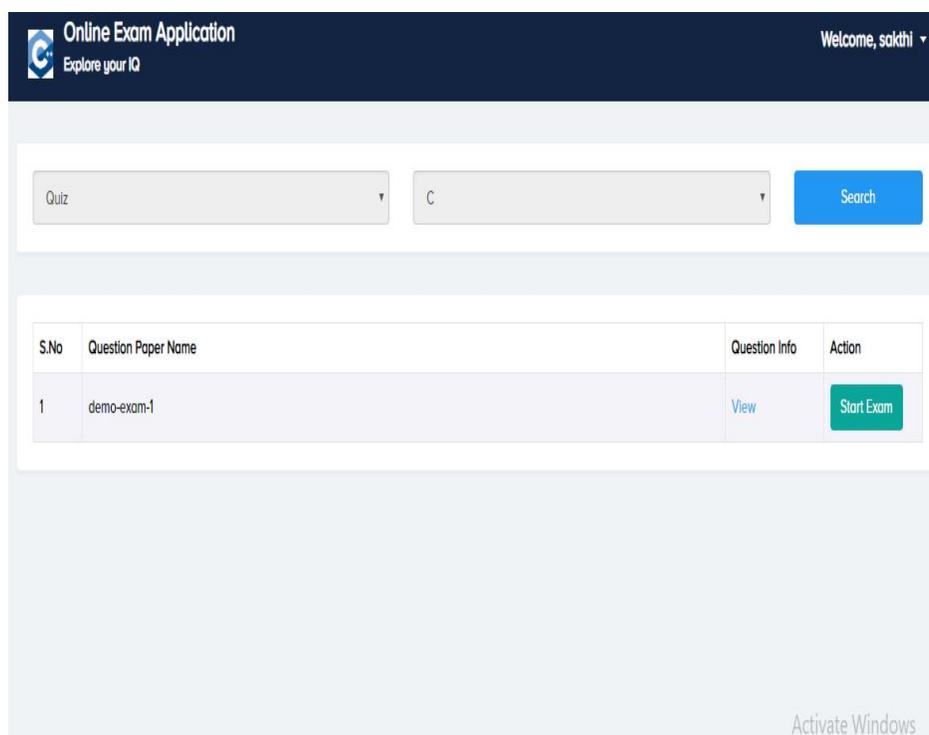


Fig: Question Selection page

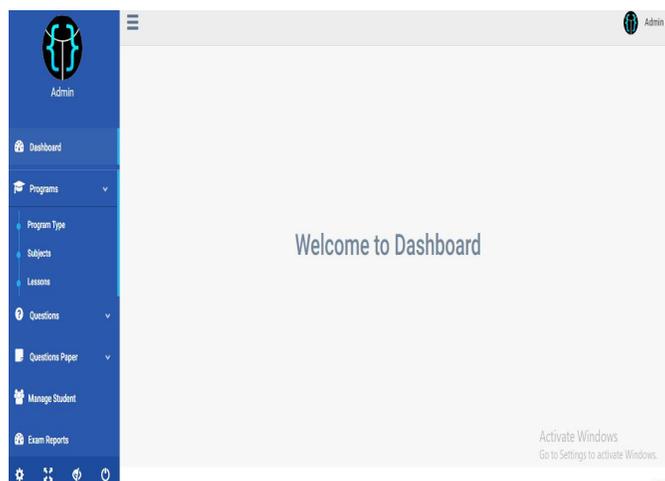
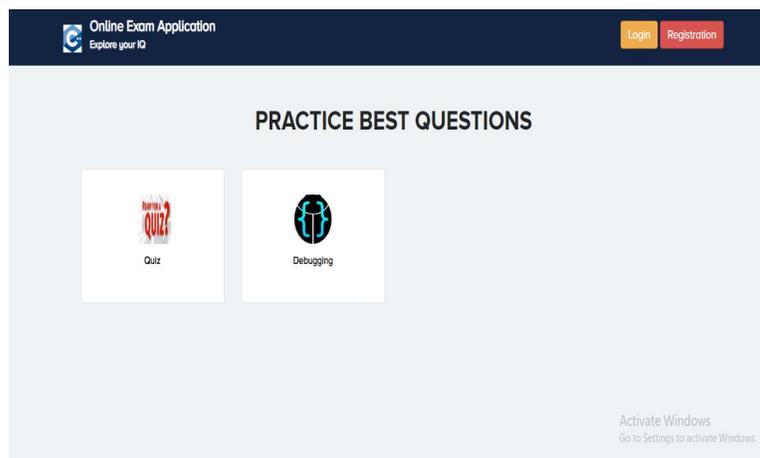


Fig: Admin page

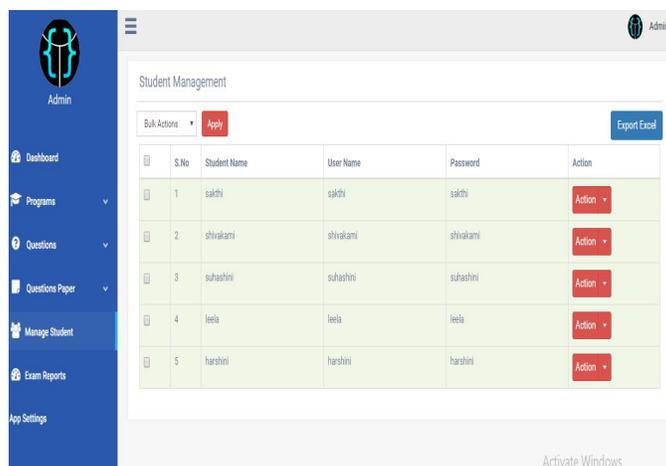


Fig: Student management

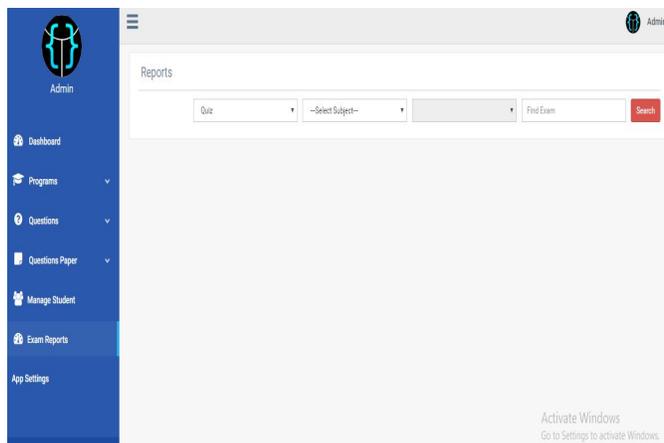


Fig: Report generation page

## VII. CONCLUSION AND DISCUSSIONS

This web application provides facility to conduct online examination. It saves time as it allows number of students to give the exam at a time and displays the result as the test gets over, so no need to wait for the result. It is automatically generated by the server. Administrator has to create, modify and delete the test papers and its particular question. User can register, login and give the test with his/her specific id and can see the result by the admin only.

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