

# ONLINE SUBJECTIVE AND DESCRIPTIVE EXAMINATION

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## ABSTRACT

Online descriptive or subjective examinations are becoming internal part of many universities. During the process of online examination the main hurdle is the automatic evaluation of answer sheets. Such examinations are to evaluate the conceptual grasping level of a candidate for how much the concepts are understood in a particular subject. The conduction of University/Board level Examination System is a tedious process involving a lot of work with high risk in managing the question papers and answer scripts. We have heard of question paper getting leaked, answer papers not completed evaluated as the additional sheets were lost in handling the answer bundles and so on. The online examination with objective type questions lacks the capability of evaluating students. For candidates requiring to take up high management post it is required that they have the aptitude, in-depth knowledge and the ability to communicate and command the subordinates so that a proper functioning of the organization takes place. For this an online descriptive examinations is the only way to solve the problems and achieve the required goals. In this paper, we propose the devices that can be used by candidates with ease to answer descriptive type examinations online digitally.

The descriptive exam system is based on automated system capable of evaluating the descriptive answers. The system consists of candidate login and admin login. The whole system will be controlled by the admin. After registration candidate gets exam information related to his interest. In this system, the candidate can apply for the exam, he receives his exam card through E-mail and he attends the exam and when the result should have to be declared, this decides by the administrator. The administrator arranges the exam schedule and result declaration. He also arranges the exam question papers and answer papers. The system checks paper manually also, if the exam paper checker gives wrong marks to candidate the system gives alert to him. The demo exam is also provided; the sample question and answers are also provided for the help of the candidate.

## INTRODUCTION

This document details all features and procedures to develop the system. These documents contains details about objectives, scope, design model, primary requirements and finally monitoring and reporting mechanisms.

Evaluation has been an essential part of the education and is done through system of examinations. The students are to be evaluated against the subjects and topics covered over a period of time. Generally, the written examination is conducted for two to three hours and the work is to be evaluated as soon as possible. At college or institute level, a teacher is required to evaluate answer books of about 60 students per class. For proper evaluation, the examiner needs at least 15-20 minutes for each answer book. It means about 15-20 hours for each subject. Since we have only limited time available per day, the evaluation is spread over many days. When there are a large number of students to be examined, the evaluation requires considerable manual effort. In some cases, there are difficulties on account of poor handwriting. The task of evaluation is repetitive and boring. The quality of evaluation also varies in accordance with the mood of the examiner. In today's environment if this could be automated, it would solve many of the above said problems. Hence, the solution lies in automating the work using computers.

The online descriptive assessment is an attempt to easy the system of evaluation for students and Institutes. Reducing the efforts of manual labor with an attempt to reduce flaws in the existing manual system of conducting exams. Online examination centres can placed at a destination beneficial for student and institute. The institute can register and host exams online.

## LITERATURE SURVEY

. The objectives of developing web based exam are to conduct exams, collect answers, auto-grading and generate a report. A multitier architecture is used to develop the web-based exam. A survey is conducted to validate the system using a sample size of two hundred and fifty. The future work is to add more questions. The main limitations, of the system developed by Rashad et al. [2], are that it does not cover subjective questions, course learning outcomes, complexity and graphic questions like Data Flow Diagram (DFD) and Unified Modelling Language (UML). An ongoing research is presented by putting together a platform as a test bed for NGN application development [3- 4]. A novel component based development model is proposed to develop SIP based mobile applications. The proposed model used as a framework for general purpose application development over the test bed. The objectives of IP Multimedia System (IMS)-based mobile examination system approach is explained with reasons and advantages identified for objective questions. Main components of IMS service architecture with their roles are also described. The approach leads to a highly modular and extensible

integrated system. IMS based application is considered to be the next generation mobile applications that enable developers to take advantage of mobile networks resources. IMS-based application is attributed with robustness and improved Quality of Experience (QoE) for mobile users.

Zhenming et al. [5] propose a novel web-based online objective examination system for computer science education. System transmits the answers into bit stream after encoding to ensure security and intrusion. It is password protected system and camera is there to monitor the activities of students. The web based examination is developed to handle basic computer skills. The system does not handle subjective exams and advanced computing courses. Therefore subjective skills of the students cannot be assessed using the system developed by Zhenming et al. [5].

Azim et al. [6] described the impact of online subjective assessment on the students as compared to objective assessments. The written ability of students is not checked while conducting the objective examination as per the results extracted by Azim et al. [6]. The study in [6] surveyed 100 private companies related to information technology field to collect the data of the candidates who got promotion after passing the OCP, MCSA or MCSE certifications. There were only few candidates who were promoted to senior positions because of written shortcoming. The subjective assessment system is the solution to check the writing skills of students [6].

A novel approach with subjective assessments for Examination system is introduced by Sinde and Chokhandre [7]. The web based system uses keywords to match with the answers. It is working like objective questions. A student will get marks if the keywords match otherwise if he/she will get zero if the order of keywords are changed or misspelled. The system does not allow students to write the answers of descriptive/subjective questions and it only deals with objective assessments. Amin and Jipeng

- Question paper setting
- Online Evaluation of objective type questions
- Question bank editor
- Spell checker
- Grammar checker
- Report generation of result
- Descriptive answer evaluation is still an open problem. [6]

## EXISTING SYSTEM

### Mode of Conducting Examination

Question paper is prepared by the subject teacher in consultation with the technical staff conversant with the project who assist in uploading the same in the desired format. The current version of the system caters for five questions per test. You may design as many tests as you need. Students appear for the test online within the lab. User authentication has been incorporated. On successful login, each student gets the question paper and his/her blank answer book. They are required to answer the questions by typing in the space provided. The software facilitates saving of the typed work as per user convenience. In case of a system failure, the saved work is available to the student for continuation. After the specified time the students are required to save their work and logout.

### Computing Results

Results are computed on the click of a button. The software also facilitates manual viewing of the answers for each question for all the students as well as full answer book of a single student. For keeping hard copy of the written work, printing of all answer books has also been provided. In case the results are found at variance from the expected ones, the software can also be trained to adapt to the new changes.

## PROPOSED SYSTEM

### Functional requirements

Required software is for conducting online examination and providing results. The system should satisfy the following requirements:

#### User Requirements

#### Administrator Aspect

- Taking back up of the database.
- Editing/Deleting/Creating the records.
- Adding faculty, department.
- Changing the super password.

#### Department Aspect

- Logging into the system.
- Sending result to specific student.
- Accepting registrations of candidates.
- Adding/editing/deleting the questions.
- Issue Hall Ticket
- Set Exam Date
- Adding the candidate to a group.

Creating questions.  
Posting questions.  
Posting multiple options to respective question.  
Marking correct answer within the given options.  
Time limit of the questions if any.  
Set marks.

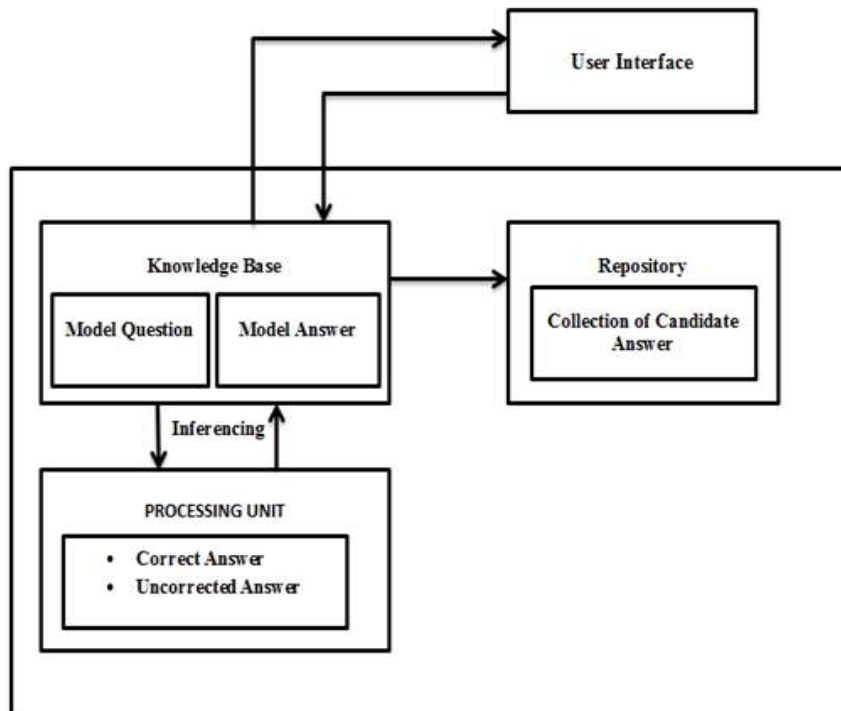
**Student Aspect:**

Requesting registration.  
Logging into the system.  
Selecting the questions.  
Appearing for the examination.  
Reviewing the given responses.  
Changing password.  
Resetting of forgotten password  
Download Hall Ticket  
View Examination Timetable

**Analysis**

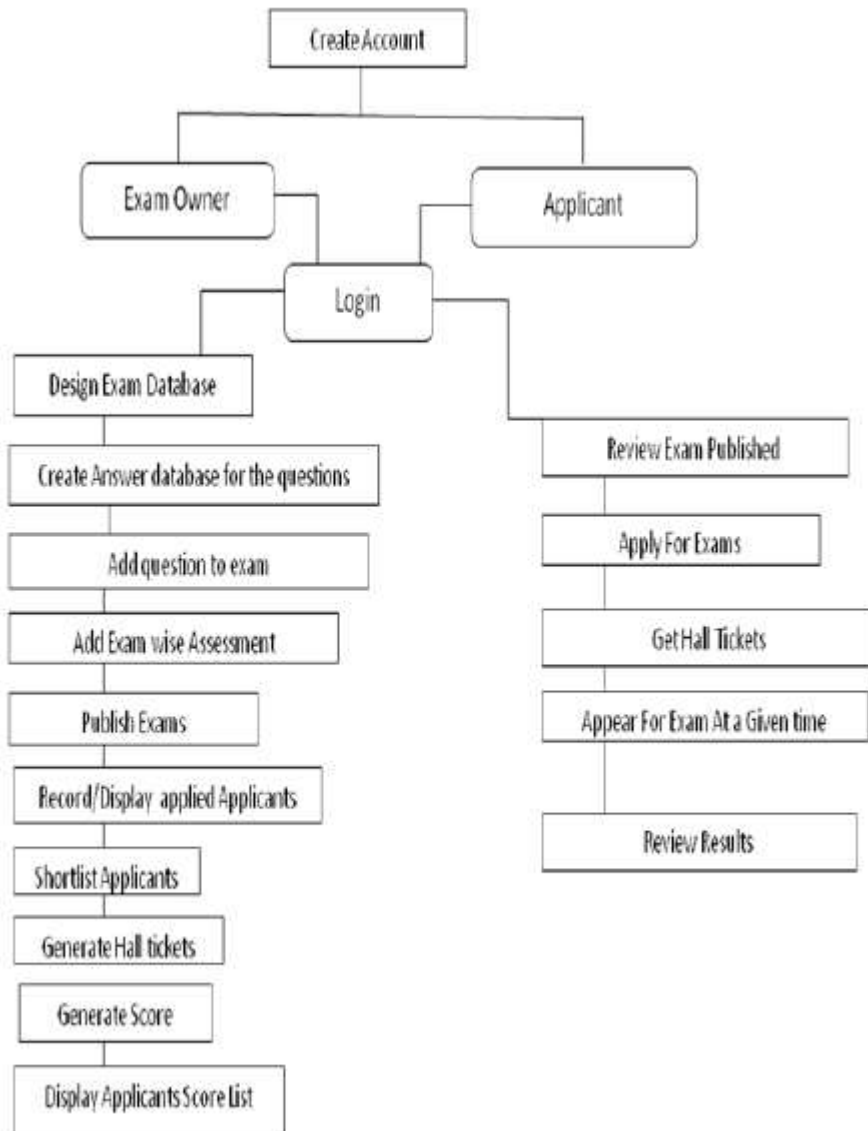
Authenticating users based on username and password  
Recording candidates' responses to every question.  
Checking whether the given response is correct or not.  
Keeping history of mark reports of all users  
The reports are required to be sent to the candidates.  
Invitations/report for the appearance for the new test will be posted.

**ARCHITECTURE**



## METHODOLOGY

### Flow Diagram



## PROCESS

The inference process follows the following steps.

The first two steps are for the objective based question while steps three onwards are the process used to access the answers.

☑ Stage 1: First the question style checked if it is yes / no format than the model answer related to those questions are called up for appropriate matching.

☑ Stage 2: If it is one word answers then again the model answer are called up and a matching process is carried out. If its distance from the model answer is less than two we accept it as correct else the word is rejected and the answer is accessed as wrong.

☑ Stage 3: One sentence based answer has to firstly check if they are in the same sequence [sequential form] as in the given model answer. Then we evaluate it as correct but for following case the process ignores if conjunctions or prepositions like 'is', 'the', 'an', 'and' if are missing are ignored and term the candidate answer as correct.

☑ Stage 4: If the sentential form is different then we check for its synonym representation provided in our knowledge base system.

☑ a. If sentential words used like “part” for “component or session” such cases are checked using wordnet dictionary if the appropriate meaning match’s than the answer is accepted else rejected.

☑ b. The whole sentence, sentential meaning was checked with already stored in the database meaning termed to be right are considered else are left. Considering the model answer written in various form and these are written termed by ranking using the confidence factor provided by our system which was generated looking at the appropriate references like books articles for that answer used.

All the efforts are basically to reduce the complexity occurring during the representation of information. The collected information is then represented in an intermediate form, like first order predicate or conceptual dependency for removing complexity for further processing.

## CONCLUSION

In traditional examination system there is a lot human efforts required along with stationery needed for conducting the examination system. Even if one candidate is going to answer the examination a set of people responsible for conducting the examination are required to do all the formalities. With the proposed system, candidates can answer their examination on digital answer paper and submit the digital answer paper to the server directly from where it can be accessed for human evaluation system or automatic evaluation system. This process will reduce the tedious job of the examination boards, examination centers and the invigilators. Automatic evaluation can further be help in reducing the task of the evaluators and also facilitate a fair evaluation system. This project has tremendous potential for implementation at large scale. With subsequent research, the system may be adopted by all organisations as well as at university level. It would save enormous amount of man hours for evaluation of examinations. It would also save time, effort and paper and help to overcome other limitations of manual evaluation.

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