

ONLINE ASSESSMENT TOOL

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Abstract: Now-a-days, to have an internal assessment application for engineering colleges to assess the students based on coding skills, logical skills and technical skills is a challenging task. In addition to this, advancement in security, student code plagiarism checker, getting the appropriate and accurate student reports, test reports of the students accordingly are a challenging and tedious task.

We came with a proposal of creating an Assessment tool with front-end HTML, CSS, Bootstrap, JavaScript, jQuery, mustache and with back-end PHP and MySQL. By using our proposed system, students are assessed on their technical, logical and coding skills. This includes user face recognition with the profile picture of the student. The test opens with secure window. Test includes coding questions, technical questions and logical questions with certain time limit. In addition to these we can add Audio and Video type questions. Duplication of programs is detected by plagiarism checker. Once the students are done with the test, different types of reports such as student wise reports, test wise reports, branch wise reports are generated and student ranking is displayed on the leader board.

Key words: Internal assessment application, Plagiarism Checker, Reports, etc.

1. INTRODUCTION

Assessment is one of the most important dimensions of the education process. It focuses not only on identifying how many of the predefined education aims and goals have been achieved but also works as a feedback mechanism that educators should use to enhance their teaching practices. Assessment is located among the main factors that contribute to a high-quality teaching and learning environment. The main purpose of online assessment tool is to identify the student capability in logical skills, technical skills and coding skills by conducting assessments in regular intervals of time. Assessing students will have different types of questions on various topics. It will consist of Multiple choice, Match the following, True/False, Essay, Drag and Drop, Numerical and Coding questions.

To meet these need we came with an idea, namely Online Assessment Tools, which is mostly used to conduct online assessments to the students with ease. We don't need to depend on external vendor for conducting online assessments. It also displays the reports of the all students to the admin in order wise.

2. LITERATURE SURVEY

Tiantial et al.'s tool, Autolep, meets the above criteria and is based both on static and dynamic analysis to analyse students' programs. Tiantial et al. (2009) point out that the tool has been used at the Harbin Institute of Technology since 2004 with success; Autolep improves the quality of teaching, enforces students interests in programming, and improves their skills and their competence in self-learning.

Vihavainen et al. (2013) also reported benefits of using their automated assessment tool, TMC (Test My Code), at a Finnish university. Their tool is focused on providing scaffolding opportunities: new goals are available as soon as the students have completed the previous ones. TMC also supports bidirectional feedback (code reviews, students and instructors' feedback), and collects data for analysis from students' programs.

Sant (2009) proposed a graphical email-client which supports automated assessment of programming tasks and discussed the advantages and disadvantages of employing such a system. From pedagogical perspectives, the strong characteristics of this approach are that it does not require any specific infrastructure, provides detail feedback and reduces the time that is needed for students to get their marked assignments.

3. PROPOSED MODEL

In our system, we are developing an Internal assessment tool which can be used easily by the teacher to create assessment, conducting assessment and viewing the reports. This tool has a user-friendly interface so that frequent assessments can be created with ease. Assessments are opened in a secured browser which reduce the students to cheat. Coding Plagiarism checker is also integrated into the tool to prevent malpractices by the students.

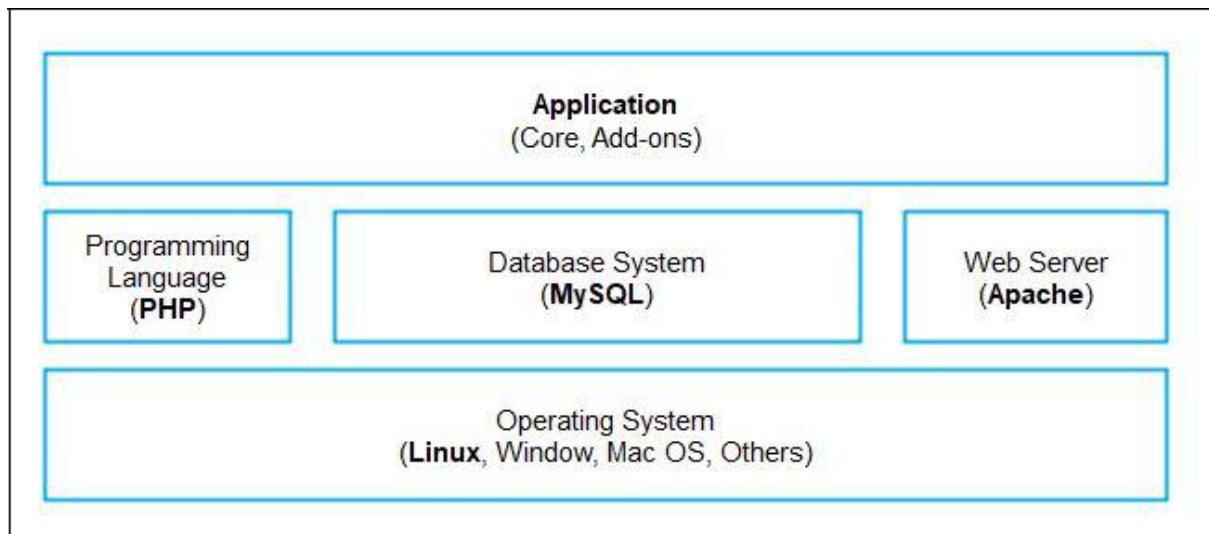


Fig 1 System Architecture

The above Figure 1 gives an overview about the architecture of online assessment tool, which consists of five main components (in rectangular boxes)-

- (i) Application
- (ii) Programming Language
- (iii) Database System
- (iv) Web Server
- (v) Operating System

The application module contains all the front-end code which is the design part consisting of HTML pages of the application. Front-end is designed using HTML, CSS, JavaScript, jQuery, AJAX and mustache. Programming language used is PHP (recursive acronym for PHP: Hypertext pre-processor) which is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML. MySQL is the database used for the application to store, retrieve and perform operations on the data. Apache web server is a program that uses HTTP (Hypertext Transfer Protocol) to serve the files that form web pages to users, in response to their requests, which are forwarded by HTTP clients. Linux is the operating system used which allows the webserver to host in itself thereby providing access of the application without using internet.

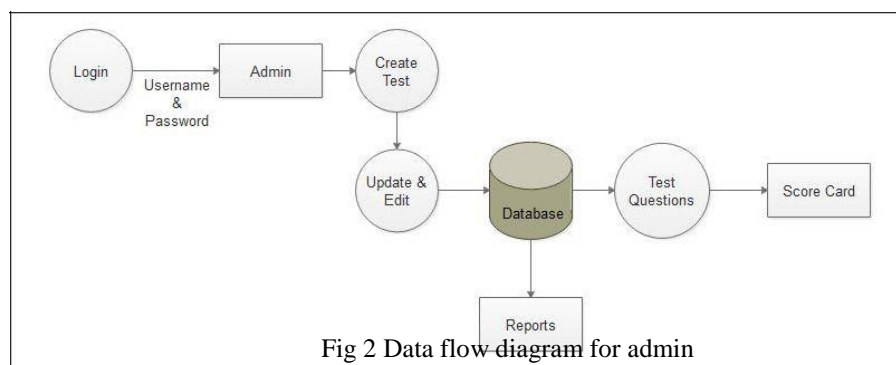


Fig 2 Data flow diagram for admin

4. RESULTS

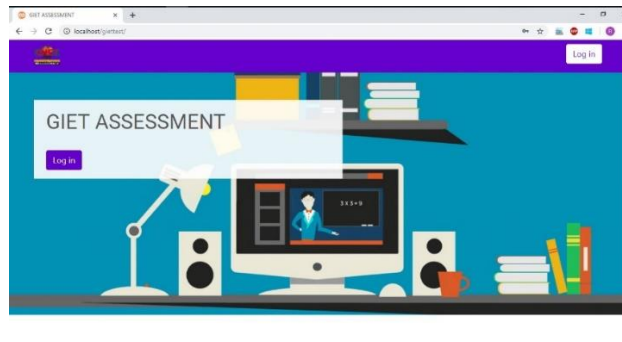


Fig 3 Front Index Page

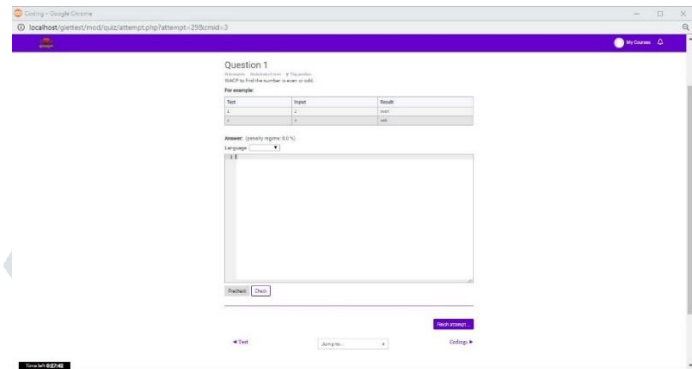


Fig 4 Test attempt coding template page

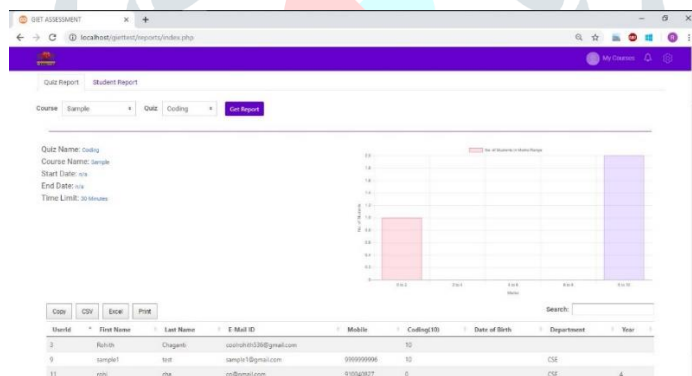


Fig 5 Quiz Reports page

5. CONCLUSION

The proposed a system, “Online Assessment Tool” which conducts assessments to the students with ease. Teacher can make changes in the assessment according to his/her need. Internet is not required to open the test and to attempt it. It is a web-based application and is used to conduct assessments daily.

As a result, management can use internal tool for conducting assessments to students, which is not costlier. Using this tool will also allow to add audio and video clips through which student can understand the question very clearly. Students can also view their ranks. Admin will get the score of the students in order wise.

The proposed system will be very useful for institutions for training their students. Students can't do any malpractices as it is having plagiarism checker and it will open in a secured window. So, students will write their assessments on their own. Score will be displayed on the leader board. Cost will be reduced by using this tool.

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