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Feature Reduction Using Principal Component Analysis for Opinion Mining

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ABSTRACT: Selecting an appropriate career is one of the most important decisions and with the increase in the number of career paths and opportunities, making this decision have become quite difficult for the students. This project "Student carrier prediction" is web application development using JSP and MYSQL database. Our main aim through this project is to reduce manual work, to provide efficient way of handling data. Analyzed the deficiencies associated with the manual technique for ascertaining Students CGPA (aggregate review point normal) and proposes an answer by built up a application to encourage the robotized handling of the outcomes. Studied and evaluate the performance of student by grouping the grading into various classes using CGPA. Also examined the involvement of students in sports activities and various skill analyses for student. The academic result, sports and extra academic activity are analyzed for each student carrier classification using machine learning algorithm of Random Forest (RF). Also recruiters while recruiting the candidates after assessing them in all different aspects, these kind of career recommender systems help them in deciding in which job role the candidate should be kept in based on his/her performance and other evaluations. This paper mainly concentrates on the career area prediction of students for better carrier future. The system would recommend the student, a career option based on their personality trait, interest and their capacity to take up the course.

I. INTRODUCTION

Instead of using excel sheets, using a database for storing all the results reduces complexity since the user can easily query for any type of information he/she requires. This automated result analyzer provides good Graphical User Interface for making all the analysis very easy and friendly for the user. Interaction with the analyzer is a very easy task ranging from entering marks of all the students to calculating statistics.

Analysis of results provides various services including the following,

Services provided on a single student:
- ❖ Percentage Calculation
- ❖ Counting No. of backlogs.
- ❖ Percentage Calculation with and without including marks of Backlog subjects.
- ❖ Total Credits

Services provided on a class of students:
- ❖ Pass percentage of a class
- ❖ Pass Percentage of a particular subject
- ❖ List of students within given range of percentage.

Automating all the above services avoids manual calculations, saving a lot of time. Not only saving time, the analyzer also integrates the results of various years and departments which is almost impossible using excel sheets. Improves correctness of the calculations since manual calculations are avoided. Equally, majority of the students RMS do not have web interfaces and others do not integrate well with the other university-wide information system. The major challenge is that the universities outsource the development of such RMS without proper understanding of the essential functionalities and compatibility issues. The system can be accessed by both students and staff.

The staff can play three different roles in the system, namely, the system administrator, as the exam officer or as the course lecturer. Each of these roles constitute system module that is further decomposed into sub-modules. The staff must 'registered on the RMS platform and then login with the staff username and password. The staff access privileges

depend on the role the staff plays in the system. The system administrator role has the highest access privileges. Also, the students can access he system as 'student'.

The student must 'registered on the RMS platform and then login with the student username and password. In the system , the student will have student privileges which will enable the student to register for course, drop registered course if required, view the result pertaining to the student alone, change the student's settings like the photo, password and student's contact address a, email and phone number.

II. RELATED WORK

WEB-BASED STUDENT RESULT MANAGEMENT SYSTEM AUTHORS: Mohammad Gulam Lorgat :
The current research aims at creating a web-based student result management system,reducing time, effort and improving security. The research results in the development of a multi-user system, based on web technology with architectural pattern and developed using Java programming language with Apache Tomcat Server and MySQL Database Management System support. Analyzed the deficiencies associated with the manual technique for ascertaining Students CGPA (aggregate review point normal) and proposes an answer by built up a product Application to encourage the robotized handling of the outcomes. MYSQL Relational Database Management System in planning the database. The created programming was tried and fill in of course.

2) STUDENT PERFORMANCE ANALYSIS SYSTEM (SPAS) AUTHORS: Chew Li Sa, Dayang Hanani bt.Abang Ibrahim, Emmy Dahlina Hossain : Almost every university have their own management system to manage the students' records. Currently, even though there is a student management system that manages the students' records in Universiti Malaysia Sarawak (UNIMAS), no permission is provided for lecturers to access the system. This is because the access permission is only to top management such as Deans and Deputy Deans of Undergraduate and Student Development due to its privacy setting. Thus, this project proposes a system named Student performance analysis system (SPAS) to keep track of students' result in the Faculty of Computer Science and Information Technology (FCSIT). The proposed system offer a predictive system that is able to predict the students' performance in course 'TMC1013 System Analysis and Design', which in turns assists the lecturers from Information System department to identify students that are predicted to have bad performance in course 'TMC1013 System Analysis and Design'. The proposed system offers student performance prediction through the rules generated via data mining technique. The data mining technique used in this project is classification, which classifies the students based on students' grade.

3) STUDENT INFORMATION REPORT SYSTEM WITH SMS (SIRS) AUTHORS: Isbudeen Noor Mohamed, Ahmad Tasnim Sidiqui, Syed Ajaz, S Mohamed   : The Student Information Report System (SIRS) has been developed for the purpose of sending regular reports to the student's parent about the activities of the student. SIRS consists of five modules which can be useful to work with the system in a simplified manner. Login module provides the authentication to the system and creation of new account for a staff. The access is available to the staff only and not to the student. Student Information module is used to search, update, insert and delete student data from the system. Any information related to the student can be manipulated using this module. SMS module is used to send the messages to the student's parents representing student's information. Attendance report is one of the important one to mention. Letter module is used to create letter for the student about various subjects and can be generated in a predefined (pdf) format. Data history module is used to view and take report of the transactions made through sms and letter. The SIRS can be applicable to almost any institution or department which sends regular report about the students to the parent.

4) AUTOMATED STUDENTS RESULT MANAGEMENT SYSTEM USING ORACLE'S DATABASE, FORMS AND REPORTS AUTHORS: KINMOSIN J: Author proposed an utilizes Microsoft Excel spread sheet program to assemble an Intelligent Knowledge-Based System (IKBS),making utilization of different programming offices gave by that application. The focal issue here is that the writing computer programs is hard coded into the cells, and cell referencing is utilized to screen and track understudy's execution total focuses, and so on. The framework has been accounted for to work fine. Be that as it may, it has all the earmarks of being somewhat prohibitive, and calls for generous aptitude in programming.

5) WEB BASED STUDENT INFORMATION MANAGEMENT SYSTEM. AUTHORS: Bharamagoudar S.R., Geeta R. B. and Totad S. G.:   The training framework concentrated emphatically on examinations. Frederick, first legislative head of the brought together state, set up a school inspectorate. Train, structures, and sufficiency of showing

staff were to be assessed, yet the most guides given toward a school's execution went to the numbers and rankings of its examination comes about. This weight on examinations was as yet utilized as a part of 1990 to judge instructive outcomes and to acquire capabilities for employments in government and the private segment.

III. PROPOSED SCHEMES

Once the registered completed by each staff individually they can enters the valid user id and password which is assigned to each staff. Staff can access all the information of student for particular department which is assigned by the college. And can upload the student result, skill and sports activities also can edit the student information as per the requirement and update the marks manually of its particular subject. Staff also added each students Semester wise mark details with grade point and view students mark details with grade point (GPA and CGPA), sports and extra-curricular activities percentage. Staff can see the pictorial comparison of the students by calculating the percentage (internal, external and both).and comparative analysis of Aggregate percentage of passed and failed student in each semester and finally can generate the performance report for its subject in excel sheet.

STUDENT CARRIER UPDATE

Student must be an authenticated user of the college to access this application. The student can view the semester marks, individual subject marks and aggregate till the current semester can view mark details semester wise grade point. The student can also make a comparative analysis with the results generated. Students can also view the skill and extra-curricular activities of staff assigned percentages. This is all useful for predicting a carriers selection.

All the manual difficulties in managing the student details in a college have been rectified by implementing computerization. The time taken to retrieve the result is faster compared to the existing system. So the overhead of the college authorities and the teachers is become less. This would help the class tutor to analysis the student performance for the sports activities, skill and academic CGPA grade results are classified for carrier prediction. Depend upon the criteria of students mark analyze and easy to trained for the next examination using different methods.
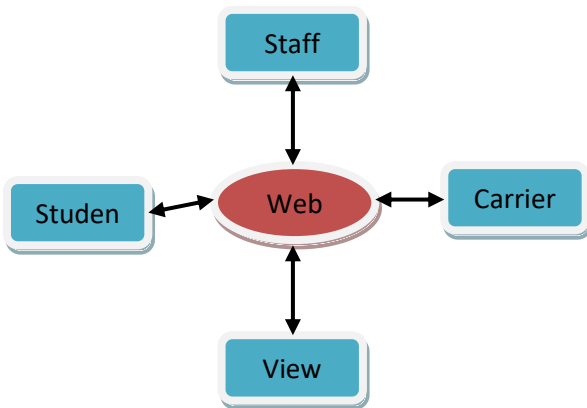

Fig 1: **ARCHITECTURE**

XGBOOST ALGORITHM
In this Machine Learning XGboost, we will learn Introduction to XGBoost, coding of XGBoost Algorithm, an Advanced functionality of XGboost Algorithm, General student CGPA Parameters, Booster Parameters, Linear Booster Specific CGPA Parameters, Learning Task Parameters. Furthermore, we will study building models and parameters of XGBoost. So, let's start the XGBoost Algorithm.

RANDOM FOREST
*Random Forest is a popular machine learning algorithm that belongs to the supervised learning technique. It can be used for both Classification and Regression problems in ML. It is based on the concept of **ensemble learning**, which is a process of combining multiple classifiers to solve a complex problem and to improve the performance of the model. As the name suggests, **"Random Forest is a classifier that contains a number of decision trees on various subsets of the given dataset and takes the average to improve the predictive accuracy of that dataset."** Instead of relying on one*

decision tree, the random forest takes the prediction from each tree and based on the majority votes of predictions, and it predicts the final output.

Rank based ratings

For search engine ranking, this translates to a list of results for a query and a relevance rating for each of those results with respect to the query. The most common way used by major search engines to generate these relevance ratings is to ask human raters to rate results for a set of queries. In case you are interested, I have written in detail on human rating systems here.

Carrier Based Rating: Thus, content-based methods are more similar to classical machine learning, in the sense that we will build features based on user and item data and use that to help us make predictions. Our carrier system input is then the carrier of the user and the carrier of the item. Our system output is the prediction of whether or not the user would like or dislike the item.

Sports Based Rating: methods for recommender systems are methods that are solely based on the past interactions between users and the target items. Thus, the input to a sports system will be all historical data of user interactions with target items. This data is typically stored in a matrix where the rows are the users, and the columns are the items. The core idea behind such systems is that the historical data of the users should be enough to make a prediction.

Extra Academic: The real goal is to have an overview of the systems of artificial intelligence that were used to predict extra academic learning. This research also focuses on how to classify the most relevant attributes in student data by using prediction algorithm. Using educational machine learning methods, we could potentially improve the performance and progress of students more efficiently in an efficient manner. Students, educator and academic institutions could benefit and also have an impact. Although students performed well in MMW, teachers should continue improving their instruction and applying various teaching strategies that will improve the performance of the students, particularly in MMW. Moreover, these machine learning models should be employed to improve the learning outcomes of students. The results of the machine learning models that accurately predict students' performance and include other factors that affect students' performance warrant further investigation..Although students performed well in MMW, teachers should continue improving their instruction and applying various teaching strategies that will improve the performance of the students, particularly in MMW. Moreover, these machine learning models should be employed to improve the learning outcomes of students. The results of the machine learning models that accurately predict students' performance and include other factors that affect students' performance warrant further investigation..

VI. DISCUSSION & CONCLUSION

Student's career prediction is one of the important research areas in this current digital world. Traditionally various survey methods are used to predict the student's career. But those methods take large amount of time to predict the result. This current digital world various computing techniques are used to predict the result in various domain. The academic results, skill and sports activities of each student are analyzed and classified for priority analyzing and selecting their appropriate carrier. Student's career data also predicted by using computing concepts like machine learning. Entering results into database is the only thing which is not automated.Importing results directly from pdf's into database would be a very useful extension to work on for this project. Presently student's revaluation /supply results is being uploaded manually. Further scope is that it should be done automatically.

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