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Placement Management System

Dr. K. Geetha[1], Sasmitha V[2], Sowmya S[3], Yasotha R[4]

[1]*M. Sc., M. Phil., SET, Ph.D., Assistant Professor Head Department of Computer Application*
[2,3,4]*UG Student, Department of Computer Application,*
Sri Krishna Adithya College of Arts and Science Kovaipudur, Coimbatore, Tamil Nadu, India
sasmithavenugopal@gmail.com, sowmeow364@gmail.com, rkryyasotha@gmail.com

1.INTRODUCTION

1.1 ABOUT THE PROJECT

Manual Training and Placement which is done at various colleges is by human intervention due to which there is a maximum chance of errors. The major problem is searching and updating the student data. Placement officers have to manage the student's profile and their documents. The Placement Officer has to collect the information of various companies who come for recruitment. They have to arrange profiles of students according to various streams and notify them each time according to company requirements. Placement officers submit the information of students and if any changes or updates are required in the profile of any student, it is to be done manually. This process is so difficult and tedious when the number of users increases. This is tedious and time-consuming. Chances of missing data were also possible. It is also difficult for collecting, managing, and updating student data as the number of students increases.

'Placement Management System' like many other placement management applications, provides information on placement providers and the placements and also keeps up to date information of all students. It is a platform where students can view and assess their opportunities. The system will have different types of accounts for different types of users such as Admin, Student, staff and co-ordinators. A profile for each student is created with the necessary credentials for the portal;They offer a variety of capabilities, including document uploading, resume generating.

The system uses oracle for database management (backend), python programming for visualization(as frontend tool) and will sort the data of the student based on eligibility criteria demanded by the respective companies and a list of eligible candidates will be prepared and they can choose if they are interested to attend that particular drive or test. Based on this a final data-set is created and the interested candidates will be registered automatically by the system. This way it reduces the work of college staff or faculty from the problems caused by human error and wastage of time doing all processes manually.This operation will take much longer to complete manually. The training and placement department needs a console application that can complete this task with a single click. Students can sign up for the platform and enter all the required information more easily with the help of the Placement Management System. Students will also be able to build and download their resumes. They can offer suggestions.

In the console application, the Training and Placement Officer plays a crucial and significant function. They check the accounts of each pupil. Training and Placement Officers can add companies so that students can know which are scheduled for test drives. They are permitted to remove the student from the database. The Training and Placement Officer is given access to the academic year and department filters so they can view students from whichever department they like, reducing data ambiguity. They will be able to observe students from their departments. The student may post offer letters so that others may view them and determine how many offer letters each student has accepted.

It is a project mainly to reduce the workload of the placement cell by keep track of

student performance and companies requirement analysis in a same area moreover it is a structural communication between staffs and students in maintaining the details of students as mentioned above and also Verifies the attendees of the placement and reports to the respective incharge of the placement for the respective students attendance and also maintains the placed students list in an organized manner for an acknowledgment of the management for reviewing overall placement performance and records . Additionally, they have access to the student's full profile and any uploaded files. When creating an account, verification and authentication are finished. This routine process is maintained manually,A better platform will be available for the Training and Placement Officer to keep all data in one place.

SOFTWARE DESCRIPTION

ABOUT PYTHON

Python is a high-level, interpreted programming language that is widely used for various applications such as web development, scientific computing, data analysis, artificial intelligence, and machine learning. It is known for its simplicity, readability, and flexibility, making it one of the most popular programming languages in the world.

Python code is written in plain text and interpreted by the Python interpreter, which executes the code line by line. Python supports multiple programming paradigms, including object-oriented, functional, and procedural programming. It also has a large standard library that provides a wide range of functionalities and modules that can be used in various applications.

Python is an open-source language, which means that its source code is freely available and can be modified by developers. It runs on multiple platforms, including Windows, Linux, and macOS, making it accessible to a wide range of users.

Some of the key features of Python include:

- Easy to learn and use
- Expressive syntax
- Dynamic typing
- Interpreted language
- Modular design
- High-level data structures
- Large standard library
- Extensible and scalable
- Cross-platform support
- Python has a wide range of applications, including:

Web development (using frameworks such as Django, Flask, and Pyramid)

Scientific computing and data analysis (using packages such as NumPy, SciPy, and Pandas) Machine learning and artificial intelligence (using libraries such as TensorFlow, PyTorch, and scikit-learn)

Desktop application development (using libraries such as PyQt and wxPython) Game development (using libraries such as Pygame) Overall, Python is a versatile and powerful programming language that can be used for a wide range of applications. Its simplicity, flexibility, and vast community support make it an ideal choice for developers and learners alike

SPYDER IDE

Python Spyder is an open-source, cross-platform integrated development environment (IDE) for scientific computing with Python. It is designed specifically for data analysis, scientific programming, and computational research.

provides a range of advanced features that make it a powerful tool for data science, including:

➢ Code Editor: Spyder has a code editor with features such as syntax highlighting, code completion, code folding, and indentation guides that help to write clean and readable code.

➢ Interactive Console: Spyder has an interactive console where you can run and test code snippets, execute individual lines of code, and see the results in real-time.

➢ Variable Explorer: The Variable Explorer provides an overview of all the variables in memory, including their names, types, and values. You can use it to view, modify, and filter variables during the debugging process.

➢ Debugger: Spyder has a built-in debugger that allows you to set breakpoints and step through code to find and fix errors.

➢ Profiler: The Profiler helps to optimize code by identifying the most time-consuming parts of the code and suggesting ways to optimize it.

➢ IPython console: Spyder provides an IPython console that allows you to run code snippets interactively, making it ideal for exploratory data analysis and prototyping.

➢ Code Navigation: Spyder allows you to navigate through your code quickly and easily using the Go to Definition, Find Symbol, and Find References features.

➢ Project Explorer: The Project Explorer provides an overview of the files and folders in your project, making it easy to navigate and manage large code bases.

Overall, Python Spyder is an excellent choice for data scientists and scientific programmers who want a powerful IDE with advanced features for data analysis, scientific programming, and computational research.

THINKER

Thinker is a Python library designed to simplify database programming in Python. It provides a high-level, intuitive interface for interacting with databases, including querying and modifying data. Thinker supports a wide range of databases, including PostgreSQL, MySQL, SQLite, Oracle, and more. It also includes support for advanced features like migrations, indices, and constraints.

Ox_Oracle

Ox_Oracle is a Python library that provides a simple and efficient way to interact with Oracle databases. It uses the cx_Oracle library to communicate with the database, providing a high-level interface for querying and modifying data. Ox_Oracle includes support for all major Oracle database features, including transactions, stored procedures, and advanced data types. It is designed to be easy to use and highly performant, making it ideal for both small and large-scale applications.

ORACLE

Oracle is a computer software company that provides a wide range of enterprise software products and services. Oracle's software offerings include database management systems, enterprise resource planning (ERP) software, customer relationship management (CRM) software, human capital management (HCM) software, supply chain management (SCM) software, and more.

Oracle Database is a popular database management system that is used by many large organizations to store and manage their data. It is known for its reliability, scalability, and security features. Oracle's ERP software, known as Oracle E-Business Suite, is designed to help businesses manage their financials, human resources, procurement, and other key business processes.

Oracle's CRM software, known as Oracle Sales Cloud, is designed to help sales teams manage their customer interactions and improve their sales performance. Oracle HCM software, known as Oracle HCM Cloud, is designed to help businesses manage their HR processes, including recruitment, employee management, and payroll. Oracle SCM software, known as Oracle Supply Chain Management Cloud, is designed to help businesses manage their supply chain operations, including procurement, inventory management, and logistics.

Overall, Oracle's software offerings are designed to help businesses of all sizes streamline their operations, increase efficiency, and improve their bottom line. With its robust features, reliable performance, and extensive support, Oracle is a leading choice for many organizations looking for enterprise software solution

2.2 PROPOSED SYSTEM

Our project aims to streamline the placement cell process by consolidating all details about upcoming drives in a single area. This includes links and requirement details to help students prepare. Time schedules and attendee lists are generated and displayed to authenticated logins along with performance feedback of the students.

We have eliminated the space between the placement cell and students by introducing a bot system that allows for easy interaction. This not only reduces the workload of the placement cell, but also makes it easier to maintain a list of students and store data according to the requirement of the placement officer in a single storage medium.

Our platform also includes a special area where students can post their resumes and update them frequently to reflect improvements in their performance. They can also post offer letters they have received, allowing the placement cell to keep track of the placed student list accordingly.

To increase opportunities for non-placed students, our system includes opportunity-based shuffling. This means that non-placed students will be preferred over placed students based on company requirements, which are controlled by the placement officer.

Finally, we have created a shortlisted student data to derive willingness and avoid any faults in non-eligible approval. By implementing these changes, we hope to improve the efficiency and effectiveness of the placement cell process and increase the number of successful placements for students.

2.2.1 BENEFITS OF PROPOSED SYSTEM

★ Attendees and round timings can be viewed by staff and higher officials in real-time.

★ Mixed people teams can be generated automatically for group discussions to save time and reduce errors.

★ All data can be stored in a central location and accessed from any location.

★ All details about upcoming drives can be viewed in a single, convenient location.

★ Placement cell can attach willingness forms to eligible students to encourage participation.

★ Non-eligible students will not be allowed to attend drives.

★ Communication gap between the placement cell and individual students is minimized DESIGN PHASE

The design phase is a crucial step in any software development project, as it lays the foundation for the entire system. Here are some important aspects to consider for your project:

★ User Interface Design: The user interface is the primary interaction point for the users with the system. It is important to design a clean, intuitive, and user-friendly interface for each of the different types of users in your system. For example, the admin dashboard should have different options to upload and view drive details, while the student dashboard should allow for uploading resumes and viewing available drives.

★ Database Design: Since you are using Oracle as your backend, it is important to design the database schema with care. You need to ensure that the database schema is optimized for the specific needs of your project, and that it is designed to support all the required features of your system. For example, you will need tables to store drive details, student information, attendance records, and willingness checks.

★ System Architecture: The system architecture should be designed to support the specific requirements of your project. You need to consider factors such as scalability, security, and performance. For example, you will need to ensure that the system can handle multiple concurrent users without any lag or downtime, and that the data is secured from unauthorized access.

★ Functional Requirements: You need to specify the functional requirements of your system in detail. This includes features such as uploading and viewing drive details, attendance management, willingness checks, and shortlisting. Each feature should be clearly defined and documented, with a list of inputs, outputs, and any specific rules or validations required.

★ Non-Functional Requirements: You also need to specify the non-functional requirements of your system, such as performance, security, and usability. For example, the system should be able to handle a large number of users, and the data should be secured with appropriate encryption and access controls.

★ Testing Strategy: It is important to design a testing strategy that covers all the functional and non-functional

requirements of your system. You need to consider factors such as manual testing, automated testing, performance testing, and security testing. Each feature should be tested thoroughly to ensure that it meets the specified requirements.

★ Deployment Plan: You need to plan the deployment of your system, including the hardware and software requirements, the installation and configuration process, and any other dependencies. You also need to plan for any maintenance and support requirements, and ensure that the system is easily scalable as needed.

Overall, the design phase is critical to the success of your project. You need to ensure that all the requirements are clearly defined and documented, and that the system is designed to meet those requirements. This will help to minimize risks and ensure that your project is delivered on time and within budget.

DATA FLOW DIAGRAM
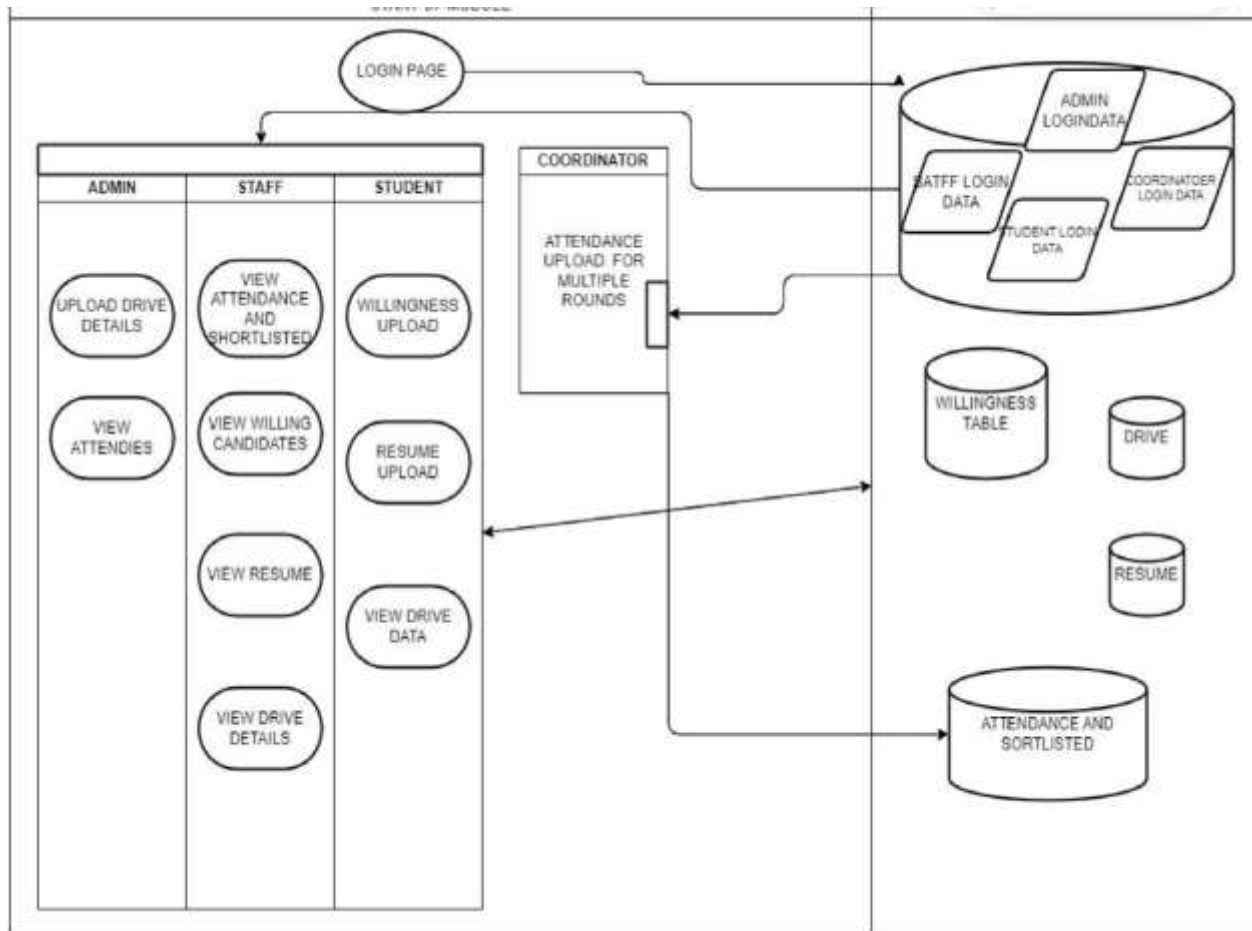
3.6 MODULE

The proposed intelligent packet filtering has the following modules :

→ Database module

→ Admin Module

→ Student Module

→ Coordinator Module

→ Staff Module

→ Shortlist Module

Database Module

➢ Define a connection to the Oracle database

➢ Create a table for willingness with columns such as student ID, willingness status, timestamp, etc.

➢ Create a table for drive details with columns such as company name, job position, salary, etc.

➢ Create a table for a resume with columns such as student ID, resume file name, timestamp, etc.

➢ Create a table for attendance with columns such as student ID, round number, status, timestamp, etc.

Admin Module

➢ Define a function to retrieve attendance data for each round from the database

➢ Define a function to upload the drive details to the database

Student Module

➢ Define a function to upload the willingness form to the database

➢ Define a function to upload the resume to the database

➢ Define a function to retrieve the drive details from the database

➢ Define a function to retrieve the willingness status from the database

Coordinator Module

➢ Define a function to retrieve attendance data for each round from the database

➢ Define a function to upload attendance data for attending students to the database

Staff Module

➢ Define a function to retrieve attendance data for each round from the database

➢ Define a function to retrieve the drive details from the database

➢ Define a function to download student resumes from the database

➢ Define a function to retrieve the willingness status from the database

Shortlist Module

➢ Define a function to retrieve shortlisted student data from the database

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