Systematic Approaches to Resolving Challenges in Result Processing

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ABSTRACT

The J&K State Board of Technical Education, an autonomous body created by an act by the Govt of J&K has been entrusted with the result processing and certification of all diploma level students studying in the various polytechnics across the state and during the process of finalization of result various kinds of issues are encountered. In this study, those issues have been elaborated and consequently the various kinds of solutions for the same have been discussed.

KEYWORDS: JKSBOTE; Board Results; Result Processing Issues; Solutions for Result Processing Issues.

I. INTRODUCTION

To err is Human. No matter how much a system is automated, at certain points manual intervention is required. The overall goal for any automation system has to be always to minimise the manual interventions in the system in order to increase the overall efficiency of the system both in terms of quality and time as the slowest step is always the rate determining step and in most of the systems, the slowest step will always be the one with manual intervention.

The examination process of J&K State Board of Technical Education(JKSBOTE) starts with the filling of online examination forms followed by 2-Stage Verification Process ,first in the concerned institute of the student and then by JKSBOTE. After successful verification of date , the students are assigned online roll numbers and then the actual process of examination starts where in the students are required to fill student details including the roll number on the front page of the answer script.

The result processing starts with the onset of evaluation process. The answer scripts are coded subject wise and the roll number part of the answer script is hidden by using a tape to ensure fair evaluation as the evaluator remains unaware about the student whose answer script is being checked.

After the evaluation process is complete, the actual process of result processing starts. The result Processing involves the following steps:

a. *Assigning a Packet to evaluator:* Each Evaluator has been assigned a unique id and a central administrator (dy. registrar) assigns an answer script packet to an evaluator.
b. *Marks Entry by Evaluator:* After successful assignment of a packet to an evaluator, the evaluator logs in to his account and enters the marks against the code. Proper interfaces have been developed for the same.
c. *Marks Entry by Operator:* There is a dual entry mechanism in place to eliminate data entry errors ; , the packet is assigned for repeat entry(2^{nd}) by admin to an operator who logs into his/her account and enters the marks against the same codes which the evaluator has entered.
d. *Verification of Marks by Dy. Registrar:* This is the marks verification step by the admin and in case of mismatch of marks, the admin gets an interface to correct it.
e. *Roll Number Entry by Decoder 1^{st} and 2^{nd} :* After successful verification of marks by the Dy. Registrar , the packets are assigned for decoding . Decoding is the process in which Roll Numbers are entered against the codes. Since decoding Process starts after the marks are verified , there is no chance of fiddling with the marks for the candidate. The packets are assigned for decoding to two different decoders and they log in to their respective accounts for the decoding. This process also being repeated twice to ensure the data entry issues are sorted out .
f. Final Verification and Confirmation: After both the processes of roll number entries are successful , the dy. Registrar then verfies the packets . In case of a mismatch between the two entries of the roll numbers against a single code , the packet cannot be verified. The Packet is opened and that particular answer script is again scrutinized by the dy. Registrar himself and accordingly the entries are corrected . For perfect match , the dy registar cannot update the rollnumber. After successful verification , the packet is stored in strong room(secrecy section).

II. RESULT PROCESSING ISSUES

At the end of the data entry process , the data is being scrutinised again before it can be finally linked with the student record. A checklist for resolving the various kinds of issues before and after linking the data with the

student record has been created. SQL and PHP is used extensively for finding and resoultion of the issues. The checklist items and the solutions are as following:

a) **Checklist 1; Calculating the number of Codes Entered :** Using SQL and PHP , the total number of codes that are entered in the system and the actual number of papers physically received from the examination centres is cross checked. Also subject wise comparison is made to ensure that there is no missing paper. The SQL query used for the Counting purpose is like

Select Count (*), SubjectID from DecodeRegister Group by SubjectID

b) **Checklist 2; List of Wrong Roll Numbers:** The moment any system is kept dependent on the human intervention, it is prone to errors. In the present existing scenario, the candidates are asked to write their roll numbers on the answer script. However many a times it has been found that students do mistakes in writing their roll numbers. Since the entire system is dependent on this roll number, thus this paper of the student will remain unlinked if not corrected. Statistically over a period of time, it has been found that around 0.5% of the answer scripts contain wrong roll numbers.

In Checklist2, a list of papers is traced through SQL queries which contain non-existent Roll numbers, the roll numbers which have not been issued by board. The SQL Query for the same is like

Select * from DecodeRegister where RollNumber NOT IN (Select RollNumber from Registration)

The Papers are identified and then scrutinised properly for actual roll numbers and accordingly rectified.

c) **Checklist 3; Duplicate Roll Numbers:** While writing a roll number, mistakenly student writes a wrong roll number, but that happens to be the roll number of another candidate. So in this check list , the list of papers which belong to same subject but contain same roll numbers is traced.

SELECT rOLLnuMBER,sUBJECTid FROM DecodeRegister WHERE DecoderNumber='2nd' GROUP BY rOLLnuMBER,sUBJECTid HAVING cOUNT(*)>1.

The Papers so found have been entered on the same roll number and then further srutinizing the papers the actual roll numbers of the student who have written wrong roll numbers are traced down.

d) **Checklist 4; Mismatch Roll Numbers in Decode Register:** Despite Double Entry Mechanism to eliminate errors, some errors in data entry may still remain. This check is performed to ensure there is no mismatch of roll numbers between the two roll numbers entered against the same code.

e) **Checklist 5; Check Single Codes in Decode Register:** Even after complete data entry , it may happen that instead of two entries against a single code, there is only a single entry present . The query is like

Select CodeNumber,COUNT(*) from DecodeRegister Group By CodeNumber having Count(*)=1.

f) **Checklist 6; Check Marks Mismatch in Code Marks:** A similar process with regard to Code Marks is performed to ensure no mismatch of Marks just like Checklist 4.

g) **Checklist 7; Check Single Codes in Decode Register:** Again this checklist is like CheckList5 for roll numbers. This ensures so single marks entry is present against a code.

h) **Checklist 8; Check codes which are absent in code marks but present in decode register & vice-versa:** This list ensures synchronization between the two tables ,one containing Roll Numbers and another containing Marks. This ensures that there is no code which is pending in one but exists in another table.

i) **Checklist 9; Check Codes which will remain unlinked because of Subject Mismatch:** Sometimes some codes are entered wrongly in different subjects. However the roll numbers entered against them are correct (same is ensured after checklist 2). This ensures that the codes will get linked to the subjects.

j) **Checklist 10; Check the Codes for the students who are already pass:** After all the above data validation processes are complete, a final query is run which checks the roll numbers of the candidates who have already cleared but have appeared again .

III. CONCLUSION

The above processes ensure that the data available after it passes all the tests is free from any raw data that is unlinkable. Further this process eliminates the discrepancies that would otherwise occur with the result record. Result Generated is very good both in terms of time and quality i,e. free from errors. The steps must be run in sequential order and recursively also after every update in order to prevent any kind of discrepancy that might arise due to updations.

IV. FUTURE SCOPE

To reduce the time further and to ensure that the system is freed from manual intervention , bar coded (or QR Coded) answer sheets with pre-printed student details will be designed and will be given to the students for the examinations. This will remove any kind of data anomalies that result from manual entry of data.

V. REFERENCES

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