

STUDENTS RECRUITMENT SYSTEM

A Project Report

Submitted in partial fulfilment of the
Requirements for the award of the Degree of

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

By

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Designation



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(Note: All entries of the proforma of approval should be filled up with appropriate and complete information. Incomplete proforma of approval in any respect will be summarily rejected.)

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CERTIFICATE

This is to certify that the project entitled, "**Students Recruitment System**", is bonafied work of **Nizamuddin Mandekar, Almeera Samari, Sarthak Relekar** bearing Student Id.: **41379, 39615, 38915** submitted in partial fulfilment of the requirements for the award of degree of **BACHELOR OF SCIENCE** in **INFORMATION TECHNOLOGY** from University of Mumbai.

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To all our colleagues who have helped us either directly or indirectly, we are grateful for their valuable inputs. This project would not have been possible without their help.

DECLARATION

I hereby declare that the project entitled, "Students Recruitment System" done at place where the project is done, has not been in any case duplicated to submit to any other university for the award of any degree. To the best of my knowledge other than me, no one has submitted to any other university.

The project is done in partial fulfilment of the requirements for the award of degree of **BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)** to be submitted as final semester project as part of our curriculum.

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ABSTRACT

Recruitment is the process of actively seeking out, finding, and hiring candidates for a specific position or job. The definition of recruitment includes the entire hiring process, from inception to the individual recruit's integration into the company. While the definition and process of recruitment vary from company to company, there are some basic steps that any employer can take to make recruitment smoother and more successful, such as the following:

- Comparing different types of job recruitment software to find the ideal fit.
- Establishing clearly defined standards and expectations for the ideal job applicant.
- Taking proactive steps to integrate new employees with comprehensive “on-boarding”.
- Staying ahead of the latest trends and best practices in recruiting.

To start, a company typically outlines what the job or position entails and creates a profile of the ideal candidate. The company must then recruit the candidate either through advertising or through the use of recruitment software. Applicants are screened and interviewed according to predetermined criteria. When the ideal candidate is chosen, they are hired and integrated into the workplace, and the recruitment process is complete. Companies often place a high value on recruitment, meaning they devote the appropriate time and resources to the process.

A Student Recruitment System (SRS) with logins for Company, Students and HR personnel. The project benefits both college students and the numerous companies that visit campuses in search of new employees. The HR department can use this system to generate profiles and list job openings. HR can also conduct an aptitude test. Additionally, students can find out which college the employer is visiting from the job posting. The list of college students and their resumes is available to HR. The students can use this system to build a profile and submit all of their information, including a resume. Students can examine a list of companies that have posted job openings using this web application. Students can apply for the job after receiving the notification from teacher. Students can take an aptitude test online from their homes or colleges, and the results will be sent by Gmail.

Only college Students are granted access to this system; individuals without a degree or those who have obtained employment are no longer eligible. It is continuously updated as soon as HR posts a job. It's also a quicker way to hire a new employee for your company. All users find this approach simpler to use, which allows them to save time.

CHAPTER 1

INTRODUCTION

The Students Recruitment System Web application offers online assistance to users. Using web-based recruitment systems like recruitment websites or jobsites also plays a role in simplifying the recruitment process.

1.1 BACKGROUND

The Students Recruitment System (SRS) is a web-based tool that aids in the communication between employers and job seekers. The main goal of this project is to make the recruitment process easier. This SRS is intended for both job providers and job seekers, i.e., companies looking for employees and job seekers looking for work (for new graduates).

The “Students Recruitment System” has been developed to override the problems inherent in manual work. This software is supported to reduce the hardship faced by this existing system. Moreover, this system is Furthermore, this system is tailored to the company's specific requirements in order to ensure that operations run smoothly and efficiently. Every organization, large or small, faces challenges in managing information about campuses, colleges, students, placement, and vacancies. Every student Recruitment System has different college requirements, so we design unique Students management systems that are tailored to your managerial needs.

A Students recruitment system that consists of a student login, an HR login, and a company login. The project is beneficial for college students, various companies visiting the campus for recruitment, and even the college placement officer. The system also consists of a HR department that can view a list of students in that college and their respective resumes through the teacher. The software system allows students to view a list of companies that have posted vacancies. The system handles student as well as company data and efficiently displays all this data to the respective sides. a web-based software for colleges to improve their placement performance by automating the placement activities. Students Recruitment system is customized for a college and aids in communication with human resources. This system keeps a track of the company coming to the campus, number of Students who can apply in the company, number of Students who got selected in the company and the whole list is then forwarded to the respective department faculty members. The details of the company uploaded by the hr, the teacher can view the changes uploaded. The teacher gets email and SMS notification of the job profile uploaded for their department and pass to Students, job notice.

1.2 OBJECTIVE

The purpose of the project is to build web-application program to reduce the manual work for managing the Placement, Job, Students detail. It tracks all the details about the Job, Students, Vacancy. In that all users have its own login is available. There are three user HR, Students and company. The proposed system will affect or interface with the activities of graduate Students only. Students Recruitment System also manage the Placement details online for Students details, Vacancy details, College.

Following are the objectives -

- It will reduce the paperwork and utilize the maximum capabilities of the setup and organization as well as it will save time and money, which are spending in making reports and collecting data.
- It tracks all the information of Placement and Students.
- Helps company coming for campus recruitment to see Students details. Before coming for campus, company can get information about eligible Students along with interested Students.

1.3 PURPOSE, SCOPE AND APPLICABILITY

1.3.1 PURPOSE

The proposed Desktop based recommendation system to give more easiness to the user for they can retrieve or add more information quickly. The proposed system will affect or interface with the activities of graduate, employee (new hire), HR, Teachers. The Teachers will have a clear understanding of the number of positions available. There are three user HR, Students and teachers. In each user have different functionality.

Features:

- HR
 - HR post a job.
 - HR can make an aptitude test.
 - HR can see the Students resume.
 - HR can take interview.
- Company
 - Company will send job notification to Students.
 - Company will send job notification to HR.
- Students
 - Students can easily apply for jobs.
 - Students find the question related to interview and aptitude test.

1.3.2 SCOPE

In today's world, the scope of these websites is greater because they provide solutions to many problems. The Students Recruitment system is designed for maximum excellence. Nonetheless, we eliminate or mitigate the human efforts and drawbacks of existing systems. The system can be made user-friendly. This system is useful for the college campus recruitment process. The system will be helpful for placement by helping to shortlist Students and prepare them for placements. This system allows students to post their resumes. It also helps in current efforts relating to student recruitment. It will also lower collection costs and make management and collection procedures run more smoothly. The students can easily find a job, or HR can easily find students who are eligible for a specific position.

Our project aims at Business process automation, i.e.. we have tried to computerize various processes of Students Recruitment System

- It has simple and easy to interact.
- Improves accuracy in result.

- Reliable and consistent way of searching jobs
- Shows the information and description of the Jobs.
- This project can be used very easily in the process of decision making in new recruitments.
- Be easy to operate
- Have a good user interface
- It satisfies the user requirement
- Be easy to understand by the user and operator.

1.3.2 APPLICABILITY

This web application can be used by a company to hire a new employee. Or HR can easily see the CVs of students. HODs and teachers keep HR in touch with the college. And they provide a list of students who are eligible for that post. Students can find employment based on their skills. Only college students are granted access to this system; individuals without a degree or those who have obtained employment are no longer eligible.

- Easily Recruit of Students.
- Maintain Students Details.
- Overcome on human efforts.
- User-friendly.
- Easy to Manage.

1.4 ACHIEVEMENT

There will be no need of putting up notice or emailing every Students about the company coming in college. The Students can keep updated themselves through this software. The company can view all Students detail and system can shortlist Students according to their criteria instead of doing manually. There is teacher login that can view Students and also can put up notifications of jobs. Students can register online instead of going to placement department for registration. This system saves time and efforts.

CHAPTER 2

SURVEY OF TECHNOLOGIES

A web application, most referred to as web sites, is a type of web app designed to run on any device, such as a smartphone, tablet, or computer. A Web-Application is a program that is stored on a remote server and delivered over the Internet via a browser interface. A Web application is a dynamic application that runs on server-side scripting. It's work on request and response. Web-Application can be designed for a wide variety of uses and can be used by anyone from an organization to an individual for numerous reasons. Commonly used Web-Application can include web mail, online calculators, or E-commerce etc.

HOW WEB-APPLICATION WORK

Web application do not need to be downloaded since they are accessed through a network. User can access a Web application through a web browser such as Google Chrome, Mozilla Firefox or Safari. For a web app to operate, it needs a web server, application server, and a database. Web servers manage the request that come from a client, While the application server completes the requested task. A database can be used to store any needed information.

Web applications typically have short development cycles and can be made with small development teams. Most Web apps are written in JavaScript, HTML5, or Cascading Style Sheets (CSS). Client-side programming typically utilizes these languages, which help build an application front-end. Server-side programming is done to create the scripts a web app will use. Language such as Python, Java and Ruby are commonly used in server-side programming.

BENEFITS

Web applications have many different uses, and with those uses, comes many potential benefits. Some common benefits of Web-apps include:

- Allowing multiple users access to the same version of an application.
- Web-apps don't need to be installed.
- Web-apps can be accessed through various platforms such as a desktop, tablet, laptop or mobile.
- Can be accessed through multiple browsers.

AVAILABLE TECHNOLOGIES

Following are the technologies available for this project. There are separate technologies for website.

For website development:

FRONT END/GUI TOOLS	.Net Technologies, Java, HTML/CSS
DBMS/BACK END	Oracle, MySQL, SQL Server
LANGUAGES	C++, Java, C#, R, Python
SCRIPTING LANGUAGES	PHP, JSP, JavaScript
.NET Platform	C# .Net, Visual C# .Net, ASP .Net

FRONT END/GUI TOOLS

ASP.NET TECHNOLOGIES

The .NET is nothing but another name of facilities. These facilities can be utilized by beginners, Developers as well as by Expert. The visual Studio .NET is a complete set of development tools for building ASP web applications, XML web services, desktop applications, and mobile applications. VB.NET, C++.NET, visual C# .NET, and visual j# .NET, all use the same integrated development environment (IDE). The .NET is the technology from Microsoft, on which all other Microsoft technologies will be depending on in future. It is a major technology change, introduced by Microsoft, to catch the market from the SUN's Java.

JAVA

Java is a general-purpose computer-programming language that is concurrent, class based, object-oriented, and specifically designed to have as few implementation dependencies as possible. It is intended to let application developers "write once, run anywhere" (WORA), meaning that compiled Java code can run on all platforms that support Java without the need for recompilation. With most programming languages, you either compile or interpret a program so that you can run it on your computer. The Java programming language is unusual in that a program is both compiled and interpreted. With the compiler, first you translate a program into an intermediate language called Java bytecodes the platform-independent codes interpreted by the interpreter on the Java platform.

HTML / CSS

HTML (the Hypertext Markup Language) and CSS (Cascading Style Sheets) are two of the core technologies for building Web pages. HTML provides the structure of the page, CSS the(visual and aural) layout, for a variety of devices. Along with graphics and scripting, HTML and CSS are the basis of building Web pages and Web Applications. A markup language

indicates text can be turned into images, tables, links, and other representations. It is the HTML code that provides an overall framework of how the site will look. HTML was developed by Tim Berners-Lee. The latest version of HTML

DBMS/BACK-END:

ORACLE

Oracle is one of the largest vendors in the enterprise IT market and the shorthand name of its flagship product, a relational database management system (RDBMS) that's formally called Oracle Database. The database software sits at the centre of many corporate IT environments, supporting a mix of transaction processing, business intelligence and analytics applications.

MySQL

MySQL is an open-source relational database management system (RDBMS). Its name is combinations of —My|, the name of co-founder Michael Widenius daughter, and "SQL", the abbreviation for Structured Query Language. The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL is a component of the LAMP web application software stack (and others), which is an acronym for Linux, Apache, MySQL, Perl/PHP/Python.

SQL SERVER

Microsoft SQL Server is a relational database management system developed by Microsoft. As a database server, it is a software product with the primary function of storing and retrieving data as requested by other software applications—which may run either on the same computer or on another computer across a network (including the Internet).

LANGUAGES

C++

C++ is a general-purpose programming language. It has imperative, object-oriented and generic programming features, while also providing facilities for low-level memory manipulation. C++ is a general-purpose programming language created by Bjarne Stroustrup as an extension of the C programming language, or "C with Classes". The language has expanded significantly over time, and modern C++ has object-oriented, generic, and functional features in addition to facilities for low-level memory manipulation. It is almost always implemented as a compiled language, and many vendors provide C++ compilers, including the Free Software Foundation, LLVM, Microsoft, Intel, and IBM, so it is available on many platforms.

JAVA

Java is a general-purpose computer-programming language that is concurrent, class based, object-oriented, and specifically designed to have as few implementation dependencies as possible. It is intended to let application developers "write once, run anywhere" (WORA), meaning that compiled Java code can run on all platforms that support Java without the need for recompilation.

PYTHON

Python is a widely used general-purpose, high level programming language. It was initially designed by Guido van Rossum in 1991 and developed by Python Software Foundation. It was mainly developed for emphasis on code readability, and its syntax allows programmers to express concepts in fewer lines of code. Python is a programming language that lets you work quickly and integrate systems more efficiently. It is designed to be highly readable. It uses English keywords frequently whereas other languages use punctuation, and it has fewer syntactical constructions than other languages. Python is a MUST for Students and working professionals to become a great Software Engineer especially when they are working in Web Development Domain. I will list down some of the key advantages of learning Python.

CHOSEN TECHNOLOGIES

Following are the technologies which have been selected for this project.

FRONT-END/GUI TOOLS	.Net Technologies, HTML/CSS
DBMS/BACK-END	SQL Server
SCRIPTING LANGUAGES	JavaScript
.NET Platform/ LANGUAGES	ASP.net with C#

JUSTIFICATION FOR SELECTION OF

TECHNOLOGIES:

HTML

The Hypertext Markup Language (HTML) is the standard markup language for documents designed to be displayed in a web browser. Technologies such as Cascading Style Sheets (CSS) and Scripting Languages such as JavaScript can help. Web-browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages.

HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML is simple and best chosen for website development. It is used along with CSS and JavaScript. While there are other technologies, it still predominates all of them for creating web pages. Every browser supports HTML language. HTML can be integrated with many languages like PHP, JavaScript and Node.js

ADVANTAGES

- HTML is one of the most used languages in the world. It is used by nearly 93.4% of all websites worldwide. Most websites you use every day were likely written in HTML.
- HTML is one of the easiest languages to learn. It is accessible for absolute beginners because of how straight forward it is compared to other languages.
- HTML is light weight and loads very fast on most browsers. This allows you to make sure even the most impatient of people will get to see your website.
- HTML is the free and default choice. You do not need to download or purchase extra software to make it run.

CSS

Cascading Style Sheets (CSS) is defined as a method sheet language that provide web designer control over how an internet site communicates with web-browsers including the formatting and display of their HTML documents. CSS or cascading sheet may be text-based coding language that specifies the websites formats and the way a site communicates with web browsers. The languages allow web developers to regulate various style elements and functionalities like layout, colour, fonts and therefore the formatting and display of HTML documents. CSS language used for describing the presentation of a document written in a markup language like HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript. CSS instructs the display of the HTML on how the web sites will display at the user's end.

ADVANTAGES

- CSS plays an important role, by using CSS you simply got to specify a repeated style for element once and use it multiple times as because CSS will automatically apply the required styles.
- The main advantage of CSS is that style is applied consistently across variety of sites. One instruction can control several which is advantageous.
- Web designers need to use few lines of programming for every page improving site speed.

- Cascading sheet not only simplifies websites development, but also simplifies the maintenance as a change of one line of code affects the whole web site and maintenance time.
- It has the power for re-positioning. It helps us to determine the changes with the position of web elements who are there on the page.

JAVASCRIPT

JavaScript is a programming language. Most websites 90% used JavaScript. Many of these are related to the way, JavaScript is often executed directly in a client's browser commonly utilized in web development. JavaScript was initially created to "Make web pages alive". The programs in this language are called scripts. They can be written right in a web page's HTML and run automatically as the page loads. Scripts are provided and executed as plain text. They don't need preparation or compilation to run. In this aspect, JavaScript is very different from another language called Java. JavaScript may be a client-side scripting language, which suggest the ASCII text file is processed by the client's browser instead of on the online server. This can load the webpages without communicating with the main server by the help of JavaScript. Like Server-Side Scripting languages, like PHP and ASP, JavaScript code are often inserted anywhere within the HTML of a webpage. The output of the Server-Side is displayed in the HTML, but the JavaScript code remains visible in the source of the webpage. The file can be a separate ".js" file, which can be displayed in the browser.

For example, a JavaScript function may check an internet from before it's submitted to make sure all specified files are filled out. The JavaScript code can produce an error message before any information is really transmitted to the server.

ADVANTAGES

- Regardless of where you host JavaScript, It always gets executed on client environment to save lots of a bandwidth and make execution process fast.
- In JavaScript, XMLHttpRequest is an important object that was designed by Microsoft. The object call made by XMLHttpRequest as a asynchronous HTTP request to the server to transfer the data to both sides without the page.
- The biggest advantage to JavaScript having a ability to support all modern browsers and produce an equivalent result.
- JavaScript is employed everywhere on the web.
- JavaScript plays nicely with other language and may be utilized in an enormous sort of applications.
- It gives the power to make rich interfaces.

SQL SERVER

Structural Query Language (SQL) is used for accessing, manipulating, and communicating

with the database. Almost every function such as retrieving data from the database, creating a new database, manipulating data and database such as insertion, deletion and updating can be performed using SQL. It is a user-friendly and domain specific language.

Microsoft SQL server is a relational database management system (RDBMS) that supports a wide variety of transaction processing, business intelligence and analytics application in corporate IT environments. Microsoft SQL Server is one of the three market-leading database technologies, along with Oracle Database and IBM's. Like other RDBMS software, Microsoft SQL Server is built on top of SQL, a standardized programming language that database administrators DBAs and other IT professionals use to manage database and query the data they contain. SQL Server is tied to Transact-SQL (T-SQL), an implementation of SQL from Microsoft that adds a set of proprietary programming extensions to the standard language.

NEED OF SQL

- It is widely used in the Business intelligence tool.
- Data Manipulation and Data testing are done through SQL.
- Data Science tools depend highly on SQL. Big data tools such as Spark, Impala are dependent on SQL.
- It is one of the demanding industrial skills.

ADVANTAGES

SQL has many advantages which makes it popular and highly demanded. It is a reliable and efficient language used for communicating with the database.

- Large amount of data is retrieved quickly and efficiently.
- Easy to learn and understand, answers to complex queries can be received in seconds.
- Due to documentation and long establishment over years, it provides a uniform platform worldwide to all its user.
- For data retrieval, large number of lines of code is not required. All basic keywords such as SELECT, INSERT INTO, UPDATE etc are used and also the syntactical rules are not complex in SQL, which makes it a user-friendly language.
- It can be used in program in PCs, Server, Laptops independent of any platform (Operating System etc). Also, it can be embedded with other applications as per need.
- SQL is used by developers and DBAs (Database Administrators) in writing Data integration scripts.
- It is used to deal with analytical queries to analyse the data and get instincts from it.
- Retrieving Information.
- Modification of data and Database table such as Insertion, Deletion and Updating.

ASP.NET WITH C#

There are different versions of them like Web forms, ASP.Net Model View Controller (MVC) and ASP.Net web pages, but all of them are used for the same purpose which is web application development. Each of them has different development style, the one you choose depends on a combination of your programming assets like knowledge, Skills and development experience, the kind of application you are creating and the development approach you're comfortable with. Asp.Net framework is language independent, means you can choose any programming language which best suited to you application. With the built-in configuration information, Asp.Net is easy to deploy. The .Net Framework quickly gives an alert for memory leaks, unbounded loops, and other wrong behaviour immediately killing them and restart them over again. All the Asp.Net applications are highly monitored and managed to help application available to handle requests. The best part of Dot Net Framework is it has its own built-in caching features.

Advantages of .Net technology over other available technologies:

- Keep your Asp.net applications secured with the built-in Windows authentication and per-application configuration.
- Asp.Net has reduced the long lines of code required to develop large applications.
- Asp.Net and Html, together generate dynamic web pages smoothly.
- Being an ideal server-side scripting technology, Asp.Net code first runs on Windows server before displaying on the web browser.

CHAPTER 3

REQUIREMENTS AND ANALYSIS

3.1 PROBLEM DEFINATION

- The current recruitment system is lengthy, and Students can't find easily the opening for fresher.
- However, if the Students finds the job but there is on time to apply for job, because they find the late information.
- In early, day we go to the place to place for giving the aptitude test for job.

With the help of my Web-Application. This project proposes to develop Web-application on Online Students Recruitment System. As the Internet is becoming the world's largest communication, it has provided an environment where everyone can be online at any given time. So, through this we can save the precious time of Students as well as HR. We can share the information about job as soon as possible to everyone or HR can take aptitude test form home or from college. The proposed system will affect or interface with the activities of Graduate (Fresher Only) and HR. The Students will have a clear view of number of vacancies for a particular job and HR will have clear view of number of candidates applied and number of candidates selected.

3.2 REQUIREMENT SPECIFICATION

A software requirements specification (SRS) is a description of a software system to be developed. The software requirements specification consists of functional and non-functional requirements. It also contains use cases that describe user interactions that the software must provide. The software requirements specification document lists sufficient and necessary requirements for the project development. For this the developer needs to have clear and thorough understanding of the software. This is achieved through detailed and continuous communication with the project team and customer and analysing each and every activity of project in detail.

Requirements specification or system analysis is part of Software Development life cycle in which we need to determine how the current information system functions and assess what users like to see in a new system. It has two subphases, viz. requirements determination and requirements structuring.



3.2.1 FUNCTIONAL REQUIREMENTS

A functional requirement defines a system or its component. It describes the functions a software must perform. A function is nothing but inputs, its behaviour, and outputs. It can be a calculation, data manipulation, business process, user interaction, or any other specific functionality which defines what function a system is likely to perform. Functional Requirements are also called Functional Specification.

3.2.1.1 HR

HR-01 The system allows to register as a HR.

HR-02 The system allows to login the HR.

HR-03 HR can see the resume of the students.

HR-04 HR can post for the job (Fresher only).

HR-05 HR can conduct the aptitude test for job.

HR-06 HR can see the reviews about Students.

HR-07 HR can upload the details about their company.

3.2.1.2 COMPANY

COMPANY-01 The system allows to register as a Company.

COMPANY-02 The system allows to login the Company.

COMPANY-03 Company can take the mock aptitude test.

COMPANY-04 Company will send the job notification to the students.

3.2.1.3 STUDENTS

STUDENTS-01 The system allow to register as a Students.

STUDENTS-02 The system allow to login the Students.

STUDENTS-03 Students can see the company information.

STUDENTS-04 Students can give the aptitude test.

STUDENTS-05 Students can apply job (After getting notification fromjob).

3.2.2 NON-FUNCTIONAL

Non-functional requirements describe the general characteristics of a system. They are also known as quality attributes. In software and systems engineering, a non-functional requirement (NFR) is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviour. Non-functional requirements are often called as quality attributes. They are contrasted with functional requirements that define specific behaviour or functions.

3.2.2.1 EASY TO USE

- The system should be easy to access.
- The system will be very simple not involving any complications.
- The system will be very easy to use.
- Even a layman can use it easily without facing many difficulties.

3.2.2.2 SECURITY

- The system will always be secure.
- Data of HR, Comapny and Students will not be lost.
- All data will be in secure state.

3.2.2.3 RELIABILITY

- The system should be reliable for applying job.

3.2.2.4 AVAILABILITY

- The system should be easy to access.
- The system should allow user to access in anywhere with anytime.

3.2.2.5 PERFORMANCE

- The client's privacy should be maintained by the system.
- The system should never compromise with the performance.
- The system should change their behaviour according to the user.
- The system should provide the accurate estimated output to the user.

3.2.2.6 PORTABILITY

- The website can be used with any browser with an internet connection.
- The system should be available to each person.

3.2.2.7 MAINTAINABILITY

- Anytime time the data which will be shown will be accurate.
- Once updated, the data will be in persistent state.

3.3 PLANNING AND SCHEDULING

3.3.1 PLANNING

Project planning is a procedural step in project management, where required documentation is created to ensure successful project completion. Documentation includes all actions required to define, prepare, integrate, and coordinate additional plans. The project plan clearly defines how the project is executed, monitored, controlled, and closed. The project planning stage requires several inputs, including conceptual proposals, project schedules, resource requirements/limitations and success metrics. Project planning begins by setting the scope of a project and eventually working through each level of dependent action, tasks, checkpoints, and deadlines. Project planning gives us an idea about what all activities are required to complete the project. It provides obstacles that arrive in the project such as non-availability of resources and so on. Project planning involves defining the roles and responsibilities of the project management team members. It ensures that the team members work according to the laid objectives.

A project is made up of many tasks and each task is given a start and end date so it can be completed in time. The team members will have different schedules and their availability and vacation or leave dates need to be documented to successfully plan those tasks. Nowadays most of the teams use online project scheduling tools. In short scheduling is just one of the features in a larger project management software solution and there are many places in software where scheduling takes place.

Project management tools vary from team to team. Without using proper tools to manage the projects you may be doubling your efforts than optimizing it. For example, most of the tools have tasks lists which enable to schedule multiple tasks, their due dates, sometimes the planned effort against that task, and then assign that task to a person. The software may also have resource availability that schedules the team availability as well as availability of nonhuman resources like machines, building or office rooms. It also generates automated email which will notify the team members about their schedule due days or overdue. It will also let the project manager know when the availability of the team member has been changed.

Our project is aimed to be completed within seven to eight months. Plan is made in such that half of the project that is up to designing phase it is to be completed in September. Remaining part will be started in November will continue up to February. Before designing, requirement and analysis activity is to be carried out. It includes gathering all the required information about

the project either by interacting with the users who are going to use or by some research and studying different surveys. We have gathered all information about our project from different users who are going to use this. In designing, we have done designing of some basic modules which includes input output screen, login form and registration forms for website.

3.3.2 SCHEDULING

The project schedule is the tool that communicates what work needs to be performed, which resources of the organization will perform the work and the timeframes in which that work needs to be performed. The project schedule should reflect all of the work associated without a full and complete schedule, the project manager will be unable to communicate the complete effort, in terms of cost and resources, necessary to deliver the project. The project schedule can be viewed and updated by team members associated with the project, keeping everyone well informed on the overall project status. Gantt chart shows our project schedule

3.3.3 GANTT CHART

In the Gantt chart we show the time spent for each phase of the software development. Gantt charts are a project-planning tool that can be used to represent the timing of tasks required to complete a project. Because Gantt charts are simple to understand and easy to construct, they are used by most project managers for all but the most complex projects.

In a Gantt chart, each task takes up one row. Dates run along the top in increments of days, weeks, or months, depending on the total length of the project. The expected time for each task is represented by a horizontal bar whose left end marks the expected beginning of the task and whose right end marks the expected completion date. Tasks may run sequentially, parallel or overlapping. As the project progresses, the chart is updated by filling in the bars to a length proportional to the fraction of work that has been accomplished on the task. This way, one can get a quick reading of project progress by drawing a vertical line through the chart at current date. Completed tasks lie to the left of the line and are filled in. Current tasks cross the line and are behind schedule if their filled-in section is to the left of the line and ahead of schedule if the filled-in section stops to the right of the line. Future tasks lie completely to the right of the line. In constructing a Gantt chart, keep the tasks to a manageable number (no more than 15 or 20) so that the chart fits on a single page. More complex projects may require subordinate charts which detail the timing of all the subtasks which make up one of the main tasks.

On a Gantt chart one can easily see:

- The start date of the project
- What the project tasks are
- Who is working on each task
- When tasks start and finish
- How long each task will take
- How tasks group together, overlap and link with each other
- The finish date of the project.

For team projects, it often helps to have an additional column containing numbers or initials, which identify that on the team is responsible for the task. Often the project has important events, which you would like to appear on the project timeline, but which are not tasks. For example, you may wish to highlight when a prototype is complete or the date of a design review. We planned our project using according to the Gantt chart as shown as follows:

	Task	Resources	Start Date	End Date	Duration
01	Project Selection and approval	Nizamuddin, Almeera & Sarthak	15-June 2022	22-June 2022	08 Days
02	Synopsis	Nizamuddin, Almeera & Sarthak	25-June 2022	03-July-2022	09 Days
03	Learning of System	Nizamuddin, Almeera & Sarthak	10-July-2022	16-July-2022	07 Days
04	Introduction	Nizamuddin, Almeera & Sarthak	17-July-2022	23-July-2022	07 Days
05	Survey of technologies	Nizamuddin, Almeera & Sarthak	26-July-2022	07-Aug-2022	13 Days

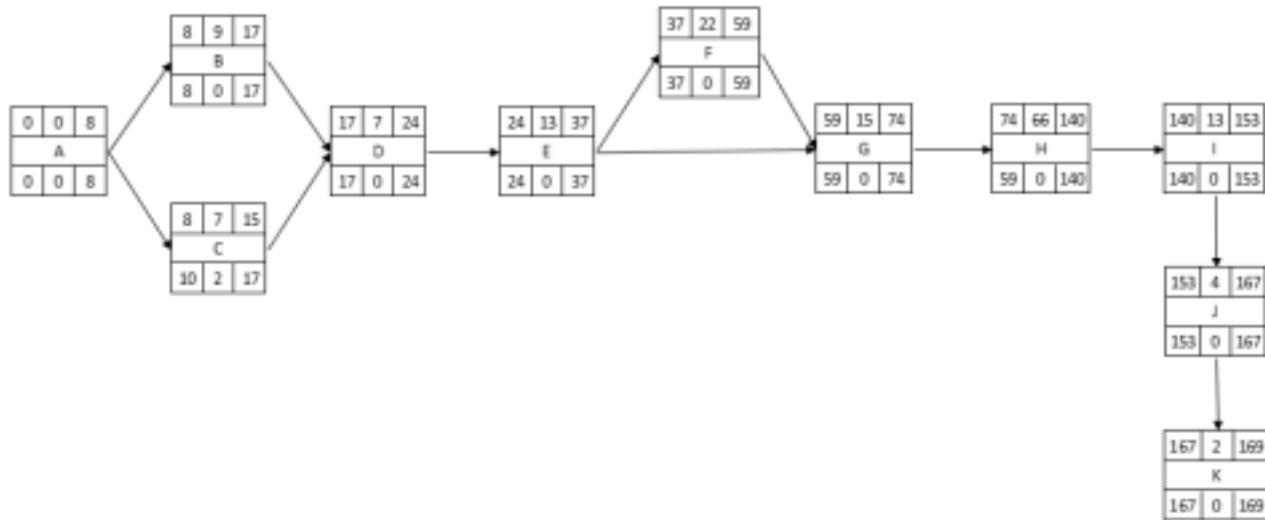
06	Gathering Requirements	Nizamuddin, Almeera & Sarthak	10-Aug 2022	01-sept-2022	22 Days
07	Designing System	Nizamuddin, Almeera & Sarthak	03-Sept 2022	17-Sept 2022	15 Days
08	Code Module	Nizamuddin, Almeera & Sarthak	26-Nov 2022	30-Jan-2023	66 Days
09	Implementation	Nizamuddin, Almeera & Sarthak	31-Jan-2023	12-Feb-2023	13 Days
10	Testing	Nizamuddin, Almeera & Sarthak	13-Feb-2023	26-Feb-2023	14 Days
11	Review	Nizamuddin, Almeera & Sarthak	27-Feb-2023	28-Feb-2023	02 Days

3.3.4 PROGRAM EVALUTION REVIEW TECHNIQUE (PERT)

The program (or project) evaluation and review technique (PERT) is a statistical tool used in project management, which was designed to analyse and represent the tasks involved in completing a given project. Figure shows PERT diagram for activities. PERT diagram shows activity no, target date, expected date and standard deviation of each activity. The activities involved are search for project, project approval, planning, requirement & analysis, documentation, designing, designing complete, database designing, documentation complete, coding & implementation and last testing.

1. It serves as a base for obtaining the important facts for implementing the decision making.
2. It forms the basis for all the planning activities.
3. PERT helps management in deciding the best possible resources utilization method.
4. PERT take advantage by using time network analysis technique.
5. PERT presents the structure for reporting information.

	Activity	Dependencies	Duration
1	A		08 Days
2	B	A	09 Days
3	C	A	07 Days
4	D	B, C	07 Days
5	E	D	13 Days
6	F	E	22 Days
7	G	E, F	15 Days
8	H	G	66 Days
9	I	H	13 Days
10	J	I	14
11	K	J	02 Days



3.4 SOFTWARE AND HARDWARE REQUIREMENTS:

To be used efficiently, all computer software needs certain hardware components or other software resources to be present on a computer. These prerequisites are known as (computer) system requirements. Most software defines two sets of system requirements: minimum and recommended.

3.4.1 SOFTWARE

- Programming Language: ASP.NET using C#.
- Web Technology: ASP.NET.
- Operating System: Windows 10, Windows 11.
- Database: SQL Server.
- Software: Visual Studio.

3.4.2 HARDWARE

- Processor – intel i5.
- Hard Disk –
- Memory – 4GB RAM.
- Processor Speed- Dual Core 2.40GHz.

3.5 PRELIMINARY PRODUCT DESCRIPTION

3.5.1 RELIABILITY

This system is designed to have very simple database just to cater the exact need of online hair salon system. It is tested for all the constraints at development stage.

3.5.2 Security

This system is provided with authentication without which no user can pass. So only the legitimate users are allowed to use.

3.6 CONCEPTUAL MODELS

In the realm of software development, a conceptual model may be used to represent relationships of entities within a database. A conceptual model can easily represent abstract concepts of the relationships between objects in the system, such as Users and their relationships to accounts.

3.6.1 USE CASE

A use case diagram is a dynamic or behaviour diagram in UML. Use case diagrams model the functionality of a system using actors and use cases. Use cases are a set of actions, services, and functions that the system needs to perform. In this context, a "system" is something being developed or operated, such as a web site. The "actors" are people or entities operating under defined roles within the system. Use case diagrams are valuable for visualizing the functional requirements of a system that will translate into design choices and development priorities. They also help identify any internal or external factors that may influence the system and should be taken into consideration.

3.6.1.1 NOTATIONS

- **System**

Draw your system's boundaries using a rectangle that contains use cases. Place actors outside the system's boundaries.



- **Use case**

Draw use cases using ovals. Label the ovals with verbs that represent the system's functions



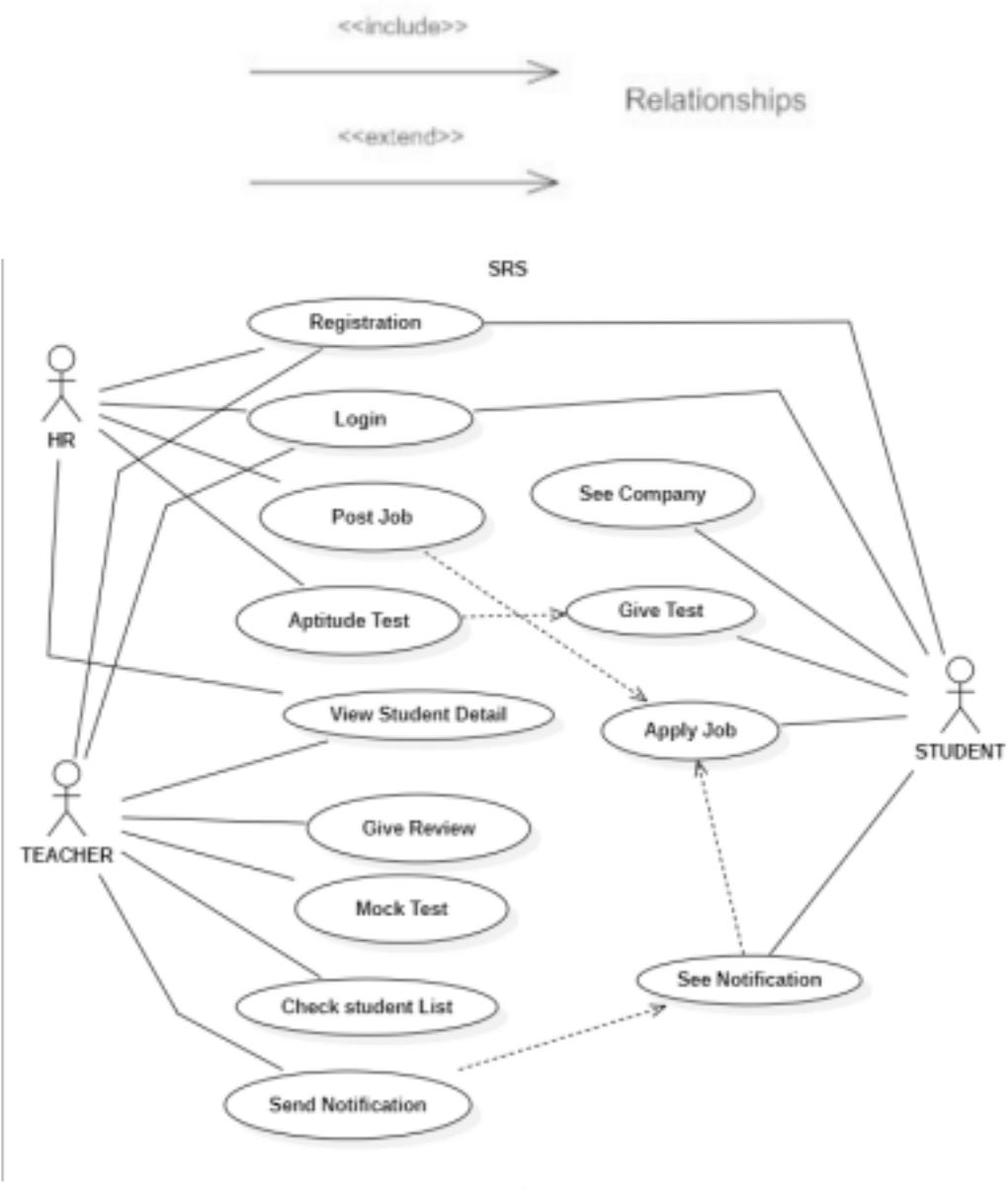
- **Actors**

Actors are the users of a system. When one system is the actor of another system, label the actor system with the actor stereotype.



- **Relationships**

Illustrate relationships between an actor and a use case with a simple line. For relationships among use cases, use arrows labelled either "uses" or "extends." A "uses" relationship indicates that one use case is needed by another in order to perform a task. An "extends" relationship indicates alternative options under a certain use case.



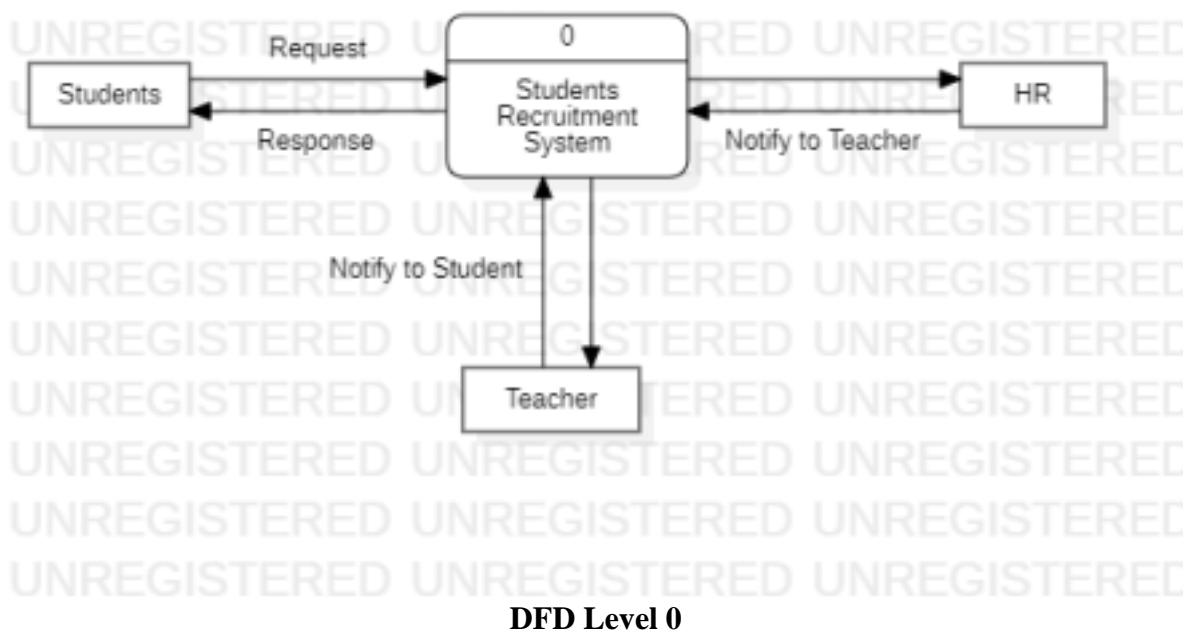
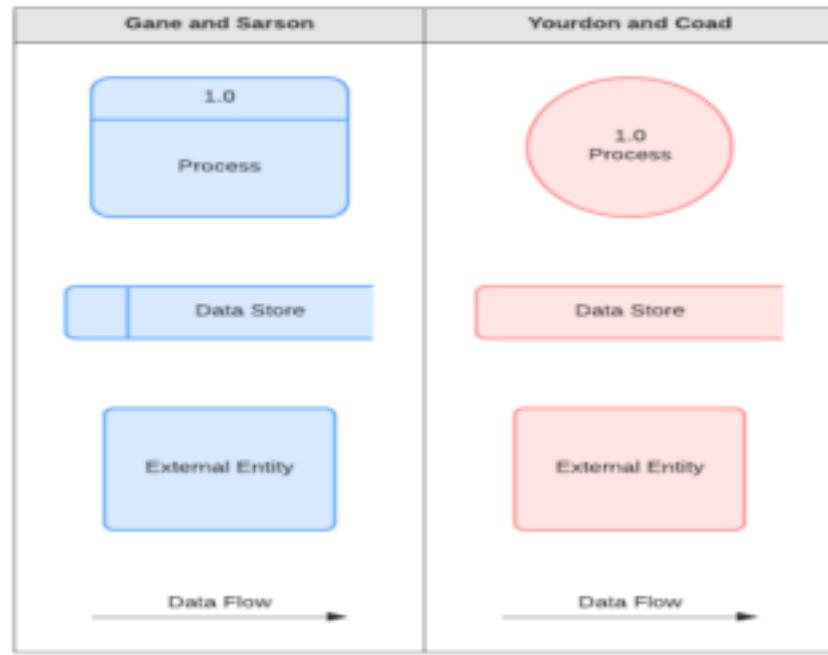
3.6.2 DATA FLOW DIAGRAM

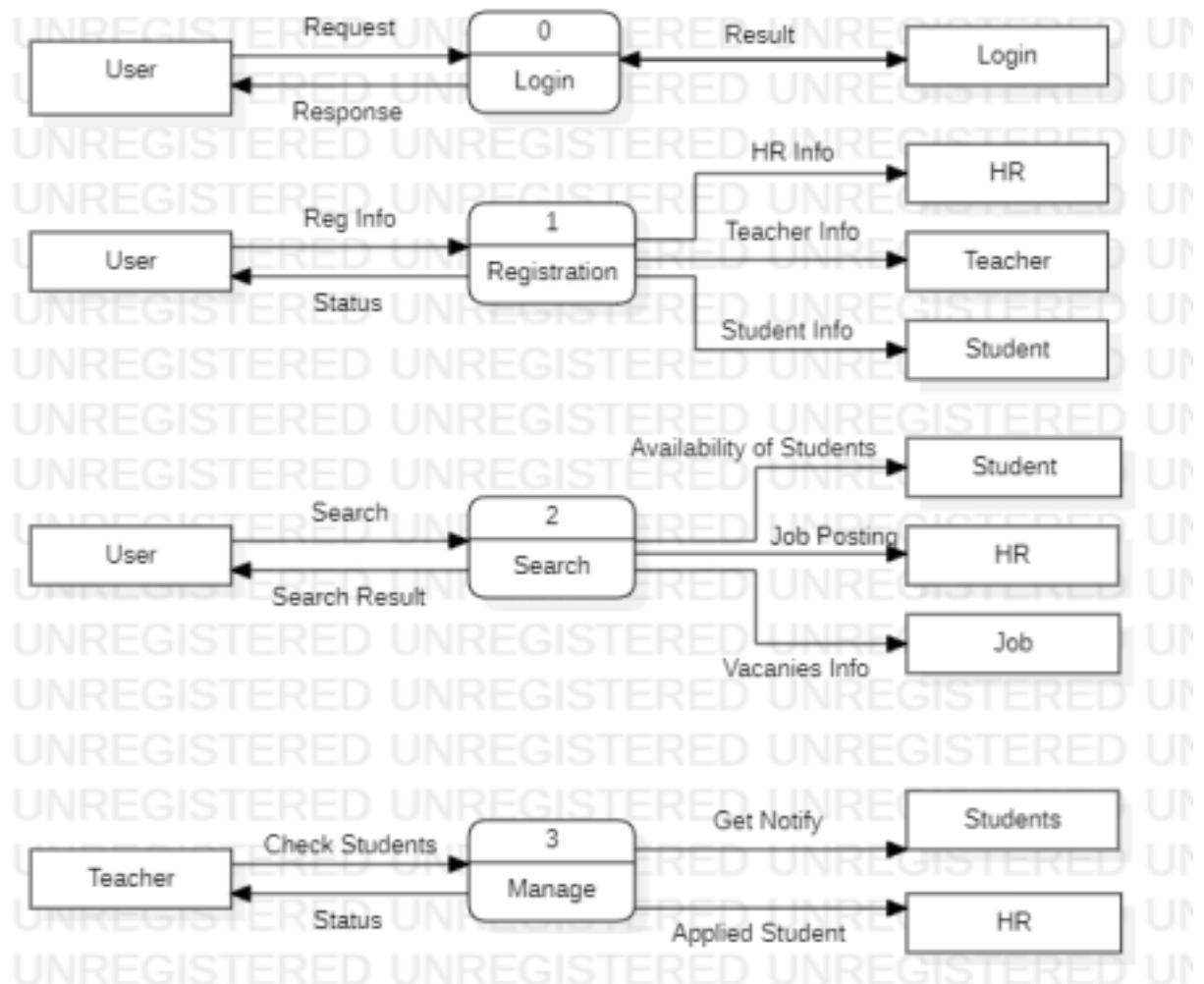
A data flow diagram shows the way information flows through a process or system. It includes data inputs and outputs, data stores, and the various sub processes the data moves through. DFDs are built using standardized symbols and notation to describe various entities and their relationships. Data flow diagrams visually represent systems and processes that would be hard to describe in a chunk of text. You can use these diagrams to map out an existing system and make it better or to plan out a new system for implementation. Visualizing each element makes it easy to identify inefficiencies and produce the best possible system. Data flow diagram levels Data flow diagrams are also categorized by level. Starting with the most basic, level 0, DFDs get increasingly complex as the level increases. As you build your own data flow diagram, you will need to decide which level your diagram will be. Level 0 DFDs, also known as context diagrams, are the most basic data flow diagrams. They provide a broad view that is easily digestible but offers little detail.

- **Level 0:** Data flow diagrams show a single process node and its connections to external entities.
- **Level 1:** DFDs are still a general overview, but they go into more detail than a context diagram. In a level 1 data flow diagram, the single process node from the context diagram is broken down into subprocesses. As these processes are added, the diagram will need additional data flows and data stores to link them together.
- **Level 2:** DFDs simply break processes down into more detailed subprocesses. In theory, DFDs could go beyond level 3, but they rarely do. Level 3 data flow diagrams are detailed enough that it does not usually make sense to break them down further.

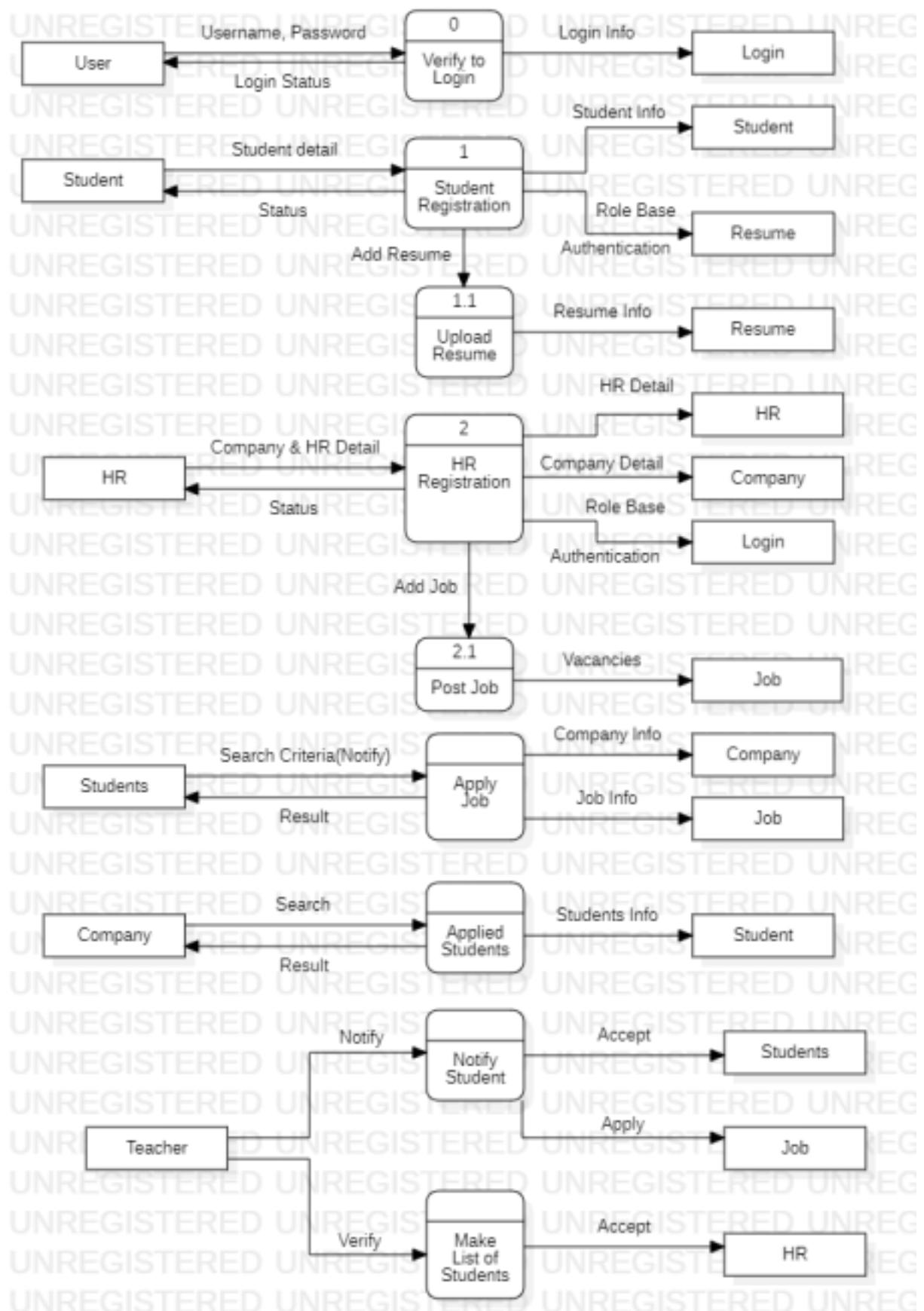
3.6.2.1 NOTATION

Depending on the methodology (Gane and Sarson vs. Yourdon and Coad), DFD symbols vary slightly. However, the basic ideas remain the same. There are four basic elements of a data flow diagram: processes, data stores, external entities, and data flows. The picture below shows the standard shapes for both methodologies.





DFD Level 1



DFD level 2

3.6.3 CLASS DIAGRAM

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.

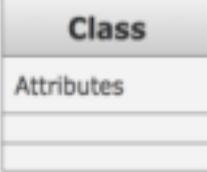
Class diagram describes the attributes and operations of a class and also the constraints imposed on the system. The class diagrams are widely used in the modelling of object-oriented systems because they are the only UML diagrams, which can be mapped directly with object-oriented languages.

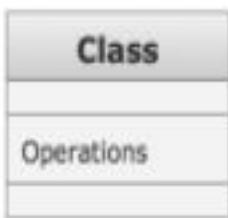
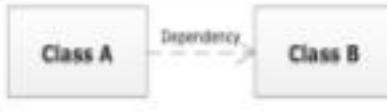
Class diagram shows a collection of classes, interfaces, associations, collaborations, and constraints. It is also known as a structural diagram.

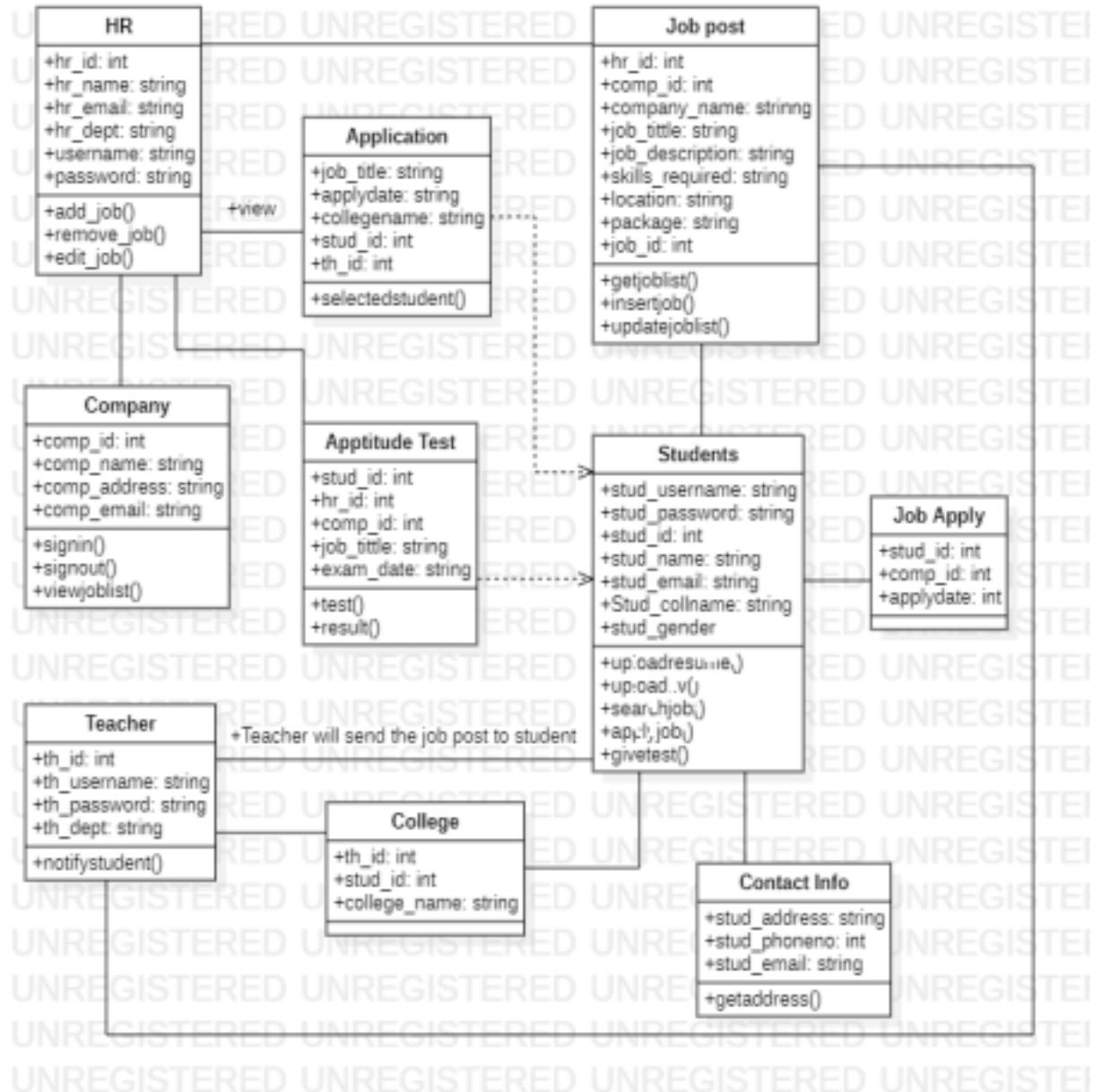
3.6.3.1 PURPOSE OF CLASS DIAGRAM

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.

3.6.3.2 NOTATIONS

Diagram element	Graphical presentation	Description
Class	 A rectangular box labeled "Class" in the center.	Class represents a set of objects that have the same structure, behavior, and relationships with objects of other classes.
Attribute	 A rectangular box divided into two horizontal sections. The top section is labeled "Class" and the bottom section is labeled "Attributes".	Attribute is a typed value that defines the properties and behavior of the object.

Operation		Operation is a function that can be applied to the objects of a given class.
Interface		Interface is an abstract class that defines a set of operations that the object of the class associated with this interface provides to other objects.
Association		Association is a relationship that connects two classes.
Aggregation		Aggregation is an association with the relation between the whole and its parts, the relation when one class is a certain entity that includes the other entities as components.
Composition		Composition is a strong variant of aggregation when parts cannot be separately from the whole.
Generalization		Generalization is an association between the more general classifier and the more specific classifier.
Inheritance		Inheritance is a relationship when a child object or class assumes all properties of its parent object or class.
Realization		Realization is a relationship between interfaces and classes or components that realize them.
Dependency		Dependency is a relationship when some changes of one element of the model can need the change of another dependent element.



Class Diagram

3.6.4 ACTIVITY DIAGRAM

We use Activity Diagrams to illustrate the flow of control in a system and refer to the steps involved in the execution of a use case. We sequential and concurrent activities using activity diagrams. So, we basically depict workflows visually using an activity diagram. An activity diagrams focuses on condition of flow and the sequence in which it happens. We describe or depict what causes a particular event using an activity diagram. UML models basically three types of diagrams, namely, structure diagram, interaction diagram, and behaviour diagrams. An activity diagrams is a behavioural diagram i.e.; it depicts the behaviour of a system.

3.6.4.1 NOTATIONS

- **Initial State**

The starting state before an activity takes place is depicted using the initial state. A process can have only one initial state unless we are depicting nested activities.

We use a black filled circle to depict the initial state of a system.

- **Action or Activity State**

An activity represents execution of an action on objects or by objects. We represent an activity using a rectangle with rounded corners. Basically, any action or event that takes place is represented using an activity.

- **Action Flow or Control flows**

Action flows or Control flows are also referred to as paths and edges. They are used to show the transition from one activity state to another. An activity state can have multiple incoming and outgoing action flows. We use a line with an arrow head to depict a Control Flow.

- **Decision node and Branching**

When we need to make a decision before deciding the flow of control, we use the decision node. The outgoing arrows from the decision node can be labelled with conditions or guard expressions. It always includes two or more output arrows.

- **Guards**

A Guard refers to a statement written next to a decision node on an arrow sometimes within square brackets.

- **Fork**

Fork nodes are used to support concurrent activities. When we use a fork node when both the activities get executed concurrently i.e., no decision is made before splitting the activity into two parts. Both parts need to be executed in case of a fork statement.

- **Join**

Join nodes are used to support concurrent activities converging into one. For join notations we have two or more incoming edges and one outgoing edge.

- **Merge or Merge Event**

Scenarios arise when activities which are not being executed concurrently have to be merged. We use the merge notation for such scenarios. We can merge two or more activities into one if the control proceeds onto the next activity irrespective of the path chosen.

- **Final State or End State**

The state which the system reaches when a particular process or activity ends is known as a Final State or End State. We use a filled circle within a circle notation to represent the final state in a state machine diagram. A system or a process can have multiple final states.

3.6.5 ENTITY RELATIONSHIP DIAGRAM

Entity-Relationship (ER) data model allows us to describe the data involved in a real-world enterprise in terms of object and their relationships and is widely used to develop an initial database design. ER diagram is a relationship between two entity sets. E-R diagram can express the overall structure of a database graphically. E-R diagrams are simple and clear.

The ER model is important primarily for its role in database design. It provides useful concepts that allow us to move from an informal description of what users want from their database to a more detailed and precise description that can be implemented in a DBMS. The ER model is used in a phase called Conceptual Database Design. It should be noted that many variations of ER diagrams are in use and no widely accepted standards prevail. ER modelling is something regarded as a complete approach to design a logical database schema. This is incorrect because the ER diagram is just an approximate description of data, constructed through a very subjective evaluation of the information collected during requirements analysis.

3.6.5.1 COMPONENTS OF AN ER DIAGRAM

- **Rectangle:** Represents Entity sets.
- **Ellipses:** Attributes.
- **Diamonds:** Relationship Set.
- **Lines:** They link attributes to Entity Sets and Entity sets to Relationship Set.
- **Double Ellipses:** Multivalued Attributes.
- **Dashed Ellipses:** Derived Attributes.
- **Double Rectangles:** Weak Entity Sets.
- **Double Lines:** Total participation of an entity in a relationship set.

ENTITY

An ERD entity is a definable thing or concept within a system, such as a person/role (e.g., Students), object (e.g., Invoice), concept (e.g., Profile) or event (e.g., Transaction). When determining entities, think of them as nouns. In ER models, an entity is shown as a rounded rectangle, with its name on top and its attributes listed in the body of the entity shape.

WEAK ENTITY

A weak entity is a type of entity which doesn't have its key attribute. It can be identified uniquely by considering the primary key of another entity. For that, weak entity sets need to have participation. A weak entity is represented using double rectangular boxes. It is generally connected to another entity.

ATTRIBUTES

An entity is described using a set of attributes. All entities in each set have the same attributes this essentially what we mean by similar. Our choice of attributed reflects the level of detail at which we wish to represent information in crisis.

1. Key Attribute

The attribute which uniquely identifies each entity in the entity set is called key attribute. In ER diagram, key attribute is represented by an ellipse with underlying lines. For each attribute associated with an entity set, we must identify a domain of possible values.

2. Composite Attribute

An attribute composed of many other attributes is called as composite attribute. In ER diagram, composite attribute is represented by an oval comprising of ovals.

3. Multivalued Attribute

An attribute consisting of more than one value for a given entity is called as multivalued attribute. In ER diagram, multivalued attribute is represented by double ellipse.

RELATIONSHIPS

They describe the association between entities. They are characterized by cardinality as follows:

One-to-One relationship means an instance of the first entity is associated with only one instance of second entity.

One-to-Many relationship means that one instance of the first entity is related to many instances of second entity, while an instance of second entity is associated with only instance of the first entity

Many-to-Many relationship means that an instance of the first entity is related to many instances of the second entity and the same is true in the reverse direction also.

3.6.6 SEQUENCE DIAGRAM

Sequence diagrams describe how objects, or groups of objects, interact within a system. Interacting objects can, for example, be classes, program components or real-world instances such a customer who is buying a train ticket in the station.

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. Sequence diagrams are used as part of the analysis and design process. The Together application has two primary modes:

Sequence Diagram Generation

Diagrams as sketches|| Diagrams with objects and messages associated with classes and operations, respectively. Developers can use sequence diagrams to document the database dynamic aspects of an object model. In the following examples, sequence diagrams are used to make object interactions more understandable by tackling the dynamics behind major business methods. This technique frequently leads to improvements in the object model.

For example, it can reveal missing associations to objects that you need to message, missing methods in a class, and sometimes even missing classes. 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.

3.6.6.1 NOTATION

ACTOR

An actor in a UML diagram represents a type of role where it interacts with the system and its objects. It is important to note here that an actor is always outside the scope of the system we aim to model using the UML diagram. We use actors to depict various roles including human users and other external subjects. We represent an actor in a UML diagram using a stick person notation. We can have multiple actors in a sequence diagram.

LIFELINE

A lifeline is a named element which depicts an individual participant in a sequence diagram. So basically, each instance in a sequence diagram is represented by a lifeline. Lifeline elements are located at the top in a sequence diagram. The standard in UML for naming a lifeline follows the following format – Instance Name: Class Name.

We display a lifeline in a rectangle called head with its name and type. The head is located on top of a vertical dashed line (referred to as the stem) as shown above. If we want to model an unnamed instance, we follow the same pattern except now the portion of lifeline's name is left blank.

MESSAGE

Communication between objects is depicted using messages. The messages appear in a sequential order on the lifeline. We represent messages using arrows. Lifelines and messages form the core of a sequence diagram. Messages can be broadly classified into the following

1. SYNCHRONOUS MESSAGE

A synchronous message waits for a reply before the interaction can move forward. The sender waits until the receiver has completed the processing of the message. The caller continues only when it knows that the receiver has processed the previous message i.e., it receives a reply message. A large number of calls in object-oriented programming are synchronous. We use a solid arrowhead to represent a synchronous message.

2. ASYNCHRONOUS MESSAGE

An asynchronous message does not wait for a reply from the receiver. The interaction moves forward irrespective of the receiver processing the previous message or not. We use a lined arrowhead to represent an asynchronous message.

USES OF SEQUENCE DIAGRAMS

- Used to model and visualise the logic behind a sophisticated function, operation, or procedure.
- They are also used to show details of UML use case diagrams.
- Used to understand the detailed functionality of current or future systems.
- Visualise how messages and tasks move between objects or components in a system.

CHAPTER 4

SYSTEM DESIGN

4.1 BASIC MODULES

A module is a software component or part of a program that contains one or more routines. One or more independently developed modules make up a program. An enterprise-level software application may contain several different modules, and each module serves unique and separate business operations. Modules make a programmer's job easy by allowing the programmer to focus on only one area of the functionality of the software application. Modules are typically incorporated into the program (software) through interfaces.

MODULAR FEATURES

HR

- Upload about company.
- See resume of Students.
- Post job.
- Aptitude test.
- See review.

COMPANY

- Give review.
- Send job.
- Mock test.

STUDENTS

- See company info.
- Give test.
- Apply job.

4.2 DATA DESGINE

A database is a collection of information that is organized so that it can be easily accessed, managed, and updated. Data is organized into rows, columns, and tables, and it is indexed to

make it easier to find relevant information. Data gets updated, expanded, and deleted as new information is added. Databases process workloads to create and update themselves, querying the data they contain and running applications against it, a database system is a fundamental component of the larger enterprise information system. The database development life cycle (DDLC) is a process of designing, implementing, and maintaining a database system to meet strategic or operational information needs of an organization or enterprise such as:

- Improved customer support and customer satisfaction.
- Better production management.
- Better inventory management.
- More accurate sales forecasting

The database development life cycle (DDLC) is inherently associated with the software development life cycle (SDLC) of the information system. DDLC goes hand-in-hand with the SDLC and database development activities starts right at the requirement phase.

WHAT IS A DATABASE MANAGEMENT SYSTEM (DBMS)?

A database management system (DBMS) is a software package designed to define, manipulate, retrieve, and manage data in a database. A DBMS generally manipulates the data itself, the data format, field names, record structure and file structure. It also defines rules to validate and manipulate this data. A DBMS relieves users of framing programs for data maintenance. Fourth-generation query languages, such as SQL, are used along with the DBMS package to interact with a database.

ADVANTAGE OF DBMS

- Segregation of application program.
- Minimal data delicacy or data redundancy.
- Easy retrieval of data using the Query Language.
- Reduced development time and maintenance need.
- With Cloud Data centres, we now have Database Management Systems capable of storing almost infinite data. Seamless integration into the application programming languages which makes it very easier to add a database to almost any application or website.

DBMS was designed to solve the fundamental problems associated with storing, managing, accessing, securing, and auditing data in traditional file systems. Traditional database applications were developed on top of the databases, which led to challenges such as data redundancy, isolation, integrity constraints and difficulty in managing data access.

A layer of abstraction was required between users or apps and the databases at a physical and logical level. By introducing a technology solution to manage databases in the form of DBMS software, the following key benefits are realized.

- **DATA SECURITY**

DBMS allows organizations to enforce policies that enable compliance and security. The databases are available for appropriate users as per organizational policies. The DBMS system is also responsible to maintain optimum performance of querying operations while ensuring the validity, security and consistency of data items updated to a database.

- **DATA ACCESS AND AUDITING**

Controlled access to databases. Logging associated access activities allows organizations to audit for security and compliance.

- **DATA INTEGRATION**

Instead of operating island of database resources, a single interface is used to manage databases with logical and physical relationships.

- **ABSTRACTION AND INDEPENDENCE**

Organizations can change the physical schema of database systems without necessitating changes to the logical schema that govern database relationships. As a result, organizations can upgrade storage and scale the infrastructure without impacting database operations. Similarly, changes to the logical schema can be applied without altering the apps and services that access the databases.

- **UNIFORM MANAGEMENT AND ADMINISTRATION**

A single console interface to perform basic administrative tasks makes the job easier for database admins and IT users.

DESCRIPTION OF NORMALIZATION

Normalization is the process of organizing data in a database. This includes creating tables and establishing relationships between those tables according to rules designed both to protect the data and to make the database more flexible by eliminating redundancy and inconsistent dependency.

TYPES OF NORMALIZATION

We need to know three stages of normalisation; a basic outline of the three stages is shown in the image below. Normalisation is used to keep a database as efficient as it can possibly be without any unnecessary duplication and no redundant data. When working with large volumes of data this can cause a lot of space and time to be saved as its less data to process.

- 1NF-Atomic Data Test.
- 2NF-Partial Dependency Test.
- 3NF-NonKey Dependency Test.

ADVANTAGE OF THE NORMAL FORM (3NF)

Reduced data redundancy, increased data quality, capturing complete business requirements, data modification anomalies (insert, delete and update) is reduced.

4.2.1 SCHEMA DESGINE

The database schema of a database system is its structure described in a formal language supported by the database management system (DBMS). The term "schema" refers to the organization of data as a blueprint of how the database is constructed.

4.2.2 DATA INTEGRITY AND CONSTRAINTS

DATA INTEGRITY

Data integrity is the maintenance of, and the assurance of the accuracy and consistency of, data over its entire lifecycle and is a critical aspect to the design, implementation and usage of any system which stores, processes, or retrieves data. The term is broad in scope and may have widely different meanings depending on the specific context even under the same general umbrella of computing it is at times used as a proxy term for data quality while data validation is a pre-requisite for data integrity. Data integrity is the opposite of data corruption the overall intent of any data integrity technique is the same: ensure data is recorded exactly as intended (such as a database correctly rejecting mutually exclusive possibilities) and upon later retrieval, ensure the data is the same as it was when it was originally recorded. In short, data integrity aims to prevent unintentional changes to information. Data integrity is not to be confused with data, the discipline of protecting data from unauthorized parties.

Data integrity is enforced in both hierarchical and relational database models. The following three integrity constraints are used in a relational database structure to achieve data integrity.

- Entity Integrity

This is concerned with the concept of primary keys. The rule states that every table must have its own primary key and that each must be unique and not null.

- Referential Integrity This is the concept of foreign keys. The rule states that the foreign key value can be in two states. The first state is that the foreign key value would refer to a primary key value of another table, or it can be null. Being null could simply mean that there are no relationships, or that the relationship is unknown.

- Domain Integrity

This states that all columns in a relational database are in a defined domain.

CONSTRAINT

Constraints are rules created at design-time that protect our data from becoming corrupt. It is essential for the long-time survival of our heart child of a database solution. Without constraints solution will definitely decay with time and heavy usage. A wise man once said: “Data must protect itself!” And this is what constraints do. It is rules that keep the data in your database as valid as possible. There are many ways of doing this. Following is some of the ways to do so. Foreign key constraints are probably the most used constraint and ensure that references to other tables are only allowed if there actually exists a target row to reference. This also makes it impossible to break such a relationship by deleting the referenced row creating a dead link.

TYPES OF CONSTRAINTS

Constraints can be divided into the following two types,

- Column level constraints: Limits only column data.
- Table level constraints: Limits whole table data.

Constraints are used to make sure that the integrity of data is maintained in the database.

Following are the most used constraints that can be applied to a table.

- **NOT NULL CONSTRAINT**

The NOT-NUL constraint is a restriction placed on a column in a relational database table. It enforces the condition that, in that column, every row of data must contain a value - it cannot be left blank during insert or update operations. If this column is left blank, this will produce an error message and the entire insert or update operation will fail. This means that you cannot insert a new record or update a record without adding a value to this field.

- **UNIQUE CONSTRAINT**

A UNIQUE constraint is a single field or combination of fields that uniquely defines a record. Some of the fields can contain null values if the combination of values is unique. The unique and primary key constraints both provide a guarantee for uniqueness for a column or set of columns. A primary key constraint automatically has a unique constraint defined on it. Note that you can have many unique constraints per table, but only one primary key constraint per table.

- **DEFAULT CONSTRAINT**

A DEFAULT constraint is used to provide a default column value for the inserted rows if no value is specified for that column in the INSERT statement. The Default constraint helps in maintaining the domain integrity by providing proper values for the column, in case the user does not provide a value for it. The default value can be a constant value.

- **CHECK CONSTRAINT**

A CHECK constraint is used to restrict the value of a column between a range. It performs check on the values, before storing them into the database. It is like condition checking before saving data into a column.

- **PRIMARY CONSTRAINT**

A PRIMARY KEY constraint uniquely identifies each record in a database. A Primary Key must contain unique value and it must not contain null value. Usually, Primary Key is used to index the data inside the table.

- **FOREIGN CONSTRAINT**

A FOREIGN KEY is a field (or collection of fields) in one table that refers to the primary key in another table. The foreign key constraint is used to prevent actions that would destroy links between tables. The foreign key constraint also prevents invalid data from being inserted into the foreign key column, because it has to be one of the values contained in the table it points.

4.3 PROCEDURAL DESIGN

Procedural Programming which at times has been referred to as inline programming takes a more top-down approach to programming. Object-oriented Programming uses classes and objects, Procedural Programming takes on applications by solving problems from the top of the code down to the bottom. This happens when a program starts with a problem and then breaks that problem down into smaller sub-problems or sub-procedures. These sub-procedures are continually broken down in the process called functional decomposition until the sub procedure is simple enough to be solved.

Software Procedural Design (SPD) converts and translates structural elements into procedural explanations. SPD starts straight after data design and architectural design. This has now been

mostly abandoned mostly due to the rise in preference of object-oriented programming and design pattern. The procedural design is often understood as a software design process that uses mainly control commands such as sequence, condition, repetition, which are applied to the predefined data. Sequences serve to achieve the processing steps in order that is essential in the specification of any algorithm.

The following steps are in procedure for Login form:

1. Get the username typed by the user.
2. Get the password typed by the user.
3. Check both username and password in MySQL database.
4. If username and password do not match.
 - a. Show invalid username and password error message.
5. If username matches but password does not match.
 - a. Show invalid password error message.
6. If username does not match but password does match.
 - a. Show invalid username error message.
7. If both match username and password.
 - a. Start session and go default redirect after login.

4.3.1 LOGICAL DIAGRAMS

Logic diagrams represent systematic flow of procedure that improves its comprehension and helps in implementation. Logic diagrams have many uses. In the solid-state industry, they are used as the principal diagram for the design of solid-state components such as computer chips.

A control flow diagram (CFD) is a diagram to describe the control flow of a business process or review. Network Diagrams aid in planning, organizing, and controlling: Due to the sequential visualization of all project tasks and activities and all their dependencies, planning the project is an easier feat whilst being able to take into consideration the criticality of each task. Task interdependencies are clearly defined: With the help of visual representation of project tasks, their dependencies, criticality, and duration are all clearly defined. This allows for a more effective project workflow as team members receive a more in-depth understanding of the individual tasks and how to perform each one in order to reach the project's objective and goal.

4.3.2 DATA STRUCTURE

In computer science, a data structure is a data organization, management and storage format that enable efficient access and modification. More precisely, a data structure is a collection of data values, the relationships among them, and the functions or operations that can be applied to the data.

The data structure name indicates itself that organizing the data in memory. There are many ways of organizing the data in the memory as we have already seen one of the data structures, i.e., array in C language. Array is a collection of memory elements in which data is stored sequentially, i.e., one after another. In other words, we can say that array stores the elements in a continuous manner. This organization of data is done with the help of an array of data structures. There are also other ways to organize the data in memory.

Data structures serve as the basis for abstract data type (ADT). "The ADT defines the logical form of the data type. The data structure implements the physical form of the data type. Different kinds of data structures are suited to different kinds of applications, and some are highly specialized to specific tasks. For example, relational databases commonly use B-tree indexes for data retrieval while Compiler implementations usually use hash tables to look up identifiers. The implementation of a data structure usually requires writing a set of procedure that create and manipulate instances of that structure. The efficiency of a data structure cannot be analysed separately from those operations. This observation motivates the theoretical concept of an abstract data type, a data structure that is defined indirectly by the operations that may be performed on it, and the mathematical properties of those operations (including their space and time cost).

TYPES OF DATA STRUCTURES

Data structure types are determined by what types of operations are required or what kinds of algorithms are going to be applied. These types include:

ARRAY

An array is a collection of items stored at contiguous memory locations. The idea is to store multiple items of the same type together. This makes it easier to calculate the position of each element by simply adding an offset of a base value, i.e., the memory location of the first element of the array (generally by the name of the array).

STACK

A stack is a container of objects that are inserted and removed according to the LIFO (Last-in First-out) principle. In the pushdown stacks only two operations are allowed: push the item into the stack and pop the item out of the stack. A stack is a limited access data structure - elements can be added and removed from the stack only at the top. push adds an item to the top of the stack, pop removes the item from the top. A helpful analogy is to think of a stack of books; you can remove only the top book, also you can add a new book on the top. A stack is a recursive data structure.

QUEUE

Queue is a linear data structure where the first element is inserted from one end called REAR and deleted from the other end called as FRONT. Front points to the beginning of the queue and Rear points to the end of the queue. Queue follows the FIFO (First - In - First Out) structure. According to its FIFO structure, element inserted first will also be removed first. In a queue, one end is always used to insert data (enqueue) and the other is used to delete data (dequeue), because queue is open at both its ends.

LINKED LIST

A linked list is a linear data structure where each element is a separate object. Each element (we will call it a node) of a list is comprising of two items - the data and a reference to the next node. The last node has a reference to null. The entry point into a linked list is called the head of the list.

STRING

Strings are defined as an array of characters. The difference between a character array and a string is the string terminated a special character '\0'. String can be referred to either using a character pointer or as a character array. When strings are declared as character arrays, they are stored like other types of arrays. For example, if str[] is an auto variable then the string is stored in the stack segment, if it's a global or static variable then stored in the data segment.

4.3.3 ALGORITHM DESIGN

To make a computer do anything, we must write a computer program. To write a computer program, we must tell the computer, step by step, exactly what you want it to do. The computer then "executes" the program, following each step mechanically, to accomplish the end goal. When we are telling the computer what to do, we also get to choose how it is going to do it. That is where computer algorithms come in.

An algorithm is a formula or set of steps for solving a particular problem. To be an algorithm, a set of rules must be unambiguous and have a clear stopping point. Algorithms can be expressed in any language, from natural languages like English. A successful and dynamic application should have a flow of events that implements the system behaviour. The term algorithm describes a solution to a problem. Algorithm is important in a problem-solving environment because it states the steps and procedures leading to the solution. In other words, an algorithm provides step-by-step procedures in solving a particular problem.

The reason algorithms are used so often in computer science is that computers can be programmed to execute each instruction in a sequence, allowing programmers to instruct computers how to render 3-D graphics, display text and perform various operations on numbers. The first uses of computers were to perform basic arithmetic operations on huge volumes of numbers, sometimes requiring several months to return an answer that would take a few seconds or minutes on today's hardware. Computer scientists at the time didn't realize that algorithms could be used to program computers to make photo-editing and design applications, video games and automated financial trading software.

FOLLOWING IS THE ALGORITHM

LOGIN

1. START.
2. Get Username and Password.
3. If Username is equal to the entered Username & the stored Password is equal to the entered Password.
4. Then login successful.
5. Else login failed.
6. End If.
7. END

REGISTRATION

1. START.
2. Click on register button.
3. Fill the form with all appropriate data according to the sequence.
4. After completing click the submit button.
5. Then click on sign in button to enter in main page.
6. END.

FOR APPLY JOB

1. START.
2. Open the websites.
3. See the notification which is send by teacher.
4. See the job
5. Click on the apply button.
6. END.

4.4 USER INTERFACE DESIGN:

User interfaces are the access points where users interact with designs. Graphical user interfaces (GUIs) are designs' control panels and faces; voice-controlled interfaces involve oral-auditory interaction, while gesture-based interfaces witness users engaging with 3D design spaces via bodily motions. User interface design is a craft that involves building an essential part of the user experience; users are very swift to judge designs on usability and likeability. Designers focus on building interfaces users will find highly usable and efficient. Thus, a thorough understanding of the context's users will find themselves in when making those judgments is crucial. You should create the illusion that users aren't interacting with a device so much as they're trying to attain goals directly and as effortlessly as possible. This is in line with the intangible nature of software instead of depositing icons on a screen, you should aim to make the interface effectively invisible, offering users portals through which they can interact directly with the reality of their tasks. Focus on sustaining this "magic" by letting users find their way about the interface intuitively – the less they notice they must use controls, the more they will immerse themselves. This dynamic applies to another dimension of UI design: Your design should have as many enjoyable features as are appropriate.

- There should be title in every page All the pages in website have proper titles. This helps the user to know on which page the user is in and what information he can expect on the page.
- The site purpose should be made clear. When user visits the website for the first time, from the introduction; the user can understand that the site is related to Students Recruitment System.
- The user should find what they need once the user enters the website Once the user is clear of what the website is for and when user tries to login after registering the user can easily find what he is looking for. No unnecessary data is presented that makes the user search in the whole page what is looking for.
- The images should be descriptive (alt tags) All the images that are used on the website have alt tags. When hovered over the image there will be tag describing the image which helps the visually disabled people who are using the website.
- Navigation must be smooth and clear Navigations on the website are made as simple as possible. The user is directed properly to the user intended page. The number of navigations that user need to make, to go the required page is kept as minimal as possible.
- Only important information must be displayed on the screen when pages open When pages open, only required information is displayed so that user is not frustrated, and he does not have to search for the required information. When user navigates to particular page only the information required by the user pertaining to the page is presented.

4.5 SECURITY ISSUES

Data is the most precious factor of today's websites. Top business organizations spend billions of dollars every year to secure their computer networks and to keep their business data safe. We are dependent on computers today for controlling large money transfers between banks, insurance, markets, telecommunication, electrical power distribution, health and medical fields, nuclear power plants, space research and satellites. We cannot negotiate security in these critical areas.

Security is freedom from, or resilience against, potential harm (or other unwanted coercive change) from external forces. Beneficiaries (technically referents) of security may be persons and social groups, objects and institutions, ecosystems, and any other entity or phenomenon vulnerable to unwanted change by its environment. The most important service in today's world is security. As technology is increasing, ways to hack data are also increasing. For any website or application development, security is one of the crucial aspects. Security involves securing the data. In our system data is secured as only the person knowing username and password can enter the system. Passwords are stored in encrypted format. At time of registration, one security question is asked from users. If users forget their password at later stage, they can access their account by answering that security question. This way system ensures that no other can use someone else's account. The security involved in this system is hierarchical security. Security is the degree of resistance to, or protection from attack. In order to elicit security requirements, ones should have the knowledge regarding security issues. The most common issues are CIA (Confidentiality, Integrity, and Availability)

- C: Confidentiality is prevention of unauthorized disclosure of information.
- I: Integrity is prevention of unauthorized modification of information.
- A: Availability is prevention of unauthorized withholding of information.

Security requirements ensure that the software is protected from unauthorized access to the system and its stored data. It considers different levels of authorization and authentication across different user's roles.

- Sending abusive e-mails or posting offensive Web pages.
- Creation or transmission of any offensive or indecent images.
- Giving unauthorized access to other computing resources e.g., allowing an account to be used by someone not authorized to use it.
- Deliberately creating or spreading computer viruses or worms.
- Unauthorized running of applications that involve committing the website to sharing its user's resources, e.g., network bandwidth, in an uncontrolled and unlimited way.

Cyber-attacks take advantage of software errors, such as not properly validating user input, inconsistencies in the design assumptions among system components, and unanticipated user and operator actions. Software errors can be introduced by disconnects and miscommunications during the planning, development, testing, and maintenance of the components. Although an application development team may be expert in the required business functionality, that team usually has limited or no applicable security expertise.

4.6 TEST CASES DESIGN:

Software testing is an essential and important technique for assessing the quality of a particular software product/service. In software testing, test cases and scenarios play an inevitable and a pivotal role. A good strategic design and technique help to improve the quality of the software testing process. The process improves the quality of the product/service and ensures effectiveness. Software testing is the process of analysing a software item to know the differences between the existing and required conditions (bugs). Testing helps to evaluate the features of the software, to ensure it is free of bug. It is an activity that is carried out in co ordinance with the development cycle and before the deployment.

Divided mainly into three major categories, test case design techniques are crucial verifications steps that are created to design a software or application that is free from various kinds of defects and issues. The purpose of these techniques is to test the functionalities and features of the software with the assistance of some effective testcases.

THREE CATEGORIES OF TEST CASE DESIGN TECHNIQUES

1. Specification Based or Black-Box Techniques.
2. Structure Based or White-Box Techniques.
3. Experience Based Techniques.

BLACL BOX TESTING

In Black Box Testing, the tester tests an application without knowledge of the internal workings of the application being tested. Data are entered into the application and the outcome is compared with the expected results; what the program does with the input data or how the program arrives at the output data is not a concern for the tester performing black box testing. All that is tested is the behaviour of the functions being tested.

Therefore, black box testing is also known as functional testing which tests the functionality of a program. Note we can also have non-functional black box testing, such as performance testing

which is a type of black box testing but instead of verifying the behaviour of the system, it tests how long it takes for a function to respond to user's inputs and how long it takes to process the data and generate outputs.

WHITE BOX TESTING

White Box Testing (also known as Clear Box Testing, Open Box Testing, Glass Box Testing, Transparent Box Testing, Code-Based Testing or Structural Testing) is a software testing method in which the internal structure/design/implementation of the item being tested is known to the tester. The tester chooses inputs to exercise paths through the code and determines the appropriate outputs. Programming know-how and the implementation knowledge is essential. White box testing is testing beyond the user interface and into the nitty-gritty of a system. This method is named so because the software program, in the eyes of the tester, is like a white/transparent box; inside which one clearly sees.

EXPRIENCES BASED TECHNIQUES

These techniques are highly dependent on tester's experience to understand the most important areas of the software. The outcomes of these techniques are based on the skills, knowledge, and expertise of the people involved. A test case software can help in writing better test cases and managing them. It also enables you to report bugs from any failed step. A tool provides robust reports generated through built-in filters also gives you actionable insights.

Test ID	Test Case	Input Specified	Expected Result	Actual Result
Case 1	User/Admin in Login	Username="" password=""	Username and password fields are empty.	Username and password field empty.
		Username="abc" password="abc123"	Verify and then redirect to home page.	Verify and then redirect to home page.
Case 2	Forgot password	Email=""	Please enter email.	Please enter email.
		Email="abc"	Please enter valid email.	Please enter valid email.

		Email="a2gmail.com"	Email has been sent to your email-id.	Email has been sent to your email id.
Case 3	Queries Type	Type=""	Please specify query type.	Please specify query type.
		Type=" MODIFY"	Please enter valid query type.	Please enter valid query type.
		Type=" CREATE"	Automatically creates CREATE query.	Automatically creates CREATE query.
Case 4	User Detail	Name="" Pin code="" Address=""	Name, Pin code, and Address fields are empty.	Name, Pin code, and Address fields are empty.
		Name="abc" Pin code="421306" Address=" xyz"	Verify and then redirect to home page.	Verify and then redirect to home page.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Code

Login Code: login.aspx

5.2 Testing & Approach

Login page:

A screenshot of a web browser showing the 'User Login' page. The URL is 'localhost:57987/login.aspx'. The page features a large circular profile picture placeholder. Below it is the text 'User Login'. There are two input fields: 'Email ID' and 'Password', both currently empty. Below the fields are two buttons: a green 'Login' button and a teal 'Sign Up' button.

Login page with validations:

A screenshot of a web browser showing the 'User Login' page with validation. The URL is 'localhost:57987/login.aspx'. The 'Email ID' field contains the value 'HelloWorld'. A validation message box appears over the field, stating: 'Please include an '@' in the email address. 'HelloWorld' is missing an '@''. Below the validation message is a small ellipsis (...). The rest of the page structure is identical to the first screenshot, with the 'User Login' title, empty password field, and 'Login' and 'Sign Up' buttons.

Signup page:

A screenshot of a web browser showing the 'Sign Up' page of a recruitment system. The page has a header with the logo 'SRS Students Recruitment System' and navigation links for 'Home', 'Login', and 'Sign Up'. The main content area features a circular profile placeholder and a 'Sign Up' button. Below the button are several input fields: Name (text box), Date of Birth (text box with a calendar icon), Phone Number (text box), Email ID (text box), Profession (dropdown menu with 'Student' selected), Gender (dropdown menu with 'Male' selected), Password (text box), Confirm Password (text box), and Re-Enter Password (text box). A large green 'SignUp' button is at the bottom.

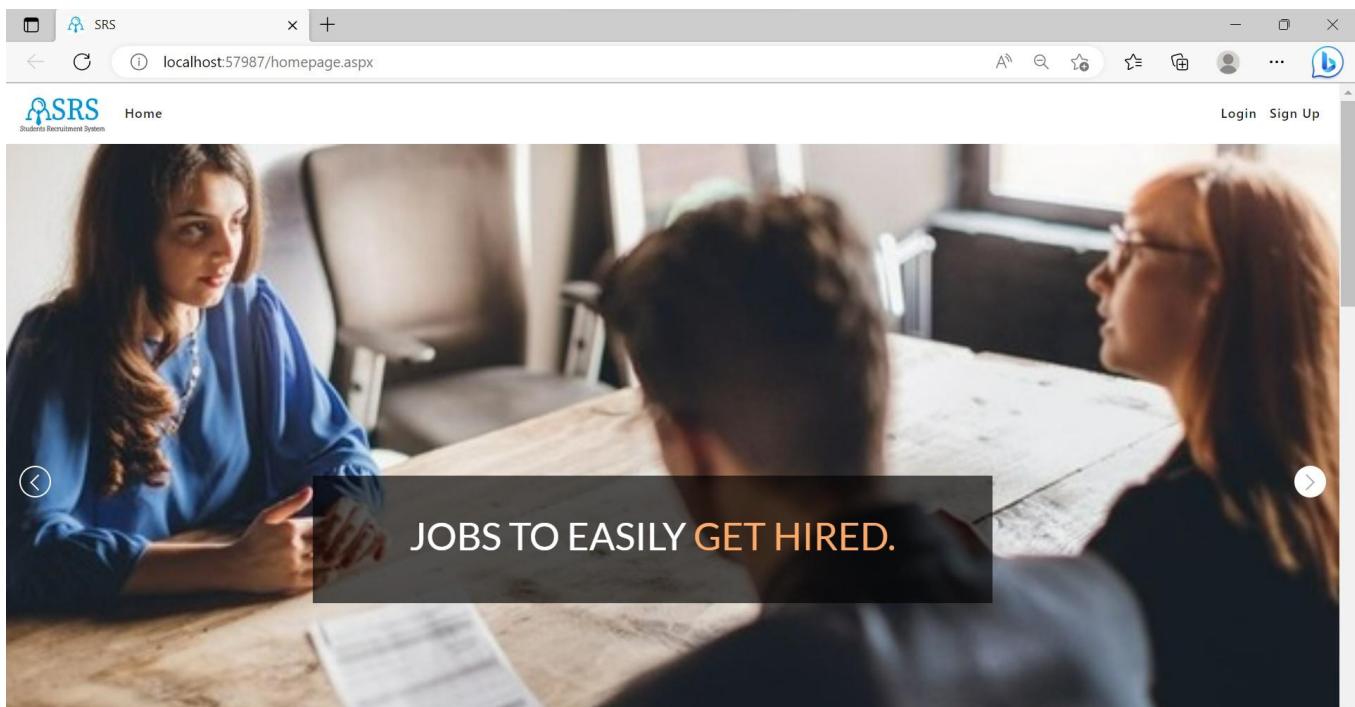
SignUp page with validations:

A screenshot of a web browser showing the 'Sign Up' page with validation errors. The validation errors are displayed as red text below each respective input field:

- Name: Please enter name*
- Date of Birth: Please enter DOB*
- Phone Number: abc
Invalid Number*
- Email ID: abc
Invalid Email*
- Password: ...
Confirm Password: ...
Password Doesn't Match*

The rest of the page structure is identical to the first screenshot, including the header, input fields, and the large green 'SignUp' button.

Homepage:



A screenshot of the same web browser showing the 'Our Features' section of the homepage. The title bar remains the same. The main content area features three sections: 'Aptitude test' with an icon of a person writing on a clipboard, 'Only for freshers' with an icon of two hands shaking, and 'Support' with an icon of a speech bubble and a microphone. Below each section is a brief description. A large image of an office interior is visible in the background.

Our Features

Aptitude test
An aptitude test is an exam used to determine an individual's skill or propensity to succeed in a given activity.

Only for freshers
Explore freshers jobs openings in your desired locations.

Support
We offer dependable, on-demand support options including technical and remote support.

Our Process

The screenshot shows the homepage of the Students Recruitment System (SRS). At the top, there is a banner image of a modern office with many desks and computers. Below the banner, the title "Our Process" is centered. Underneath this, there are three circular icons with text labels: "Find Jobs" (with a magnifying glass icon), "Apply" (with a calendar and hand icon), and "Get Hired" (with a person and checkmark icon). Below these icons, there are three sections: "About Us", "Contact Info", and "Important Link".

About Us
Welcome to our Students Recruitment System! We are a platform that connects talented students with top companies and organizations looking to hire fresh graduates.

Contact Info
Email :
studentsrecruitmentsystem@gmail.com

Important Link
View Project
Contact Us
Support

StudentProfile:

The screenshot shows the "StudProfile.aspx" page. At the top, there is a header with the SRS logo and links for "Home", "Login", and "Sign Up". The main content area is titled "Student profile". It contains a form with fields for Name, Gender, Date of Birth, Contact No, University Name, and College Name. A "Save" button is located at the bottom of the form. Below the form, there is a section titled "Education".

Student profile

Name	Gender
<input type="text"/>	<input type="text"/>
Date of Birth	Contact No
<input type="text"/>	<input type="text"/>
University Name	College Name
<input type="text"/>	<input type="text"/>

Education

A screenshot of a web browser window titled "SRS" showing a student profile edit page at "localhost:57987/StudProfile.aspx". The page has a header with a "Save" button. Below it is a section titled "Education" containing fields for "Education Level : 10th", "Field Of Study : ssc", and "Percentagege : 70%". There is an "Edit" button below this section. The next section is titled "Skills" with an "Edit" button. The final section is titled "Applied Job".

Education

Education Level : 10th
Field Of Study : ssc
Percentagege : 70%

Edit

Skills

Edit

Applied Job

A screenshot of a web browser window titled "SRS" showing an applied job details page at "localhost:57987/StudProfile.aspx". The page has a header with an "Edit" button. Below it is a section titled "Applied Job" containing fields for "Company Name : TCS", "Job Title : Software-Developer", "Department : IT", "Skills Required : Java", "Package : 3LPA", and "Location : Mumbai". There is a "Job Description : Software-DeveloperSoftware-Developer" field as well. At the bottom of the page is a blue footer bar with links for "About Us", "Contact Info", and "Important Link".

Applied Job

Company Name : TCS
Job Title : Software-Developer
Department : IT
Skills Required : Java
Package : 3LPA
Location : Mumbai
Job Description : Software-DeveloperSoftware-Developer

About Us

Welcome to our Students Recruitment System! We are a platform that connects talented students with top companies and organizations looking to hire fresh graduates.

Contact Info

Email :
studentsrecruitmentsystem@gmail.com

Important Link

[View Project](#)
[Contact Us](#)
[Support](#)

HR Profile:

The screenshot shows a web browser window with the URL `localhost:57987/HRProfile.aspx`. The page title is "SRS Students Recruitment System". On the left, there's a logo for "ASRS Students Recruitment System". On the right, there are "Login" and "Sign Up" links. The main content area is titled "HR Profile" and features a placeholder profile picture. Below it, there are input fields for "Name", "Date of Birth", "Contact No", "Email ID", and "Gender", each preceded by a colon. A blue "Edit" button is centered below these fields. Further down, there's a section titled "About Company" with a blue "Add" button.

This screenshot shows the same "HR Profile" page as above, but with more content sections. It includes "About Company", "Work Experiences", and "Post" sections, each with its own "Add" button. The overall layout is similar to the first screenshot, with the "Edit" button removed from this specific view.

About Us

Welcome to our site! Its a platform that connect talented students with top companies and organization looking to hire fresh graduates.

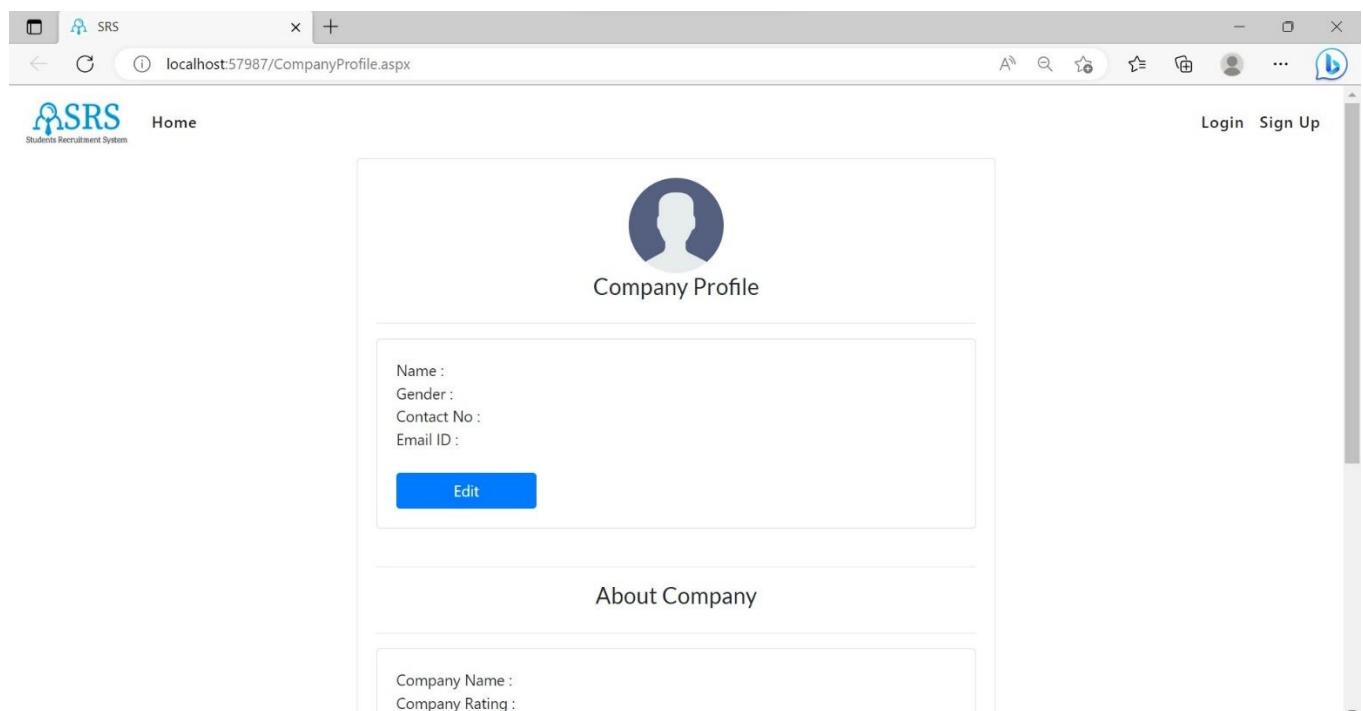
Contact Info

Email :
`studentsrecruitmentsystem@gmail.com`

Important Link

[View Project](#)
[Contact Us](#)
[Support](#)

Company Profile:



The screenshot shows a web browser window for the Students Recruitment System (SRS) at localhost:57987/CompanyProfile.aspx. The page title is "Company Profile". It features a placeholder profile picture and a "Company Profile" heading. Below this is a form containing fields for Name, Gender, Contact No, and Email ID, each with a corresponding input field and a blue "Edit" button.

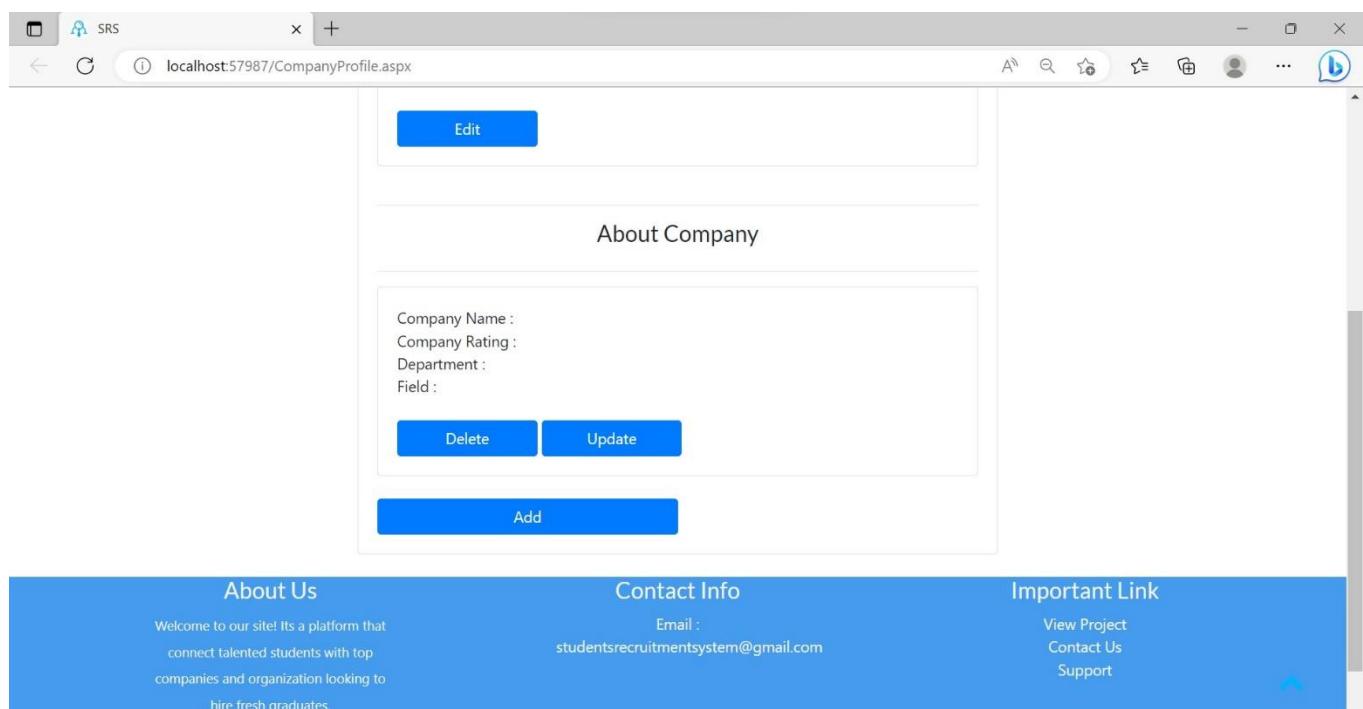
Company Profile

Name :
Gender :
Contact No :
Email ID :

Edit

About Company

Company Name :
Company Rating :



The screenshot shows the same web browser window for the Company Profile page. The "Edit" button from the previous screenshot has been clicked, revealing additional controls. A "Delete" button is visible on the left, and an "Update" button is on the right. At the bottom of the form is a large blue "Add" button.

About Company

Company Name :
Company Rating :
Department :
Field :

Delete Update

Add

About Us

Welcome to our site! Its a platform that connect talented students with top companies and organization looking to hire fresh graduates.

Contact Info

Email :
studentsrecruitmentsystem@gmail.com

Important Link

[View Project](#)
[Contact Us](#)
[Support](#)

Aptitude Test:

The screenshot shows a Microsoft Edge browser window with the title bar "Online Test" and address bar "localhost:57987/Default.aspx". The main content area displays the text "APTITUDE TEST" in blue at the top, followed by "Start Your online Aptitude Test". Below this, there are several instructions: "Instruction:", "This is a FREE online test.", "Total number of questions: 10.", "Time allotted: 10 minutes.", "Each question carries 1 mark; there are no negative marks.", and "DO NOT refresh the page." At the bottom center is a blue-bordered button labeled "Start Test".

The screenshot shows a Microsoft Edge browser window with the title bar "localhost:57987/default2.aspx - Profile 2 - Microsoft Edge" and address bar "localhost:57987/default2.aspx". The main content area has a header "Asp .Net Online Test" and "Final Result: 5/10".
Question 1: "Which of the following is NOT an Integer?"
Options: Char (radio button checked), Byte, Integer, Short.
Feedback: "InCorrect Answer"
Correct Answer: "Correct Answer Is :- Char"
Question 2: "Which of the following is the correct way to find out the number of elements currently present in an ArrayList Collection called arr?"
Options: arr.Count, arr.GrowSize, arr.MaxIndex, arr.Capacity.
Feedback: "InCorrect Answer"
Correct Answer: "Correct Answer Is :- arr.Count"
Question 3: "Which of the following statements is correct about classes and objects in C#.NET?"
Options: Class is a value type., Since objects are typically big in size, they are created on the stack.
Feedback: None

localhost:57987/default2.aspx - Profile 2 - Microsoft Edge

localhost:57987/default2.aspx

- Objects of smaller size are created on the heap.
- Objects are always nameless.

Correct Answer

Question 4 :- Which of the following is NOT a namespace in the .NET Framework Class Library?

- System.Process
- System.Security
- System.Threading
- System.Xml

InCorrect Answer

Correct Answer Is :- System.Process

Question 5 :- Which of the following CANNOT belong to a C#.NET Namespace?

- Class
- Interface
- Data
- Enum

Correct Answer

Question 6 :- Which of the following converts a type to a Boolean value, where possible in C#?

- ToBoolean
- ToSingle

localhost:57987/default2.aspx - Profile 2 - Microsoft Edge

localhost:57987/default2.aspx

- warning
- line
- region
- error

Correct Answer

Question 9 :- Which of the following converts a type (integer or string type) to date-time structures in C#?

- ToSingle
- ToString
- ToChar
- ToDateTime

InCorrect Answer

Correct Answer Is :- ToDateTime

Question 10 :- Which of the following is correct about variable naming conventions in C#?

- It should not be a C# keyword.
- It must not contain any embedded space or symbol such as? - + ! @ # % ^ & * () [] { }
- Both of the above.
- None of the above.

Correct Answer

Submit

Test Cases:

Login page:

Step	Step Details	Expected Results	Actual Results	Pass/Fail/Not executed/Suspended
1.	Enter Email	Matches Email from database	As Expected	Pass
2.	Enter Password	Matches password from database	As Expected	Pass

Signup Page:

Step	Step Details	Expected Results	Actual Results	Pass/Fail/Not executed/Suspended
1.	Enter Name	Only alphabets are allowed	As Expected	Pass
2.	Enter email	All characters allowed	As Expected	Pass
3.	Enter Mobile No.	Only 10 digits allowed	As Expected	Pass
4.	Enter password	All characters allowed	As Expected	Pass

5.3 Unit Testing:

Unit testing is a software verification and validation method where the programmer gains confidence that individual units of source code are fit for use. A unit is the smallest testable part of an application. Unit testing has proven its value in that a large percentage of defects are identified during its use.

In procedural programming a unit may be an individual program, function, procedure, etc., while in object-oriented programming, the smallest unit is a class, which may belong to a base/super class, abstract class or derived/child class. Unit tests are typically written and run by software developers to ensure that code meets its design and behaves as intended. Its implementation can vary from being very manual (pencil and paper) to being formalized as part of build automation.

5.4 Integration Testing:

Integration testing, also known as integration and testing (I&T), is a software development process which program unit are combined and tested as groups in multiple ways. In this context, a unit is defined as the smallest testable part of an application. Integration testing can expose problems with the interfaces among program components before trouble occurs in real-world program execution.

Integration testing is a component of Extreme Programming (XP), a pragmatic method of software development that takes a meticulous approach to building a product by means of continual testing and revision.

There are two major ways of carrying out an integration test, called the bottom-up method and the top-down method. Bottom-up integration testing begins with unit testing, followed by tests of progressively higher-level combinations of units called modules or builds

Validation Testing:

The process of evaluating software during the development process or at the end of the development process to determine whether it satisfies specified business requirements. Validation Testing ensures that the product actually meets the client's needs. It can also be defined as to demonstrate that the product fulfils its intended use when deployed on appropriate environment.

CHAPTER 6

RESULTS AND DISCUSSIONS

6.1. Test Report:

Snapshots:

The screenshot shows the 'Sign Up' page of the ASRS Students Recruitment System. At the top, there is a placeholder profile picture and the text 'Sign Up'. Below this are several input fields: 'Name' (HelloWorld), 'Date of Birth' (01-01-2000), 'Phone Number' (9100000000), 'Email ID' (hellostudent@gmail.com), 'Profession' (Student), 'Gender' (Male), 'Password' (****), and 'Confirm Password' (12345). A large green 'SignUp' button is at the bottom.

The screenshot shows the 'User Login' page of the ASRS Students Recruitment System. It features a placeholder profile picture and the text 'User Login'. There are two input fields: 'Email ID' (hellostudent@gmail.com) and 'Password' (12345). Below these are two buttons: a green 'Login' button and a blue 'Sign Up' button.

About Us

Welcome to our Students Recruitment System! We are a platform that connects

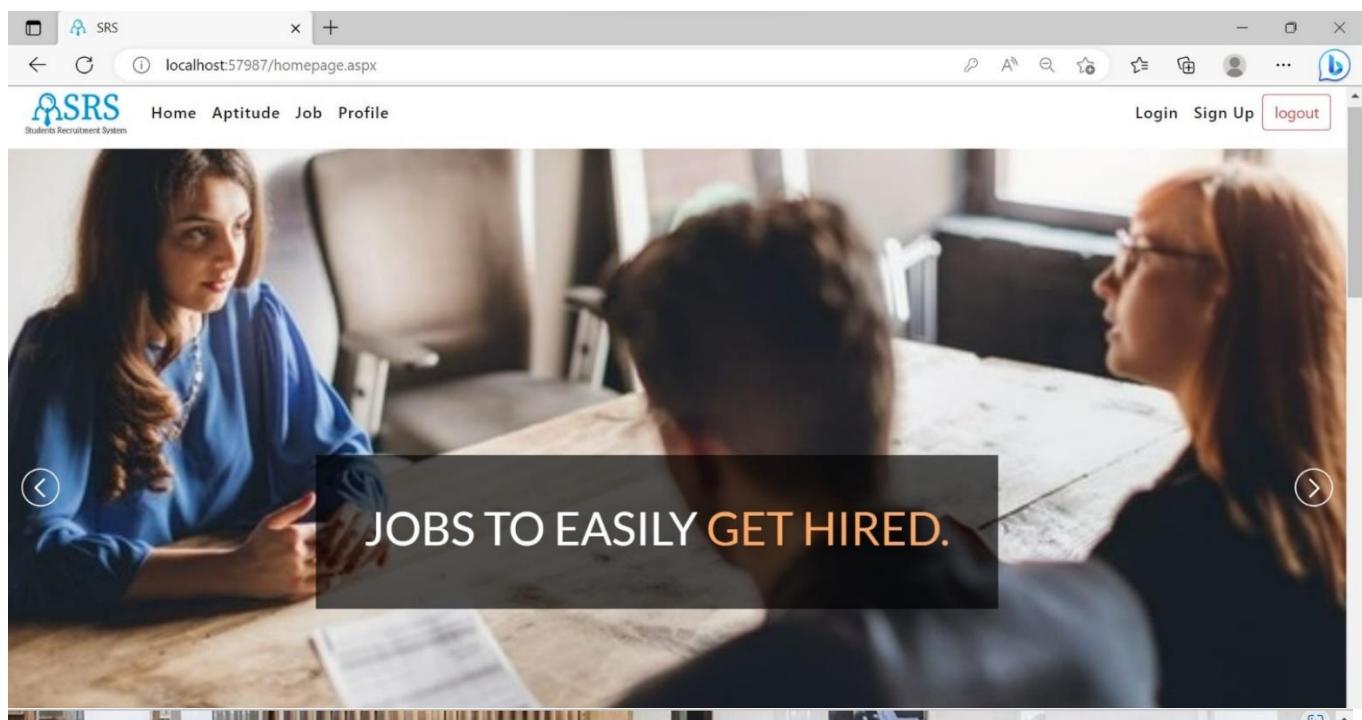
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Email :
studentsrecruitmentsystem@gmail.com

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Login as Student:



JOBS TO EASILY GET HIRED.



Our Features



Aptitude test

An aptitude test is an exam used to determine an individual's skill or propensity to succeed in a given activity.



Only for freshers

Explore freshers jobs openings in your desired locations.



Support

We offer dependable, on-demand support options including technical and remote support.



Our Process



Find Jobs



Apply



Get Hired

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SRS

localhost:57987/ContactUs.aspx

Home Aptitude JObs Profile

Login Sign Up Log Out

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CONTACT INFO

studentsrecruitmentsystem@gmail.com

+919979999999

www.studentsrecruitmentsystem.com

Kalyan, Maharashtra, India

SEND US A MESSAGE

Name

Email

Your Message

Send

SRS

localhost:57987/StudJobs.aspx

Home Aptitude JObs Profile

Login Sign Up Log Out

Jobs

Company Name: TCS
Job Title :- Software-Developer
Department: IT
Skills Required: Java
Package: 3LPA
Location: Mumbai
Job Description: Software-DeveloperSoftware-Developer

Apply

< < Back to Home

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Online Test x +
localhost:57987/Default.aspx

APTITUDE TEST

Start Your online Aptitude Test

Instruction:

This is a FREE online test.

Total number of questions: 10.

Time allotted: 10 minutes.

Each question carries 1 mark; there are no negative marks.

DO NOT refresh the page.

All the best!

[Start Test](#)

Show desktop

localhost:57987/default2.aspx - Profile 2 - Microsoft Edge
localhost:57987/default2.aspx

Thank You for submitting your test. Final Result: 5/10

Asp .Net Online Test

Question 1 :- Which of the following is NOT an Integer?

- Char
- Byte
- Integer
- Short

InCorrect Answer

Correct Answer Is :- Char

Question 2 :- Which of the following is the correct way to find out the number of elements currently present in an ArrayList Collection called arr?

- arr.Count
- arr.GrowSize
- arr.MaxIndex
- arr.Capacity

InCorrect Answer

Correct Answer Is :- arr.Count

Question 3 :- Which of the following statements is correct about classes and objects in C#.NET?

- Class is a value type.
- Since objects are typically big in size, they are created on the stack.

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localhost:57987/default2.aspx

- Objects of smaller size are created on the heap.
- Objects are always nameless.

Correct Answer

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- Both of the above.
- None of the above.

Correct Answer

Submit

SRS localhost:57987/StudProfile.aspx

ASRS Students Recruitment System Home Aptitude Job Profile Login Sign Up logout

 Student profile

Name : HelloWorld
Gender : Male
Date of Birth : 2000-01-01
Contact No : 9100000000
University :
College Name :

Edit

Education

Add

Add

Skills

Add

Applied Job

Company Name : TCS
Job Title : Software-Developer
Department : IT
Skills Required : Java
Package : 3LPA
Location : Mumbai
Job Description : Software-DeveloperSoftware-Developer

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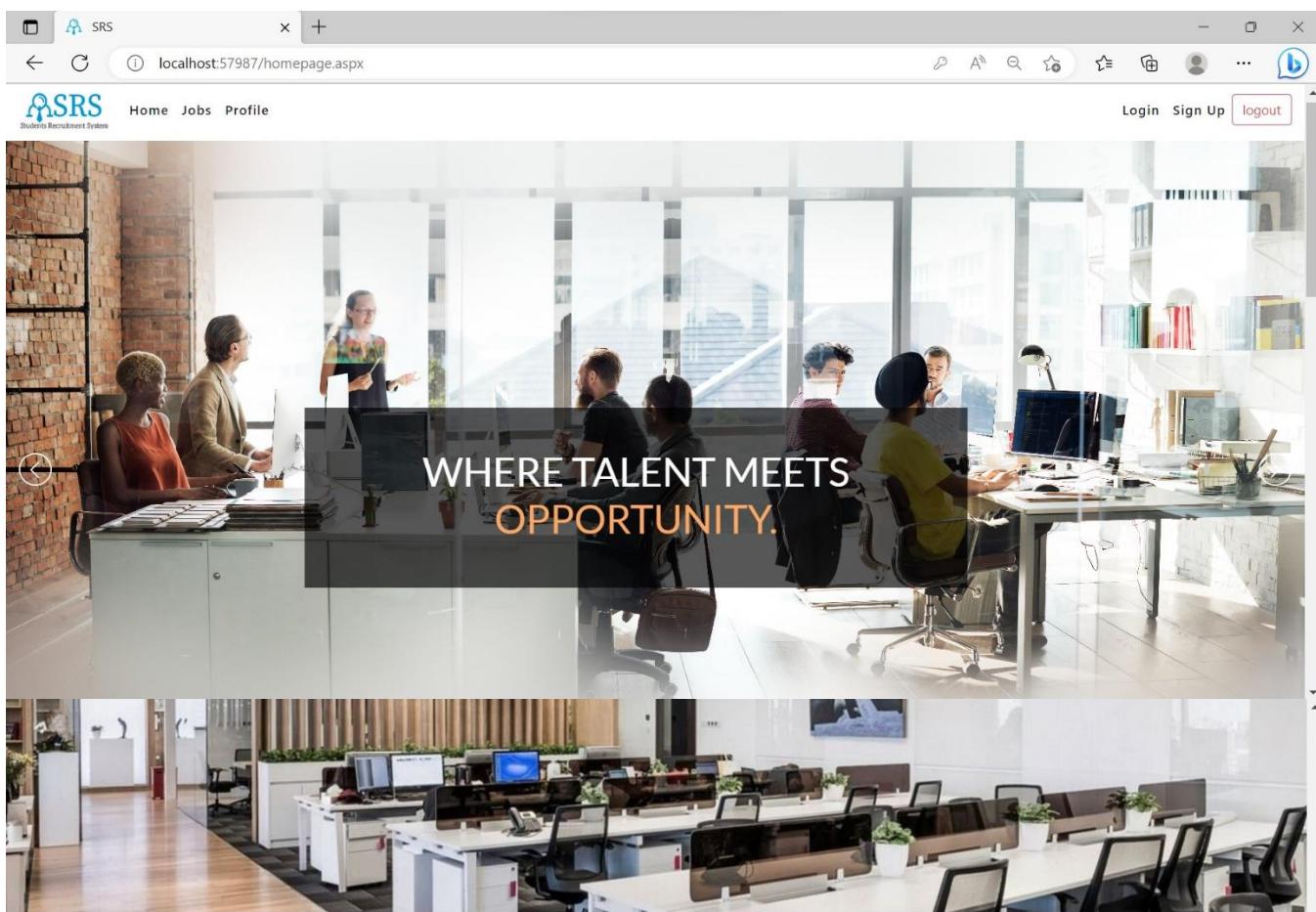
Contact Info

Email : studentsrecruitmentsystem@gmail.com

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Login as HR:



Our Features



Aptitude test

An aptitude test is an exam used to determine an individual's skill or propensity to succeed in a given activity.



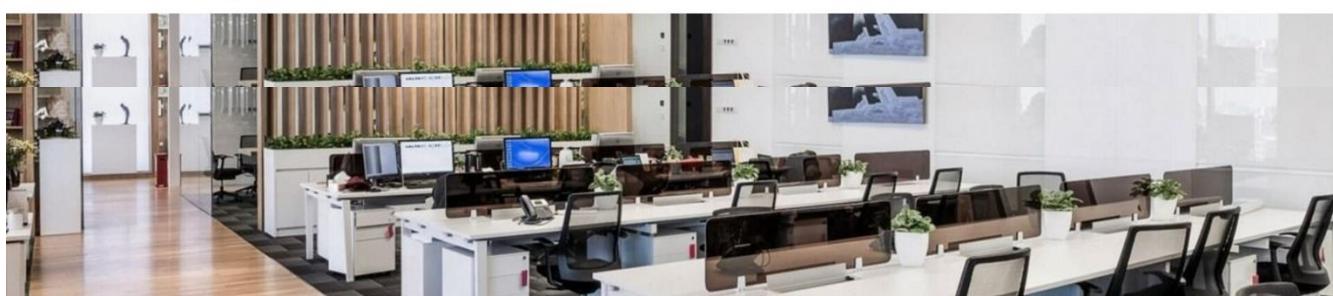
Only for freshers

Explore freshers jobs openings in your desired locations.



Support

We offer dependable, on-demand support options including technical and remote support.



Our Process



Find Jobs



Apply



Get Hired

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SRS

localhost:57987/HrPostJob.aspx

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Home Jobs Profile Login Sign Up logout

Job Post

Company Name	Job Title
Company Name	Job Title
Department	Skills Required
Department	Skills Required
Package	Location
Package	Location
Work Type	
Please Select	
Job Role	

Job Role

Job Role in detail

Qualification

Education	Level
Please Select	Please Select
Percentage/Aggregate	
Please Select	

Post **cancel**

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SRS Students Recruitment System

localhost:57987/HRProfile.aspx

Home Jobs Profile Login Sign Up logout

HR Profile

Name : HelloWorld
Date of Birth : 01-01-2000
Contact No : 9200000000
Email ID : hellohr@gmail.com
Gender : Female

Edit

About Company

Add

About Company

Add

Work Experiences

Add

Post

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Students Recruitment System

Home Job Profile

Login Sign Up logout

INDIVIDUAL APPROACH TO EACH STUDENT.

Our Features



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An aptitude test is an exam used to determine an individual's skill or propensity to succeed in a given activity.



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localhost:57987/CompanyJobs.aspx

ASRS Home Job Profile

Login Sign Up logout

Views Jobs

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SRS

localhost:57987/CompanyProfile.aspx

ASRS Home Job Profile

Login Sign Up logout

Company Profile

Name : HelloWorld
Gender : Female
Contact No : 9300000000
Email ID : hellocompany1@gmail.com

Edit

About Company

About Company

Company Name :
Company Rating :
Department :
Field :

Delete Update

Add

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CHAPTER 7

CONCLUSION AND FUTURE WORK

Job should benefit the recipient and meet the needs of the end-users and company. Hence there should be a bridge to connect them for effective coordination and collaboration. Jobs should be given with respect for the wishes and authority of the recipient, and in conformity with the government policies, regulatory requirements and administrative arrangements of the recipient country. That's why I feel job providing is one of the most important things that people can make. Hence, I have successfully completed with this website to demonstrate how online Students Recruitment System can works. So, with admin and job seeker module I have completed the demonstration in other words I have completed the website of Students Recruitment System website with guidance of our teacher and with my hard work.

CHAPTER 8

REFERENCES

- https://en.wikipedia.org/wiki/Gantt_chart
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- <https://meeraacademy.com/online-campus-selection-system-in-asp-net-c-project/>