A Novel Approach With Subjective Assessment For E-Examination

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ABSTRACT

This research gives a brief idea about E-examination and related technology keeping in views the needs of the University. The drawbacks in previous E-examinations are pointed out and have been taken into consideration to overcome it, an appropriate solution is proposed. Our system will allow E-examinations to be taken securely under the supervision of invigilators and with subjective assessment in it, with instantaneous availability of results.

Keywords - Distributed Database, FCK Editor, objective Assessment, Paint, Subjective Assessment,

I. INTRODUCTION

The contribution of web applications in the advanced technology has brought up a tremendous transition in our social life including the ancient system of education and examination.

Knowledge of student can be identified by objective type and subjective type questions. Educational experts and strategically scientists confessed that subjective writing skills are essential for senior management status. Investigation divulge that professional who are qualified through objective type online Examination with lack in subjective writing skill could not gain ascend in career to top management positions smoothly. The research considered the skills of a scholar to express knowledge subjectively as the self relying variable and higher management status requires as the relying variable. It intellectualizes better the student of higher level education. Many organizations are replacing their ancient methods with advanced perceptorial materials through the web.

Students who are looking to give online exams within a short period of time and getting instantaneous results. This project is based on a real time issue. Basic goal is to overcome present procedure implemented in every college which is performed through manual process. This procedure includes many problems. In order to overcome the above problems new system that is E-Examination is introduced which contains the modules like Student Module Invigilator Module, Result Module, and platform for solving the objective questions as well as subjective questions and also the diagrams. All the record of the students, invigilors schedules of exams. The paper includes following sections:

1. Problem definition
2. Research Methodology
3. Guidelines for E-Examination
4. Advantages.
5. Limitations.
6. Proposed Flowchart
7. Conclusion and future scope.

II. PROBLEM DEFINITION

Basic aim of formulating this research is to focus on the fast implementation, conduction & assessment of questions in the exam both Objective and Subjective. In E-Examination following problems are being diagnosed:

1. Time Constraints for declaration of result.
2. Test results alone do not give enough information to students for the efficient preparation for the examination.
3. Use of FCK Editor for effective implementation of Subjective questions
4. Reduction in the workload of Invigilators.
5. Providing an efficient format for sketching diagrams in subjective question

III. RESEARCH METHODOLOGY

In Student module, students should register in registration form and accordingly they will receive their ID and password after which they can appear for the examination. This application will display random questions which will differ for each student. Using this procedure invigilator task will be reduced. Students will be provided with graphical view for better understanding of rules and regulations of this system. The students will have two choices which are mandatory to solve one after another. [1]

a) Objective Questions
b) Subjective Questions

In objective question set student will be provided with questions in which they have to choose one option among four options compulsorily. If student fails to choose option then student will not be able to proceed further. The subjective questions can be solved after the objective or vice- versa. FCK editor is used for solving subjective questions in short answers as well as essay type answers can be solved easily. FCK editor also provides the base for

sketching diagrams whenever and whichever is necessary. The Subjective questions are those in which we need answers that contain brief information about the particular term or describe some special events. Subjective question are questions such as "Who is Hitler?", "What is earth quake?", or "Why is blood red?", which need answer that contain the definitional information about the particular term, explain some special characteristics.(i.e. chemical equation) or describe some special events[9].

For above all questions we need the answer that gives us a correct and descriptive introduction. For these descriptive answers we need system like these. On internet lots of information is available but some-times it is not relevant to our question that time we need such systems which understand our problem and easily gives us the better answer. Our system gives the better solution to this [9]. In our work we are solving complexity involved in assessing online descriptive examination using FCK Editor and MS Paint for sketching diagrams.

The answers of subjective questions will be matched with the answer stored in database and accordingly the assessment of marks will be done

2.1 E-Examination Invigilator's Module
The invigilators have to register themselves before login and then they would get authority. The invigilator work reduced as the results are calculated immediately after the examination within a specified time. [1]

In our research work we follow the following stages for assessment of subjective and objective questions. For objective questions correct answer will be matched with model answer by the experts and accordingly result will be calculated.

- Firstly we will provide a reference material in which sample questions will be provided and then accordingly students have to follow that answers pattern for scoring good score.
- Then on the basis of the reference material provided a sample question paper is prepared.
- For this sample question paper a keys are prepared by the expert in particular topics.
- The question paper will generally have following types of question.
  a. Definition and example based
  b. Explanation and example-based
  c. Questions containing equations and diagrams

All above steps are done by the faculty members, then these s question set we hand over to the different students for answering. Then after

solving questions these sets will be hand over to the experts to match the model answer and student's answer and then result will be calculated on the basis of how much time student required to solve the particular question. [9]

This module is going to provide a platform for drawing images in subjective questions whenever required, the MS. Paint software is used and flexibility is increased accordingly. MS. Paint is a feature in Windows 7 that you can use to create drawings on a blank drawing area or in existing pictures. Many of the tools you use in Paint are found in the ribbon, which is near the top of the Paint window. The following illustration shows the ribbon and other parts of Paint

① Paint button   ③ Ribbon
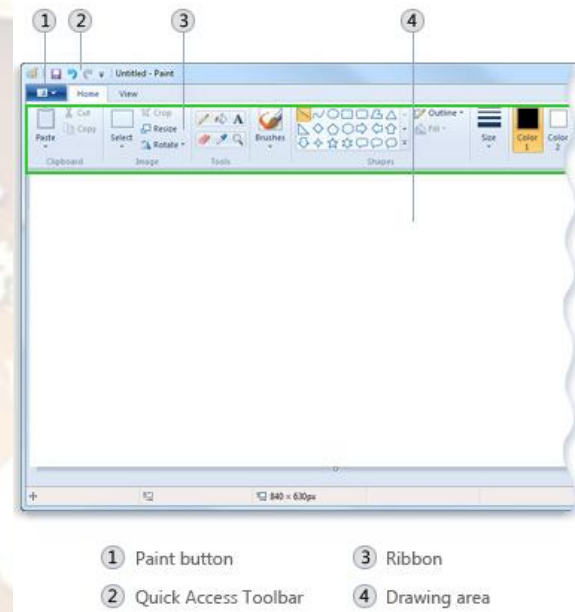② Quick Access Toolbar ④ Drawing area

Fig. 2.1.1 Paint Window

We can use several different tools to draw in Paint. The tool you use and the options you select determine how the line appears in your drawing. These are the tools you can use draw lines in MS Paint. [8]

The tools are Pencil tool, brushes, lines tool, curve tool. We can also use Paint to add different shapes in a picture. The ready-made shapes range from traditional shapes like rectangles, ellipses, triangles, and arrows, lightning bolt, or callouts (to name a few). If you want to make your own custom shape, you can use to the Polygon tools to do this.

Fig. 2.1.2 Shapes in Paint window

In MS. Paint, you can also add your own text or message in your picture. Changing the view in MS.Paint lets you choose how you want to work with the picture. You can zoom in on a certain part of the picture or the whole picture if you want. Conversely, you can zoom out if the picture is too large. In addition, you can show rulers and gridlines as you work in Paint, which can help you work better. [8]

We are providing a platform for drawing images in subjective questions whenever required, the paint software is used and flexibility is increased accordingly.

2.2 FCK Editor

FCK Editor is an old and widely used WYSIWYG (what you see   is what you get) editor that implements the capabilities of a word processor on your website. Learn about what makes it tick and its benefits, as well as a new editor based on it. There are many editors available in the market. Each editor has its own features, benefits and drawbacks. FCK Editor is one of the top editors in Open Source category. In this article, we will explain some of its good features.

FCK Editor is an application that can be used as a online text editor for JavaScript, php and asp.net. It brings the power of many desktop editors to our MAC**.** FCK Editor is lightweight, doesn't require any kind of installation on the client computer, XHTML compliant and works with Firefox, Mozilla, Netscape, IE and a lot of other web browsers. FCK Editor is HTML text editor brings to the web much of the power of desktop editors like MS Word. FCK Editor is powerful tool which provides the html editing, theme to suit your web interface, multiple language supports, selection of tools to be displayed as per requirement, image upload, flash file upload and many more. [6]
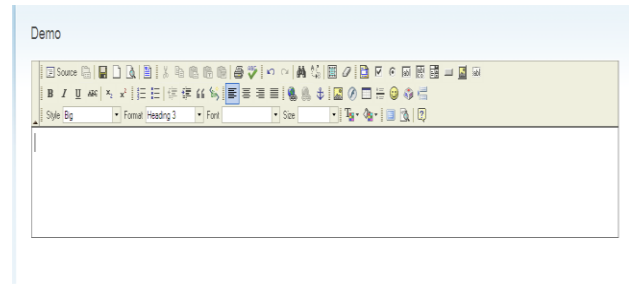

Fig. 2.2.1 FCK Editor

The features that attracts the user to use it
1. Open source
2. User friendly and easy to integrate
3. Toolbar selection facility
4. Support of multiple language
5. Support of skin to suite web page UI
6. Light weight
7. Image and flash file upload

FCK Editor is very simple, easy to integrate and can be used in almost all the web application as html editor/ rich textbox editor.

2.3 E-Examination Result Module

In our research we have chosen topic i.e .C++, we have provided material with the help of ready references which are easily available on internet or web and also from the books of various authors. Then equivalent existence is found to each word, if word present give 1's else 0.

If all the expected keywords are present in the answer submitted by the student, he would thus score the marks allotted, but if there are spelling mistakes or misplacement of the keywords or there may be extra keywords added to the answer which are unnecessary and irrelevant then he would score zero marks and no marks would be allotted. So this would help in getting the precise and appropriate answers and thus would be easy for evaluating the answers.

For Example

Q.1 What is the features of C++?

Ans: - Classes (1), Data Abstraction (1), Inheritance (1), Message Passing (1), Polymorphism (1).

S1: Classes, Data Abstraction, Inheritance, Message Passing, Polymorphism (1 1 1 1 1)

S2: Classes, Namespaces, Inheritance, Message Passing, Polymorphism (1 0 1 1 1). (Irrelevant Keyword) [4]

S3: Classes, Data Abstaction, Enheritance, Message Passing, Polymorphism (1 0 0   1 1). (Spelling mistakes).

Q.2 Which are the Operators used in C?

Ans: -   Assignment(1) Bitwise(1) Conditional(1) Logical(1)

S1: Assignment, Bitwise, Conditional and Logical (1 1 1 1)

S2: Assignment, Bitwise, Logical and Conditional (1 1 0 0)

(Keyword was Misplaced).

S3:Asiggmeent, Bitwse, Conditional and Logical (0 0 1 0).
(Spelling mistakes). [4]

The above Examples thus give an idea about the evaluation of the result and the allocation of the marks is also shown above. The numbers in the round brackets indicate the marks specified for each keyword. If the keyword matches then the marks would be given or else no marks. For subjective questions sample answers would be provided and according marks allotment would be done and the result would be calculated. Student is provided with a particular space to write the answer and it is mandatory to finish the entire answer which should contain the entire list of expected keywords within the limited space and time [9].

IV.   GUIDELINES FOR E-EXAMINATION
Rules on Examination Day can be followed as below

1. Student should report to the centre before 10minutes, if in certain case he/she gets late they would not be permitted.
2. The candidate should have its identification detail i.e. print out of the login form.
3. The exam would get terminated after the expiration of specific time allotted.
4. If student clicks on the back button while solving the paper the current answer would not be considered .[4]
5. Student must bring his/her Hall ticket with them.

V.   ADVANTAGES
1. Quick implementation of results.
2. Easier and flexible platform for subjective
   questions.
3. Workload of invigilators is reduced.
4. Easy platform for sketching diagrams.
5. Manually performance is reduced by performing   everything online.
6. Low cost.

VI.   LIMITATIONS
1. In case of System crash exam will not be conducted
2. Server problem can bring the system to halt.
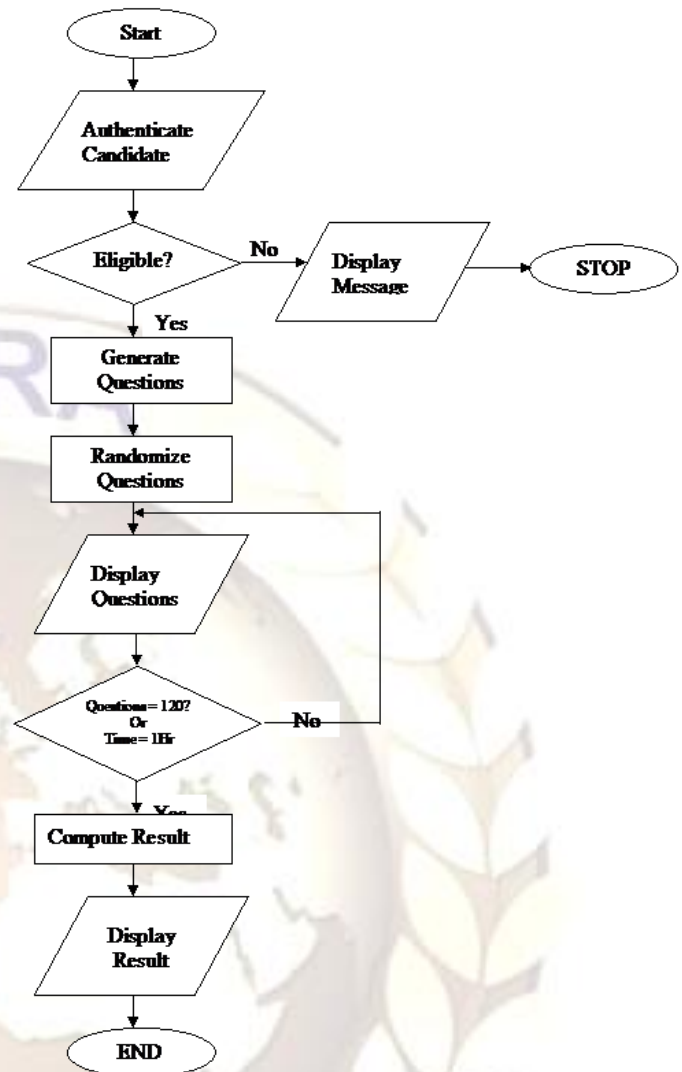
VII.   PROPOSED FLOWCHART

Fig. 5.1 Proposed Flowchart

VIII.   CONCLUSION AND FUTURE SCOPE
After incorporating the three basic requirements i.e. objective question, subjective question and drawing diagrams as a single module. The E-Examination System will be a platform for solving subjective and objective question with diagrams which is totally automated. This procedure would raise the interest of the students and thus would help them to polish their speciality. With the availability of the latest technology, the researchers envisage building an e-tutoring module that will enable support for education of invigilators and students. [6]

Thus this research provides procedure reduced workload for invigilators, quick time availability of results, and platform for subjective questions and as well as for diagrams which are made available to students in easy and effective manner.

Thus this system can be further used for the implementation of all the students belonging to various streams.

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