Software Requirement Specification

On

**“**Feature-rich, advanced practical online website for the training

and placement department of the college “

**Session 2022 - 23**

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# 1) Introduction

**1.1 Purpose**

In today’s world everyone is travelling for jobs after Completion of their graduation.

It has became need for each and every student, but for that they need to travel world wide in searching of jobs. For simplicity of this whole hectic procedures we had proposed Online Training and Placement System because of earlier system is totally done manually by maintaining records ,time consuming and very difficult to maintain coordination between student and companies. The project is aimed at developing an online web application for the training and placement department of the college. The system is an online web application that can be accessed throughout the Institute with proper login provided.

Thissystemcan be used as an application for the TPO of the college to manage the studentinformation with regard to placement. Student logging should be able to upload their information. Organizations representatives logging in may also access/search an information put up by the students. TPO have to collect the information and manage them manually according to various streams. If any modification is required that is also to be done manually. Overall it will reduce the paper work and utilize the maximum capability of the setup and organization as well as it will save time and money.

**1.2 Problem Definition and Project Scope**

Students choose a specific college where the placement will be held, there is a need to maintain all these papers, causing large amount of space. It is manually done, chances of missing, difficult to handle the details of student.

**Scope of Project :**

 Our project has a big scope to do. Students can access previous information about placement. We can stores information of all students. Various companies can access their information. Notifications are sent to students about the companies.

1.Easy to collect and manage student data.

2. To increase the accuracy and efficiency of placement procedure.

3. Reduce the paper work.

4. Analysis of overall placement activities

**1.3 Technologies to be used**

**1) Node JS**

Node.js is an open source, cross-platform runtime environment for developing server-side and networking applications. Node.js applications are written in JavaScript, and can be run within the Node.js runtime on OS X, Microsoft Windows, and Linux. Node.js also provides a rich library of various JavaScript modules which simplifies the development of web applications using Node.js to a great extent. Node.js is an open-source and cross-platform JavaScript runtime environment. It is a popular tool for almost any kind of project! Node.js runs the V8 JavaScript engine, the core of Google Chrome, outside of the browser. This allows Node.js to be very performant.A Node.js app runs in a single process, without creating a new thread for every request. Node.js provides a set of asynchronous I/O primitives in its standard library that prevent JavaScript code from blocking and generally, libraries in Node.js are written using non-blocking paradigms, making blocking behavior the exception rather than the norm.

**2) Visual Studio**

Visual Studio Code combines the simplicity of a source code editor with powerful developer tooling, like IntelliSense code completion and debugging.

First and foremost, it is an editor that gets out of your way. The delightfully fric- tionless edit-build-debug cycle means less time fiddling with your environment, and more time executing on your ideas. Visual Studio Code is a free source-code editor made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git.Users can change the [theme](https://en.wikipedia.org/wiki/Theme_(computing)), [keyboard shortcuts](https://en.wikipedia.org/wiki/Keyboard_shortcut), preferences, and install [extensions](https://en.wikipedia.org/wiki/Plug-in_(computing)) that add additional functionality. Visual Studio Code's [source code](https://en.wikipedia.org/wiki/Source_code) comes from Microsoft's [free and open-source software](https://en.wikipedia.org/wiki/Free_and_open-source_software). **VSCode** project released under the permissive [Expat License](https://en.wikipedia.org/wiki/Expat_License), and the compiled binaries are [freeware](https://en.wikipedia.org/wiki/Freeware) for any use. Visual Studio Code was announced on April 29, 2015, by Microsoft at the 2015 [Build](https://en.wikipedia.org/wiki/Build_(developer_conference)) conference. A Preview build was released shortly thereafter. On November 18, 2015, Visual Studio Code was released under the [Expat License](https://en.wikipedia.org/wiki/MIT_License) and its source code posted to [GitHub](https://en.wikipedia.org/wiki/GitHub).

Extension support was also announced.Visual Studio Code is a source-code editor that can be used with a variety of programming languages, including [Java](https://en.wikipedia.org/wiki/Java_(programming_language)), [JavaScript](https://en.wikipedia.org/wiki/JavaScript), [Go](https://en.wikipedia.org/wiki/Go_(programming_language)), [Node.js](https://en.wikipedia.org/wiki/Node.js) and [C++](https://en.wikipedia.org/wiki/C%2B%2B). It is based on the [Electron](https://en.wikipedia.org/wiki/Electron_(software_framework)) framework, which is used to develop [Node.js](https://en.wikipedia.org/wiki/Node.js) [Web applications](https://en.wikipedia.org/wiki/Web_application) that run on the [Blink layout engine](https://en.wikipedia.org/wiki/Blink_layout_engine). Visual Studio Code employs the same editor component (codenamed "Monaco") used in [Azure DevOps](https://en.wikipedia.org/wiki/Azure_DevOps_Server) (formerly called Visual Studio Online and Visual Studio Team Services).

Visual Studio Code can be extended via [extensions](https://en.wikipedia.org/wiki/Plug-in_(computing)), available through a central repository. This includes additions to the editor and language support A notable feature is the ability to create extensions that add support for new [languages](https://en.wikipedia.org/wiki/Programming_language), [themes](https://en.wikipedia.org/wiki/Theme_(computing)), and [debuggers](https://en.wikipedia.org/wiki/Debugger), perform [static code analysis](https://en.wikipedia.org/wiki/Static_code_analysis), and add [code linters](https://en.wikipedia.org/wiki/Lint_(software)) using the [Language Server](https://en.wikipedia.org/wiki/Language_Server_Protocol) [Protocol](https://en.wikipedia.org/wiki/Language_Server_Protocol).

**3) Java Script**

JavaScript is a lightweight, interpreted programming language. It is designed for creating network-centric applications. It is complimentary to and integrated with Java. JavaScript is very easy to implement because it is integrated with HTML. It is open and cross-platform.

Javascript is the most popular programming language in the world and that makes it a programmer’s great choice. Once you learnt Javascript, it helps you developing great front-end as well as back-end softwares using different Javascript based frameworks like jQuery, Node.JS etc.

Javascript is everywhere, it comes installed on every modern web browser and so to learn Javascript you really do not need any special environment setup. For example Chrome, Mozilla Firefox , Safari and every browser you know as of today, supports Javascript.Javascript helps you create really beautiful and crazy fast websites. You can develop your website with a console like look and feel and give your users the best Graphical User Experience.

JavaScript usage has now extended to mobile app development, desktop app development, and game development. This opens many opportunities for you as Javascript Programmer.Due to high demand, there is tons of job growth and high pay for those who know JavaScript. You can navigate over to different job sites to see what having JavaScript skills looks like in the job market.Great thing about Javascript is that you will find tons of frameworks and Libraries already developed which can be used directly in your software development to reduce your time to market.

**4) HTML & CSS**

HTML is simply the only option with respect to the Frontend for the Web. Abstractions like HAML, Jade, etc., are considered to be alternatives to HTML;

however, even these abstractions are eventually converted to HTML because that’s what the browser understands! So, if you’re looking to wow your audience, HTML along with CSS(Cascaded Style Sheets) makes a good case for itself.

Think of CSS as a make-up artist and HTML as the actor, HTML brings the talent, but it looks plain without CSS. HTML is a markup language used to create static web pages and web applications. CSS is a style sheet language responsible for the presentation of documents written in a markup language.

CSS is considered to be one of the easiest languages to learn. Its basic rules and syntax are simple, and you could start styling web pages after a single day of learning (if you're already familiar with HTML).

**1.4 Overview**

The training and placement management system creates student and company databases. This module allows students to update parts of bio data and invite companies for placements. Student list can be retrieved from the database of the management software on the basis of the selection criteria of the company.

Training and placement management module additionally manages interview schedules, student list announcements, records of various training and placement activities and the like. This module of education ERP solution can assign login rights to the department staff.

**2) Overall Description**

**2.1 Project Perspective**

This project aims to develop an online automation system that is beneficial for SIM students and companies recruiting SIM graduates. This software has two login portals, one for students and the other for recruiting companies.Students will enter all their personal as well as professional while registering themselves into the system. The students can also control the privacy settings of their accounts. The companies register with their company name, Job title, No. of vacancy, Job description, Job profile, Criteria, etc. The students can view and apply to the companies. The students will also be notified if job ads match with their interests and abilities, provided that they choose to make their information public. The companies can view the list of student profile who have applied to the particular company. An optional requirement is that the system allows users to communicate. The company recruiter of the system, has the access to all the portal.

He handles all the logins credentials. The company recruiter can add, delete or edit information when need be. The company recruiter can also generate various reports (personal identity needs to be removed) for SIM management to understand the employability of SIM graduates. All the details are stored in the cloud which is very easy to access for the user any time. As, the project files and a database file will be stored into the Azure cloud (or Amazon AWS), the project will be accessed in the web browser through Azure link.

**2.2 Product Functions**

* Website uses two login portals, one for students and other for recruiting companies.
* Students will enter all their personal as well as professional while registering themselves into the system.
* The students will also be notified if job ads match with their interests and abilities, provided that they choose to make their information public.
* The company recruiter can add, delete or edit information when need be.
* The companies register with their company name, Job title, No. of vacancy, Job description, Job profile, Criteria, etc.

**2.3 User Classes and Characteristics**

The Users should be able to do the following functions:

* Students will enter all their personal as well as professional while registering themselves into the system and can view the company data.
* The company recruiter can edit information according to their needs.
* The company recruiter can handle all login credentials.
* TPO have to collect the information and manage them manually according to various streams.

**2.4 Operating System**

The operating system used in the project is Windows.

**2.5 Need for the new system**

College training and placement (CTAP) system provides the modules like

 Student

 company recruiter

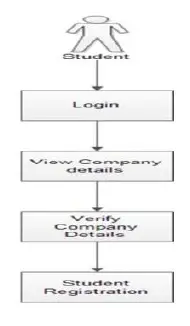
 Student can view company data

 company recruiter dashboard has overall functional rights

Appropriate data processing and handling

**Student Module**

This Module consist of a login option and registration window for unregisteredstudents. Students will use their choice of username and a proper specified length password. The functionalities provided in this module consist of:



It helps the Students to update their details anytime.

• The students would be able to view the company requirement.

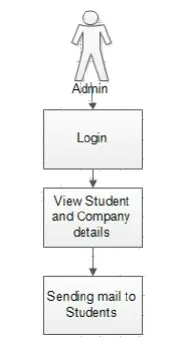
• Students will be provided with a link to apply for the company if eligible.

• Previous Years placement paper and material is also provided.

• Students can see the complete profile of the company. Such as recruitment procedure history CTC offer and the working environment.

**The T&P(company recruiter) Module**

It has the authority to manage various functionalities of the system. This module will be handled by an company recruiter (say Training and placement Officer) who has the authority to:

****

• Provides authentication for registered students

• Add news feed and Update company data. Overall records of the students will be presented over the portal like the data of all placed and unplaced students which will reduce the bottleneck of confusion among students.

### 3) External Interface Requirements

**3.1 User Interfaces**

The user of the proposed system requires that the developed software should be user friendly, have security access, and ensure the privacy of the administrator and produce results in timely manner. The users are not frequently exposed to the training and placement interface to the user must be simple and understandable. The desktop application must be user – friendly and must be in an easy-to-use style . The user must be able to easily switch among various I/O screens. The system is well designed so that it can be easily used by users.

The system should be designed in such a way that only authorized users should be allowed to login to the system.

The user interface should be as interactive as possible. A user-friendly interface must be provided so that the user can easily interact with the system and comprehend things in a quicker and easier way. The system must provide reliable and up-to-date information. The application should be efficient so that the user does not spend much time in training.

**3.2 Communication Interfaces**

* As the website consists of online recruiting so it requires high speed internet modem for the use of this application.
* For the suitable use there must be a correct internet connection among the users
* The users can directly interact with the application and use its functionalities.
* Keep peopleinformed so that they will support the outcome of the project, understand what theyneed to do and the implications, and alert the project team to issues.

**3.3 Software Interfaces**

* Operating system
* Database
* Tools/ide
* Platform

|  |  |
| --- | --- |
| **Software used** | **Description** |
| Operating system | We have chosen a Windows operating system for its best support and user-friendliness. |
| Database | To save the students and companies information which have been entered by user. |
| Tools/IDE | To implement the project we have chosen Visual studio for its more interactive support. |
| Platform | Website |
| Technologies and Tools Used | Node JS,Javascript,HTML&CSS.. |

**4) System Features**

**4.1.1 Description and Priority**

The Training and Placement Cell (T&P Cell) is an essential department in educational institutions such as colleges and universities. Its primary responsibility is to help students prepare for and secure employment opportunities after graduation. The T&P Cell works in collaboration with the academic departments to develop and organize training programs that enhance the employability skills of students. These training programs may include technical skills development, soft skills training, communication skills, interview skills, and other professional skills. The aim of these programs is to equip students with the knowledge and skills required by the industry and make them job-ready. The T&P Cell also acts as a bridge between students and potential employers. They organize campus recruitment drives where students can interact with representatives from various companies and organizations. The T&P Cell assists students in preparing their resumes, preparing for interviews, and providing them with information about job vacancies in their respective fields. Overall, the T&P Cell plays a vital role in ensuring that students receive the best possible career opportunities and helps in building a strong relationship between educational institutions and industry partners.

**4.2 Functional Requirements**

**UI/ UX requirement:**

Attractive design, easy to navigate and speedy page loading are three features real time application must have. Apart from that, use of color, fonts and images also plays a vital role to engage the user. These issues must be resolved. Mobile devices are the great source of user nowadays. So, this application must be mobile friendly and scalable to different screen sizes. This application must have features of applying jobs based upon categories and sub categories. This application always want to hear from users how the search operations works according to their expectation.

**Management requirements:**

Users can search jobs on the basis of their choice and can apply to their specific jobs

System must support accurate and continuous real data collection.

1. System needs to store the data and provide access to a user interface.

4. System must store the user and company information.

5. System must support two way communications between the client and server.

6. System should be easy to deploy.

**5)Other Non-Functional Requirements**

**5.1 Performance Requirements:**

High Speed: System should process requested task in parallel for various action togive quick response. Then system must wait for process completion.

Accuracy: System should correctly execute process, display the result accurately.

System output should be in user required format.

**5.2 Safety Requirements:**

 The data safety must be ensured by arranging for a secure and reliable transmission media. The source and destination information must be entered correctly to avoid any misuse or malfunctioning. Password generated by user is consisting of characters, special character number so that password is difficult to hack. So, that user account is safe.

**5.3 Security Requirements**

Secure access of confidential data (user’s details). Information security means protecting information and information systems from unauthorized access, use, disclosure, disruption, modification or destruction.

The terms information security, computer security and information assurance are frequently incorrectly used interchangeably. These fields are interrelated often and share the common goals of protecting the confidentiality, integrity and availability of information; however, there are some subtle differences between them. User password must be stored in encrypted form for the security reason All the user details shall be accessible to only high authority persons. Access will be controlled with usernames and passwords.

**5.4 Software Attributes**

* **Availability**- all the services should be available to the user.
* **Correctness**-the list of the data related to a student and company should be stored correctly.
* **Usability**-the details of user should be self-explanatory.
* **Maintainability**-TPO should maintain the database and store in updated form.
* **Portability**- the application should be portable to mobile.
* **Reliability**- the system should give 98% correct search results out of 1000 searches during testing.
* **Extendibility**-the application should be easy to extend, code should be written in such a way that it favors implementation of new functions.
* The safety requirements are those requirements that are defined for the purpose of risk reduction. Like any other requirements, they may at first be specified at a high level, for example, simply as the need for the reduction of a given risk.
* Then they must be refined so that their full details are provided to designers. The totality of the safety requirements for all risks forms the safety requirements specification. At the design stage, the safety requirements are provided by means of safety functions. system design.

**6) Analysis Model**

**6.1 Use Case Diagram**

This diagram describes a set of actions (use cases) that some system or systems (subject) should or can perform in collaboration with one or more external users of the system (actors). Each use case should provide some observable and valuable results to the actors or other stakeholders of the system.

This use-case diagram is a graphic depiction of the interaction among the elements of the Training and placement site.It represents the methodology used in system analysis to identify,clarify and organise system requirements of Training and placement .

The main actors in the Training and placement are the system who gives Training and placement details. In Training and placement, users are the actors who can interact with the frontend of the application and firebase handles the database (back-end) and React Js is used for the communication between frontend and backend.

Both user and firebase play their roles on their respective ends.An actor represents a role of a user that interacts with the system that you are modeling.

The user can be a human user, an organization, a machine, or another external system. In UML models, subsystems are a type of stereotyped component that represent independent, behavioral units in a system.Use case diagrams are used to gather the requirements of a system including internal and external influences.These requirements are mostly design requirements. Hence, when a system is analyzed to gather its functionalities, use cases are prepared and actors are identified.

A use case analysis is the primary form for gathering usage requirements for a new software program or task to be completed.

The primary goals of a use case analysis are: designing a system from the user's perspective, communicating system behavior in the user's terms, and specifying all externally visible behaviors.

It helps to understand the requirements of the system. It is a sequence of steps that describes the interaction between user and system. It helps to manage the complexity in the transaction, as it focuses on one task at a time.

**Diagram

Description automatically generated**

**6.1) Use case diagram**

**6.2 Activity Diagram**

An activity diagram is a diagram that depicts a process, system or computer algorithm. They are widely used in multiple fields to document, study, plan, improve and communicate often complex processes in clear, easy-to-understand diagrams.

They can range from simple, hand-drawn charts to comprehensive computer-drawn diagrams depicting multiple steps and routes. If we consider all the various forms of activity diagram, they are one of the most common diagrams on the planet, used by both technical and non-technical people in numerous fields.

Activity diagram are used to design and document simple processes or programs. Like other types of diagrams, they help visualize the process.

Two of the many benefits are flaws and bottlenecks may become apparent. Activity diagram typically use the following main symbols:

* A process step, usually called an activity, is denoted as a rectangular box.
* A decision is usually denoted as a diamond.

A symbol appearing in a particular part is within the control of that organizational unit. A cross-functional activity diagramt allows the author to correctly locate the responsibility for performing an action or making a decision, and to show the responsibility of each organizational unit for different parts of a single process.

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**Diagram

Description automatically generated**

**6.2 Activity Diagram**

**6.3 Class Diagram**

* A class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among objects.
* Training and placement site class diagram describes the structure of social media application classes,their attributes,operations(methods),and the relationship among the objects.
* The main classes of Training and placement site is users and systems.
* The purpose of class diagram is to model the static view of an application.
* Class diagrams are the only diagrams which can be directly mapped with object-oriented languages and thus widely used at the time of construction.
* UML diagrams like activity diagram, sequence diagram can only give the sequence flow of the application, however class diagram is a bit different. It is the most popular UML diagram in the coder community.
* Class diagram is a static diagram. It represents the static view of an application.
* Class diagram is not only used for visualizing, describing, and documenting different aspects of a system but also for constructing executable code of the software application.
* The purpose of the class diagram can be summarized as −

1. Analysis and design of the static view of an application.
2. Describe responsibilities of a system.
3. Base for component and deployment diagrams.
4. Forward and reverse engineering

* Class diagrams are the blueprints of your system or subsystem. You can use class diagrams to model the objects that make up the system, to display the relationships between the objects, and to describe what those objects do and the services that they provide.
* Class diagram describes the attributes and operations of a class and also the constraints imposed on the system. The class diagrams are widely used in the modeling of objectoriented systems because they are the only UML diagrams, which can be mapped directly with object-oriented languages.
* Class diagram shows a collection of classes, interfaces, associations, collaborations, and constraints. It is also known as a structural diagram.
* Class diagrams are the only diagrams which can be directly mapped with object-oriented languages and thus widely used at the time of construction.
* UML diagrams like activity diagram, sequence diagram can only give the sequence flow of the application, however class diagram is a bit different. It is the most popular UML diagram in the coder community.

**Diagram

Description automatically generated**

**6.3) Class Diagram**

**6.4 Sequence Diagram**

A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence diagrams are typically associated with use case realizations in the Logical View of the system under development. Sequence diagrams are sometimes called event diagrams or event scenarios. A sequence diagram shows, as parallel vertical lines (lifelines), different processes or objects that live simultaneously, and, as horizontal arrows, the messages exchanged between them, in the order in which they occur. This allows the specification of simple runtime scenarios in a graphical manner. Here, the classes are referred to by the term lifeline and as shown in the diagram there is a sequence maintained between the lifelines according to the actions performed by the user and company recruiter respectively on the system. A sequence diagram is the most commonly used interaction diagram. Interaction diagram – An interaction diagram is used to show the interactive behavior of a system. Since visualizing the interactions in a system can be a cumbersome task, we use different types of interaction diagrams to capture various features and aspects of interaction in a system. Sequence Diagrams – A sequence diagram simply depicts interaction between objects in a sequential order i.e. the order in which these interactions take place. We can also use the terms event diagrams or event scenarios to refer to a sequence diagram. Sequence diagrams describe how and in what order the objects in a system function. These diagrams are widely used by businessmen and software developers to document and understand requirements for new and existing systems.

The sequence diagram represents the flow of messages in the system and is also termed as an event diagram. It helps in envisioning several dynamic scenarios. It portrays the communication between any two lifelines as a time-ordered sequence of events, such that these lifelines took part at the run time. In UML, the lifeline is represented by a vertical bar, whereas the message flow is represented by a vertical dotted line that extends across the bottom of the page. It incorporates the iterations as well as branching. Since visualizing the interactions in a system can be a cumbersome task, we use different types of interaction diagrams to capture various features and aspects of interaction in a system. Sequence Diagrams – A sequence diagram simply depicts interaction between objects in a sequential order i.e. the order in which these interactions take place.

Diagram

Description automatically generated

**6.4) Sequence diagram**

This allows the specification of simple runtime scenarios in a graphical manner. Here, the classes are referred to by the term lifeline and as shown in the diagram there is a sequence maintained between the lifelines according to the actions performed by the user and company recruiter respectively on the system.

**6.5 Deployment Diagram**

The deployment diagram visualizes the physical hardware on which the software will be deployed. It portrays the static deployment view of a system. It involves the nodes and their relationships. It ascertains how software is deployed on the hardware. It maps the software architecture created in design to the physical system architecture, where the software will be executed as a node.

Since it involves many nodes, the relationship is shown by utilizing communication paths.The main purpose of the deployment diagram is to represent how software is installed on the hardware component. It depicts in what manner a software interacts with hardware to perform its execution. Both the deployment diagram and the component diagram are closely interrelated to each other as they focus on software and hardware components. The component diagram represents the components of a system, whereas the deployment diagram describes how they are actually deployed on the hardware.

* High performance
* Scalability
* Maintainability
* Portability
* Easily understandable

**Diagram

Description automatically generated**

**6.5) Deployment diagram**

**6.6 Component diagram**

Component diagram is used to break down a large object-oriented system into the smaller components, so as to make them more manageable. It models the physical view of a system such as executables, files, libraries, etc. that resides within the node.

It visualizes the relationships as well as the organization between the components present in the system. It helps in forming an executable system. A component is a single unit of the system, which is replaceable and executable. The implementation details of a component are hidden, and it necessitates an interface to execute a function. It is like a black box whose behavior is explained by the provided and required interfaces.

**Diagram

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**6.6) Component diagram**

**6) Conclusion**

In conclusion, the Online Training and Placement Cell (T&P Cell) is a valuable tool for connecting students with employers and providing them with the necessary training to succeed in their careers. Furthermore, the T&P Cell offers a streamlined and efficient process for employers to find qualified candidates for their open positions. By posting job listings and participating in virtual recruitment events, companies can connect with talented students who are ready to contribute to their organizations. Overall, the Online Training and Placement Cell is an excellent initiative that can benefit both students and employers alike. It provides a comprehensive platform for career development, job placement, and networking that can help students achieve their goals and help companies find the best talent for their teams.

**7) Future Scope**

* The Online Training and Placement Cell (T&P Cell) has become more important than ever in the wake of the COVID-19 pandemic, as more and more students and employers rely on virtual platforms for job searches and recruitment. As technology continues to evolve, the scope of the Online T&P Cell will also expand to meet the changing needs of the industry. Here are some potential future developments for the Online T&P Cell:
* Virtual Reality-Based Career Guidance: The Online T&P Cell could leverage virtual reality technology to provide students with immersive career guidance experiences.
* Augmented Reality-Based Recruitment Events: Online T&P Cells could host augmented reality-based recruitment events that provide students with a more interactive and engaging job search experience.

**8) References**

* https://w3layouts.com/tag/training-placement-cell/
* <https://themeforest.net/item/campus-recruitment-system/20856917>
* https://www.nitt.edu/home/academics/placement/
* [https://www.researchgate.net/](https://www.researchgate.net/figure/UML-Class-diagram-for-the-monitoring-activity-components_fig3_280773061)

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