

SKILL ANALYSIS OF A STUDENT USING MACHINE LEARNING

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Abstract--- Utilizing Machine Learning calculations in cloud application to break down the exhibition of the student. It is useful for placement cell to train the students and break down the presentation level of students and lead them to attain next level. The fundamental target of the venture is to prepare students to dominate in every interview. This examination is to break down the productivity of students all-out cycle is to be done in a proficient manner with negligible assets and time. This forecast depends on some important ascribes of quantitative and subjective perspectives like critical thinking, correspondence, problem solving and so on, to foresee the recruiting upcomers by applying different factual measures on element determination and utilizing different ML calculations to construct the model. These outcomes will assist with shortlisting the students with a high chance of clearing the interview.

INTRODUCTION

The placement cell will prepare the students to get past the enlistment cycle, the staff need to prepare all the students regardless of their degree of knowledge. This task will investigate the students profundity of information depending on which the staff can prepare the students respectively. For model, if the organization is wanting to enlist 10 students the college can waitlist 15 or 20 students dependent on the examination as opposed to sending the whole batch, which saves time and assets and increases effectiveness on a huge scale. Students are broke down dependent on assets such as quantitative. qualitative analysis, critical thinking, problem-solving, communication, technical qualities, expected package, inclining toward other cities. This project permits the students to act on assessments which encourages them to comprehend their degree of information and gives a space to build up their aptitude.

Recruitment is identifying and encouraging prospective students to train for a job. The effective analysis is helpful for future recruitment processes which will help to choose efficient students and within a short period of time. The cooperation between students and staff allows the enterprises to achieve the goal. Making a good analysis not only increases student retention but also reduces the cost associated with the training.

The rest of the paper organised as follows: The basic overview of Evaluation process approaches are presented in Section II. in Section III detailed explanation of dataset construction and methodology used for evaluation. In Section IV. Finally, the paper provides the conclusion and remarks.

EVALUATION PROCESS

The score dataset of students is more significant in the assessment cycle, it is to examine every student's strengths and shortcomings.

For examining the student, they need to take the base number of evaluations or practice tests empowered ,since, in such a case that the forecast executes with a couple of appraisals it won't be productive.

There are a few limitations for the assortment of dataset which is taken as a contribution for expectation. In light of the dataset it will propose the package classification and dashboard will show the following level recommendation and comparing packages of students.

Below mentioned table 1 is used as an input dataset to train the model for prediction. It contains an assessment score of each and every student. Table 2 explains briefly about the attributes in table 1.

METHODOLOGY FOR EVALUATION

(i)Dataset Creation

The data is derived from a set of online assessments collected from the institute placement cell including Quants, Verbal, Reasoning, Technical MCQs, Problem-solving. There are numerous sets of attributes that are available as distinguishing factors for dataset instances. The mentioned attributes are basic sectors in the recruitment process in all fields (government exams, service-based, and product-based company). Because these all are the basic qualities to filter candidates in a short time. There are 3 different difficulty levels in each type of attribute. In each difficulty level, there must be at least 300 questions.

The accompanying rundown of properties takes the contribution for assessing the students execution to locate their level in tackling problems. For dissecting the level in settling these characteristics gives the by and large percentage. The two classifications of technical and nontechnical abilities are partitioned into four sections quants, verbal, reasoning, and technical MCQ and issues and it consolidates into simple and medium as a single class and hard level as discrete category.(QEM_MCQ) and (QEM_PS) indicate the number of inquiries tackled in inclination and critical thinking at a simple level. (QH_MCQ) and (QH_PS) mean the number of inquiries tackled in inclination and critical thinking at a hard level.(EM_MCQ_PER), (H_MCQ_PER), (EM_PS_PER), and (H_PS_PER) signifies the level of an studentfor addressed inquiries. These all credits are ordered as a single dataset.

Table 1. Dataset of students assessment

QEM_MCQ	EM_MCQ_PER	QH_MCQ	H_MCQ_PER	QEM_PS	EM_PS_PER	QH_PS	H_PS_PER
450	60	250	65	28	75	15	31
500	75	380	67	30	70	15	25
400	80	350	50	55	80	20	30

The above table 1 is an example dataset to prepare the model for forecast. These are the information which is gathered after a base arrangement of evaluations directed during the preparation time frame. Table 1 credits are clarified momentarily underneath table 2.

Table 2. Attributes expansion

CATEGORY	DESCRIPTION
QEM_MCQ	No of MCQ questions solved in easy and medium level

EM_MCQ_PER	Percentage obtained in MCQ in easy and medium level.
QH_MCQ	No of MCQ questions solved in Hard level
H_MCQ_PER	Percentage obtained in MCQ in hard level
QEM_PS	No of Problem solving questions solved in easy and medium level
EM_PS_PER	Percentage obtained problem solving in easy and medium level
QH_PS	No of Problem solving questions solved in hard level
H_PS_PER	Percentage obtained in problem solving in hard level.

(ii)NextLevel Prediction:

This venture is broken up into 3 parts.

In the first part, we find the no of questions solved and the percentage obtained by each student.This will influence the final percentage of students and prepare data for the machine learning model.

In the second part we build a decision tree to predict the chances of event outcome for student percentage obtained and plot relation between percentage and package.

In the third part we build a neural network to predict the level of the student and to suggest a package using no of questions solved and percentage obtained which influence the student performances.

Table 3 is the decision set which is used to analyse students performance and give suggestions based on prediction about the package and their performance level. With the help of this result mentors can boost up the students to attain the next level. Package categories are divided into 4 categories listed below.

There are constraints for analysing the package. They are easy, medium and hard. Combination of easy and medium is a single constraint and hard is a separate constraint. Each and every type of question set has all these constraints levels. Hard is the highest priority level in the analysis process, easy and medium are low level priority in the analysis process.

Table 3. Decision set

P K G	EM MCQ	H MCQ	EM PS	H PS
3-5	QEM_MCQ>=300 & QEM_MCQ<=1500 EM_MCQ_PER >= 70%	QH_MC Q>=160 & QH_MC Q<=680 H_MCQ _PER >= 60%	QEM_PS>=20 & QE M_PS >=70 EM_PS_P ER >= 70%	QH_PS >=10 & QH_PS >=20 & H_PS_ PER >= 30%
5-7	QEM_MCQ>=1500 & QEM_MCQ<=3000 EM_MCQ_PER >= 75%	QH_MC Q>=680 & QH_MC Q<=1250 H_MCQ _PER >= 65%	QEM_PS>=70 & QEM_PS>=250 EM_PS_P ER >= 75%	QH_PS >=20 & QH_PS >=70 & H_PS_ PER >= 40%
7-10	QEM_MCQ>=3000 & QEM_MCQ<=5000 EM_MCQ_PER >=80%	QH_MC Q>=1250 & QH_MC Q<=2500 H_MCQ _PER >= 75%	QEM_PS>=250 & QEM_PS>=500 EM_PS_P ER >=80%	QH_PS >=70 & QH_PS >=150 & H_PS_ PER >=50%

Above 10	QEM_MCQ>=500 EM_MCQ_PER >=85%	QH_MC Q>=2500 H_MCQ _PER >=80%	QEM_PS>=500 EM_PS_P ER >=85%	QH_PS >=150 H_PS_PER>=70%
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CONCLUSION AND FUTURE WORK

This exploration set out with the point of utilizing appraisal information and distinguishing occasions that require investigation of students to propose a package and to discover the exhibition inadequacies for the following level.

This was accomplished by gathering an ordinary arrangement of conditions true to form by the enrollment group which includes designing to specifically feature more huge ascribes regarding sway on the sort of activities to suggest. Subsequent to applying some notable classifiers, the outcomes were predictable with recommendations; thus the outcomes show that we have been fruitful in building a classifier that predicts student-based appraisal weaknesses.

The principle shortcomings confronted were identified with the size of the test information coming from 3 to 4 appraisals, this will change as more appraisals are gathered, subsequently giving more preparing information for future work including information from other students (as of now the information comes from the SIET evaluation cycle for one program).

Another impediment is that the prerequisites of the therapeutic activity (trigger) are based on estimations of Questions settled and the rate being above given standards; the element designing cycle naturally featured An and E as potential determinants of medicinal activities. In future work, we plan to utilize multi-name characterization to incite a classifier that will anticipate the activities as a bunch of "good rehearses" to be followed by an educator during preparation. This set will be given to the educator for each course they are instructing at the beginning. This is thought of as an anticipation method to relieve appraisal deficiencies brought about by low achievement by a student.

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