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Placement prediction system using machine learning

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Abstract:

Every student wants a perfect job and every student has their own dream company. But practically it is not possible for everyone to get into their dream company. The reason behind is that students lack knowledge regarding company placement criteria. To solve this issue this paper represents a placement prediction system with the help of Machine learning, in which we have used a support vector algorithm. We will generate one Google form which contains all students performance like there higher secondary marks diploma score communication skills, area of interest and most imp there dream job on that basis we will provide them necessary guidance to achieve their goal we will track there result each year , also their technical interest and will inform them how much efforts they need to take to achieve their dream job. Even if they miss their dream job due to company criteria our proposed algorithm will develop new data where we can suggest another alternation to students according to their achievements, their skills and also give guidelines at every phase.. Hence the future scope and relevance of the system will be discussed.

I. INTRODUCTION

The Training and Placement activity in college is one of the important activities in the life of a student. Therefore, it is very important to make a process hassle free so that students would be able to get required information as and when they require. Also, with the help of the good system it would be easy for staff of the Training and Placement cell to update students easily and the work would be less. The “College placement Prediction using Machine Learning” is developed to override the problems prevailing in practicing manual systems. This software is supported to eliminate and, in some cases, reduce the hardships faced by the existing system. Moreover, this system is designed for a need of a company to carry out operations in a smooth and effective manner. Majority of the companies are focusing on campus recruitment to fill up their positions. The companies identify talented and qualified professionals before they have completed their education. This method is the best way to work on the right resources at the right time to get good companies at the beginning of their career.

Every organization, whether big or small, has challenges to overcome and manage the information of placement, training, placement cells, technical skill. Every training and placement management system has different training needs; therefore, we design exclusive employees or are always on the go, our systems come with remote access features, which will allow you to manage your workforce anytime. These systems will ultimately allow you to manage resources. Students studying in the final year of engineering focus on getting employed in reputed companies. The prediction of placement status that F.E. students are most likely to achieve and will help students to put in a harder work to make appropriate progress. It will also help Faculty as well as placement cells in an institution to provide proper care towards improvement of students in the duration of course. A high placement rate is the key entity in building the reputation of an educational institution. It will also help the placement cell in an institute to provide proper care towards improvement of students. This system has a significant place in the educational system of any higher learning institution.

Students studying in the final or third year of an Engineering college start feeling the pressure of the placement season with so much of placements activities happening around them. They feel the need to know where they stand and how they can improve their chances of getting a job. The Placement Office plays an important role in this. The students are given vital information on how to prepare themselves for the placement season by the TPO. In previous study Placement Prediction System which will predict the probability of an undergrad student getting placed in an IT company by applying the machine learning model of k-nearest neighbors' classification. We also compare the results of the same against the results obtained from other models like Logistic

Regression and Support vector machine.

The training and placement department is an important aspect of every college. Every college wants that there placement ratio should be more than any other college. Every student wants a dream job for himself. Thus to fulfill all these requirements we have developed an online placement Prediction system with the help of Machine learning algorithm In this system we will take all the necessary input like their marks, personal interest and their achievements. On that basis we will do the classification of students such as if students are good in academics we will tell them what extra he should do? If a student is weak in academics we will tell him how much effort he needs to achieve his goal. Also If a student is good in other technical skills we will guide him how he can make use of that skill. Tracking of results will be done for individual students so that it will be possible to monitor the activities of students individually. Every student will have his own account so records will be maintained. Suggestion facility is provided in the system if there is need of any improvement the changes will be made in the system. This system is useful for students as well as to the College.

Advantages of placement prediction system using machine learning are:

- 1) Students will get complete knowledge of the placement process.
- 2) Students will get enough time for preparation.
- 3) Everyone will be able to know their strength and weakness and in which area they need to work.
- 4) Their route to reach their goals will be much easier as we will be helping them at every step
- 5) Even if students lack behind in academics our proposed system will help them to choose different routes according to their skills and also suggest companies which suit their caliber .

The system modules should have the following features-

- 1) User Registration- Here users have to register with required parameters such as name, mobile, password and hardware ID.
- 2) User Login- After user registration is done successfully the user can login to the system.
- 3) Records update:- After each year you can update your records like marks ,achievement etc.
- 4) Basic requirement:- The system will show you what are the requirements to achieve your dream company like marks, skills etc.

II. METHODOLOGY

Existing System Process:-

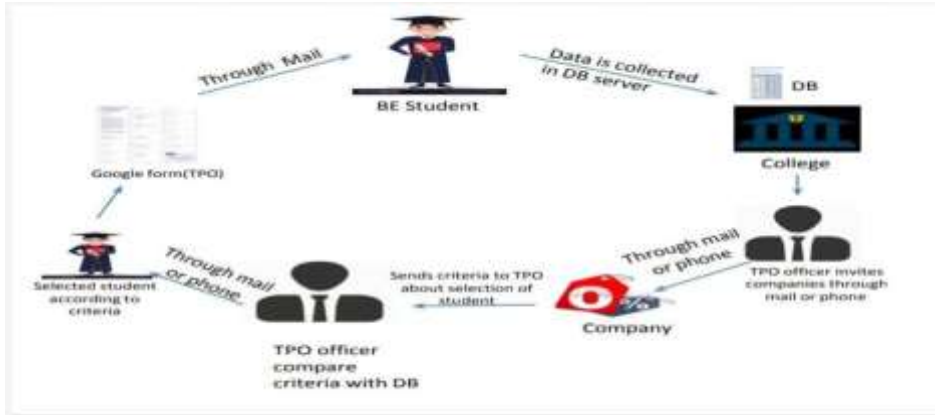


Figure 1: Existing system process.

T&P Registration Form 2019-20

Dear BE Students,
Welcome to T&P Cell.

All the students who want to avail the facilities provided by "SNJB T&P Cell" like placement drives of various companies, expert lectures by industry people, training sessions etc. need to fill all the information provided in this form on mandatory basis. Make sure that all information is accurate and filled as per the original documents because we share this information with companies and any incorrect data provided may lead to disqualification.

Last date to submit this form is 31st July 2019 after which link will be disabled and no further registrations will be accepted.

Number of Dead KT *
Total ATKT's in Engg. from sem 1 till date. It includes Cleared ATKT's + Live ATKT's

Your answer _____

10th % Marks *

Your answer _____

10th Board Name *

Choose _____

Year of Passing 10th *

Your answer _____

Email address *

Your email _____

PRN Number *
Permanent registration number printed on university mark sheet.

Your answer _____

Name in Full *
Surname, Name, Father's Name (Kapse Pankaj Ashok)

Your answer _____

Diploma Board *
12th students can select NA

Choose _____

Diploma Passing Year *
12th students can write 0000

Your answer _____

Diploma Branch *
12th students select NA

Choose _____

Sem 3 % *

Your answer _____

Sem 4 % *

Your answer _____

Sem 5 % *

Your answer _____

Sem 6 % *

Your answer _____

Career Options *

Choose _____

Work Experience *

Choose _____

Submit

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Google Forms

Figure 2: Google Form

In that system students in final year there is placement drive through campus so students don't know exactly what criteria they have to follow for any particular company .At that time they search the steps to be placed in company, with necessary skills,knowledge, or score of their academics they required to get through the interview.. Here students loose lot of time.It becomes too late for the students to understand the steps the company follows for recruitment of employees for their company. But due to lack of knowledge they finally loose good job opportunities.. Student don't know that what kind of score and percentage they have to achieve for any particular company so they will able to come in that companies criteria.Students face lot of difficulties in company interview due to lack of communication skill and how to face the interviewer during the company drive hence some students lag behind and eligible and good skilled students are confused regarding placement. These students also don't get enough time to prepare for the company placement.These are the drawback of existing system.

• **Proposed System working Process-**

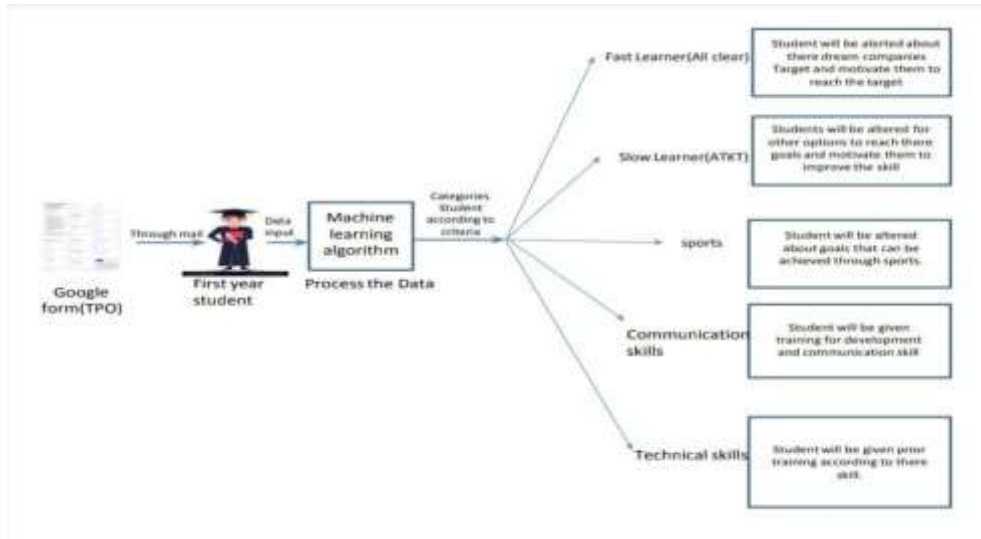


Figure 2(a) :Block diagram showing the working of placement prediction system using machine Learning.

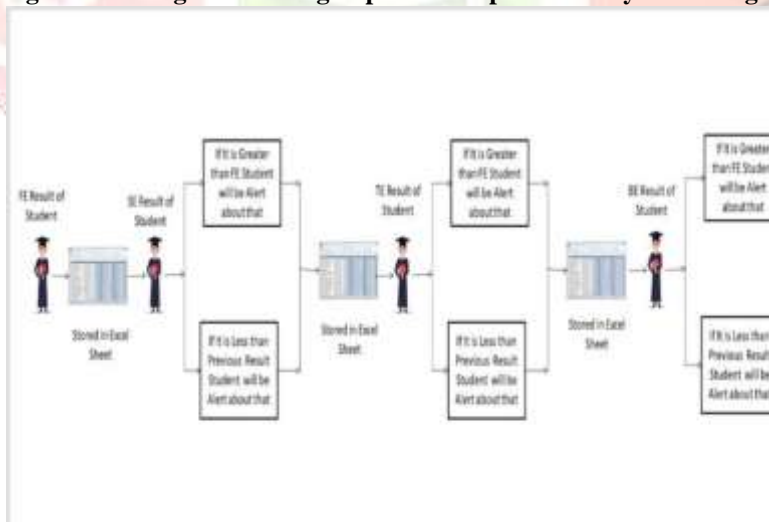


Figure 2(b): RESULT TRACKING

We will take student's marks as input means marks scored in JEE,CET,10th and 12th as well as other skills like communication skill and student personal interest will play an important role in prediction.

If the average of all these marks is above 70% the student will be considered as fast learner and further guidance will be given to them to achieve their dream company like on which position they are currently what kind of preparation they needed this kind of information will be provided to them and if the students average is below 70% then he/she will be considered as slow learner and according to that further guidance will be provided to him in this way students from both the categories will be able to perform well.

The various modules involved in system are as follows:

1. Google form
2. Excel sheet
3. Support vector machine algorithms using Machine learning theory .
4. User registration and login.
5. Feedback

The sequence of operation is as follows:

Every registered student of First year engineering will be given Google form sent through TPO (Training Placement officer) of college and students has to fill the general data required for future placement and also their interest in technical aspects and personal interest in respective branch they opted .Also their sports aspect will be considered in that form and all this information will be recorded in database server. The result database will contain the entire student's FE result which is stored in Excel sheet format. Later when the student reaches SE then his result will be compared with the Excel sheet which contains the results of FE score in both the terms I and II.

Students will be alerted through sms on cell and through mail about their progress and how they can achieve it during course of time. Also students who carried a backlog in their result will be given sms alerts about different options regarding different companies and what skills to be achieved to fulfill the company criteria .

This process will be carried out throughout their engineering course and different suggestions and options will be suggested after every result so that students remain focused about getting placed in campus selection.

Also colleges can opt for different technical and language skill development at a very early stage seeing the scenario of the companies demand where students can learn not only academic concepts but also communication skill and behavioural skills to enhance their performance during the interview period.

Finally students feedback will be taken for creating the new academic google form and how these proposed system helped them to get placed in companies

III. PERFORMANCE EVALUATION

Different parameters used in proposed system module are –

1. Google Form

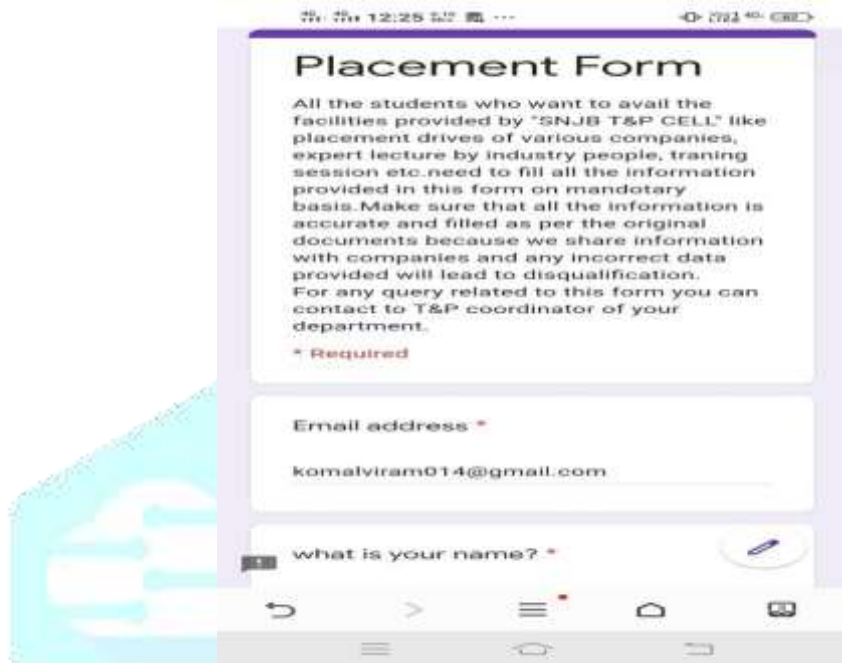


Figure 3:Google form

Google form contains all the basic information like students 10th and 12th score , University they have completed their 12th course also there personal area of interest ,any technical skills ,communication skill as well as there achievement in sports if any .All this information will be useful for their placement in future .

2. Excel sheet

	A	B	C	D	E	F	G	H	I	J	K
1	Name of student	10th Score	12th Score	JEE Score out of 100	NEET Score out of 100						
2	Sivas Srinis	80	85	75	80						
3	Vinay Rathi	80	87	75	78						
4	Poojai Chitre	88	80	50	88						
5	Tejal Rajan	81	72	40	50						
6	Shagyaashree Tejde	88	80	88	78						
7	Atika Shresth	50	55	68	55						
8	Rutvik Chavale	72	70	70	88						
9	Aarsha Shinde	78	75	85	78						
10	Shantanu Srinone	55	65	50	48						
11	Aakya Anshu	78	75	77	78						
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Figure 4-stored result

Excel sheets will be derived from the Google form filled by the students. Entire academic details and personal interest details will be saved in this sheet. Every year after the result declaration this data in excel sheet will be compared to the database of results, where students semester wise result is generated and stored in the result database. With the comparison our new database will be generated about how close or far deviated the student is from his dream job and what more he can do to cope up during his upcoming academic journey.

3.Using Support vector Algorithm:

Definition:-

SVM is a machine learning algorithm that analyzes data for classification and regression analysis.

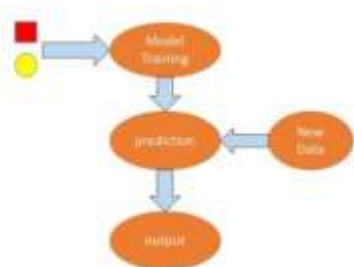


Figure 5: user registration

We will take student's marks as input means marks score in JEE, CET, 10th and 12th. If the average of all these marks is above 70% the student will be considered as fast learner and further guidance will be given to them to achieve their company like on which they are currently what kind of preparation they needed this kind of information will be provided to them and if the student's average is below 70% then he/she will be considered as slow learner and according to that further guidance will be provided to him in this way students from both the categories will be able to perform well.

4. User registration and user login



Figure 6: user registration

At the beginning students have to do registration for record purposes. Every student will have his own account so that no confusion will occur.

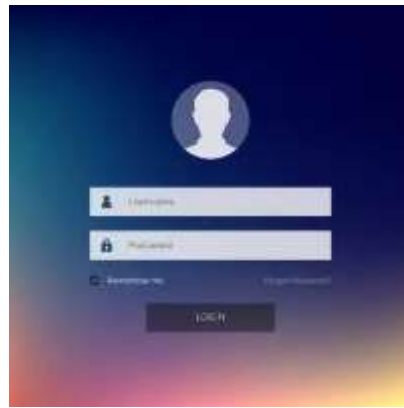


Figure 7- User Login

5. Feedback

Figure 8: Feedback form.

Students are allowed to give their feedback on this system all the suggestions given by students will be taken seriously. If there is a need for any changes, the changes will be made as per requirement in the Google form .

IV. CONCLUSION

This system will be helpful to students from the beginning of their Engineering career .This system will reduce the chaos caused at the end of the final year. Students will start improving themselves from second year itself about their career awareness learning new skills throughout their graduation course . This system will help them to achieve their dream company as well as they will learn how to overcome their weaknesses. Students will be clear about their career growth and what various options are available in the market and how far they can improve themselves .Also with the result generated from the proposed system college placement cell will be well aware of what new skills can introduced by upbringing new training sessions in the college so that maximum student can get benefited out of the training . Also suggestions of new recruitments and the company criteria and requirement of skills to be known will be messaged to the students at very early stage .This system covers all the aspects for increasing the placement in undergraduate students.This system will also helpful for development of college as new project skills will be created by student and percentage of placement will be increased overall.

V. REFERENCES

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