

Design and Development of Placement Portal for Institutions

Janhavi Tawde¹, Akash Singh², Tanishka Sharma³, Dr. Zahir Alam⁴

^{1,2,3}(Student, Dept. of Computer Engineering, Thakur College of Engineering and Technology)

⁴Professor, Dept. of Computer Engineering, Thakur College of Engineering and Technology

Abstract - The research revolves around the advancement of training and placement department of our college. The main aim of this project is to automate various activities of the department that will help to speed up the process making it convenient for everyone involved. The system will consolidate information about every student in our database. It will consist of two modules they are training and placement module. In the training module, a predictive model will be constructed on this data and whether a student is ready for the placement or not will be determined. In the placement module, we will monitor every student's progress in each company's placement rounds and concerned notifications will be sent accordingly to the student.

Key Words: AI(Artificial Intelligence), Machine Learning, Training and Placement (T&P)

1. INTRODUCTION

The Training and Placement cell plays a very major role in shaping the future of the students and is one of the most important department of institutions. Therefore, a system is required to be designed and developed to consolidate and collate all the information about the activities. It is very important to boost the placement performance of the students. Hence, Placement prediction could help the department as well as the students to improve their performance. The placement prediction status could help the students to put in more hard work in case the placement prediction status is negative. It will help the teachers as well as students to track their progress and improve on the areas where they lack. With the help of machine learning and Artificial Intelligence techniques, analysis of the records of the student can be done to predict the placement prediction status. It could also help the teachers and training department to change their teaching techniques and programs that match best with the growth of the students. The Training and Placement module will not only make the department more efficient by reducing manual work but also save a lot of time which could, in turn, be invested into more productive work. High placement is a key factor in building the reputation of any educational institute. Hence, such a system will have an important place in all the educational institutes.

2. LITERATURE SURVEY

[1] Smart Training and Placement System by Dr. S. B. Vanjale, Rahul Kumar Modi, Supreet Raj, Akshit Jain published in

International Journal of Computer Science And Technology, 2017 emphasis on building a system for automation of conventional training and placement systems in various colleges. It consists of three modules: TPO, student, and company module. The system promises to fill the communication gap between TPO, students, and companies by notifying the students, writing Invites to the companies, mailing every student about company details and other information, providing a list of eligible students as per company format which is different for every company. The paper only focuses on bridging the communication gaps between students, TPO, and the company. The model does not describe the security of the database and authentication of data inserted by the students. Also, it does not specify on what basis will the eligible students be categorized. There is a company format automation feature that enables companies to filter students on their requirements but there is no mention of categorizing student's records and performances in various tests.

[2] Online Training and Placement System by Mulla Kajal, Mahadik Awanti, Pandharpatte Sonali, Kalantre Rashmi, Bansode Swapnali issued in International Research Journal of Engineering and Technology (IRJET), 2016 discusses the need to automate the training and placement process by building a website to lift the workload of the TPO and provide a smooth functioning between the students and TPO. The main drawback in this paper is the admin or TPO has to fill in the details of every student which is similar to adding information in the excel sheet. Thus, it is time-consuming and cannot be considered as an upgrade to the existing system. There is an option for students to update their details but authentication of details is not mentioned. In the student's module, there is only one feature of updating the details and uploading the resume which is irrelevant because they have not specified the reason to upload the CV as students are not able to see the list of companies or select any company they wish to get placed in. Also, it states that companies can view students' records. Due to this ineligible students' records will also get displayed which is of no use to the companies. There is no automatic SMS integration system but a time-consuming manual SMS system.

[3] Design Paper on Online Training and Placement System(OTaP) by Mr. Nilesh T. Rathod, Prof. Seema Shah which was published in International Conference on Education and Educational Technologies, 2013 aims to automate the Training and Placement unit of RGIT (Rajiv Gandhi Institute of Technology). There are three actors in

this system- administrator, student, and recruiter. The students can upload their details in the form of a CV. The paper gives an overview of the system with its architecture. But it does not throw light on the technologies that will be used in the project. It does not have a clear specification of the roles and functionality. The flow of the project is not proper and satisfactory reasoning is not done. If a recruiter wants to select or view students then desirable filters have not been mentioned. The reason for having an alumni section is not specified. Briefly stated, the paper gives a glimpse of the system without showing its intricacies of it.

[4] Online Training and Placement System by Suraj Trimukhe, Anil Todmal, Kanchan Pote, Monali Gite,

Asstt. Prof. S.S. Pophale published in International Journal of Advanced Research in Computer Science and Software Engineering, 2017 focuses on a system that not only provides security to the database but also converts unstructured data into structured data. The system might be very systematic and easy to use but it does not focus on improving the performance of the students from the placement point of view. It does not have a Student Placement Prediction system that could help students in improving their skills and work on their weaker areas.

[5] Study of Implementation of Online Placement System by K.G.Patel, C.K. Patil published in International Conference On Emerging Trends in Engineering and Management Research, 2016 is aimed at developing an online application for the Placement Department of the college having six type of users - Current Student, Alumni, Placement Officer of the college, Departmental Staff and Companies. This project has a lot of modules and a lot of users of the system and yet they do not lay any emphasis on the security of the system. They do not have an SMS integration that does not make it so interactive. It should also include reminders for due dates for applying for the companies so that the students don't miss out.

[6] Student Analysis System for Training and Placement by Navaneeth Kumar B, Vamsi Kandula, Praneeth Ambiti, K Hema, Kishore Buddha published in International Journal of Recent Technology and Engineering (IJRTE), 2020 focuses on a Student Analysis System that gives students a performance report for analyzing student strengths and weaknesses in various company's recruitment exams. The drawbacks of the system are that the dataset for analysis is not stated. How analysis will happen is not mentioned. How the generation of a list of placed or unplaced students will take place is not specified.

[7] Android-based Training and Placement Automation by Tejashri Gosavi, Shraddha Gaikwad, Rohit Nazirkar, Amol Salke issued in Multidisciplinary Journal of Research in Engineering and Technology, 2015 aim to automation of the training and placement cell and profile matching. Collecting the resumes, providing notifications about various companies to the students according to the eligibility and

company criteria, classifying the data from the resume submitted by students and creating the recruitment metrics, analyzing and controlling the progress of the selection process and communicating with different eligible candidates via SMS or email notification. The proposed system provides functionalities like uploading the resume, communication mechanism. There are three notified users they are students, training and placement officer (TPO) and company representative. The administrator has all the priorities and authorities regarding updating and approvals. The administration can analyze and approve the resume. Students are categorized further as current students and pass-out students. Students can view and update their resumes. Students which are eligible for a specific company will get notification regarding the company's arrival and rounds to be conducted by SMS or E-mail notification. The proposed system uses classification algorithms like Naive Bayes to check whether the student is eligible for a particular company or not.

[8] Training and Placement Office Automation System by Prof. P.V. Phadke, Miss.T.D. Marodkar & Miss. N.A. Chunade issued in Imperial Journal of Interdisciplinary Research (IJIR), 2016 talks about developing a web application to ease the working of the training and placement cell. The goal of the project is not specified clearly. The information provided is quite shallow and it fails to provide an insight of the project. There are six actors in the system but why they are required is not stated. Technologies that will be used are not mentioned. It fails to provide detailed flow of the entire system. Classification of students in which categories is to be done are not stated and the reason behind the specified algorithm is not written. It just proposes a shallow idea of a web-application without throwing light on the details of execution.

3. EXISTING SYSTEM

Our college has a Training and Placement cell to manage all the student data and activities conducted. Records that consist of the Employability skill development (ESD) attendance, training attendance, academic attendance, test and project marks, etc. are maintained. Based on training attendance and marks, the category of a student is determined. All these processes are done manually with the help of excel sheets. Managing the data of so many students becomes time-consuming and error-prone. A mistake can cost a student to be forbidden to appear for a company's selection. Resolving such errors involve skimming through numerous sheets and then making changes in every document making it tedious and time-consuming. Human intervention is necessary at each step in this system. Problems faced by the existing systems are:

- As a company comes for its selection process, students that fall into the said category are allowed to appear. The T&P has to search eligible students and categorize them manually.

- Every time a company visits the campus, students upload their resumes. The collection of resumes is a time-consuming task and handling them is an overhead.
- The T&P records the progress of each student at every selection round of a company. They have to update excel sheets at each round for every company. This generates a huge workload on the employees at the department.
- The duplication of records leads to data redundancy.
- If a student changes his consent from higher studies to placement or vice-versa, updating the record in each document is dreary. The changes take time to get reflected in the system.
- The system does not take acknowledgment from the students attending a particular event. It creates confusion and dissatisfaction among the students at the last moment.
- There is no direct communication between the T&P cell and students. Therefore, students are less aware of the activities conducted by the department.

4. SURVEY ANALYSIS

A survey was conducted with the means of google forms. The survey was conducted among the age group 18-21, mainly students. It had a total of 6 questions. The questions asked were multiple-choice questions to understand the concerns of the students. Different methods were incorporated so that the analysis could be as near as possible to the truth. There were 103 responses and their response was studied.

- We saw that almost 80% of the students thought that they will benefit from the placement prediction system from which we can infer that students want a new feature that helps them get along with the placement activities. 14% of students are not sure whether it will benefit them or not. This may be because if the prediction does not lie in the student's favor then it can create demotivation and frustration among them. They can feel discouraged and cause stress to them. However, on the brighter side, some students can work harder to improve their status which will result in them getting placed.

Do you think the prediction of placements is helpful?

102 responses

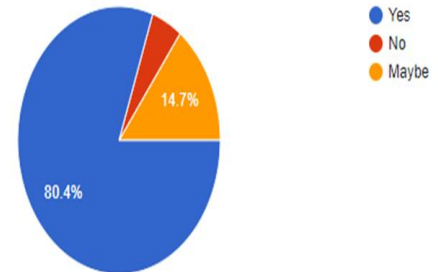


Fig. 1: Do you think prediction of placements is helpful?

- About 90% of the students wanted a notification system that keeps them updated about all the placement activities. This high number can be accounted to not having proper platform for communication between T&P and the students. Messages are forwarded to students via whatsapp. This results into cluttered notifications and one can miss important events or activities due to this.

Will it be helpful if you are notified about the placement activities from time to time?

102 responses

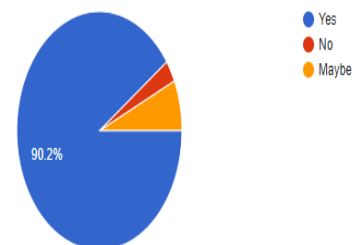


Fig. 2: Will it be helpful if you are notified about the placement activities?

- 92% of the students felt that they as well as the institutes will benefit from such a system and will help them save time and improve their efficiency. Paperwork and workload will get reduced. Work will be more efficient.

Will a Training and Placement Module for Institution help improve efficiency and save time?

102 responses

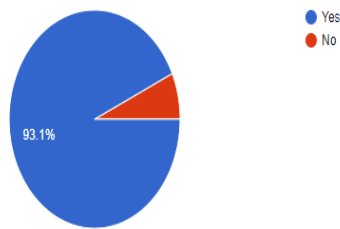


Fig. 3: Will a training and placement module help improve efficiency?

- About 80% of the students felt that this Placement module will help them move in the right direction. Some were skeptical about the results from the model.

Will the analysis and current status of the student help the student improve and move in the right direction?

102 responses

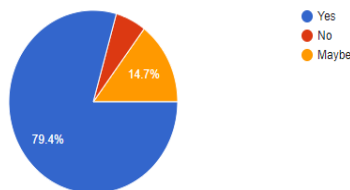


Fig. 4: Will analysis and current status help the student?

- The majority of the students agreed that they want a system that offers more transparency. If a student attends an event/session and is marked absent for the same then there arises dissatisfaction and frustration among them. So, it is necessary to have transparency in placement activities.

Will it be better if the entire placement process offers more transparency?

102 responses

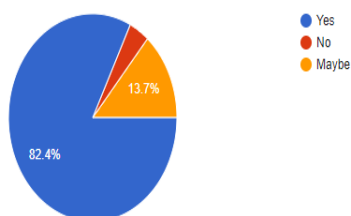


Fig. 5: Will it be better if the entire system is more transparent?

- When asked if the system will have any negative effect on anyone whatsoever, the results were diverse but the majority of people thought it will not have any kind of negative effects.

Will the placement prediction status in the module have any negative effects on the students ?

102 responses

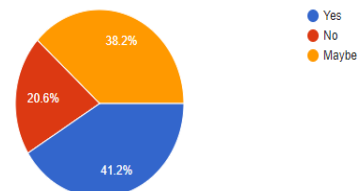


Fig. 6: Will the placement prediction status in the module have any negative effect on the status?

5. PROPOSED SYSTEM

The main aim of the proposed system is to reduce paperwork and process the work faster. Data is stored systematically and retrieving the information becomes simple. It is a direct interface between students and the T&P. The user interface is straightforward for uncomplicated usability. It is scalable to meet future requirements. Accuracy in results is achieved. The system lifts the burden of the employees and makes it efficient. It tends to remove the drawbacks of the existing system and add features to facilitate time optimization.

The proposed system works for both students and the T&P. It is categorized into two modules: Student and Admin/TPO. The first page that any user will encounter is the login page. It is divided into two sections- each having login options. Students can enter their credentials in the space provided exclusively for them. The same is true for admin. It also has an option to retrieve the account if one forgets their password. After entering correct login details, students will be directed to the student dashboard where information about different companies' drives, placement activities, and other features will be available. Admin or TPO will be directed to the admin dashboard containing options to create a company drive, manage data and generate reports.

The algorithm that we aim to use is the Naïve Bayes Classifier as in real-life data applications, it works well. When used with univariate conditional probabilities, it benefits from precise estimation and variable selection.

A. T&P Module:

This module is accessed by the employees at the training and placement department. They have the authority to verify student details that will decide a student's category. The

operator can add and update data related to the attendance and test marks of the students. This data is mapped to students' profiles that decide the category under which a student falls. The admin can add or update company drives that will get reflected in the student's dashboard. He can verify the details filled by the student to check the student's eligibility for the company drive. The list of these registered eligible students is sent forward to the recruiters for further process. After every selection round, data of selected and unselected students is made available by the company. The admin then selects only qualified students from the list of all students, and the rest are eliminated from the data. These students are informed about the future rounds. The elimination takes place until the last recruitment round. The list of final selected students is generated. If a student gets placed in a company then he is prohibited to sit for other same category companies' recruitment. Report generation of placed students against unplaced students is done and sent to the stakeholders. The diagrammatic representation helps in analyzing the data and areas for improvement.

B. Student Module:

After successful login, students can see a dashboard containing active company drives, information about placement activities, and articles. Students can register to different available company links based on their category. The admin authenticates the information provided by the students. As a company arrives for its recruitment process, the progress of each student in a selection round is maintained. The students that are selected are barred from sitting for other company's recruitment processes. Notifications informing about the placement activities and company drives are messaged to the students.

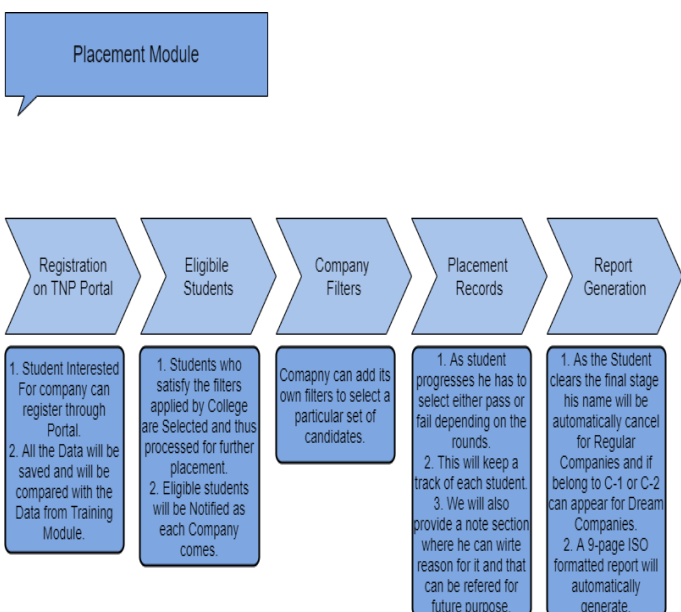


Fig. 7 : Flow diagram of Placement Module

6. IMPLEMENTATION

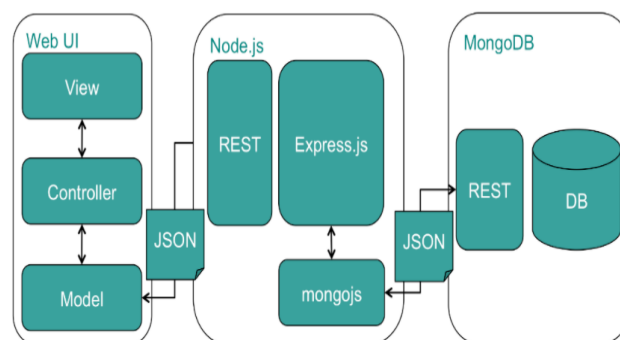


Fig. 8: Software Architecture

We have developed important modules that are the foundation of the entire architecture of our project. Users do not have the option to create their accounts as the usage is limited till college. We will provide usernames and passwords to the students. This data is pre-filled in the database. They have the option to change their password once they log in successfully. It helps to refrain any outsider from entering the portal. Admin can also change his password after successful login. The login page attached below has two login sections, one for students and the other for admin.

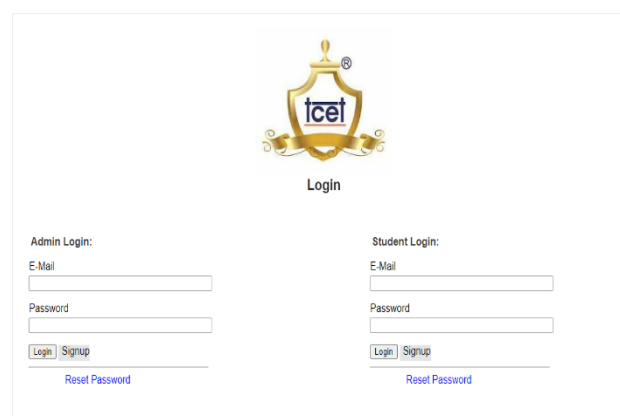


Fig. 9: Login Page

After successful login, both users will be directed to the dashboard. However, the features in the sidebar will be different. Given below is student dashboard.

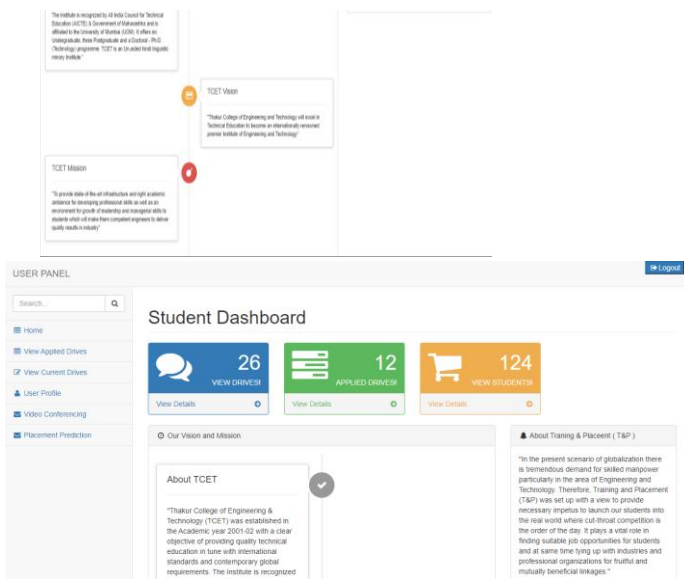


Fig. 10: Student dashboard

Both the users can view ongoing recruitment drives. Admin has the authority to create, update and delete a campus drive. Changes get stored in the database. The admin can also view eligible students.

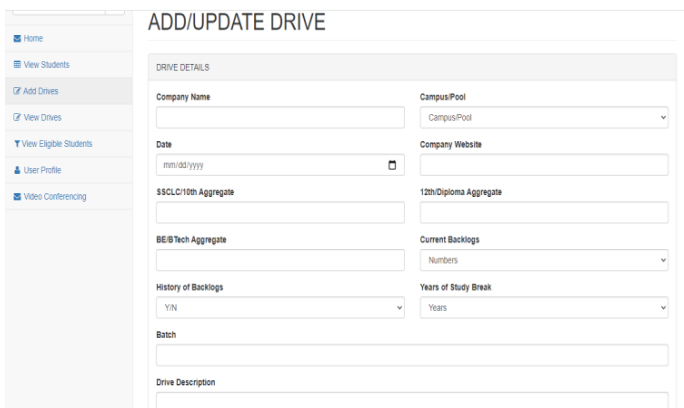


Fig. 11: Add or update drive

Students who are eligible can register to the ongoing drive. They can also view the drives they have applied before. The list of the registered student is displayed to the admin.

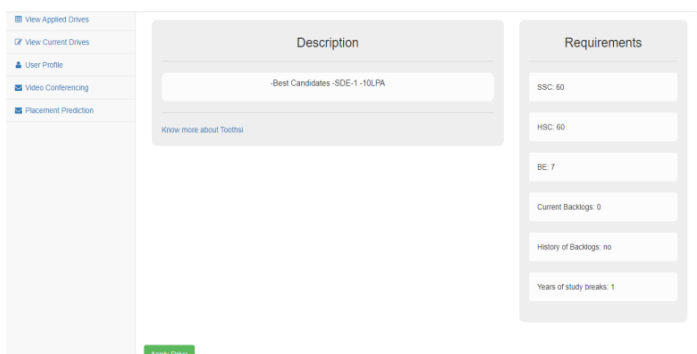


Fig. 12: Registration to ongoing drive

Admin can see the list of all students who have opted for placement along with their score.

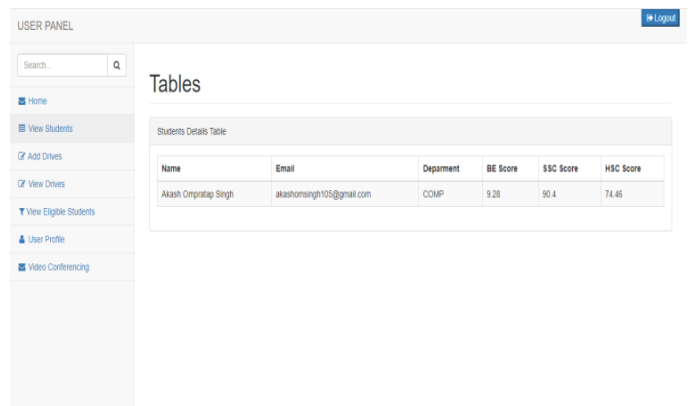


Fig. 13: View Students Page

Both the users can view their profiles and add or update their details. The changes get stored in the database at the backend.

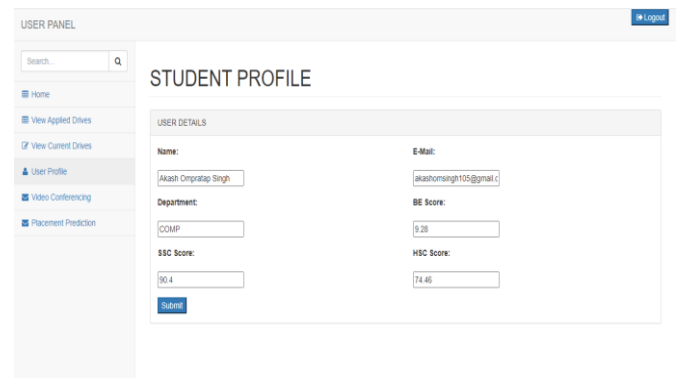


Fig. 14: Student Profile

7. CONCLUSION

The Training and Placement Module is very important to the institutes as well as its students. Its Placement Prediction feature uses machine learning and AI techniques. Many research papers are there related to the educational sector, which concentrates on student performance predictions. They help the students, teachers, and training department to improvise their results by changing their teaching techniques or providing different programs as required by the students. It could help the students to put in more hard work by tracking their progress and moving in the right direction. The department could benefit from this as this system will highly increase their efficiency and save a lot of time. The proposed paper tries to address each problem independently and bridge the gaps seen during the analysis of research papers. The proposed system could find its application in various fields.

8. APPLICATIONS

The module has very important applications in educational institutes which the paper emphasizes majorly but this system can not only be used in educational institutes but also in business corporations. The factors to be considered will be different as in the case of business corporations, the challenge is to take into consideration the current market scenario that affects its employees and products. It could also be used in sports academies to track the performance of their athletes.

REFERENCES

- [1] Dr. S. B. Vanjale, Rahul Kumar Modi, Supreet Raj, Akshit Jain,2017," Smart Training and Placement System ", International Journal of Computer Science And Technology
- [1] Mulla Kajal, Mahadik Awanti, Pandharpatte Sonali, Kalantre Rashmi, Bansode Swapnali,2016," Online Training and Placement System ", International Research Journal of Engineering and Technology (IRJET)
- [2] Mr. Nilesh T. Rathod ,Prof. Seema Shah,2015," Design Paper on Online Training and Placement System(OTaP)", International Conference on Education and Educational Technologies
- [3] Suraj Trimukhe, Anil Todmal, Kanchan Pote, Monali Gite, Asstt. Prof. S.S. Pophale,2017," Online Training and Placement System", International Journal of Advanced Research in Computer Science and Software Engineering
- [4] K. G.Patel , C. K. Patil, "Study of Implementation of Online Placement System", International Conference On Emerging Trends in Engineering and Management Research
- [5] Navaneeth Kumar B, Vamsi Kandula, Praneeth Ambiti, K Hema, Kishore Buddha,2020," Student Analysis System for Training and Placement",International Journal of Recent Technology and Engineering (IJRTE)
- [6] Tejashri Gosavi, Shraddha Gaikwad, Rohit Nazirkar, Amol Salke,2015," ANDROID-BASED TRAINING AND PLACEMENT AUTOMATION", Multidisciplinary Journal of Research in Engineering and Technology
- [7] Prof. P. V. Phadke, Miss. T. D. Marodkar & Miss. N. A. Chunade,2016" Training and Placement Office Automation System", Imperial Journal of Interdisciplinary Research (IJIR)