Aptitude Assessment System

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Abstract - *The digital movement in the country is growing and new technologies are being made to accommodate the digital era. Education sector is also massively undergoing the digital transformation and hence there is a need for a robust system that helps the students to examine their knowledge [1]. Computers, laptops, tablets, mobile-phones are used by students for most part of their time. There is a lack of capable software available online, which can be used to evaluate the aptitude of students from their comfort. Evaluating and constantly testing students learning progress is crucial for developing their interest and understanding. It also provides a measure of how much the students have grasped a particular topic and therefore what topics need to be taught more in depth for their better understanding. The digital movement across the nation fuels the need to have an online website which is accessible to each and every student and helps in the development of their psyche and makes learning more interactive [1]. Having this system will help the students know their progress in the desired field. Thereby increasing the chances of improving their knowledge in the field. The examiners will regularly update the questions based on current topic, this helps the students to be up-to-date with the ongoing topic.*

Key Words: **Evaluation, Exam, Online Test, Aptitude, Random Questions.**

1. INTRODUCTION

The digital movement in the country is growing and new technologies are being made to accommodate the digital era. Education sector is also massively undergoing the digital transformation and hence there is a need for a robust system that helps the students to examine their knowledge [1]. Computers, laptops, tablets, mobile-phones are used by students for most part of their time. There is a lack of capable software available online, which can be used to evaluate the aptitude of students from their comfort.

1.1 Objectives

The Aptitude Assessment System allows the teachers to get information about a student's area of academics where they need help for improvement. This is done with the help of and aptitude test and based on the result of the test, the teacher can get to know about the student's weak areas in academics and can help them to improvise. This system is not about just grading the students based on their scores but it focuses on making education more interactive and at the same time understanding what part of academics a student needs help and needs to be revised or taught properly.

1.2 Methodology

The proposed system is a website where registered users can give aptitude exams. The website will be developed using HTML, CSS and JavaScript on the front-end, and PHP and MySQL on the back-end [3]. It will allow uses to register using their name and password. The password will be securely hashed using the MD5 hashing algorithm. The administrator of the website will be able to add questions which will be updated as soon as added. The administrator will be able to add questions and answers, also admin can disable a user profile which won't allow the user to attempt an exam [2]. Users change their answers in case they feel like to change the answer before hitting the submit action button. The system will then match the user's answers with the right answer that is entered in the database by the administrator. The system will have different questions from different topics, covering all the topics necessary for the user/student to excel in an aptitude system [4]. The system will have different sections dedicated to different topics and each section will a dedicated timer. If the user is unable to finish a particular section in the given time limit it will automatically submit the user attempted answers. This will test user's accuracy and time utilization which is necessary for an aptitude exam.

1.3 Components of the System

- Aptitude Test :
  The Aptitude test contains 3 sets of questions, these sets can vary depending on the examiners requirement. The question in each set is provided by the examiner and can be updated or changed anytime when needed. The questions present in the system will be updated regularly to make sure that the content is up-to-date for the current syllabus. The website development will also be consistent in order to match the evolving technology. Website will be able to randomize the questions displayed each time to the users when they access the test. The examiner will provide extra questions, which will help the website to pick out different questions and thereby reducing the chances of users copying from each other

- Timer :
  Timer is started once the user clicks on the start test, the timer present for the test shows the time left for the completion of the test and on completion of the allotted time the test is automatically submitted regardless of the completion by the

student, thereby testing the student's accuracy and efficiency at the same time.

- Internet And Server :
  This system will be hosted on a server, thereby allowing everyone with a stable internet connection to access the page and appear for the test. The system will also be uploaded on the server, hence in case of unstable internet connection students can access the page just as in the presence of the internet.

- Digitization :
  One of the main objectives of this system is to reduce paper documentation and convert paper based examination into a digital format. A student with minimal knowledge about computers and its operation should be able to operate and attempt the exam easily. Our system is easy to use, even people with minimal knowledge about computers can access the website and use it efficiently. The result and a certificate is also generated online and sent on email thereby there is no need for students to have a hardcopy of the result.

- PDF Generation :
  Once you've finished the test, the test is evaluated and the scores are obtained in the form of a pdf document, unlike other test systems which provide the test scores on the screen at the end of the test. Only having scores displayed at the end of the test may result in the loss of tracking the student's records. These test results are sent to the students via email for better tracking of progress. The user can see the progress made in successive tests and can also download the certificates for all the tests given anytime they need.

- Email :
  Users tend to forget the scores they have obtained over the time. Having a digital copy of the test score helps the user to keep track of all the scores. The users can check the mail received by them once they have completed the test, anytime they want.

2. IMPLEMENTATION REQUIREMENTS

2.1 Hardware Requirements
- Website will run on 256MB or higher of RAM.
- Website will run on 80GB or higher of Hard disk.
- A good processor

2.2 Software Requirements
- Operating System: Windows O.S, Linux.
- HTML, CSS, JavaScript(JQuery , JSON).
- BOOTSTRAP: Bootstrap is a free and open-source front-end web framework for designing websites.
- Core PHP: It is a powerful PHP framework.
- XAMPP Server-It's an Apache Distribution which is been used.
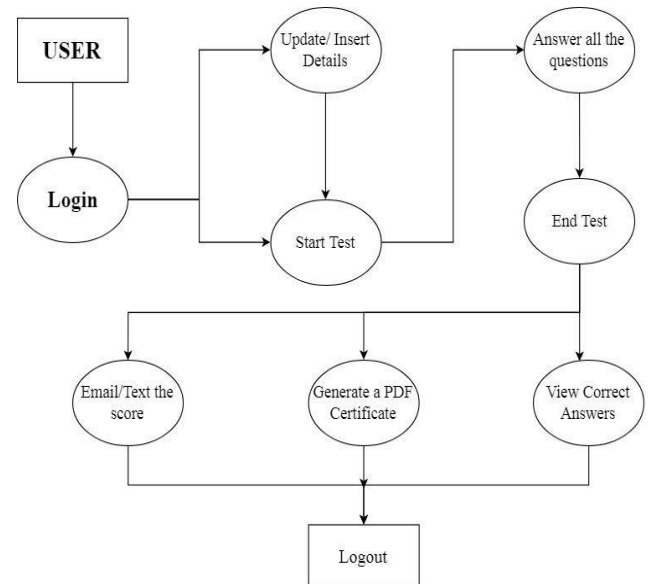
3. SYSTEM FLOW

3.1 User System

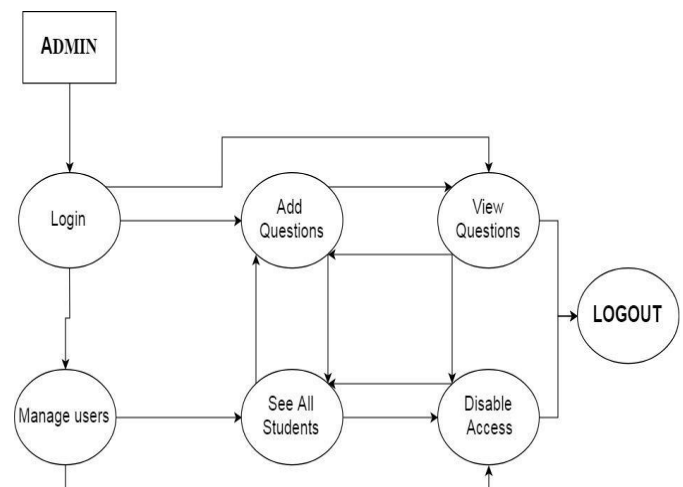**Fig -1:** User System

3.2 Admin System

Fig – 2 : Admin System

4. CONCLUSION

A student can use this system to improve their academics and can also be used by teachers for keeping a track of their student's progress. This system will give data on how students are performing and work on their studies and development by accessing their results from past exams and help them for their future .Since teachers will be the ones to update the questions, the relevance of the questions will always be accurate to the subject matter. Based on the performance teachers can help the students and solve their doubts. This project is completely beneficial for students as we are moving towards the digital India movement. As this

will reduce the cost for establishing the examination program.

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