CENTER FOR COMMUNICATION AND TECHNOLOGY

SRS

TABLE OF CONTENTS

LIST OF FIGURES

1.INTRODUCTION:

Welcome to our website on communication and technology. Here, we offer a platform for connecting, working with, and communicating with others utilising cutting-edge technical tools. In order to increase productivity, foster creativity, and foster social cohesion, our website is created to make it easy for people, groups, and organisations from across the world to engage with one another. We are aware of the value of successful communication and the part technology plays in making it possible. In light of this, our website has functionality that, among other things, let users exchange files, work together on projects, and conduct real-time conversation. Since collaboration and communication are crucial to success in today's fast-paced world, we endeavour to create a platform that makes it simple for people to work together, wherever they are.

1.1 PURPOSE:

The creation of a website on communication and technology was done in order to provide individuals a place to interact and work together. Collaboration and communication have become crucial elements of success in many industries as a result of the development of the internet and the spread of technical tools. By offering users a variety of tools and features, our website is created to encourage productive communication and cooperation. By enabling users to collaborate regardless of location, the website promises to increase productivity, foster creativity, and foster social harmony. We acknowledge the significance of technology in the fast-paced world of today and strive to offer a platform that fully utilises its potential to promote frictionless communication between people, groups, and organisations.

1.2 SCOPE:

The goal of developing a website on communication and technology is broad and includes a variety of features and capabilities that allow for efficient user interaction and communication. The following are the website's main focus areas:

- Communication.
- Research Centre.
- User Management.
- Security.
- Usability.

1.3 DEFINITIONS, ACROYNM AND ABBREVATION:

The exchange of information, concepts, and ideas between two or more people, groups, or organisations is referred to as communication and can take place either verbally, in writing, or electronically. Technology is the use of scientific knowledge and equipment to design, develop, and enhance goods and procedures that make life simpler and more productive.

An acronym is a term created from the first letters of a name or phrase that contains many words, with each letter standing for a different word. HTTP (Hypertext Transfer Protocol) is one example.

A term or phrase that has been abbreviated is known as an abbreviation. Central Processing Unit, for instance.

1.4 REFRENCES:

- researchgate.cutm.ac.in
- researchgate.cutm/communication-and-technology//ac.in.

1.5 OVERVIEW:

A platform that offers users numerous tools and resources to support efficient communication and cooperation is a communication and technology webpage. The website seeks to employ technology to get over geographical and temporal limitations and enable real-time interaction and collaboration amongst users. Features including instant messaging, audio and video conferencing, screen sharing, document collaboration and version control, task management, project tracking, and file sharing may be available on the website. These technologies make it possible for people to successfully interact, share ideas, and work on projects together.

In general, a communication and technology webpage is a useful resource for businesses and people looking to boost their cooperation and communication abilities. The website uses technology to give a thorough platform that enables users to connect and work successfully, regardless of geographic location and time zones.

2.OVERALL DESCRIPTION:

A communication and technology website must include user control and security. To guarantee that only authorised users have access to critical information, the website should offer alternatives for user authentication and permission. Strong security mechanisms must be included on the website to safeguard user information and guard against unauthorised access.

2.1 PRODUCT PERSPECTIVE:

A communication and technology webpage's product viewpoint refers to how the webpage fits within the overall picture of the organisation or sector it serves. It entails comprehending how the website may assist in achieving the objectives of the organisation and addressing the demands of its stakeholders.

2.2 SYSTEM INTERFACE:

A communication and technology website's system interface describes how that website communicates with other systems, programmes, and hardware. It requires knowing how the website works with other programmes and hardware to give users a smooth and effective communication and collaboration experience.

1. User Interface.
2. Storage System.
3. Emails.
4. Project Management.

A communication and technology website's system interface is essential for giving users a seamless and effective communication and collaboration experience.

2.3 USER INTERFACE:

For consumers to have a seamless and effective communication experience, the system interface on a communication and technology website is essential. A website's design and layout that allows users to engage with its different features and functions is referred to as the user interface (UI) of a communication and technology webpage. The user experience may be greatly improved by a well-designed user interface (UI), which also makes it simpler for users to browse and utilise the webpage efficiently for communication and collaboration.

1. Navigation.

2. Search.
3. Communication Projects.
4. Responsive Design.
5. Visual Design.

2.4 HARDWARE INTERFACE:

The actual hardware and tools needed to use the website and its features. This can include hardware such as laptops, cell phones, tablets, and other ancillary items required to access and use the functionalities of the website.

i. **Connectivity:** In order for people to access the website from any location with an internet connection, it must be built to operate flawlessly with both wired and wireless connections.
ii. **Display resolution:** To guarantee that visitors can read and interact with its features successfully on any device, the website should be optimised for multiple display resolutions and sizes.
iii. **Security:** To guarantee that users' data and information are safeguarded, the website should be built to interact securely with various hardware devices, such as security keys.

2.5 SOFTWARE INTERFACE:

The group of software elements and resources needed to give users effective access to the webpage's features and capabilities. This comprises the computer programmes required to maintain the content of the website, as well as any other essential tools for collaboration, communication, and other tasks.

i. **Web browser compatibility:** In order for people to visit the website using their favourite browser, it must be built to function flawlessly with a variety of web browsers, including Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge.
ii. **Database management:** In order to store and manage user data, communication logs, and other information, the webpage may need a database management system. It should be made to integrate easily with other database management systems.
iii. **Operating system Compatibility:** To allow people to access the website using their chosen devices, the webpage should be compatible with a variety of operating systems, including Windows, macOS, Linux, iOS, and Android.

2.6 COMMUNICATION INTERFACE:

On a website devoted to communication and technology, the term "communication interface" describes the functions and apparatuses intended to facilitate efficient user interaction. Among the features that make it possible for users to work together and communicate clearly are messaging tools, audio and video conferencing, file sharing, and other services.

2.7 MEMORY CONSTRAINTS:

Memory restrictions relate to the limits on how much memory a communication and technology website may use to store data and process information. Memory limitations can affect how well a website performs and functions, especially when dealing with big volumes of data or complicated procedures.

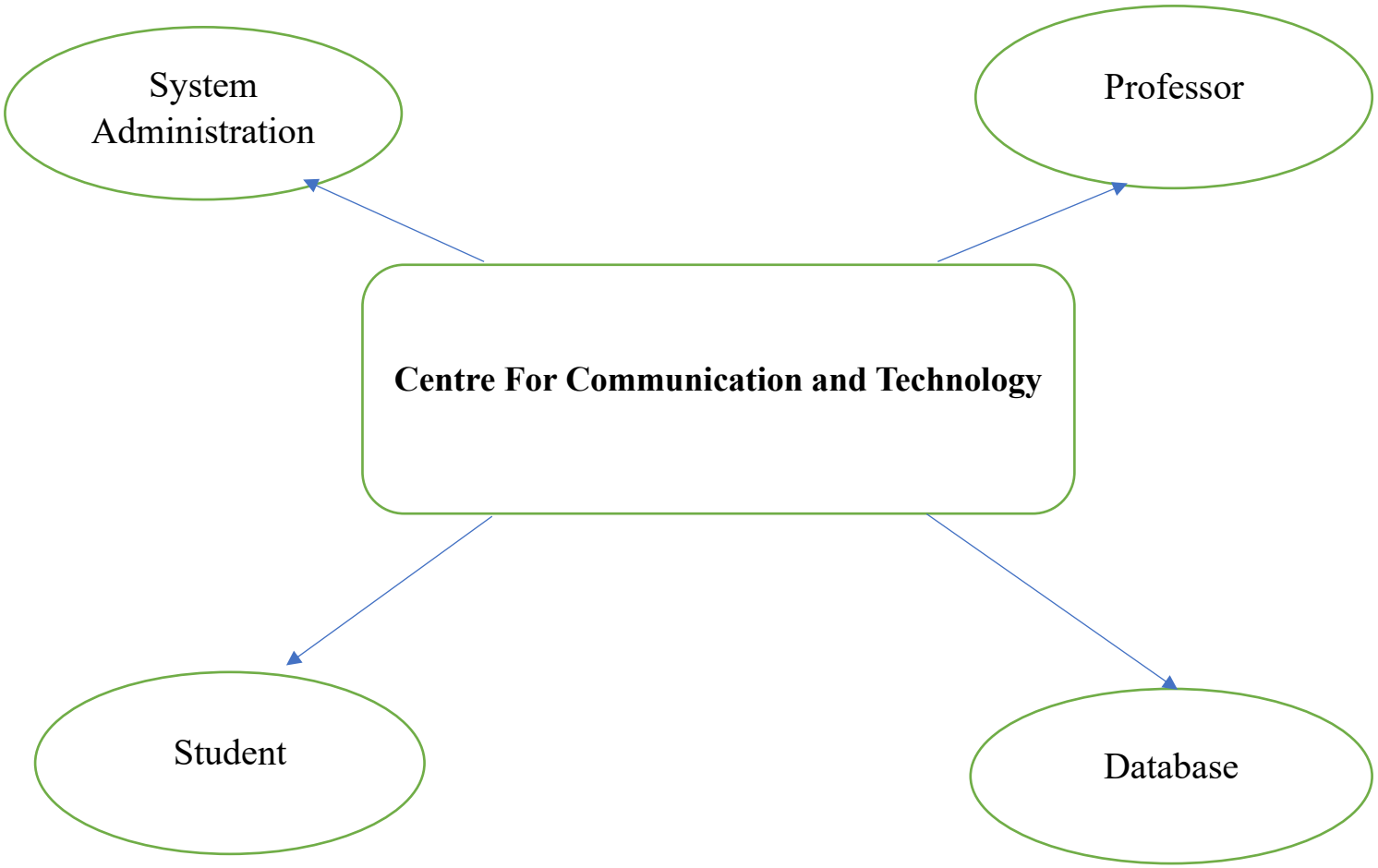
2.8 OPERATIONS:

The website executes a number of duties and procedures to promote user interaction and cooperation. A website for communication and technology could include the following important functions:

- User Management.
- Security.
- Data Management.
- Updates.

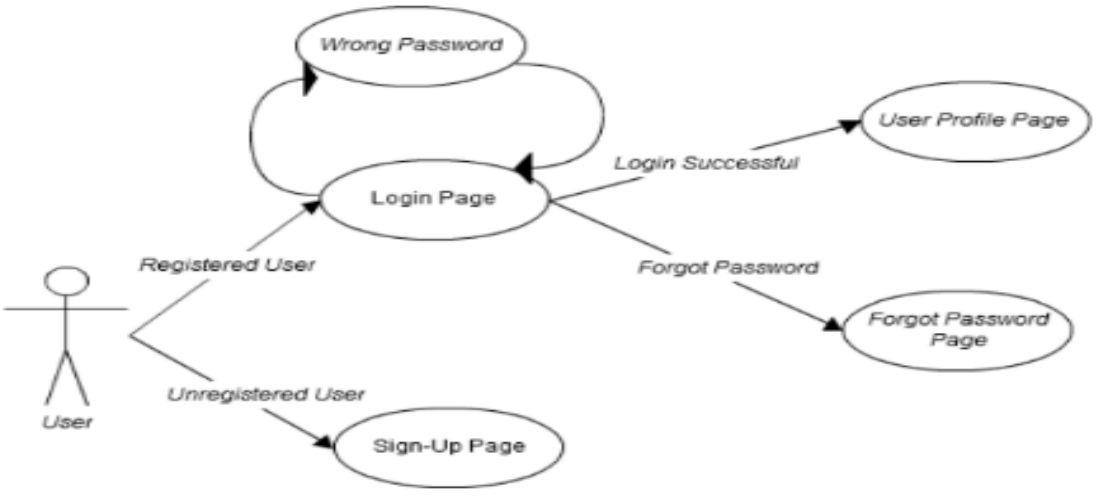
3.PRODUCT FUNCTIONS:

3.1 Context Diagram:

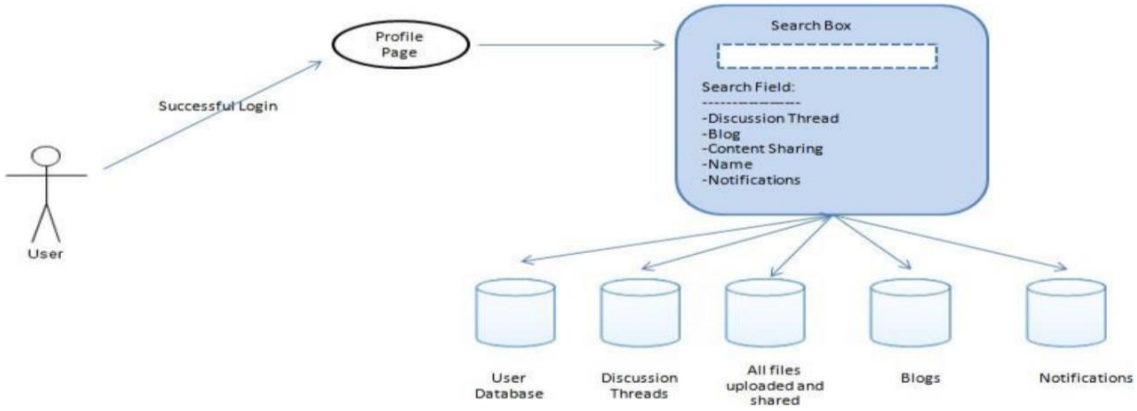


3.2 Use Case Diagram:

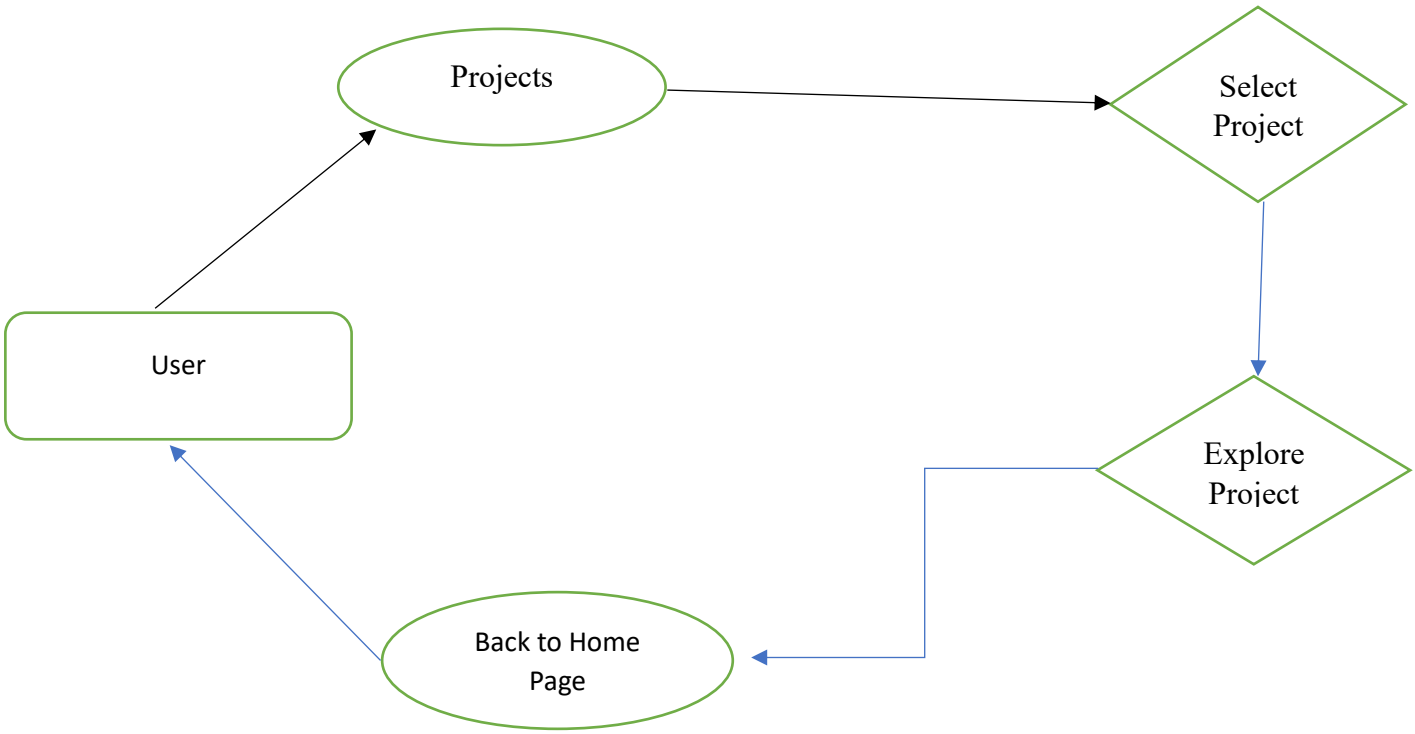
3.2.1 User Login:



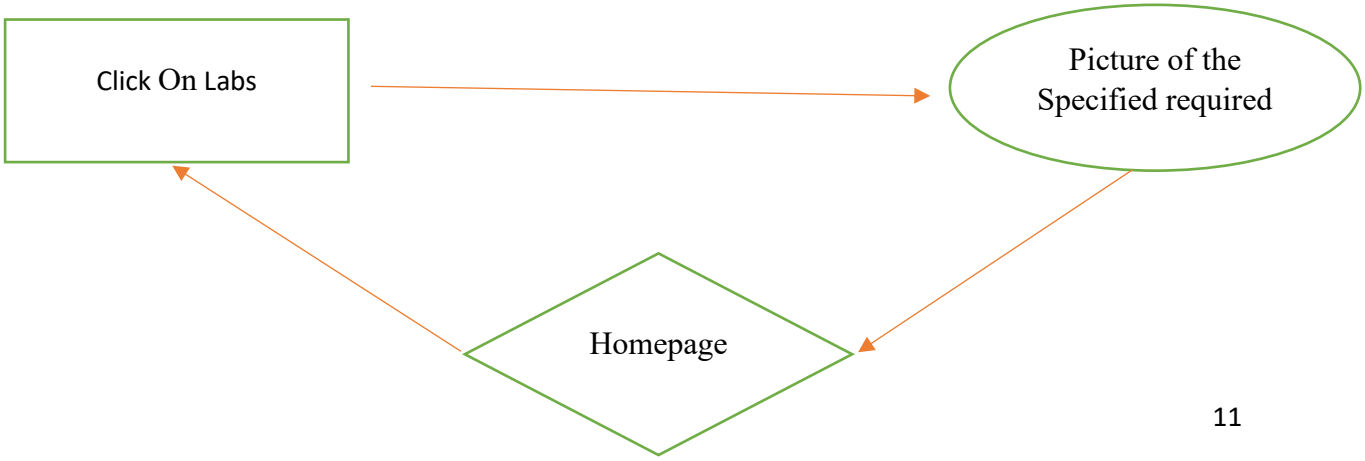
3.2.2 Search:



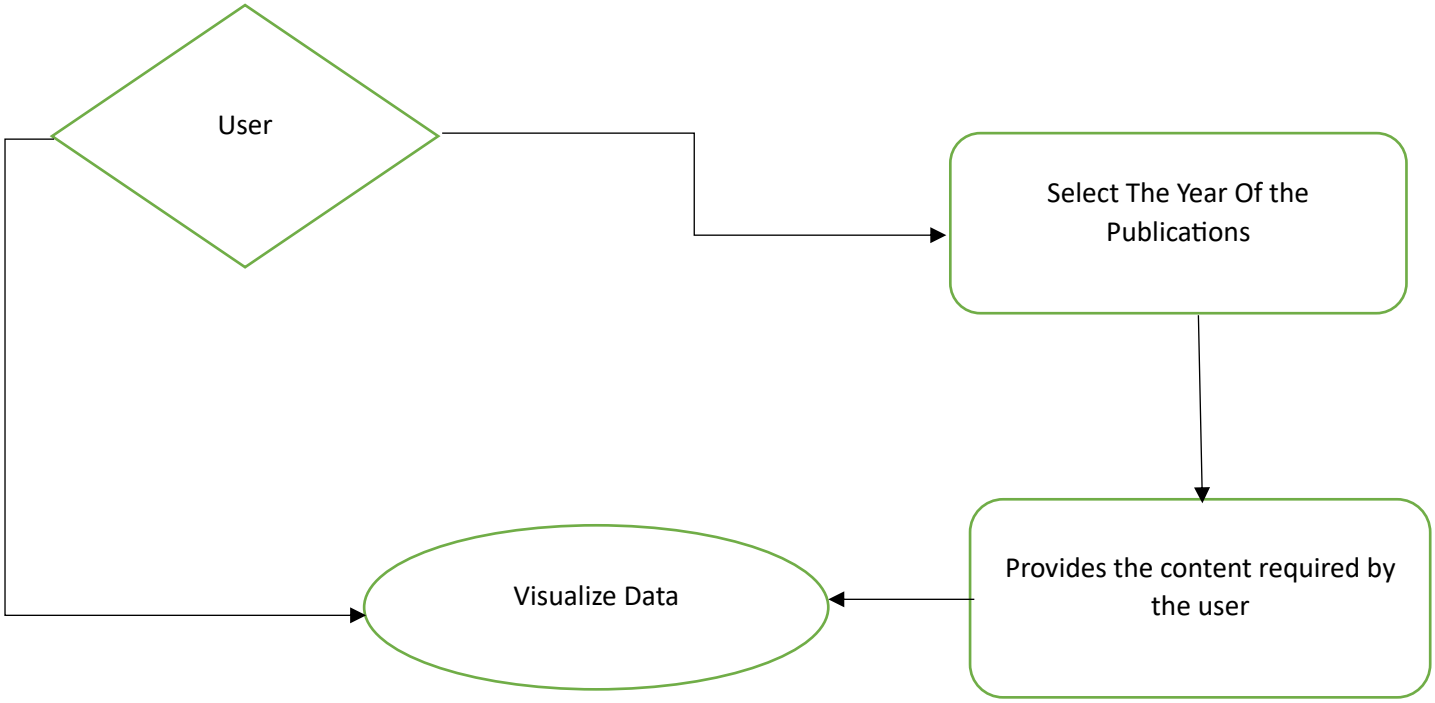
3.2.3 Projects:



3.2.4 Labs:



3.2.5 Publications:



4. USE CASE DESCRIPITION / INTRODUCTION:

4.1 GROUPS:

The system shall provide the administrator ability to create and manage new groups of different kinds like a course group or a department group. Here a user can be part of multiple groups.

4.2 COURSE GROUP:

Students belonging to same course (e.g., Database Course) along with the professors and teaching assistant of the course will be part of the particular course group. Here the professors along with the teaching assistants (*conditional) will be the course administrators with the students being the users of the group.

4.3 DEPARTMENT GROUP:

Students belonging to same department (e.g. Computer Science, Electricals) along with the professors of the department will be part of the particular department group. Here an assigned professor will be the course administrator with the students and the other professors being the users of the group.

5.PROJECTS:

Projects are often short-term initiatives carried out to accomplish a certain objective or aim. They are often created to offer a special product, service, or outcome and typically have a set scope, budget, and deadline.

Projects in the field of communication and technology might include a wide range of tasks, including building new software, constructing websites, coming up with marketing strategies, and researching cutting-edge technologies. These tasks frequently call for a group of experts with a range of abilities, such as project management, software development, design, and communication. Any project's success depends on efficient project management. To make ensuring the project stays on track and achieves its goals, this entails establishing the project scope, creating a project plan, managing resources, and keeping track of development. To ensure that everyone is in agreement with the project's objectives and expectations, effective communication is essential both inside the project team and with external stakeholders.

6.LABS:

Labs are specialised facilities or areas where professionals and students may work on projects and carry out research relating to their area of study or expertise in the communication and technology fields. These laboratories are furnished with specialised gear, software, and tools to facilitate a range of tasks, including software development, data analysis, the creation of digital media, and user experience design. There are laboratories everywhere, including in educational institutions, research institutes, and commercial establishments. They could be accessible to everyone or just to specific people or groups depending on their affiliation or credentials. Labs offer chances for cooperation and learning in addition to giving access to specialised tools and resources. It is possible for professionals and students to collaborate on projects, exchange information and skills, and acquire practical experience using the newest tools and technology in their respective fields.

7.LOGIN:

By entering a set of credentials that authenticate their identity, a user can access a computer system, website, or application through the login procedure. A login often entails inputting a username and password. A login is used to make sure that only authorised users may access sensitive data or carry out certain tasks inside a system. A login aids in guarding against security breaches and preventing unauthorised access by asking users to input their credentials. For access to the services offered by many websites and applications, users frequently need to create a login. After creating an

account and logging in, a user may get access to extra features or information that is tailored to their interests and behaviour.

8.SEARCH:

Instead of utilising hierarchical links, the system must be able to traverse sites using search capability. Academic portals can demand too many clicks and might be challenging to utilise effectively. Students become frustrated when fundamental tasks, like turning in an assignment, require too many steps. Students can easily locate what they're seeking for thanks to a search tool and a hierarchical approach to the academic portal's search functionality.

9.USER CHARACTERISTIC:

9.1 STUDENT:

It is crucial that educational institutions give students access to websites that are pertinent to their coursework and study. Student access to websites may differ depending on the particular institution and course. Through a learning management system (LMS), such as Blackboard or Canvas, students may be given access to websites where they may access course materials, take part in Projects. Students could also have access to websites for academic resources like the library, writing centre, or tutoring services.

9.2 TEACHERS:

Through a learning management system (LMS) or other platforms for educational technology, teachers may be given access to a range of websites. These websites could provide resources for professional development, prior events, gradebooks, projects, and course materials. Educational institutions may require instructors to log in using their credentials, such as their employment ID and password, to guarantee that they have access to pertinent webpages. This makes it possible to guarantee that only instructors who have been granted access may use the system to access sensitive data and carry out relevant duties.

9.3 SYSTEM ADMINISTRATORS:

The academic portal is mostly maintained by system administrators. They don't add much to the courses themselves, but they spend more time updating and changing the system's setup.

10. CONSTRAINTS:

10.1 CONSTRAINTS WITH USER INTERFACE:

This system is fairly easy to use and straightforward. All of the system's functionality should be clear to a user with a working knowledge of basic browser navigation.

10.2 HARDWARE RESTRICTIONS:

The system should function on the majority of household desktop and laptop machines that support HTML5 and JavaScript.

10.3 SOFTWARE RESTRICTION:

Firefox 4 and later, Google Chrome 10 and later, and Internet Explorer 8 and later are all recommended for use with the system.

10.4 CONSTRAINTS ON DATA MANAGEMENT:

System must be able to communicate with other components in accordance with their requirements.

10.5 OPERATIONAL RESTRAINTS:

The system's operating server places a cap on the number of concurrent users it can handle.

10.6 SITE ADAPTATION RESTRICTION:

After the system is created, the component will be modified to work with the overall system

10.7 ASSUMPTIONS AND DEPENDENCIES: The majority of academic portals include a tonne of unnecessary features that are never utilised during a class. In addition to introducing certain new features that other portal lack, our new system focuses on the characteristics that academic institute consumers value the most.

11. SPECIFIC REQUIREMENTS

11.1 EXTERNAL INTERFACE:

11.1.1: WEB SERVER:

- The web server chosen is Apache:
- Using HTML forms, the user submits data to the web server.

- The web server runs PHP as a module, and if the post data is accessible, the PHP script obtains it.
- The PHP script provides data back to the web server.
- The end-user sees an HTML page as a result from the web server.

11.1.2: PHP APPLICATION:

PHP was used to create the actual programme that will carry out the procedures. A database will be used to store all the data.

11.1.3: MYSQL DATABASE:

It’s an open-source SQL database to store all data which communicates with the application on the server

11.2 PERFORMANCE REQUIREMENTS:

Performance requirements are a set of criteria or specifications that specify the speed, capacity, and efficiency with which a system or application must operate. These specifications, which are frequently established by users or stakeholders of the system or application, are used to assess the system's performance and make sure that it satisfies its users' needs.

11.2.1 LOGICAL DATABASE SPECIFICATIONS:

All information, with the exception of files that are stored on the disc, will be saved in the database, including user accounts and profiles, discussion data, messages, etc. A solid database architecture is necessary for the database to support concurrent access and maintain consistency at all times.

11.2.2 DESIGN CONSTRAINTS:

1. SQL will be used for all communication between the portal programme and the database.

2. HTML/CSS will be used to create the portal layout.

3. PHP will be used to create the product.

4. The output needs to be W3C XHTML 1.0 compliant.

5. The source code must adhere to PHP's coding standards.

6. Complete documentation must be available to system administrators.

11.3 SOFTWARE SYSTEM CHARACTERISTICS:

The components of the software are as follows:

1.the PHP programme and

2.the Apache web server

3. MySQL, the database

4. Even if there is a mistake, the database should always be consistent.

11.3.1 RELIABILITY:

The dependability of the individual components affects the program's overall dependability.

11.3.2 AVAILABILITY:

The system should be available at all times, meaning the user can access it using a web browser, only restricted by the down time of the server on which the system runs. In case of a of a hardware failure or database corruption, a replacement page will be shown. Also in case of a hardware failure or database corruption, backups of the database should be retrieved with the MySQL server and saved by the administrator

11.3.3 SECURITY:

1. Passwords will be saved encrypted in the database in order to ensure the user's privacy.

2. The user's IP will be logged.

3. The system will be protected against vulnerabilities such as SQL injection attacks.

11.3.4 MAINTAINABILITY:

MySQL is used for maintaining the database and the Apache server takes care of the site. In case of a failure, a re-initialization of the program is recommended.

11.3.5 PORTABILITY:

The application is Linux-based and should be compatible with other systems. Apache, PHP and MySQL programs are practically independent of the OS-system which they communicate with. The end-user part is fully portable and any system using any web browser should be able to use the features of the application.