Placement Skills Assessment System and Benchmarking

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Abstract - This project is built to enhance the students assessment and train them for their placements. The system provides an initial test that is called a mandatory test to all students of various departments during their beginner stage. Based upon the outcome, the system will generate an individual student report, where each and every student data will be analyzed and their benchmarks will be highlighted. Furthermore, test levels will be generated based upon their previous performance and questions will be randomly distributed for each student based upon their performance. The student can attempt the test multiple times to improve his/ her placement skills. The attempts made by the students and related scores will be updated to the respective faculty members and to the students.

Keywords: Placement, Assess student, Analyze

I. INTRODUCTION

Today, recruiters are having lot of requirements that are not easily fulfilled by the students. Also, placement training is provided in a manual way. Some educational institutes provide computerised placement training system. Yet this system is not effective in terms of quality benchmarking of students training. Each and every student is provided overall training and they are not trained in an individual manner. Students possess different skill set and they must be trained in an individual manner. Even if students are trained in an individual way, the whole process becomes manual.
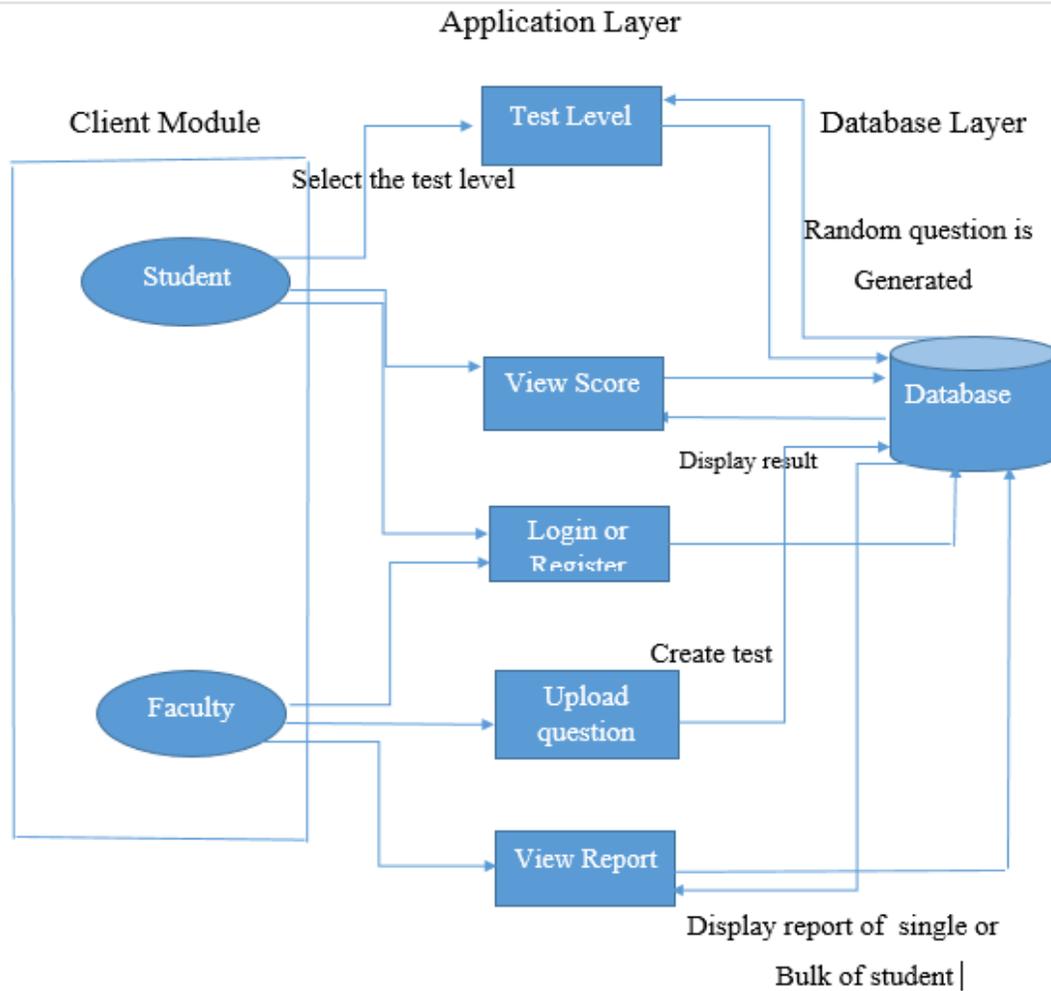
To enhance and improve this process, the proposed system provides an individual level training of students based upon their capability. Initially, a common test is kept among all students to check their capability. Capability is checked through scores made by the students in their initial test. Once their capability is defined, another set of training level test is provided to the students. In this training test, questions based upon individual students impotence is displayed. This helps the students to increase their capability in an individual basis through this test system.

Tests taken by each student and individual attempt made by them can be accessed by the faculty incharge. They can access both overall and individual report of the student. Report is generated in both textual and graphical form which makes it more convenient. E-mail of test results is sent to both the student and the faculty incharge.

II. PROPOSED SYSTEM

To increase the efficiency and reduce the manual process, an application is made to manage test reports of students. Each and every student gets different question based upon their ability. Questions for both Initial test and training test are provided in a Randomized form. The proposed system accomplishes the following-

1. Reduce physical storage of documentation.
2. Provide accurate result.
3. Avoids Plagiarism.
4. Improves skills of individual student.
5. Easy access to students report.
6. Easy Interface to upload questions and access data.
7. Secure storage of data.

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III. STUDY OF THE SYSTEM

The interfaces made are easily accessible through a web browser. Students can take test at their own pace of time and faculty can review test attempts made by the students through easy access of browser support. Browser support also helps the site to be accessible via Mobile phones.

The User Interface of the system can be classified into two types. They are-

1. Student Interface
2. Faculty/ Administrative Interface

The student interface concentrates on providing test to various students. These test questions are generated in a randomized order.

The faculty/ Administrative Interface is responsible to add/ remove student, add questions for test and review student report.

IV. SYSTEM MODULES

The system consist of 2 modules. They are Student module and Faculty/ Administrator module. Both the modules can be accessed by web browser.

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1. Student Module

The student module consist of various fields such as Login, Take Test and View Report. These fields are displayed as various tabs on the top of the screen. Students are provided with their Login identity by the Administrator. Once the student enters the portal, they can start with an Initial test displayed in the Take test tab at the top of portal.
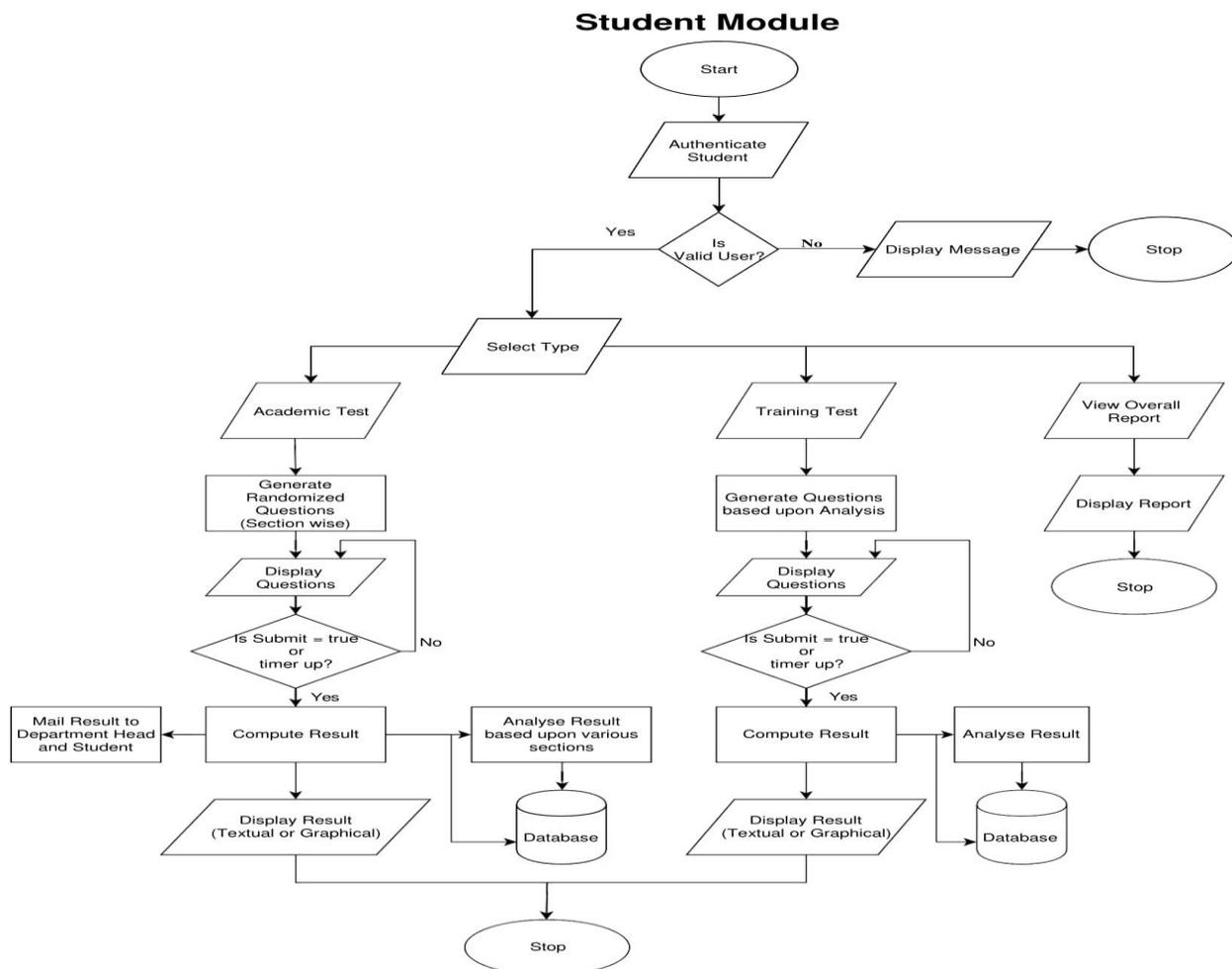
Initial tests are basic test and it consist of questions based upon problem solving skills such as Aptitude, and questions based upon Increasing communication skills through English. This category of test is Level 1 test and this test can be taken by all the students irrespective of department.

Once the student completes their initial test, scores are provided based upon their performance. Using this score, a student is analyzed for their impotent in specific field. Students can then take Training test to improve their scores. Training test can be taken by clicking upon the training test tab at top of the portal. Questions in training test is generated based upon a student's weakness in specific field. For example, if a student is weak at Logical Reasoning, maximum number of questions based upon Logical Reasoning is generated.

The Level 2 test is considered to be as an intermediate test and it is specific to each department. Domain Knowledge can be increased in this field. For example, for an IT or CSE department student, questions related to programming and their concepts is generated. In this way, Level 2 test can provide enhanced training to improve a students domain knowledge.

The final level (i.e.) the Level 3 test is advanced category test. Test questions are based upon various companies. Different companies have different criteria to evaluate a student and based upon that criteria, questions are generated.

The third tab consist of viewing report. Students can view their report for every attempt they have made in each test category. Report can be viewed in both graphical and textual form making it convenient to the user.

Student Module

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2. Administrator Module

The administrator module is also called as faculty module consist of tabs such as view report, upload questions and bulk registration.

In the bulk registration tab, faculty can create accounts for students. Student's registration is done by faculty through this tab. Once their registration is done, students can login to their account and proceed further with their test.
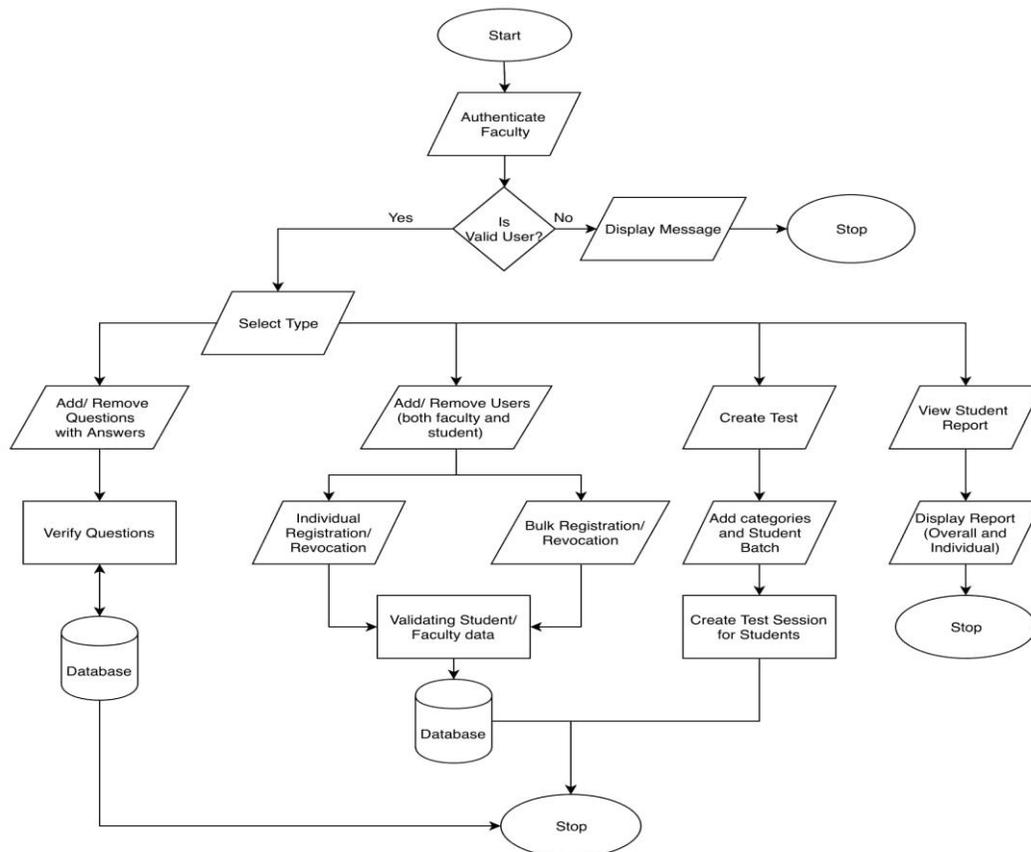
In the upload questions tab, faculty can upload questions to the portal. These questions gets stored in the database. Questions can be uploaded into the system in two forms. One method is through a User interface which asks for questions, choices and their answer. Another method is through Excel sheet upload. Both the methods are reliable and convenient to use.

The next tab consist of viewing report. Faculty can view report of each and every student. Report can also be viewed based upon overall class. Report is generated in both textual and graphical form which makes it more convenient to use.

The sidebar in the portal for both student module and faculty module is fixed one. It consist of Student/ Administrator image. When clicking that image, their profile is displayed. Changes can be made to their profile through this page.

Each question is generated and displayed in a single page. Questions pane consist of a single question with 4 options in radio button format. Student selects one among the 4 options and clicks next button at the bottom. Once all the questions are answered, student can click submit button at the bottom of the page. Also, students can refer back to a question if not answered through question number pane. This pane is present at the right corner of portal. By clicking upon the question numbers, students can navigate to specific questions.

Faculty Module

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V.   IMPLEMENTATION TECHNOLOGY

The system is developed based upon Spring MVC framework(Java Framework). Front-end is developed using Angularjs validation. Database technology used is Oracle 10g.

VI.   ADVANTAGES

1.   User Friendly: The application has user-friendly interface which makes the task of both faculty and student easy. Student can easily access questions and write test. Similarly, faculty/ administrator can upload questions and view reports of students.

2.   Reliability: The system is reliable to use as it provides accurate results to the students based upon their performance.

3.   Security: Security to the system is provided through encapsulating the implementation in separate Data Access Objects(DAO) packages.

4.   Portability: Accessing the portal is very simple as it can be accessed through a web browser. So, if the user(both student and administrator) has a basic internet connection with web browser support, they can access the portal easily.

VII.   CONCLUSION

Application will analyse the student score and set a difficulty level. Scores determine the understanding level of the student. Difficulty level increases or decreases based upon their performance. Randomization algorithm would be used to avoid plagiarism. Hence, the system designed would be efficient in terms of both evaluating the student and generating the report for the same.

VIII.   FUTURE SCOPE

This web portal can be further enhanced and developed. Uploading questions can be done through web scraping or image processing which would eliminate the manual work done by the faculty. Also, techniques such as Machine Learning can be used to analyse students performance in an much efficient way. The data collected by these tests can be used by placement coordinators to know and understand the performance of students.

IX.   REFERENCES

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