International Journal of Advances in Engineering and Management (IJAEM)
Volume 3, Issue 7 July 2021, pp: 3681-3685 www.ijaem.net ISSN: 2395-5252

Implementation of Result Analysis Automation Tool using Python Django Framework

B. Gowtham Kumar - BJM.Ravi Kumar,M.Tech- Dr.K.N.Brahmaji Rao , M.Tech,PH.D - B.Leena - B.Niharika - D.Lavanya -
Raghu institute of technology - dakamarri visakhaptnam

Submitted: 15-07-2021 Revised: 29-07-2021 Accepted: 31-07-2021

ABSTRACT

These days educational institutions are performing analysis on their student results in order to know about the performance level of their students .So that they can improve their academic planning to improve the students performance but the major problem which everyone is facing in this analysis . Making report of students performance in exams is done manually by staff which is time consuming and more strenuous work because of enormous amount of data i.e., for instance if we consider an average of 1000 students in an institution it may take around 2 to 3 hours for them to prepare a report of students analysis ,having said that there is no certainty of preparing a perfect analysis . So, in order to narrow down these complications amidst issues and also for working in an effective way, we have designed a web application named**"Quick Result Scrutinizer Tool"** .

The central theme of this application is ,why to do work excessively for performing a simple analysis as we are living in such a world where **"People prefer Smart-work to hard-work".**

"**Quick Result Scrutinizer"** is a web application tool which is built for performing various kinds of analysis in a simple and convenient way just by following simple instructions .The students performance is analyzed accurately within 4 to 5 minutes.

I. INTRODUCTION

In now day's manual record of student's marks are maintain on Excel sheet. The different calculations like percentage, how many pass or fail and maintain their subject wise details, overall result are done manually which are lot of time consuming.

The result analysis is used in generating the performance report of students according to year, branch, faculty ,subject and grade wise which is quite difficult and time-consuming process in every college. The Student Result Analysis helps the teacher to analyze the result and generates its report by just one clicks and it also allows the students to see their academic performance subjectwise and also faculties can also see their faculty wise analysis by just only uploading there result file which is either in PDF or CSV file format. Then they can see the pass percentage of the student through pictorial representation which can be categorized subject wise, faculty wise,grade wise, overall performance of branch or single student result.

II. LITERATURE SURVEY

Existing System :

The Existing System is a manual process in which analysis done by two to three staff members,this process includes a manual way of analyzing the JNTUK results PDF file which consists of around 2000+ records just for a single department which indeed time consuming process and result's may not be accurate even after spending lot of time in manual analysis.

Disadvantages of Existing System :

- This system is time consuming.
- The results generated in this system may not be accurate enough.
- This system need high manual efforts to perform analysis just to find list of all clear students.
- We do not get any visual reports like Graphical Analysis to visualize data in high level and easy understanding.

Proposed System :

General idea of the proposed system is to automate the entire result analysis process which is done manually .The main idea in this system is is to design a system which will automate the entire result analysis process with just some simple button click's.The user need to perform simple steps i.e to

International Journal of Advances in Engineering and Management (IJAEM)
Volume 3, Issue 7 July 2021, pp: 3681-3685 www.ijaem.net ISSN: 2395-5252

enter the required batch number,and uploading the results PDF file .The system will perform entire analysis part and will provide all kinds of analysis which help's the department's to get the better analysis of their student's performance.Apart from the data analysis ,this proposed system also provides data visualization through graphical analysis using pie charts for the clear understanding of the data. This Proposed System is a Automated Django Web Application.

Advantages of Proposed System :

- It saves time of student as well as the management.
- It is soo user friendly that it doesn't require high manual work.
- It provides different kind of analysis by just uploading a file.
- This system provides accurate results.
- It also produces result in more visual way by using graphs.
- It provides analysis of results of all the departments.

PROBLEM STATEMENT :

- In some universities results are released in PDF format which contains results of regular exam as well as supplementary exams .
- In such cases performing result analysis (which includes faculty wise analysis,student wise analysis,backlog analysis,subject wise analysis) manually is much time consuming and repetitive process when its have to be done in all the departments.
- So,develop a system which will perform whole analysis without manual analysis.

SOLUTION

- We have developed a web application named "**QUICK RESULT SCRUTINIZER**" which can automate this whole result analysis process within few minutes.
- The user needs to enter the required batch number ,type of the file (CSV or PDF) and upload the results file.
- According to the features selected by the user the related data will be presented to the user,the user can also download the generated results in CSV format.
- The features provided in this application are
  - Subject-wise Analysis
  - Backlog Analysis
  - Faculty-wise Analysis
  - Grade-wise Analysis
  - Department-wise Analysis
  - Student wise Analysis

III. OBJECTIVE

The main objective is to create a unique and useful "Result Analysis Tool' with exceptional quality and service which helps institutions to perform analysis of student results easily and within just few minutes.

IV. METHODOLOGY

To implement our idea,firstly we have considered the result file ,which we get in PDF format . Then we convert the PDF to CSV format using 'Tabula' module in python.Followed by , we process the CSV and extract the data from it and then store the data in form of lists . Further,according to the requirements we perform operations on the lists to get the required output. We also used 'nvD3' module for graphical representation of the analyzed data.

V. IMPLEMENTATION

This Automation tool is implemented using python and Django . Its a Modular based program. We created different modules with different set of functionalities likewise :

- File Management Module
- Student Management Module
- Report Management Module
- Overall Department's Analysis Module

->**File management module** is responsible for the file processing part in our application.Here file in the sense we are referring to the result's PDF file.This is the initial point of our application and here the entire data analysis begins in our application.

The user browses the PDF result file and upload it.He will enter Batch number of the students of which he wanted to get the results.User can then upload Re-Evaluation File if any.The user will be provided the Generate results option ,to automatically generate csv files of selected batch students.

->**Student management module** is used for fetching result of a specific student.the best part of this module is there is no need of any specification of student department details the user just need to enter the roll number of the student. By just a simple button click the application only will detect the student department details and automatically fetch the specific student subject's grades along with the auto calculated CGPA of the specific student.

International Journal of Advances in Engineering and Management (IJAEM)
Volume 3, Issue 7 July 2021, pp: 3681-3685 www.ijaem.net ISSN: 2395-5252

->**Report management module** is used for performing the entire main analysis part of our application .In this module we cover all kind's of result analysis which are needed for any department to get an clear understanding of there students performance in the current semester.

In this user first selects the departement of which he want to see the results.Then he will be provided the following options :

- Backlog Analysis
- Subject-wise Analysis
- Faculty wise Analysis
- Grade wise Analysis

Backlog Analysis :
This functionality is used for performing analysis to give the data of student's who got backlogs (if a student failed in a subject then we call it as a backlog). the data will consists of roll numbers' along with the total count of student's.
• Along with failures data this functionality will also provide the data of All Clear Students(Student who got passed in all the subject's).
• The best part of this functionality is user will get the entire data of student's with roll number's and there count with just a simple button click's.

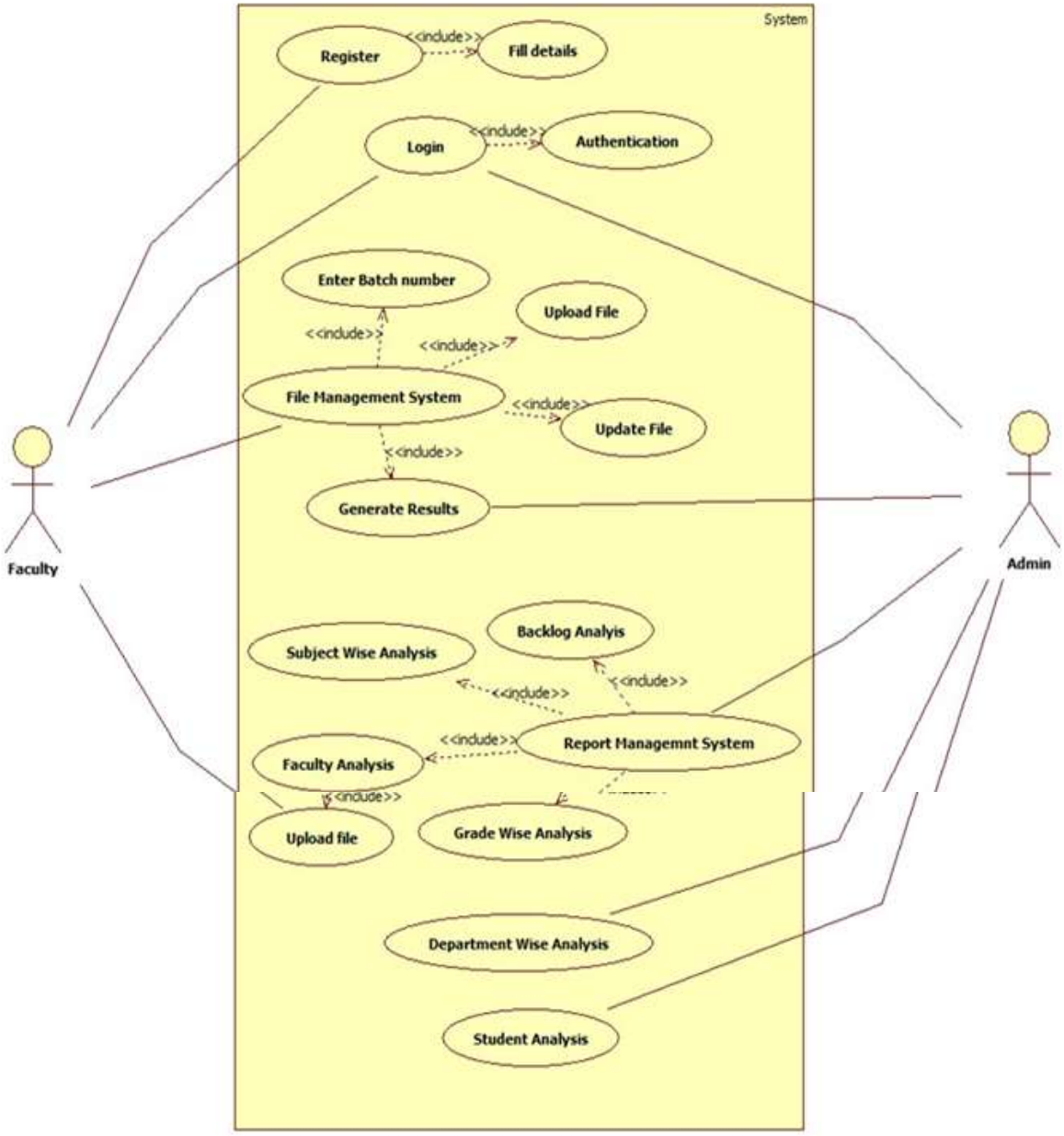
Subject-wise Analysis :
• This functionality is used for performing analysis to give the data of student's who got failed in a specific subject.
• The data will consists of roll numbers' along with the total count of student's.
The best part of this functionality is user will get the entire data of failed student's in a specific subject with roll number's and there count(count of students failed in a subject) with a simple button click's on specific Subject Name.

Faculty-wise Analysis :
• It is the final step in faculty wise analysis,here the user just need to select whether he required analysis for one section or two section or three section and then he will be provided with a button called view analysis by clicking on that user can view the analysis data in the below example format.

Grade-wise Analysis :
• This Functionality is used for providing grade wise analysis of each subject in a visual way with pie charts.this data shows the percentage of grades obtained in each individual subject.
• This functionality is used for getting the analysis of student's performance in each subject like in which subject student's performance is good vice versa.
This analysis is entirely percentage based pie chart visual analysis here we wont provide any roll number data.

Overall Analysis :
• This module is used for performing entire pass and failure student's percentage analysis of every department.This analysis data will be shown in a pie charts visualization format.
• The concept of this module is to provide an insight to management about which is performing best and vice versa.
• This functionality help's management to understand in which department they need to concentrate more.
Use case diagram for result Analysis tool

International Journal of Advances in Engineering and Management (IJAEM)
Volume 3, Issue 7 July 2021, pp: 3681-3685 www.ijaem.net ISSN: 2395-5252



VI. CONCLUSION:

In today's world the entire analysis system are getting converted into an Automated System,In order to eliminate the manual hard work of human and to improve accuracy of result analysis. This automated system will give us better and efficient result's with less effort's compared to manual analysis.The main concept of this project is to eliminate the manual hard work done by the institution's to make analysis of the student's semester result's.

These result analysis will help institutions to understand and analyze there student performance.So, in order to change the process of analyzing results we introduced our innovative solution "QUICK RESULT SCRUTINIZER", which helps every institute in a better and efficient way to get accurate result and perfect analysis in a short period of time with a less manual effort .

VII. FUTURE SCOPE:

Currently this application is only designed for those institution which are under the control of JNTUK result's pattern system,In future we would like to improve our tool to make it applicable to every institute.so that every institute can use "QUICK RESULT SCRUTINIZER" to do their result analysis in a quick and efficient way to get the accurate result's.We also planned to convert the application front end in Angular and use Databases to store the data permanently.

IMPROVEMENT IN OUR PAPER COMPARED TO REFERENCE PAPERS:

The existing paper is only concerned with future student result analysis for up coming semester's but in our paper we are considering student current semester analysis[1].the existing paper was based on collecting simple student information for making analysis but in our system just simple results PDF file would be enough[2].This existing paper is a data mining based system which will results in segregating students based on there results but our system provides more insightful information for overall departments analysis[3].This existing paper is a decision tree algorithm which is developed for predicting student results based on old semester datasets in our system is mainly focused on current semester results here we don't need any dataset's our system is based on computational logic's[4].This existing paper is a mining algorithm which will only play a key role in analyzing old students results data basing on that manually we need to analyze students performance in our system current semester result's are pretty enough to give student's analysis[5].This existing paper is a web application which is using sql to store student data and retrieve data segments but it won't provide all kind of analysis very limited analysis but our application provides more number of different kind of analysis including department wise,faculty wise,backlog wise,subject wise even a student result analysis along with grades and CGPA and even our application generates department wise output PDF files with calculated CGPA'S.

REFERENCES:

[1]. A. S. Olaniyi, S. Y. Kayode, H. M. Abiola, S. I. T. Tosin, A. N. Babutunde, "Student's Performance Analysis Using Decision Tree Algorithm" Annals. Computer Science Series, 15(1), 55-62, 2017.

[2]. https://en.wikipedia.org/wiki/Student_information_system.

[3]. Ishwank Singh,A Sai Sabitha,Abhay Bansal,Student performance analysis using clustering algorithm,2016.

[4]. Trivedi A. Evaluation of Student Classification Based On Decision Tree. Int Journal of Advanced Research in Computer Science and Software Engineering, Vol.4(2), 2014.

[5]. Result Analysis Suite: A Completely Automated Result Analysis SolutionPankaj Sambyal 1 , Anamika Rustagi 2 , Sonia Rani 3 , Chinab Bhudhiraja 4 , Bhawna Sharma

[6]. STUDENT RESULT ANALYSIS SYSTEMAshwin Mehta1, Jugal Patel2, Aditya Mewada3.