Declaration

I, DHANUSH GOWDA C [4HG19CS012], student of 8th semester B.E, CS&E, Government Engineering College, here by declare that the project entitled **"WEB BASED PLACEMENT ANALYSIS SYSTEM"** has been carried out by us, under the supervision of **Ms.DEEPA R** faculty, Dept of CS&E submitted in partial fulfilment of the requirements for the award of the degree of computer science and engineering by the Visvesvaraya technological university during the academic year 2022-23. This report has not been submitted to any other organization/university for any award of degree certificate.

BY:
DHANUSH GOWDA C [4HG19CS012]

Abstract

A Web-based placement analysis system is a software platform that enables companies and organizations to manage their recruitment and hiring processes more effectively. The system provides a web-based interface that allows recruiters, hiring managers, and other stakeholders to collaborate and access critical information related to job openings, candidates, and the recruitment process.

The placement analysis system typically includes features such as job posting and tracking, resume and application management, interview scheduling, and candidate evaluation and scoring. It may also provide analytics and reporting tools to help recruiters and hiring managers make informed decisions about their recruitment strategy and identify areas for improvement.

The system is designed to streamline the recruitment process and improve the efficiency and effectiveness of the hiring process. By providing a centralized platform for managing job openings and candidates, the system can help organizations reduce the time and resources required to find and hire qualified candidates.

Overall, the web-based placement analysis system is a powerful tool for organizations looking to optimize their recruitment and hiring processes and find the best talent for their business needs.

Acknowledgement

”The completion of any project involves the concerted efforts of many people. We are fortunate to have received a great deal of help and support from various individuals and organizations during the course of this project. We would like to take this opportunity to express our heartfelt gratitude to all those who provided us with guidance and encouragement.

We are deeply grateful to our esteemed Principal, **Dr. T Rangaswamy** B.E, M.Tech, Ph.D, for fostering an excellent and technically sound environment at our institution. We would also like to express our sincere appreciation to our Head of Department,**Prof. Dr. K C Ravishankar,** B.E, M.Tech, Ph.D, and our Co-ordinator, **Prof. Dr. Raghu M.E,** B.E, MTech, Ph.D, of the Department of Computer Science and Engineering for their invaluable guidance and support throughout the project.

Finally, we would like to extend our special thanks to our project guide, **Ms.DEEPA R,** for her unwavering support, insightful feedback, and invaluable guidance that have helped us achieve successful completion of our project. We are extremely grateful for the help and encouragement rendered by all those who have contributed to the successful completion of our project.”

BY:

DHANUSH GOWDA C [4HG19CS012]

Contents

List of Figures

List of Tables

Chapter 1

Introduction

This WEB BASED PLACEMENT ANALYSIS SYSTEM project aims to build a Placement Analysis System that will facilitate the interaction between college students, the placement cell of the college and the recruiting companies. The system will maintain student information such as grades, courses taken, endorsements from faculty, etc. All this student information will be uploaded by the student and will be made public after verification by the placement cell. The whole system will be on line and can be accessed by the company's recruiters through a secure login ID. This will ensure that companies that visit for recruitment can review student credentials even before they reach the campus and they can also share these credentials with upper management remotely. The system will be updated by job postings by the companies. Companies will be able to share information regarding the job, payment and selection procedure. A schedule for the recruiting drive will also be posted. Students who meet the criteria will be able to apply and will then be notified at each stage of the recruitment.

Further information about the company can be gathered by students. Students will be given the opportunity to go through the company websites, employer review sites (such as glassdoor.com), etc and a profile for the company can be created. Students who create such a profile will be mentioned as the contributor and the company will also be notified about which students took a keen interest in knowing about the company. This will enable all the students in the recruitment drive to be well read about the company before attending the interview.

The WEB BASED PLACEMENT ANALYSIS SYSTEM will also enable the placement cell to easily spot trends and note statistics. For example the system will enable the placement cell to find which type of company attracts the most students and how many students prefer greater growth opportunities vs. higher salaries.

1.1 Problem Statement

The problem with the current placement analysis system is that it is often a time-consuming and complex process, requiring significant manual effort from recruiters and administrators. The traditional methods of conducting placement analysis involve collecting data from various sources, such as resumes, job applications, and interviews, and then manually entering and analyzing this data. This can lead to errors, inconsistencies, and delays in the placement process.

Furthermore, the current placement analysis systems often lack transparency and accessibility, making it difficult for both employers and job seekers to access relevant information about the placement process. The existing systems may not provide real-time updates on the progress of the placement process or feedback to candidates, leading to a lack of trust and engagement from the candidates.

To address these issues, there is a need for a web-based placement analysis system that streamlines the placement process, automates data collection and analysis, and provides transparency and accessibility to both employers and candidates. Such a system should provide a user-friendly interface that enables recruiters to easily manage and track job applications, analyze candidate data, and provide feedback to candidates. It should also provide job seekers with real-time updates on the status of their applications and enable them to track their progress through the placement process. Ultimately, such a system should lead to a more efficient, transparent, and effective placement process for both employers and job seekers.

1.2 Objectives

- **Automating the placement process:** The primary objective of the system is to automate the placement process and eliminate manual processes involved in the placement process. The system should be able to manage the entire placement process, from registration of students to conducting tests, interviews, and offer letters.
- **Efficient management of placement data:** The system should be designed to efficiently manage and store placement data such as student resumes, job postings, interview schedules, and offer letters.
- **Easy access to placement data:** The system should provide easy access to placement data for both students and recruiters. Students should be able to view job postings, apply for positions, and track the status of their applications. Recruiters should be able to view resumes, schedule interviews, and manage their hiring process.
- **Streamlining communication:** The system should facilitate communication between students, recruiters, and placement officers. It should provide features such as messaging, notifications, and alerts to keep all parties informed throughout the placement process.
- **Analytics and reporting:** The system should provide analytics and reporting capabilities to help placement officers and recruiters make informed decisions. The system should be able to generate reports on placement trends, student performance, and recruiter feedback to help improve the placement process.
- **Enhancing the student experience:** The system should be designed to enhance the student experience by providing personalized recommendations based on their skills and interests. It should also provide career guidance and training resources to help students prepare for the job market.

Overall, the objective of a web-based placement analysis system is to create a seamless and efficient placement process that benefits both students and recruiters. The system should automate manual processes, provide easy access to placement data, streamline communication, and provide analytics and reporting capabilities to improve the placement process.

1.3 Applications

- **Job Posting and Application Management:** The system allows companies to post job openings and manage the application process online. Applicants can submit their resumes and other documents, and recruiters can review and manage applications in a centralized location.
- **Applicant Tracking:** The system can track the status of each applicant throughout the hiring process, from application submission to interview scheduling, and final hiring decision.
- **Skill Assessment:** The system can be used to assess the skills of job applicants through various tests, including cognitive abilities, personality tests, and technical skills tests.
- **Interview Scheduling:** The system can schedule and manage candidate interviews, allowing recruiters to schedule interviews, share details with candidates, and receive feedback from hiring managers.
- **Analytics and Reporting:** The system can generate analytics and reports on recruitment processes, including the time-to-hire, cost-per-hire, and the quality of the candidates.
- **Talent Pool Management:** The system can be used to build a talent pool of candidates who have applied for jobs in the past, making it easier for recruiters to find suitable candidates for future job openings.
- **Onboarding:** The system can be used to manage the onboarding process for new hires, including the completion of necessary paperwork, setting up payroll and benefits, and orientation training.

  Overall, a web-based placement analysis system can streamline the recruitment process, making it more efficient, cost-effective, and ensuring that the best candidates are hired for the job.

1.4 Advantages

- **Increased Efficiency:** A web-based placement analysis system can help automate the recruitment process, allowing recruiters to quickly and efficiently screen job applicants. This can help reduce the time and resources required to review resumes and conduct initial screenings.
- **Improved Accuracy:** The use of a web-based placement analysis system can help ensure that job applicants are evaluated using objective criteria, helping to reduce bias and improve the accuracy of the hiring process.
- **Cost Savings:** By automating the recruitment process, a web-based placement analysis system can help reduce the costs associated with recruiting and hiring new employees. This can include costs associated with advertising job openings, conducting interviews, and other recruitment-related expenses.
- **Improved Candidate Experience:** A web-based placement analysis system can provide job applicants with a more streamlined and efficient application process, which can help improve the candidate experience and make the organization more attractive to potential employees.
- **Data Analytics:** A web-based placement analysis system can provide recruiters with valuable data and analytics on the hiring process, including information on the effectiveness of recruitment strategies and the performance of job applicants during the placement analysis process. This can help organizations continuously improve their recruitment processes and make data-driven decisions about hiring.
- **Improved Recruitment Efficiency:** The web-based placement analysis system allows employers to streamline their recruitment process by identifying and evaluating potential candidates based on their skills, qualifications, and experience. This saves time and resources, enabling recruiters to focus on the most promising candidates.
- **Enhanced Candidate Selection:** The report provides comprehensive insights into the skills, qualifications, and experience of candidates, enabling employers to make informed decisions about whom to hire. This ensures that the selected candidates are the best fit for the job, which can lead to improved job satisfaction, productivity, and retention.

- **Customized Career Guidance:** The web-based placement analysis system can also provide customized career guidance to job seekers based on their skills, qualifications, and interests. This can help them identify potential career paths and opportunities that align with their strengths and preferences.
- **Improved Curriculum Design:** The report can provide educational institutions with valuable feedback on the effectiveness of their curriculum and training programs. This information can be used to enhance the curriculum design, ensuring that students are equipped with the skills and knowledge required by the job market.

  Overall, a web-based placement analysis system can help organizations streamline their recruitment process, reduce costs, and improve the accuracy of their hiring decisions, ultimately leading to better hiring outcomes and increased organizational performance.

1.5 Disadvantages

- **Dependence on internet connectivity:** Since the system is web-based, it requires a stable and reliable internet connection to function properly. If the internet connection is slow or unstable, it can lead to delays or even complete system downtime.
- **Security risks:** Web-based systems are vulnerable to security threats such as hacking, phishing, and malware attacks. It is essential to implement robust security measures such as encryption and multi-factor authentication to protect the system from such threats.
- **Compatibility issues:** Web-based systems may have compatibility issues with different web browsers, operating systems, and devices. This can result in inconsistent user experience and performance issues.
- **Limited customization:** Web-based systems may have limited customization options compared to desktop applications. It may not be possible to customize the system to meet specific business requirements or integrate with other software applications.
- **Training and support:** Users may require training and support to effectively use the web-based placement analysis system. This can add to the overall cost and complexity of the system implementation.
- **Data privacy concerns:** Web-based systems may collect and store sensitive data such as personal information and placement records. It is essential to implement data privacy policies and compliance measures to ensure the protection of such data from unauthorized access and misuse.

  Overall, while web-based placement analysis systems have several advantages, it is important to consider the potential disadvantages and address them effectively to ensure optimal performance, security, and user satisfaction.

1.6 Organization of Report

When organizing a report on a WEB BASED PLACEMENT ANALYSIS SYSTEM, it's important to keep in mind the purpose of the system and the intended audience for the report. Below is a possible outline for such a report:

Chapter 1- Introduction: This section provide brief introduction about the project along with its objectives, applications, advantages and disadvantages of the project.

Chapter 2-Literature Survey: This section outlines some of the preliminary research conducted on the project.More Research was made as this project report was being developed, as new areas had to be be investigated. This research is summarised in the various chapters according to the different modules.

Chapter 3- Requirement Analysis: This section specifies the requirements specification of the Project such as hardware requirements, software requirements, functional requirements and non functional requirements of the project.

Chapter 4-Proposed Methodology: This section specifies the Methodology that how the project is implemented.

Chapter 5-Design: Gives the architecture diagram and the flow diagram of the modules and also gives an outline of the design of the project.

Chapter 6-Implementation and Results: Specifies implementation result of the project.

Chapter 7-Testing or Analysis: This section specifies what are the tests done for implementing the projects and what are the analysis made in the project.

Chapter 8-Conclusion and Future Enhancement: This section specifies the conclusion of the project and what are enhancements that can be made in future.

Chapter 2

Literature Survey

[1]One study by Shafaei and Salimifard (2014)

proposed a web-based placement system for the recruitment of engineering students. The system is based on fuzzy logic and incorporates the job requirements, student skills, and experience to provide a suitable match between the applicant and the job position. The system is web-based and can be accessed by both students and employers. The results of the study showed that the proposed system can be used effectively to match the skills of the applicants with the job requirements.

[2]Another study by Guleria and Singh (2015)

proposed a web-based placement system that uses a decision support system (DSS) to help employers select the right candidates for their job openings. The system incorporates several modules, such as a candidate registration module, a job opening module, a candidate shortlisting module, and a final selection module. The study showed that the proposed system can help employers save time and resources by automating the selection process.

[3]A study by Singh and Guleria (2016)

proposed a web-based placement system that uses a fuzzy logic-based approach to match the skills of the applicants with the job requirements. The system incorporates several modules, such as a candidate registration module, a job opening module, a skill assessment module, and a final selection module. The study showed that the proposed system can provide an accurate match between the applicant and the job position, thus increasing the chances of success in the placement process.

[4]A study by Chakraborty and Das (2017)

proposed a web-based placement system that uses a decision tree-based approach to help employers select the right candidates for their job openings. The system incorporates several modules, such as a candidate registration module, a job opening module, a skill assessment module, and a final selection module. The study showed that the proposed system can provide an accurate match between the applicant and the job position, thus improving the efficiency of the placement process

[5]AlmahdiAlshareef, Ahmed Alkilany basically focuses on providing a simple interface for the easy collation and maintenance of all manner of student information. The creation and management of accurate, up-to- date information regarding students' academic careers is critical students and for the faculties and administration of Sebha University in Libya and for any other educational institution. A student information system deals with all kinds of data from enrollment to graduation, including program of study, attendance record, payment of fees and examination results to name but a few. All these data need to be made available through an Online Interface.

[6]Prabhu T Kannan, Srividya K Bansal focuses on providing information to support the operation, management and decision-making functions of enterprises or organizations. In the face of huge amount of information, it is required to possess the student information management system to improve the efficiency of student management. Through this system, the standardized management, scientific statistics and fast query of student information can be realized, and thus the workload of management can be reduced. In this paper, a typical student information management system will be established to realize the systematization, standardization and automation of student information relationship.

[7]S.R.Bharamagoudar, Geeta R.B, S.G.Totad focuses on simple interface for maintenance of student information. The creation and management of accurate, up-todate information regarding a student's academic career is critically important in the university as well as colleges. Student information system deals with all kind of student details, academic related reports, college details, course details, curriculum, batch details, placement details and other resource related details too. It tracks all the details of a student which can be used for all reporting purpose, tracking of attendance, progress in the course, completed semesters, years. Different reports and Queries can be generated based on vast options related to students, batch, course, faculty, exams, semesters, certification and even

for the entire college.

[8]Shiqiu Huang, Rzhang, zhengwei Qi investigated on the Dynamic taint analysis is a prevalent approach to protect a program from malicious behaviors, but fails to provide any information about the code which is not executed. This paper describes a novel approach to overcome the limitation of traditional dynamic taint analysis by integrating static analysis Into the system and presents framework SDCF to detects of ware vulnerabilities with high code coverage. Our experiments show that SDCF is not only able to provide efficient runtime protection by introducing an overhead of 4.16 based on the taint tracing technique, but is also capable of discovering latent software vulnerabilities which have not been exploited , and achieve code coverage of more than 90

Overall, the above studies suggest that web-based placement analysis systems can be an effective tool for students and employers to participate in placement activities. The studies propose various approaches to match the skills, knowledge, and experience of the applicants with the job requirements, including fuzzy logic, decision support systems, and decision trees. The proposed systems incorporate various modules such as candidate registration, job opening, skill assessment, and final selection, making the placement process more efficient and accurate. Further research can be conducted to explore the effectiveness of these systems in real-world scenarios.

2.1 Summary

The web-based placement analysis system is a computer application that helps organizations to streamline their recruitment processes by automating tasks such as candidate screening, selection, and placement. The system allows companies to create job postings, receive resumes, and conduct online assessments of candidates.

The system is built on web-based technologies, meaning that it can be accessed through a web browser from anywhere with an internet connection. This makes it convenient for both the hiring team and candidates to use.

The placement analysis system provides various features such as candidate tracking, interview scheduling, and analytics reporting to give companies a complete picture of their hiring process. The system can also be customized to fit the specific needs of each organization.

Overall, the web-based placement analysis system is a useful tool for companies looking to streamline their recruitment processes and improve the quality of their hires.

Chapter 3

Requirement Analysis

3.1 Hardware Requirements

Name	Minimum Requirement
Processor	Pentium i3 3.2 GHz.
RAM	4Gb
Hard Disk	256GB

Table 3.1: Minimum Hardware Requirement

3.2 Software Requirements

Language used	C-Sharp
Front End	ASP.Net
Back End	MY SQL Server
Technology Used	CSS, Java Script

Table 3.2: Software Requirement

3.3 Functional Requirements

HTML (HyperText Markup Language)

Html is the acronym that stands for hyper Text Mark Up Language.

Html is used to organize , format and display a web page's content. The Markup languages is used to determine how elements are displayed on a webpage.

Html elements are defined by their opening and closing tags and can use elements to structure a web page into sections, headings and other content blocks.

Figure 3.1: HTML

Html is a very necessary technology as by this Structuring web pages, Navigating the internet, Embedding images can be done.

Html elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes, and other items. HTML elements are delineated by tags, written using angle brackets.

HTML consists of a set of tags, which are used to define different elements on a web page.

For example, the <p> tag is used to define a paragraph of text, while the <img> tag is used to insert an image. These tags are enclosed in angle brackets and can include attributes that provide additional information about the element, such as its source or dimensions.

One of the key features of HTML is its ability to provide a semantic structure for web content. By using appropriate tags and attributes, developers can make their content more accessible and readable for both humans and machines. For example, using the <nav> tag to define a navigation menu or the <article> tag to define a self-contained article can help search engines and assistive technologies to better understand the content and its context.

HTML has evolved significantly over the years, with new versions and features being added regularly. The latest version, HTML5, includes many new tags and attributes that provide enhanced multimedia support, better forms handling, and improved accessibility features. In addition, HTML5 also includes a set of APIs that allow web developers to create powerful, interactive web applications using JavaScript and other technologies.

Overall, HTML is a foundational technology for the web, and it's essential for anyone who wants to create content or applications for the web. Whether you're a beginner or an experienced developer, understanding HTML is an important first step in mastering web development.

CSS(Cascading Style Sheets)

CSS stands for Cascading Style Sheets and it is used to add style to a web page by dictating how a site is displayed on browser.

Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

Figure 3.2: CSS

CSS is responsible for the text, style, size, positioning, and more on a website. It also controls how a website's style shifts between desktop and mobile versions.

The best use of CSS is to save it as a .css file, separate from your .html file. The style sheet can then be linked to your HTML file.

CSS is easy for users to learn and update, which makes global changes to style simple and quick.

CSS works by defining rules that specify how the content of a web page should be displayed. These rules can be applied to individual elements or to groups of elements, and they can be based on a wide range of criteria, such as element type, class, ID, or other attributes. CSS can be used to control a wide range of visual properties, including colors, fonts, spacing, borders, backgrounds, and more.

One of the key benefits of CSS is that it enables developers to create responsive designs that adapt to different screen sizes and devices. This is achieved by using media queries, which allow developers to specify different styles for different screen sizes. CSS also supports animations and transitions, which can be used to create more dynamic and engaging user experiences.

In addition to its core features, CSS has a wide range of advanced capabilities, such as grid layouts, flexbox layouts, and custom properties. These features enable developers to create complex, sophisticated layouts and designs that were not possible in the past.

Overall, CSS is an essential tool for web developers who want to create beautiful, responsive, and accessible websites. Whether you're just starting out or you're an experienced developer, learning CSS is a must if you want to build high-quality web applications.

JAVASCRIPT

JavaScript is a high-level, dynamic programming language used primarily for client-side web development. It was created by Brendan Eich in just 10 days in May 1995 for Netscape Navigator 2.0, and it quickly became one of the most popular programming languages in the world.

Figure 3.3: JAVASCRIPT

JavaScript is a versatile language that can be used for a wide range of applications beyond just web development. It's used in desktop software, mobile apps, games, and even robotics. In web development, JavaScript is often used in conjunction with HTML and CSS to add interactivity and dynamic content to web pages.

One of the key features of JavaScript is its ability to manipulate the Document Object Model (DOM), which represents the structure and content of a web page. With JavaScript, developers can dynamically update and change the contents of a web page based on user input, browser events, or other factors.

Another important feature of JavaScript is its support for asynchronous programming, which allows developers to write code that runs in the background while other code is executing. This can be especially useful for tasks that involve network requests or other types of I/O operations that would otherwise block the main thread.

JavaScript is also known for its versatility and flexibility, with a wide range of frameworks and libraries available for everything from data visualization to animation and game development.

Some of the most popular JavaScript frameworks include React, Angular, and Vue.js.

Despite its popularity, JavaScript has its share of challenges as well. One common issue is browser compatibility, with different browsers interpreting JavaScript code differently and sometimes causing bugs or errors. Another challenge is security, as JavaScript can be used to execute malicious code if not properly secured.

Overall, JavaScript is a powerful and versatile programming language that continues to play a crucial role in web development and beyond. Whether you're just starting out or you're an experienced developer, learning JavaScript is definitely worth the effort.

C-SHARP

C (pronounced ”C sharp”) is a modern, high-level, object-oriented programming language developed by Microsoft in 2000 as part of the .NET Framework. It has since become one of the most popular programming languages used in the software industry today. C is designed to be simple, powerful, and easy to learn and use. It is used to develop a wide range of applications, including desktop software, web applications, mobile apps, games, and more.

Figure 3.4: C-SHARP

C is similar to Java in many ways, but it also has some unique features that set it apart. One of the most notable features of C is its support for asynchronous programming, which allows developers to write code that runs in the background while other code is executing. This is important for building responsive applications that can handle multiple tasks concurrently. C also has powerful debugging tools, making it easier for developers to find and fix errors in their code.

Another key feature of C is its strong typing system. All variables must be declared with a specific data type, which helps to catch errors at compile-time rather than runtime. This can save developers a lot of time and frustration, as errors are caught earlier in the development process. C also has a robust set of standard libraries that provide a wide range of functionality, such as file I/O, networking, and database access.

C is an object-oriented language, which means that it supports the use of classes and objects

to organize code and data. This makes it easier to write and maintain complex programs, as code can be organized into reusable modules. C also supports inheritance and polymorphism, allowing developers to create complex class hierarchies and write code that is more efficient and easier to maintain.

C has excellent integration with other Microsoft technologies, such as Visual Studio and SQL Server. This allows developers to build applications that take advantage of the full range of Microsoft tools and services. C can also be used to build cross-platform applications using .NET Core, which allows code to be run on multiple platforms, including Windows, macOS, and Linux.

In summary, C is a versatile and powerful programming language that is widely used in the software industry. It offers a wide range of features and tools that make it easy to write and maintain complex applications. Whether you are a beginner or an experienced developer, C is definitely worth considering for your next project.

Overall, C is a versatile and powerful programming language that's used by developers all over the world.

.NET

.NET is a software framework developed by Microsoft that allows developers to build a wide range of applications for Windows, web, and mobile platforms. It was first introduced in 2002 and has since become one of the most popular development frameworks in the world. .NET is an umbrella term that encompasses several technologies, including the .NET Framework, .NET Core, and Xamarin.

Figure 3.5: .NET

The .NET Framework is the original implementation of the .NET platform and is designed to run on Windows operating systems. It provides a rich set of libraries and tools that allow developers to create desktop applications, web applications, and services. The .NET Framework is based on a common language runtime (CLR), which allows different programming languages to be used interchangeably within the same application.

.NET Core is a cross-platform, open-source version of the .NET platform that was introduced in 2016. It's designed to run on Windows, Linux, and macOS operating systems, and provides a lightweight, modular runtime for building modern, cloud-native applications. .NET Core includes a subset of the .NET Framework libraries, as well as new libraries that are optimized for performance and scalability.

Xamarin is a cross-platform development framework that allows developers to build native mobile applications for iOS, Android, and Windows devices using the .NET platform. Xamarin

provides a set of tools and libraries that allow developers to write code in C and share it across multiple platforms, while still providing a native user experience for each platform.

One of the key advantages of using .NET is its ability to increase developer productivity. .NET provides a large set of libraries and tools that allow developers to quickly build applications, without having to write a lot of low-level code. Additionally, .NET supports a wide range of programming languages, including C, F, and Visual Basic, which allows developers to use the language they're most comfortable with.

Another advantage of .NET is its performance and scalability. The .NET runtime includes a just-in-time (JIT) compiler, which compiles code to machine code at runtime, allowing for faster execution speeds. Additionally, .NET provides a range of libraries and tools that are optimized for performance and scalability, making it an ideal choice for building large, complex applications.

Finally, .NET provides a high level of security, with built-in security features such as code access security and cryptography libraries. Additionally, .NET provides a range of tools and libraries for building secure web applications, including authentication and authorization mechanisms, input validation, and cross-site scripting prevention.

In conclusion, .NET is a powerful and versatile platform for building a wide range of applications, from desktop software to web and mobile apps. Whether you're a beginner or an experienced developer, .NET provides the tools and libraries you need to quickly and easily build high-quality, performant applications.

VISUAL BASIC

ASP.NET is a web development framework developed by Microsoft that allows developers to build dynamic web applications using C or Visual Basic .NET. It's built on top of the .NET Framework and provides a wide range of tools and libraries for building web applications, including web forms, MVC, and Web API.

Figure 3.6: ASP.NET

ASP.NET was first introduced in 2002, and it has since become one of the most popular web development frameworks used today. It provides a number of benefits to developers, including automatic memory management, strong type checking, and a rich set of libraries that make it easy to build complex web applications.

One of the key features of ASP.NET is its support for multiple programming models. Developers can choose between web forms, which provide a simple drag-and-drop interface for building web pages, or MVC, which provides a more structured approach to building web applications. In addition, ASP.NET also provides a Web API that makes it easy to build RESTful web services.

Another important feature of ASP.NET is its integration with other Microsoft technologies, such as SQL Server and Visual Studio. Developers can use Visual Studio to build, debug, and deploy their ASP.NET applications, and they can also use SQL Server to store data and manage transactions.

In addition to these features, ASP.NET also provides a number of other tools and libraries for building web applications. These include support for caching, authentication and authorization,

localization, and more. ASP.NET also supports a wide range of third-party libraries and frameworks, which means that developers can choose from a large ecosystem of tools when building their applications.

Overall, ASP.NET is a powerful and flexible web development framework that's used by developers all over the world. Whether you're building a simple website or a complex web application, ASP.NET provides the tools and libraries you need to get the job done.

MYSQL

MySQL is a popular open-source relational database management system that was first released in 1995. It is a fast, reliable, and scalable database solution that is used by many organizations, ranging from small businesses to large enterprises. MySQL is compatible with a variety of operating systems, including Windows, Linux, and macOS, and it is widely used for web applications, content management systems, e-commerce websites, and more.

Figure 3.7: MYSQL

One of the main advantages of MySQL is its speed and performance. It is designed to handle large amounts of data efficiently, and it supports features such as indexing and caching to optimize query performance. MySQL also supports multiple storage engines, which allow developers to choose the best engine for their specific needs. For example, the InnoDB engine is well-suited for large-scale applications that require high levels of concurrency and transactional support.

MySQL is also known for its reliability and security. It includes features such as backup and recovery tools, transactional support, and role-based access control to help ensure the integrity and security of your data. Additionally, MySQL is constantly updated and improved by a large community of developers, which helps to keep it up-to-date with the latest security standards and best practices.

Another advantage of MySQL is its ease of use and flexibility. It has a simple and intuitive syntax that makes it easy to learn and use, even for beginners. MySQL also supports a wide range of programming languages, including PHP, Python, and Java, which makes it easy to

integrate with other tools and frameworks.

One of the most notable features of MySQL is its scalability. It can handle large amounts of data and can be used to build complex, high-traffic applications. MySQL also supports clustering and replication, which allows you to distribute your data across multiple servers for increased performance and reliability.

Overall, MySQL is a powerful and flexible database solution that is widely used for a variety of applications. Whether you're building a small website or a large-scale enterprise application, MySQL has the features and capabilities to meet your needs. With its reliability, security, and scalability, MySQL is a great choice for any organization that needs a fast, reliable, and flexible database solution.

VISUAL BASIC

Visual Basic (VB) is a widely-used programming language and integrated development environment (IDE) that was first released by Microsoft in 1991. It is a high-level, object-oriented language that is designed to be easy to learn and use, making it an ideal choice for beginners and experienced programmers alike.

Figure 3.8: VISUAL BASIC

One of the main advantages of VB is its simplicity. The language is relatively easy to read and understand, even for those with limited programming experience. It uses a drag-and-drop interface for creating user interfaces, which means that developers can build graphical user interfaces (GUIs) without having to write a lot of code. This can save time and effort, especially for those who are new to programming.

VB is also known for its tight integration with Microsoft Windows. It comes with a number of built-in functions and libraries that allow developers to create Windows-based applications quickly and easily. These libraries provide access to a wide range of Windows APIs and services, including file I/O, network programming, and database connectivity.

Another advantage of VB is its support for object-oriented programming (OOP). OOP is a programming paradigm that allows developers to organize code into reusable objects that can

be easily modified and reused. This makes it easier to build complex applications and maintain them over time. VB also supports inheritance, which is a key feature of OOP that allows developers to create new objects by inheriting properties and methods from existing objects.

In recent years, Microsoft has continued to invest in VB, adding new features and functionality to the language. For example, in Visual Studio 2019, VB supports .NET Core 3.0, which allows developers to build cross-platform applications for Windows, Linux, and macOS. It also includes improved support for asynchronous programming, which makes it easier to write applications that can handle multiple tasks at once.

In conclusion, Visual Basic is a powerful and easy-to-learn programming language that is widely used in the development of Windows-based applications. Its simplicity and tight integration with Windows make it an ideal choice for beginners and experienced programmers alike, while its support for object-oriented programming and other advanced features make it a versatile and powerful tool for building complex applications.

3.4 Non Functional Requirements

HARDWARE REQUIREMENTS

- Processor : Pentium i3 3.2 GHz.
- RAM : 4GB
- Hard Disk : 256 GB
- Input device :Standard Keyboard and Mouse
- Output device :Monitor

SOFTWARE REQUIREMENTS

- HTML,CSS,JAVASCRIPT
- C-SHARP
- VISUAL BASIC,ASP.NET
- MYSQL
- Pentium i3 3.2 GHz.
- 4GB RAM
- 256GB HDD
- Operating System: Windows 8/10

Chapter 4

Proposed Methodology

4.1 Methodology

The web-based placement analysis system is a software application that can be used by organizations to streamline their recruitment process. This system is designed to analyze the performance of candidates during the placement process and provide insights to the recruiter. The proposed methodology of this system involves several steps, which are described below.

System Requirements Analysis: The first step in developing the web-based placement analysis system is to conduct a thorough analysis of the requirements of the system. This involves identifying the key features of the system and understanding the needs of the organization. The requirements analysis should be conducted by gathering input from stakeholders, including recruiters, HR managers, and other key personnel.

Design and Development: Once the system requirements have been identified, the next step is to design and develop the system. The design should be based on the requirements analysis and should include user interfaces, database schemas, and other technical specifications. The development process involves writing code, testing the system, and debugging errors.

Data Collection: The web-based placement analysis system relies on data to provide insights into the performance of candidates. This data includes information about the candidates, such as their resumes, cover letters, and interview feedback. The system should be designed to collect this data automatically, either from the organization's existing HR software or directly from the candidates themselves.

Data Processing: Once the data has been collected, the next step is to process it to extract meaningful insights. This involves using statistical analysis tools and machine learning algorithms to identify patterns and trends in the data. The system should also be designed to generate reports and visualizations that can be used by recruiters to make informed decisions.

User Interface: The user interface is an important part of the web-based placement analysis system. The interface should be intuitive and easy to use, allowing recruiters to access the insights generated by the system quickly and easily. The system should also be designed to allow users to customize the interface to meet their specific needs.

Security: Security is a critical consideration when developing any web-based system. The web-based placement analysis system should be designed to protect the privacy of candidates and to prevent unauthorized access to sensitive data. This involves using encryption to protect data in transit and at rest, implementing access controls to limit who can access the system, and conducting regular security audits to identify and address vulnerabilities.

Testing and Deployment: Once the system has been developed, it should be thoroughly tested to ensure that it functions as intended. This involves conducting user acceptance testing to ensure that the system meets the needs of the organization and its users. Once the system has been tested, it can be deployed to production, where it can be used by recruiters to improve their placement processes.

4.2 Summary

In summary, the proposed methodology of the web-based placement analysis system involves several steps, including requirements analysis, design and development, data collection, data processing, user interface design, security, testing, and deployment. By following this methodology, organizations can develop a powerful tool for improving their recruitment processes and identifying the best candidates for their open positions.

Chapter 5

Design

5.1 System Architecture

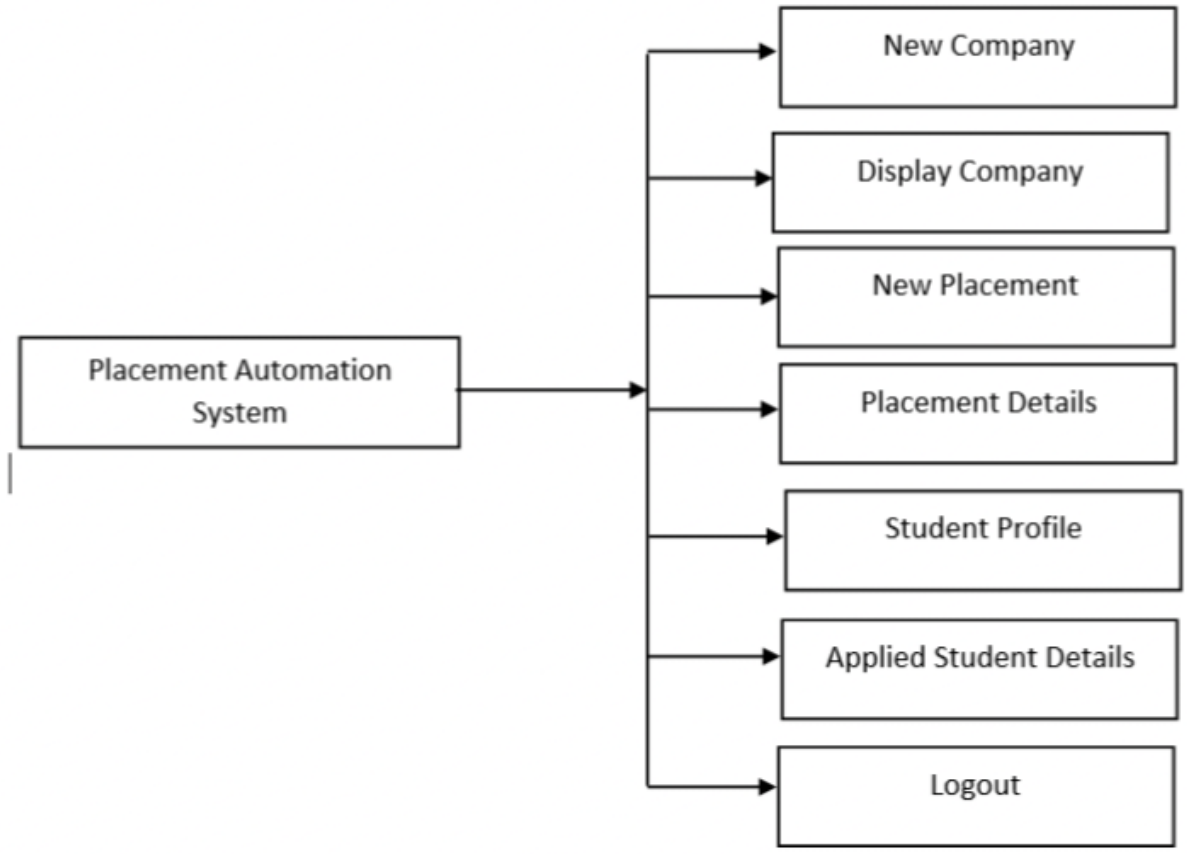

Figure 5.1: System Design

Systems design is the process of defining elements of a system like modules, architecture, components and their interfaces and data for a system based on the specified requirements.

A system architecture is the conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system.

System Architecture is abstract, conceptualization-oriented, global, and focused to achieve the mission and life cycle concepts of the system. It also focuses on high-level structure in systems and system elements. It addresses the architectural principles, concepts, properties, and characteristics of the system-of-interest. It may also be applied to more than one system, in some cases forming the common structure, pattern, and set of requirements for classes or families of similar or related systems.

The 5.1 shows the system architecture of our project. The image is taken from the system storage or the camera, They are converted from RGB sets to Greyscale conversion takes place. It is then analyzed and the process of training and testing the data takes place in order to provide the appropriate results.

The images which are uploaded are then stored in the databases provided beforehand and they are matched to the already existing databases.After the matching process is completed they are classified based on the matched data of the image and placed in the same group of the classified data.

The result of the outcome is displayed in the final step of the system architecture. In this system architecture the uploaded image data is stored till the whole classified file of emotions is full till the prescribed limit. after that the more accurate ones are stored while discarding the data with the least value of accuracy.

5.2 Data Flow Diagram

A data flow diagram (DFD) is a graphical representation of the ”flow” of data through an information system, modeling its process aspects. Often they are a preliminary step used to create an overview of the system which can later be elaborated.DFDs can also be used for the visualization of data processing (structured design).

Good style conventions which should be observed in drawing of DFD's: 1. Process names, file names and Data flows names must be meaningful in the context of the problem

2. Data should be conserved. A process can't create the new data. It can only transform input data to create output data parallel to any data retrieved from file that must have been stored in it earlier.

3. Data flow should not act as a signal to activate or initialize the process.

DFD is not a flowchart. It represents the flow of data, while flowchart shows the flow of control. One way to construct a DFD is to start by identifying the major inputs and outputs to the process. Minor inputs and outputs should be ignored first. Then starting from inputs, work towards the outputs identifying the major transforms in the way. An alternative is to work down from output towards the inputs.

5.3 Levels of Data Flow Diagram

Level 0

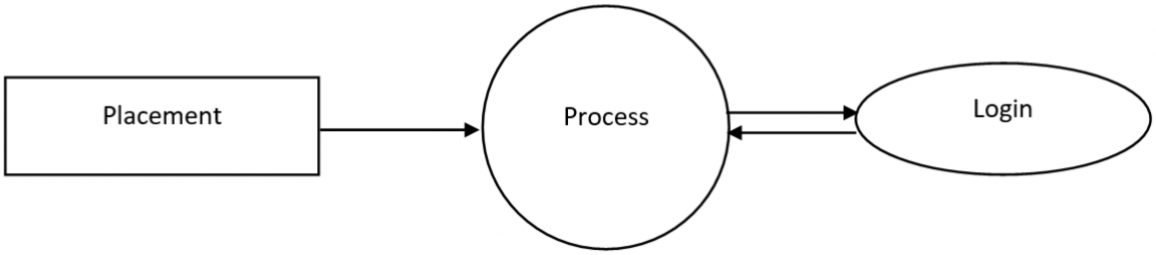

Figure 5.2: DFD for Level 0

LeveL 1

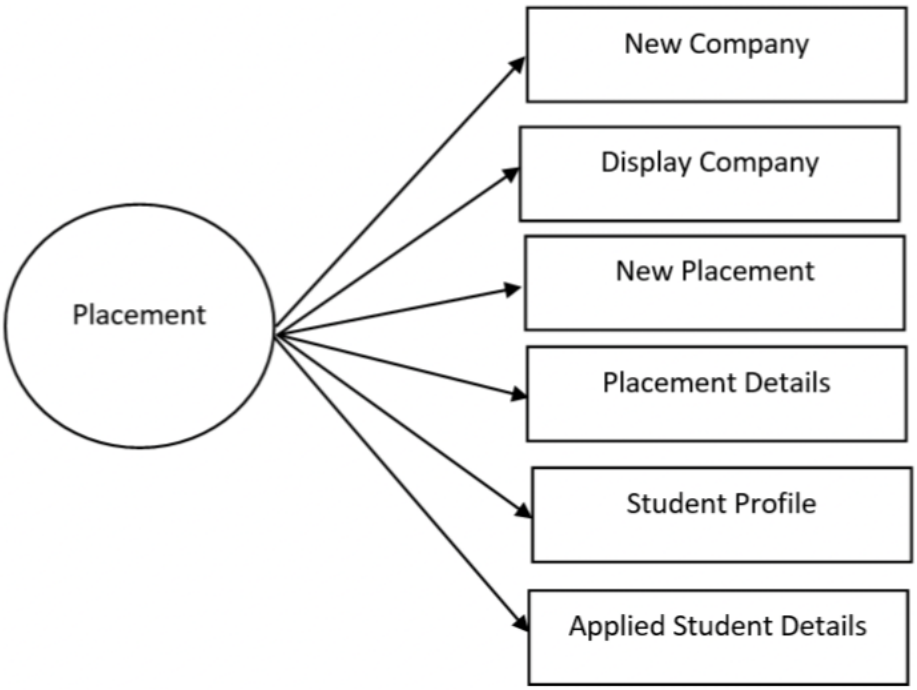

Figure 5.3: DFD for Level 1

Level 2

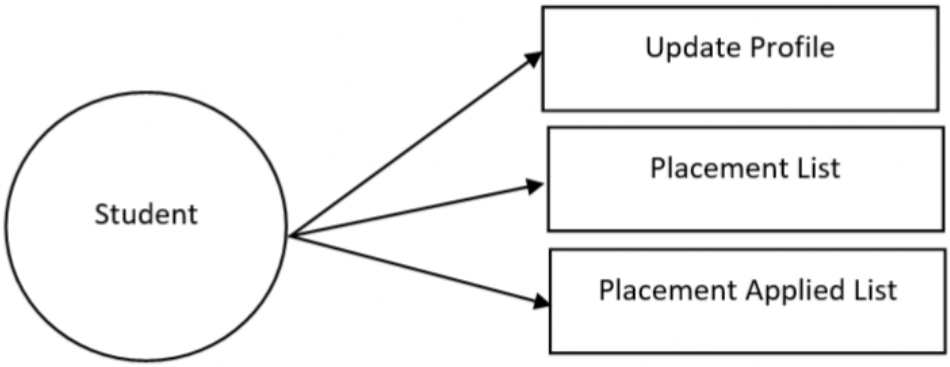

Figure 5.4: DFD for Level 2

Chapter 6

Implementation and Results

6.1 pseudo code

Step 1- Initialize variables

var studentData = [];

var companyData = [];

Step 2- Get student data from API

function getStudentData()

// Send HTTP request to API

// Parse JSON response and store in studentData variable

Step 3- Get company data from API

function getCompanyData()

// Send HTTP request to API

// Parse JSON response and store in companyData variable

Step 4- Calculate student and company match

function calculateMatch()

for (var i = 0; i < studentData.length; i++)

for (var j = 0; j < companyData.length; j++)

```
var matchScore = 0;

// Calculate match score based on student and company attributes
matchScore += calculateAttributeMatch(studentData[i].attribute1, companyData[j].attribute1);
matchScore += calculateAttributeMatch(studentData[i].attribute2, companyData[j].attribute2);
// ...

// Store match score in student and company objects
studentData[i].matches[companyData[j].id] = matchScore;
companyData[j].matches[studentData[i].id] = matchScore;
```

Step 5- Calculate match score for a single attribute

```
function calculateAttributeMatch(studentAttribute, companyAttribute)
var matchScore = 0;

// Calculate match score based on attribute value
// ...

return matchScore;
```

Step 6- Display match results in table

```
function displayMatchResults()
// Create table HTML element
// Add table header and rows with student and company data
// Highlight cells with high match scores
```

Step 7- Main function

function main()

getStudentData();

getCompanyData();

calculateMatch();

displayMatchResults();

Step 8- Call main function when page is loaded

window.onload = main;

6.2 VS Code

Visual Studio Code (VS Code) is a popular integrated development environment (IDE) that is used by developers around the world to create and debug software applications. One of the key features of VS Code is its ability to support the implementation of software projects, allowing developers to easily manage and organize their work.

To begin implementing a project in VS Code, the first step is to create a new workspace. A workspace is a container that holds all of the files and resources associated with a project, and allows developers to easily switch between different projects. Once a workspace has been created, developers can start adding files and resources to their project. This can be done by creating new files within the workspace or by importing existing files from other locations. VS Code also includes a number of built-in tools and features that can help with project implementation.

For example, the integrated terminal allows developers to run commands and scripts directly from within the IDE, while the debugging tools allow developers to identify and fix errors in their code. Another useful feature in VS Code is the ability to integrate with version control systems such as Git. This allows developers to track changes to their code and collaborate with other team members on projects. 29 Dept. of CSE, MH Halli ID AUTHENTICATION USING OTP FOR LIBRARY 2022-2023

One of the primary benefits of VS Code is its versatility. It supports a wide range of programming languages, including popular ones like JavaScript, Python, and Java, as well as lesser-known ones like Rust, Swift, and TypeScript. It also offers a wide range of extensions that can be installed to provide additional functionality and customization.

VS Code is also highly customizable, allowing users to configure key bindings, syntax highlighting, and themes to suit their preferences. It also includes a built-in terminal, debugger, and Git integration, making it easy to manage code development and collaboration.

Another advantage of VS Code is its cross-platform support. It runs on Windows, macOS, and Linux, providing a consistent development experience across different operating systems.

Overall, VS Code is a powerful IDE that provides a range of tools and features to support the implementation of software projects. By leveraging these features, developers can easily manage and organize their work, identify and fix errors, and collaborate with other team members to bring their projects to fruition.

6.3 Admin login

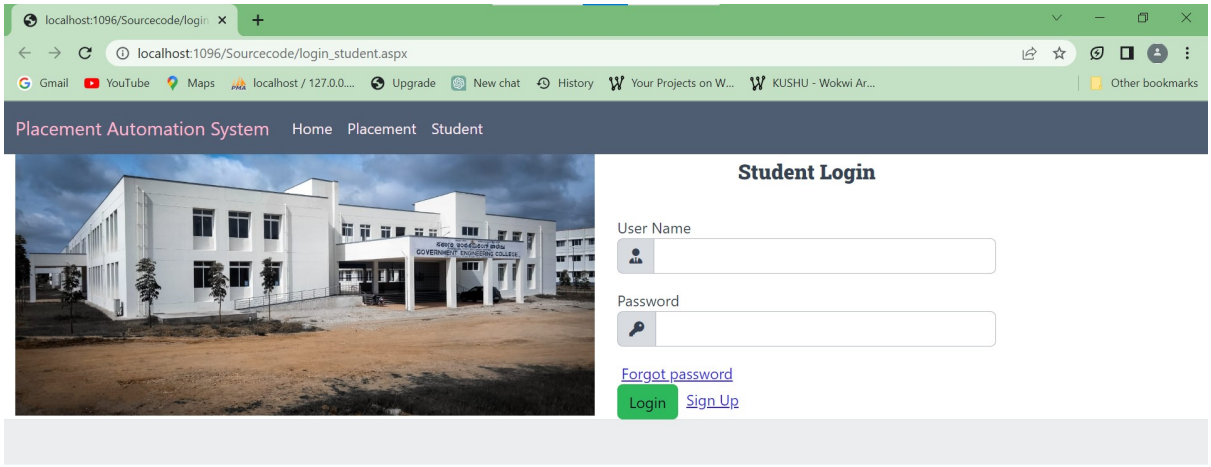

Figure 6.1: Admin Login

6.4 Add New Company

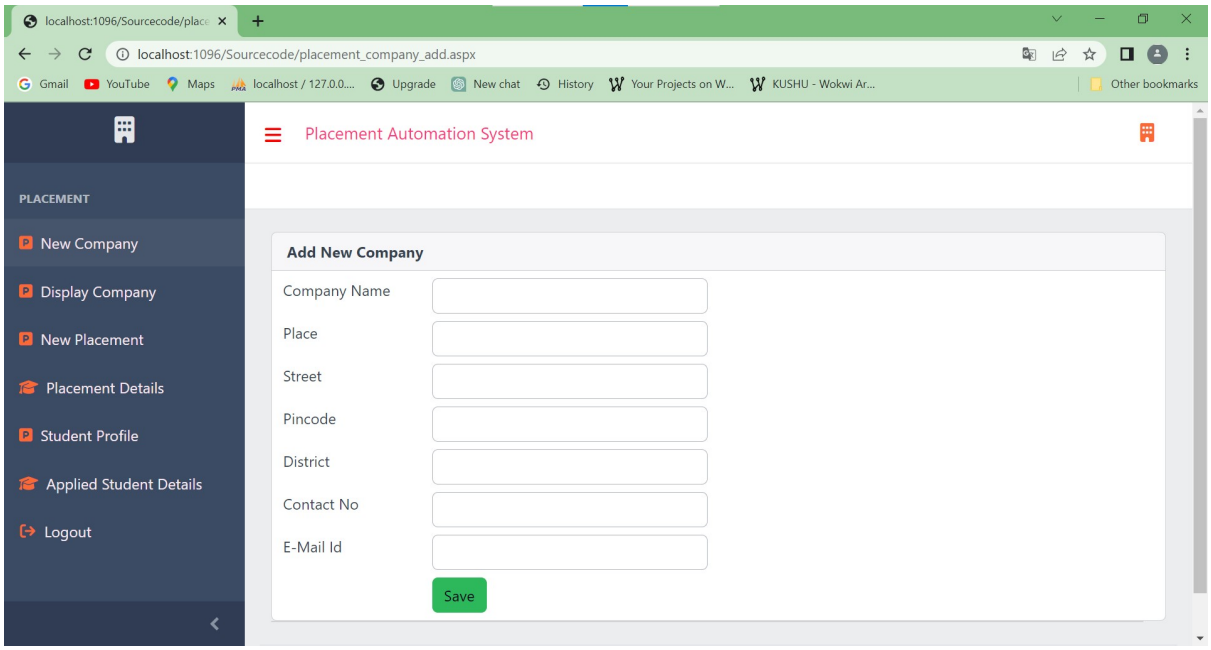

Figure 6.2: Add New Company

6.5 Display Company Details

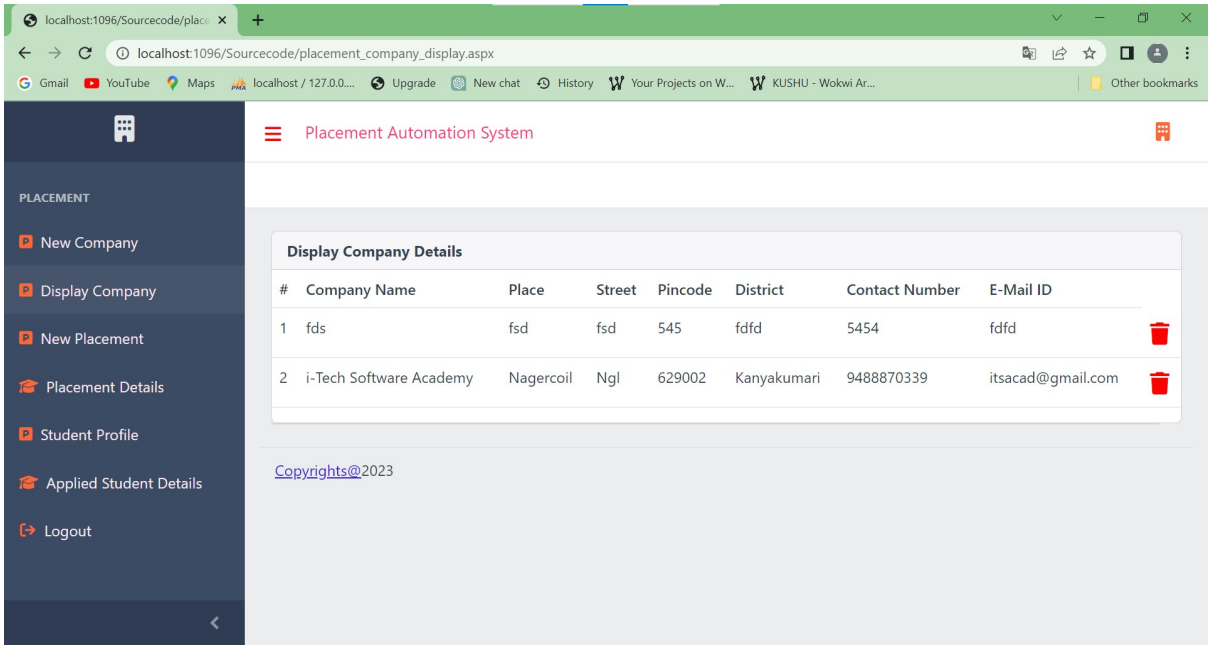

Figure 6.3: Display Company Details

6.6 Add New Placement

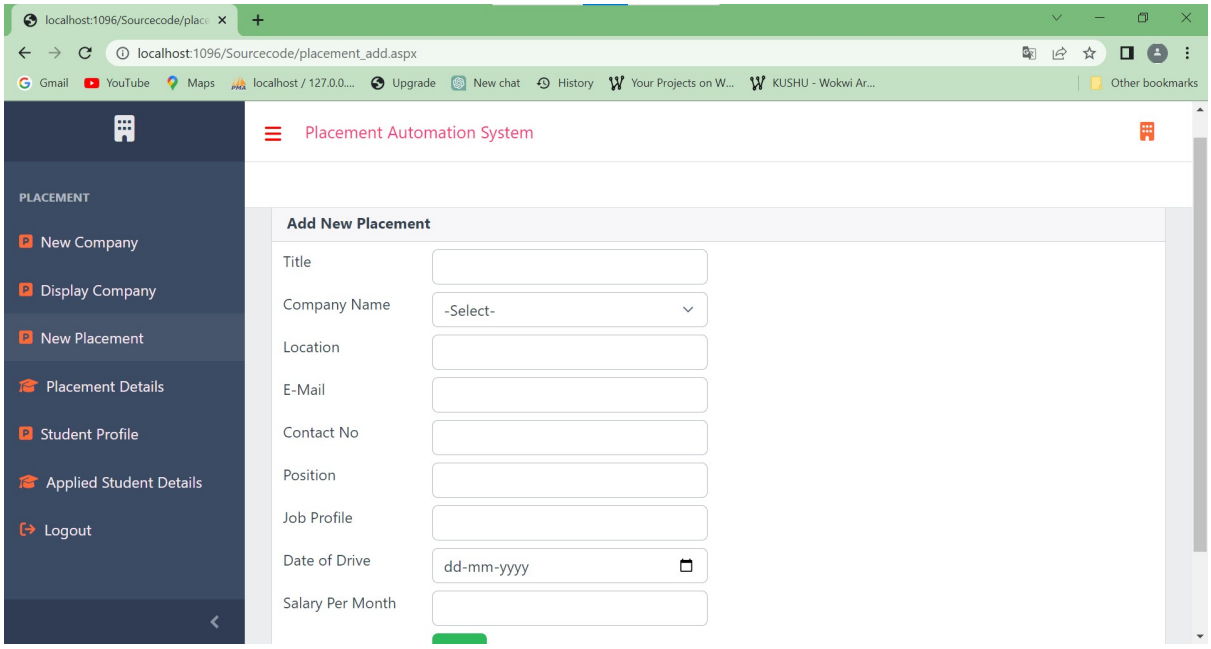

Figure 6.4: Add New Placement

6.7 Placement Details

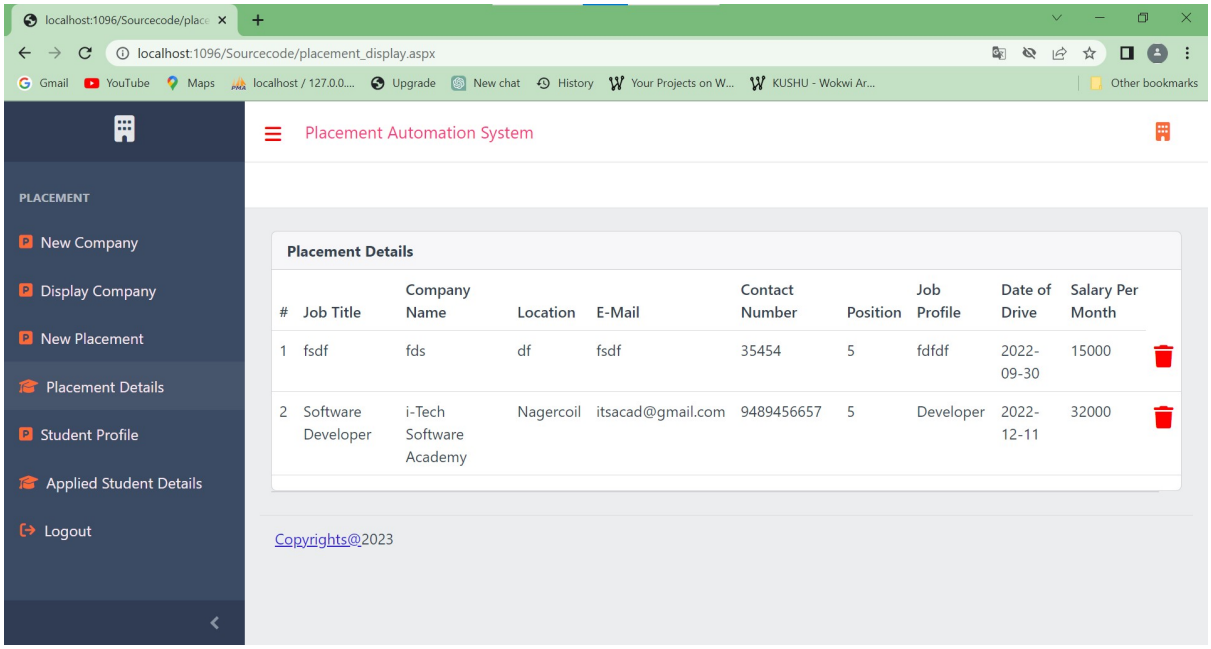

Figure 6.5: Placement Details

6.8 Student Profile Approval

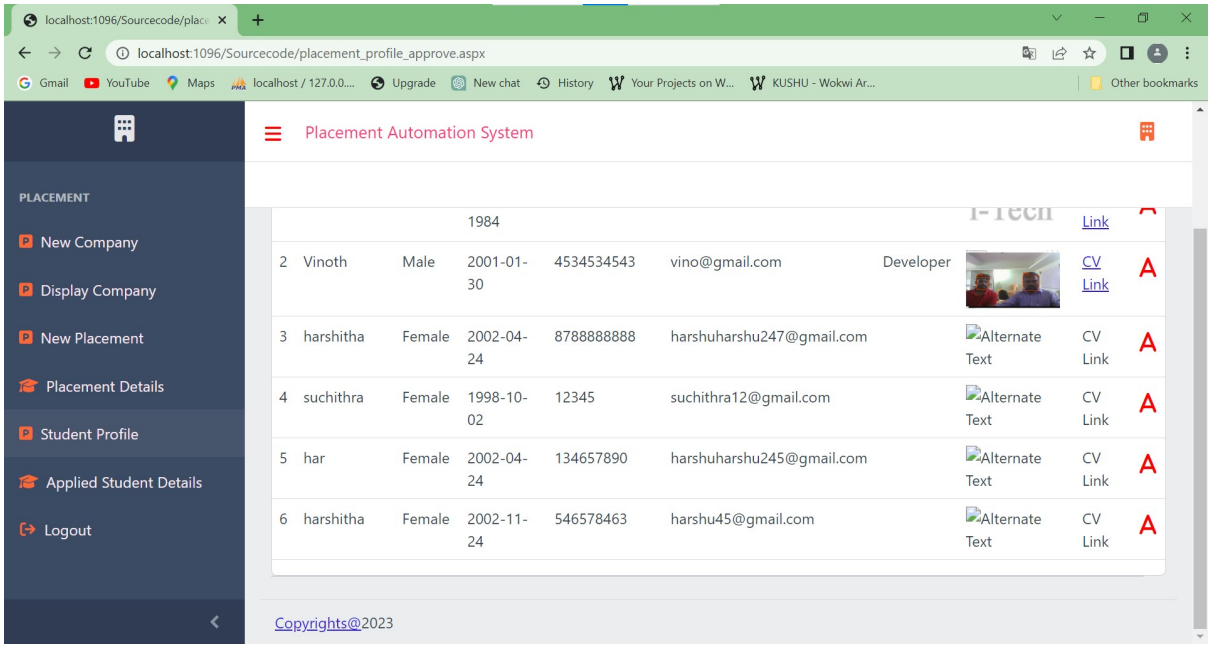

Figure 6.6: Student Profile Approval

6.9 Placement Applied Students

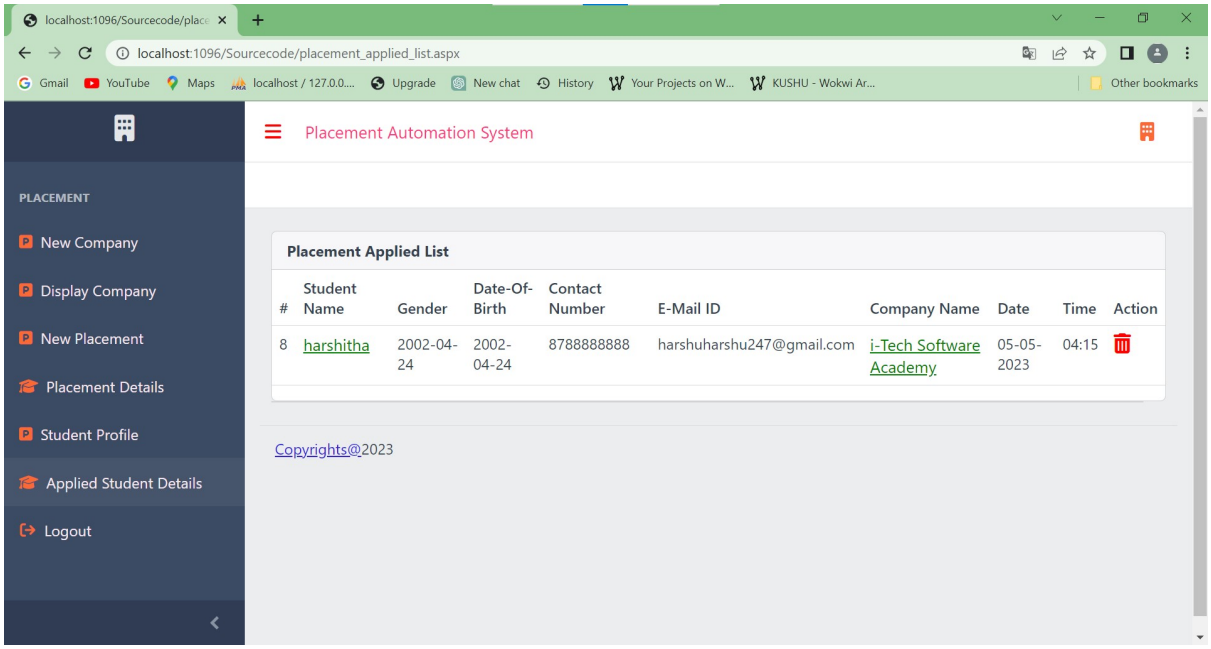

Figure 6.7: Placement Applied Students

6.10 Student Signup

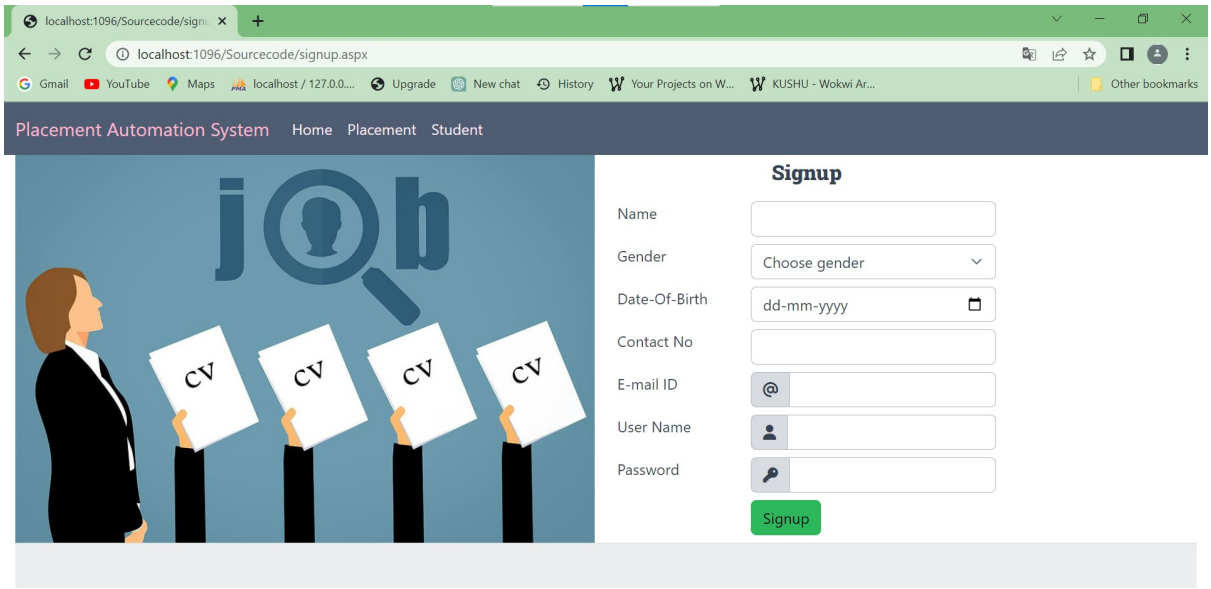

Figure 6.8: Student Signup

6.11 Student Update

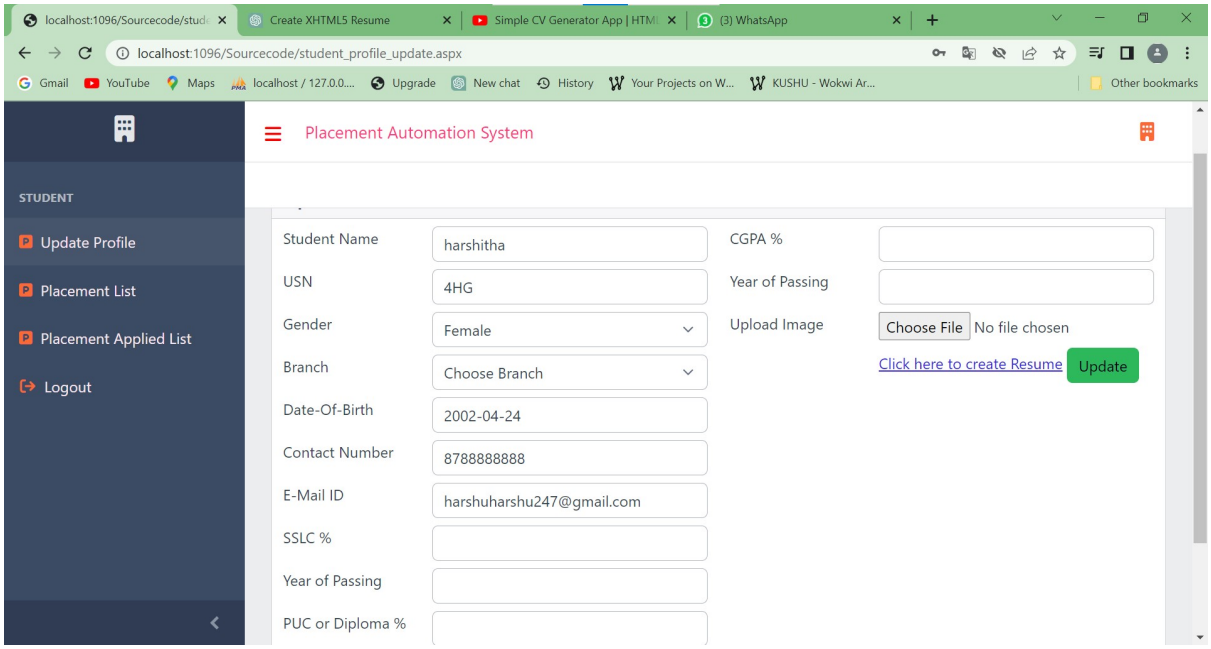

Figure 6.9: Student Update

6.12 Placement List

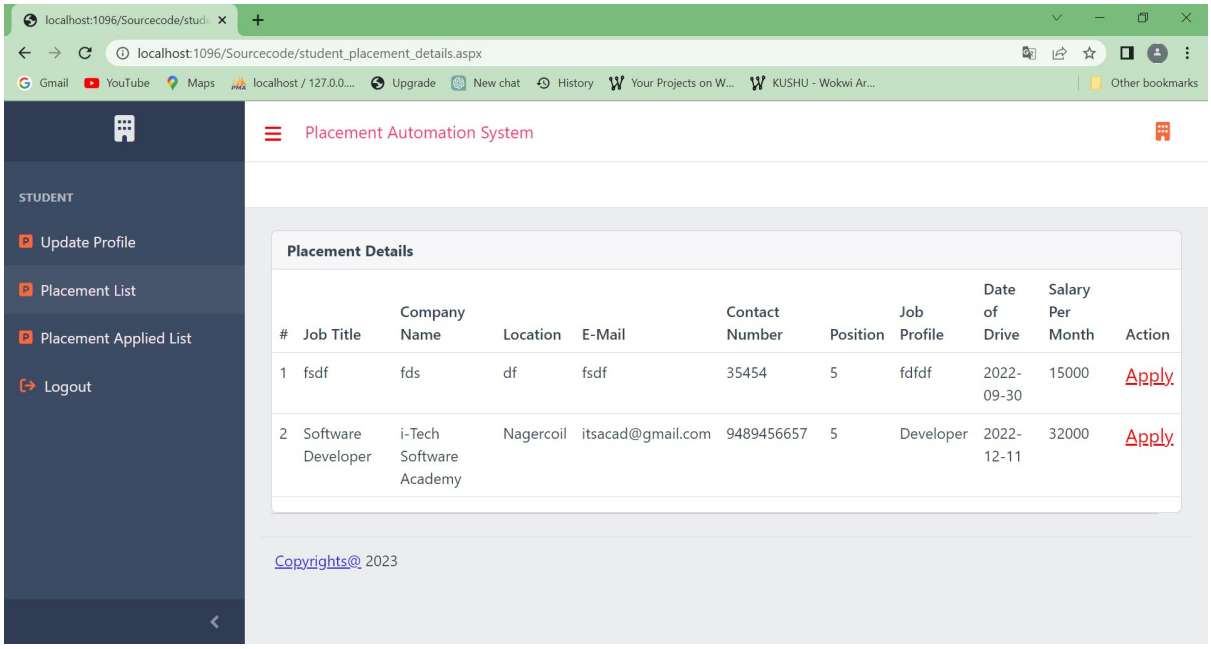

Figure 6.10: Placement List

6.13 Placement Applied List

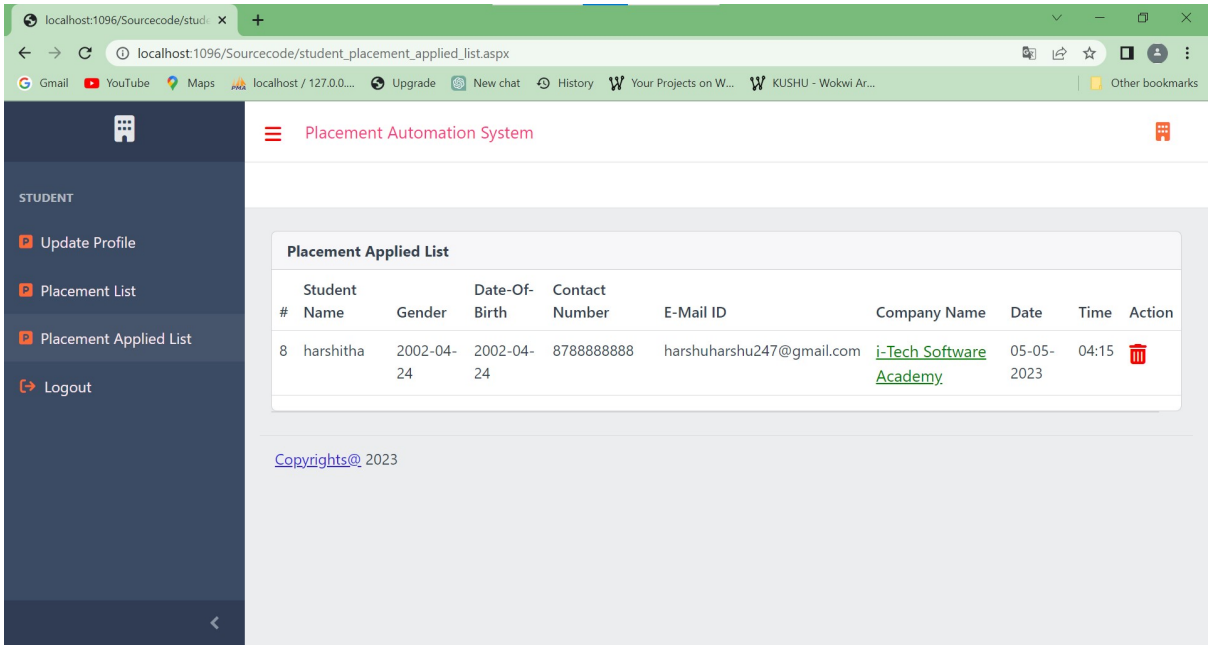

Figure 6.11: Placement Applied List

Chapter 7

Testing or Analysis

7.1 Testing

Here are some key considerations for testing a web-based placement analysis system:

Functionality Testing: This type of testing is used to ensure that all the features and functions of the system work as intended. It is important to test each function thoroughly to make sure that they meet the requirements and specifications of the system.

Usability Testing: This type of testing is used to ensure that the system is user-friendly and easy to navigate. It is important to test the user interface and user experience to ensure that the system is easy to use, even for individuals who are not familiar with the software.

Performance Testing: This type of testing is used to ensure that the system can handle a large number of users and transactions. It is important to test the system's response time, scalability, and reliability to ensure that it can handle the workload.

Security Testing: This type of testing is used to ensure that the system is secure and protects sensitive data. It is important to test the system's authentication, authorization, and encryption mechanisms to ensure that data is protected from unauthorized access.

Compatibility Testing: This type of testing is used to ensure that the system is compatible with different web browsers, devices, and operating systems. It is important to test the system on different platforms to ensure that it works properly and consistently across all devices.

By thoroughly testing a web-based placement analysis system, organizations can ensure that

the software meets their needs and provides accurate and reliable results.

7.2 Analysis

Purpose and Objectives: The first step in analyzing any system is to understand its purpose and objectives. The purpose of the Web-Based Placement Analysis System is to provide a data-driven approach to recruitment and placement, and its objective is to match the right candidate with the right job. This system aims to streamline the hiring process and save time and resources by automating the matching of job requirements with candidate skills and experience.

Functionality: The Web-Based Placement Analysis System analyzes candidate data, including their education, experience, and skills, and compares it to job requirements. The system then generates a report indicating the candidate's suitability for the job based on the analysis. The system can also generate a list of potential candidates for a job based on the job requirements.

User Interface: The user interface of the system should be easy to navigate and intuitive for users to use. The system should have clear instructions and provide feedback to users as they input data. The system should also have security measures to protect the data entered by users.

Accuracy: The accuracy of the system is crucial as incorrect matches can lead to poor hires and wasted resources. Therefore, the system must use reliable and valid data sources to analyze candidate information accurately. The system should also be regularly updated with the latest job requirements to ensure accurate matches.

Integration: The Web-Based Placement Analysis System should be able to integrate with other systems used in the recruitment process, such as applicant tracking systems, to ensure a seamless hiring process. The system should also be flexible enough to accommodate different job types and requirements.

Cost-Effectiveness: The system should provide a cost-effective solution to the recruitment process. The cost of the system should be reasonable and justifiable based on the time and resources saved by using it.

7.3 Summary

Overall, the Web-Based Placement Analysis System can be a useful tool in the recruitment and placement process if it is designed and implemented correctly. A thorough analysis of the system's purpose, functionality, user interface, accuracy, integration, and cost-effectiveness is essential to ensure its effectiveness.

Chapter 8

Conclusion and Future Enhancement

8.1 Conclusion

Students can fill out registration forms at their ease from their respective desktop computer systems which relieves them from standing in long queues for submitting the forms. Task of entering student data into the system is wiped out due to auto storage of data from registration forms into the database. Retrieving student data from database is easier than passing queries and formatting data in excel sheets. Communication of students with TPO has increased immensely due to digital noticeboard. Exclusive Notifications is possible and easy to function due sms and emails via website. Online mock tests give students better understanding of the actual test to be conducted by the companies

In the existing system most of the the work will be done manually, as it takes more time for any changes in the system. The major problem with this existing system are notification method available is not available for giving information about student expect the notice board or circulars. The proposed system is online training and placement management system gives the automation in all the process of campus recruitment, searching student details individually. This system in future could be joined to sms server so that it can notify the message to students via Sms for upcoming companies.

8.2 Future Enhancement

Future Scope for extension in this project include a smart phone application with different OS platforms like android, IOS and Windows. As this system already consist of many features but still there can be some errors which can overcome in future release. The project is easily extensible and can be improved by further incremental releases of the same.New modules can be easily added as it requires only an addition of a new package. Forum can be upgraded with new features. Communication between company, admin and student can be increased by live chat options.

- In future there is a chance to conduct MR after HR in such cases we can change the application according to the requirements.
- There is a chance to generate graphs on placement procedure on the bases of database.
- In future there is a scope for staff/coordinators to change their passwords. In future we can add an alert domain for the sake of students.
- In future we can add a Feedback from student to faculity.
- In future we can add Company information through company page links.
- In future we can add Chatbot for clarifying our doubts.

Bibliography

[1]One study by Shafaei and Salimifard (2014) proposed a web-based placement system for the recruitment of engineering students.

[2]Another study by Guleria and Singh (2015) proposed a web-based placement system that uses a decision support system (DSS) to help employers select the right candidates for their job openings

1. Programming VB .NET: A Guide For Experienced Programmers Gary Cornell

2. Beginning Visual Web Programming in VB .NET: From Novice to Professional James Greenwood

[3]A study by Singh and Guleria (2016) proposed a web-based placement system that uses a fuzzy logic-based approach to match the skills of the applicants with the job requirements

[4]A study by Chakraborty and Das (2017) proposed a web-based placement system that uses a decision tree-based approach to help employers select the right candidates for their job openings

[5] Almahdi Alshareef, Ahmed Alkilany "Toward a Student Information System for Sebha University, Libya",Fifth international conference on Innovative Computing Technology

[6] Prabhu T Kannan, Srividya K Bansal,"Unimate: A Student Information System",2013 International Conference on Advances in Computing, Communications and Informatics

[7] shiqiu Huang,R zhang,zhengwei Qi: Static program analysis assisted dynamic taint tracking for software vulnerability discovery

[8] S.R.Bharamagoudar, Geeta R.B, S.G.Totad, "Web service api for student information and course management systems"International Journal of Advanced Research in Computer and Communication Engineering

[9] www.w3schools.com

[10] www.javatpoint.com