International Journal of Innovative Research in Engineering
Volume 3, Issue 2 (March-April 2022), PP: 267-271.
www.theijire.com
ISSN No: 2582-8746

University Exam Result Analysis

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How to cite this paper:
Nijaal Khot[1], Amtulla Baranwala[2], Iqra Khan[3] ,Er. Shrinidhi A.Gindi[4] , "University Exam Result Analysis", IJIRE-V3I02-267-271.

Abstract: *Technology in today's world has reached the extent that it can be used to do various tasks in day to day life easily with less effort and time. World todayhas realized importance of education in one's life which has led to revolutionin the field of education. Universi colleges, schools today have loads of tasksto be completed in a given timeline. In today's scenario colle need to analyze student results manually which takes lots of time and effort by faculties working o Hence in order to simplify these tasks a web based system is introduced which can perform student re analysis. The Exam Result Analysis helps the teacher to analyze the result and generates its report by one click and it alsoallows the students to see their academic performance subject, year or semester by just only uploading their result PDF file.*

Key Words*: ReactJs, Vercel, Charts, ORM, MongoDB Atlas, MU.*

I. INTRODUCTION

In the world of digital technology almost anything can be automated. Why not automate the process of result analysis to reduce the manpower of the clerks? The process of result analysis is quite tedious. Calculations of pointers, how many students have passed or failed also maintain their subject wise details [2]. Current system requires some amount of work to be done prior to creating an excel sheet which contains all student information. In this proposed system, we will automate the process of extracting information of students and operations like calculating their pointers, determining the number of passed and failed students along with their class. Manual exam result analysis is quite tedious because we have a large amount of data in the form of pdf and to find specific data from that large pdf is a hectic work. This paper is designed for our colleges to manage results for the IT students which is provided by Mumbai University(MU). In this paper we are going to do result analysis of sem1 and 2 pdfs which is directly provided by the MU (Mumbai University) itself. We are going to use these pdfs to convert it into an excel sheet and give a different visual of analysis.The objective of this work is as follows:

- To find number of students appeared: Number of boys and girls
- To find number of students passed
- To find number of students failed
- To determine the class of students based on pointers. (1st class, 2nd class, etc.)
- To display subject wise result analysis

II.RELATED WORK

Aditya Rao proposed a system "Online Exam Cell and Result Analysis Automation" in the year 2015. It helps the exam-cell process be organized. Automated solutions using this system will make exam department activities more efficient by covering for the most important drawbacks of manual systems, namely speed, precision and simplicity. A centralized system will ensure that the activities in the context of an examination can be managed effectively, while also making it more accessible and convenient for both students and staff. The final product would constitute a computerized module aimed at replicating offline exam cell processes. The system is a new concept which came into existence because of the large amount of data being on paper and it made analysis of results a tedious task, apart from the unmanageable amount of data that is generated in an institution from various departments [4].

III.PROPOSED SYSTEM

The system requires new software technologies like Python, Reactjs and MongoDB for the implementation of the projects. The system also requires services like Digital Ocean and Vercel for the implementation of the projects. The final web application can be run on any device and laptop irrespective of the operating system.

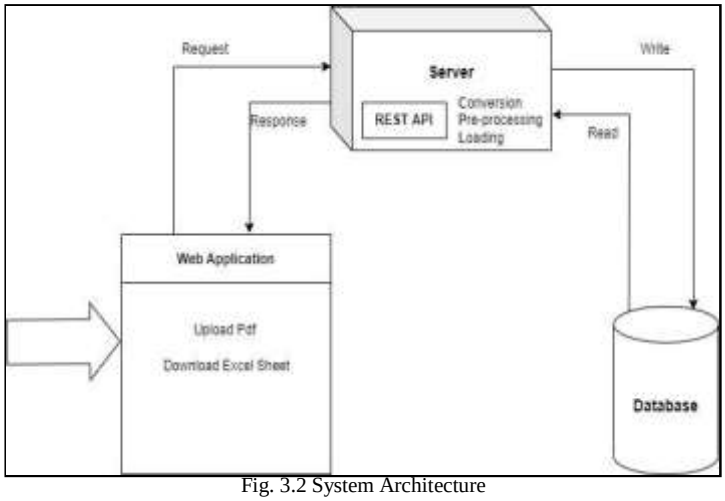

Fig. 3.2 System Architecture

In our system, we are using Reactjs for building the website, Man tine for styling the website, and Frappe Charts for displaying the analysed data. React.js is an open-source JavaScript library that is used for building user interfaces specifically for single-page applications. It's used for handling the view layer for web and mobile apps. React also allows us to create reusable UI components. To ease the styling of the website we have used styled components library Man tine. Man tine is a fully featured React component library. man tine UI is a set of more than 120 responsive components built with Man tine. All components support dark/light colour scheme and Man tine theme customizations. Man tine UI is free for everyone. Frappe Charts is a GitHub-inspired simple and modern SVG chart for the web with zero dependencies. Frappe Charts are responsive, as they re-render all the data in the current available container width. In our proposed system we are accepting pdfs to perform CPL (Conversion, Pre-processing, Loading) operations. After the CPL operations process which is done by the server our application provides the ability to download the processed data in the form of excel sheet and to analyse by using visualization with the help of frappe charts. To build the scalable application we have used Python Flask Framework as our server. Flask is a micro web framework written in Python. It is classified as a micro framework because it does not require particular tools or libraries and doesn't include an ORM (Object Relational Manager) or such features. Our server performs 3 main phases. They are called CPL (Conversion, Pre-processing, Loading).

Conversion: The pdf uploaded from the front-end is converted into text format. The data which is obtained after conversion is going to be used in the next phase i.e. Pre-processing.

Pre-processing: The data which is obtained in the previous phase is an unformatted data. In this phase we are going to perform cleansing on data by removing excessive line spaces, unwanted special characters and fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data. After the data is cleansed text formatting is performed to obtain the desired output.

Loading: In this final phase the completed data is then stored in the MongoDB database.

To make our frontend and backend communicate with each other we have used APIs. API stands for application programming interface, which is a set of definitions and protocols for building and integrating application software. To store data effectively we are using the MongoDB database. MongoDB is an open-source document database and leading NoSQL database. We are using MongoDB Atlas to store our data on the cloud. MongoDB Atlas is a fully-managed cloud database that handles all the complexity of deploying, managing, and healing your deployments on the cloud service provider of your choice (AWS, Azure, and GCP).

IV.RESULT

As it was mentioned above the required objectives have been achieved.

In order to view the analysis of the previously uploaded Pdf user needs to select the view button from our home page as shown in Fig. 4.1. After selecting the view button the user will get the dropdown where it has to select the year of which analysis the user wants to view.

A Dashboard will appear where all analysis performed by our server will be seen and the user has the ability to download the data in the excel format as shown in Fig. 4.3.

In order to upload data to our application the user needs to select the upload button from our Home page which will redirect them to the upload page where the user can upload the result Pdf and specify the seat numbers of the students as shown in Fig. 4.2. This data will be sent to the server and stored in the MongoDB.

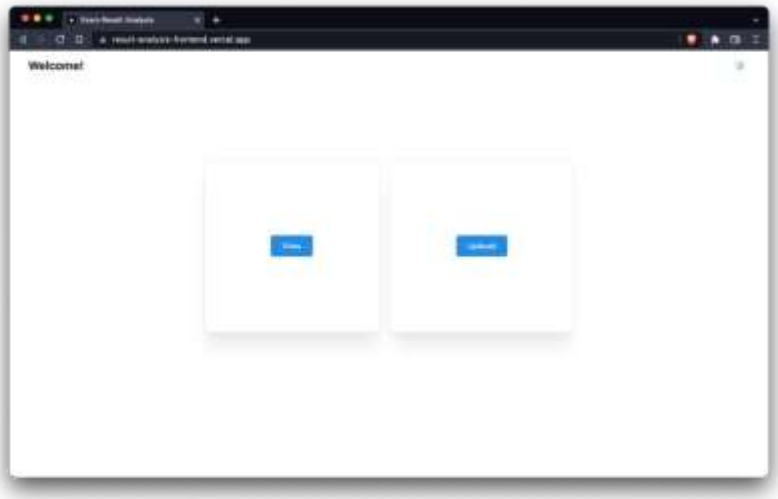

Fig. 4.1

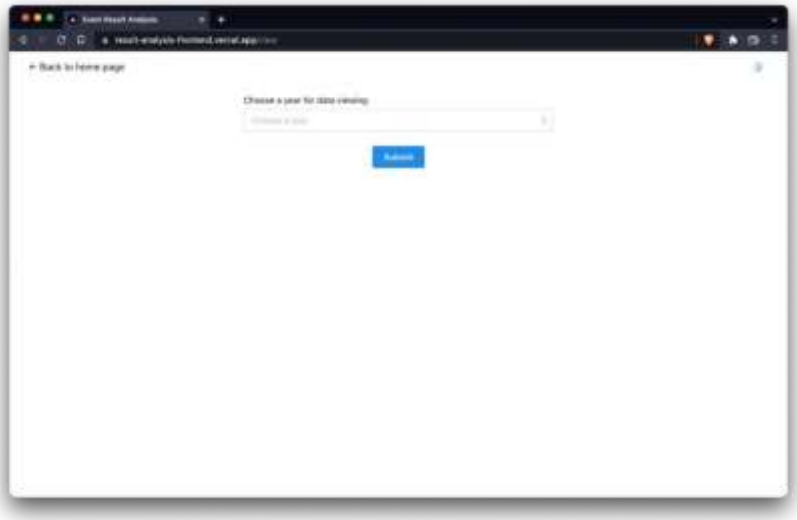

Fig. 4.2

Fig. 4.3

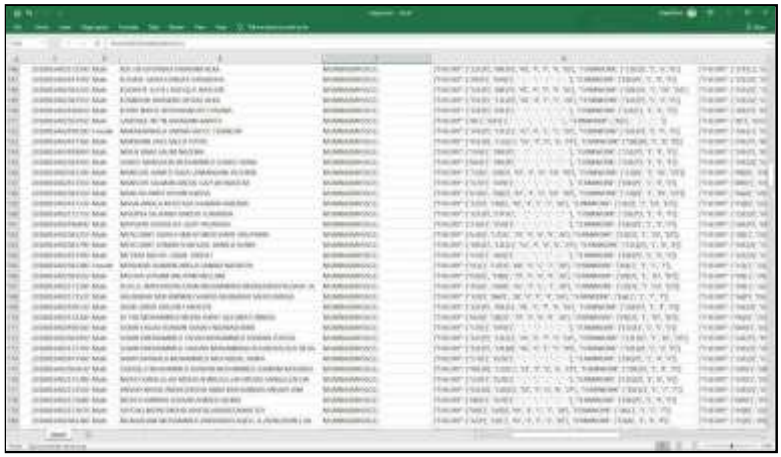

Fig. 4.4

ADVANTAGES

As the proposed system is a web application so you can access it from anywhere in the world. Faculty do not have to prepare the excel sheet of marks of each student, they only have to upload the result, our system will create excel sheets automatically. It is very simple as users only have to upload the PDF of the result because the rest of the work is automated. No high configuration system required, only required is the supporting browser. All semester results can be analysed in order to find out the visual representation of each semester result and also students can see their progress.

DISADVANTAGES

The whole system requires internet connection at all times. A slight failure of the internet will prevent the user from interacting with any of the functions of the system. If the network connection is poor then the process of extracting will consume more time.

V.CONCLUSION

Our main aim through this project is to reduce manual work, to provide an efficient way of handling data. All the requirements and goals are achieved in the project which makes it a simple and user-friendly web application for student exam result analysis and to generate the different types of visual representation in the form of charts or graphs. Our application increases the productivity of teachers and the college staff as they don't have to waste their time on analysis of results. Also it will provide the output in a few minutes.

VI.FUTURE SCOPE

Future scope of this project is that the data for the result can be directly extracted from the respected web site and more features can be added to this web application like attendance and class performance record. Application can be expanded to be used by every branch.

References

[1]. *R. K. B. Navas, R. P. Akash, G. Sathish and J. M. Azharudeen, "Six Sigma in Education: Examination Result Analysis Using Six Sigma - A Case Study," 2016 IEEE 4th International Conference on MOOCs, Innovation and Technology in Education (MITE), Also available at: https://ieeexplore.ieee.org/abstract/document/8049090*

[2]. Kaja Bantha Navas R, Akash R P, Sathish G, and Mohamed Azharudeen J, "Six Sigma in Education: Examination Result Analysis Using Six Sigma - A Case Study," 2016 IEEE 4th International Conference on MOOCs, Innovation and Technology in Education (MITE), also available at: https://www.researchgate.net/publication/320026055_Six_Sigma_in_Education_Examination_Result_Analysis_Using_Six_Sigma_-_A_Case_Study

[3]. G.Ramya, G.Swetha, and M.Ramya, "The Statistical Analysis and Evaluation of Examination results using R," 2017 International Journal of Engineering Research in Computer Science and Engineering (IJERCSE), also available at:https://www.technoarete.org/common_abstract/pdf/IJERCSE/v4/i11/Ext_57640.pdf

[4]. Ashwin Mehta,Jugal Patel and Aditya Mewada, "Student Result Analysis System," 2018 International Research Journal of Engineering and Technology (IRJET), also available at: https://www.irjet.net/archives/V5/i4/IRJET-V5I4572.pdf

[5]. Dhekane Rushikesh A, Dhumal Megha P, and Jadhav Rutuja Yuvraj, "Student Result Analysis System and Predicting Difficulty Level of Subject," 2018 International Research Journal of Engineering and Technology (IRJET), also available at:https://www.academia.edu/36867481/Student_Result_Analysis_System_and_Predicting_Difficulty_Level_of_Subject

[6]. Abel U. Osagie, Abu Mallam, "Students Record Analysis And Examination Result Computation Algorithm (SRAERCA)," 2014 International Journal Of Technology Enhancements And Emerging Engineering Research, also available at: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.566.9464&rep=rep1&type=pdf

[7]. D. Nemenqani, R. Soliman and M. Ahmed, "Submission of Exams and Result Analysis (SERA) Software as a new tool in Medical Education," 2021 International Conference of Women in Data Science at Taif University, also available at:https://ieeexplore.ieee.org/document/9430191

[8]. LVarun Ramesh ,R Sai Anusha Priyanka, SNSS Venkata Lakshm, and V Mounika, "Student Result Management System," 2021 Journal of Engineering Science, also available at: https://jespublication.com/upload/2021-V12I757.pdf

[9]. Wenjie Yuan, Chengji Deng, Hongxi Zhu, and Jun L, "The Statistical Analysis and Evaluation of Examination Results of Materials Research Methods Course," ScientificResearch,also available at: https://www.researchgate.net/publication/271293296_The_Statistical_Analysis_and_Evaluation_of_Examination_Results_of_Materials_Research_Methods_ Course

[10]. Brožová H. and Rydval J. (2014) "Analysis of Exam Results of the Subject ´Applied Mathematics for IT´", Journal on Efficiency and Responsibility in Education and Science, also available at: https://oaji.net/articles/2015/2466-1445726393.pdf

[11]. Shubhangi Shankar Shinde,Dr. Bhatambrekar S.S., and Dipali Meher, "Result Analysis of Choice Base Credit System", 2020 Journal of Engineering Sciences,also available at: https://www.moderncollegegk.org/research/Result_Analysis_of_Credit_Sysytem.pdf

[12]. Md. Imdadul Hoque, Abul kalam Azad, "University Students Result Analysis and Prediction System by Decision Tree Algorithm", 2020 ASTES Journal, alsoavailable at: https://astesj.com/v05/i03/p15/

[13]. Terence G. Favero ,Nora Hendricks, "Student exam analysis (debriefing) promotes positive changes in exam preparation and learning," 2016 The American Physiological Society, also available at: https://journals.physiology.org/doi/full/10.1152/advan.00060.2016

[14]. Gupta, N., "Student Result Analysis and Performance Report Generator," 2019.. Grin.com., also available at: https://www.grin.com/document/468852

[15]. G., R,"Student Result Management System Project", 2017, Ignousupport.blogspot.com. also available at : http://ignousupport.blogspot.com/p/student-result- management-system.html

[16]. Shaikh, S., "Project report on Student Result Management System", 2015 FreeProjectz. Freeprojectz.com. also Available at: https://www.freeprojectz.com/project-report/6815