ABSTRACT

The conduction of examination, then evaluation followed by result compilation is the basic task for any examination board. The Computation of Result Analysis is one of the primary and important tasks for the Jammu and Kashmir State Board of Technical Education. It forms the basis of the academics and is quite helpful in policy decisions of the board and the institutes (polytechnics) for the betterment of the students by depicting their overall academic picture quality besides giving the comparison w.r.t other students/institutes.

Keywords: The Jammu and Kashmir State Board of Technical Education (JKSBOTE); Software Engineering; Result Analysis; Polytechnics of Jammu and Kashmir; Analysis Computation.

I. INTRODUCTION

For any school, college or other educational institutes like Polytechnic Colleges of J&K India, students are an important asset to produce skilled human resource out of these with great quality who excel in academics, practical knowledge, self-development and innovative thinking. For achieving this, it is very much necessary to analyze the performance of the candidates at various levels. The Performance measurements help in the overall development of the candidates besides it helps all the stakeholders to take appropriate corrective measures to address the issues that can be interpreted from the collective analysis and further strengthen the areas in which the students are already good. The performance levels can be

1. Individual, where in the student gets to know his/her result subject wise and overall result.
2. Subject Wise: The total numbers of subjects that are being taught in the various polytechnics of J&K are 589 across various streams. In this part of the overall analysis, the performance of students is checked subject wise which gives a reflection about the various subjects in which the candidates require more attention.
3. Branch Wise: There are 18 Courses (Diploma Programmes) that are being offered in the various polytechnics in the state of Jammu and Kashmir and the analysis is performed across the various branches.
4. Institute Wise: There are 31 Polytechnic institutes currently in the state of Jammu and Kashmir and getting the result analysis of the colleges helps in categorizing the institutes in terms of quality output besides it would help new students to opt for the institutes and also results in the overall.

II. METHODOLOGY FOR COMPUTATION OF ANALYSIS

The various levels already defined are computed by different mechanisms.

Individual Level:
For each student, the process of result compilation is a very cumbersome and hectic process. Every subject
is distributed into three components; **Sessional, Practical and Theory.** There are different ways for each of these components for the compilation. For Sessional Component, Pre Filled Excel Sheets are sent to the institutes. The Excel Sheets contain the student details and subject details in them. The Institutes edit the same sheets and update the sessional marks against the concerned subjects/students and revert back the updated excel sheets to the board. All the excel sheets from all the institutes are consolidated in a single sheets and then all the data is migrated in the SQL database and then through customized php scripts , the data is linked to the sessional component of individual students. For Practical each examiner has been provided an unique id and password and an automation system has been developed through which the examiner submits the marks, the data is being stored in the cloud server and then migrated to the result processing server and linked to the students' practical component. For Theory component, the complex system of decoding and coding is implemented where in every sheet is coded and then through customized mechanisms, the marks are entered against the code followed by the process of decoding in which the roll numbers are entered against the codes and then the final process of linkages of marks of theory component against the roll numbers.

After marks of all the components of all subjects are added against all the students whose result is to be declared, the final result of each candidate is calculated and then the result is saved and a result register and result gazette are generated. The result register remains the final product of the result processing in the board. The sample broad result register is shown as Figure 1.

![Sample Result Register Page](image)

**Figure 1. Sample Result Register Page**

**Subject Level Result Analysis Computation:**
For each subject, the total number of students that have appeared is calculated. The computation is performed from the **ResultDetailed** relation of the database. Then again the total number of students who have passed and failed is computed and the process is repeated for every subject that is being taught and the analysis is performed across institutes as well to get an overall analysis in comparison to institutes. The sample analysis for each subject analysis is as shown in Figure 2.
Branch Level Result Computation:

For each Programme, the total number of students is calculated and then their overall result is computed and depending upon that the analysis is performed and also the performance of students across different branches is computed. A sample result analysis across branches is shown in Figure 3.

Institute Level Result Computation:

For each Institute, the total number of students appeared is computed followed by the computation across branches in the concerned institute. The Comparison across overall institutes is also computed which helps to analyses the position of the institute in comparison with other colleges and average. Figure 4 shows an overall sample screen shots of the result analysis at institute level.

![Table](image)

**GOVT. POLYTECHNIC COLLEGE BARAMULLA**

Three Years Diploma in Architecture Assistantship

![Table](image)

**Figure 2.** Subject Wise Result Analysis, source: JKSBOSE
Table: Branch Wise Result Analysis

<table>
<thead>
<tr>
<th>Branch</th>
<th>Appeared</th>
<th>Passed</th>
<th>Pass Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTOMOBILE</td>
<td>117</td>
<td>65</td>
<td>56</td>
</tr>
<tr>
<td>CIVIL</td>
<td>1000</td>
<td>580</td>
<td>58</td>
</tr>
<tr>
<td>COMPUTER</td>
<td>347</td>
<td>127</td>
<td>37</td>
</tr>
<tr>
<td>ELECTRICAL</td>
<td>833</td>
<td>323</td>
<td>39</td>
</tr>
<tr>
<td>ELECTRONICS</td>
<td>318</td>
<td>125</td>
<td>40</td>
</tr>
<tr>
<td>MECHANICAL</td>
<td>527</td>
<td>136</td>
<td>26</td>
</tr>
</tbody>
</table>

Figure 3. Branch Wise Result Analysis

Figure 4. Institute Level Result Analysis

Figure 5. Institute Level Result Analysis for a particular branch; source: JKSbote
III. CONCLUSION

In this paper result analysis of different polytechnics was computed at various levels and a comparative analysis was also carried out across various subjects/branches/institutes besides the process of computation was also done.

IV. REFERENCES


[7]. Han Cuiping, "Design and Implementation of Student Management System of Educational Management System", IEEE, 2014