GOVT. HOLKAR SCIENCE COLLEGE INDORE

Project Report

" WEB BASED FILE SHARING APPLICATION"

This is the Major Project for the partial fulfilment of the award of degree of **BACHELOR DEGREE** in **Computer Application**

SESSION 2021-2022

SUBMITTED TO:

Prof. Sapna Kaneria

SUBMITTED BY:

Prakash Deshmukh

Utkarsh Shrivastava

Yogesh Dhakkad

Head of Department

Dr. Pradeep Sharma Sir

Department of Computer Science

Holkar Science College Indore

GOVT. HOLKAR SCIENCE COLLEGE INDORE

Certificate

This is to Certify that the major project work entitled **"WEB BASED FILE SHARING APPLICATION"** submitted by **"Prakash Deshmukh, Utkarsh Shrivastava, Yogesh Dhakkad"** Student of final Year B.C.A (Bachelor of Computer Application) in the year 2021-2022 of Computer Science Department of institute, is a satisfactory account of this work based on syllabus which is approved for the award of Degree of Bachelor of Computer Application.

DATE: _____

Signature of
Internal Examiner

_____

Signature of
External Examiner

_____

GOVT. HOLKAR SCIENCE COLLEGE INDORE

Declaration by The Candidate

I declare that the project entitled **"WEB BASED FILE SHARING APPLICATION"** is my own project work conducted under the guidance of Prof. **Sapna Kaneria**, at Govt. Holkar Science College affiliated to the Devi Ahilaya Vishavidhyala, Indore (M.P.) India approved by Bachelor of Computer Application Degree Committee. I have put more than 75% attendance with the supervisor at the center.

I further declare that to the best of my knowledge that report does not contain any matter partially or wholly which has already been submitted for the award of any degree either to this University / any other University / Deemed University and if it does it is done with proper citation.

SIGNATURE OF GUIDE

SIGNATURE OF STUDENTS

Prakash Deshmukh :_____

Utkarsh Shrivastava :_____

Yogesh Dhakkad : _____

SIGNATURE OF HEAD OF DEPARTMENT

Dr. Pradeep Sharma Sir

Department of Computer Science

Holkar Science College Indore

Acknowledgement

"It is not possible to prepare a project report without the assistance & encouragement of other people. This one is certainly no exception."

We would like to express our sincere gratitude to several individuals and organizations for supporting us throughout this project. First, we wish to express our sincere gratitude to our supervisor**, Prof. Sapna Kaneria** , for her enthusiasm, patience, insightful comments, helpful information, practical advice and unceasing ideas that have helped us tremendously at all times in our project and writing of this report. Her immense knowledge and profound experience have enabled us to do this project. Without her support and guidance, this project would not have been possible.

We extremely thankful and pay our gratitude to our Holkar Science College Indore and specially to the **Principal Suresh Silawat Sir** and Head of Computer Science Department **Dr. Pradeep Sharma Sir** for giving this opportunity.

We also acknowledge with a deep sense of reverence, our gratitude towards our parents, who has always supported us morally as well as economically.

Any omission in this brief acknowledgement does not mean lack of gratitude.

Thanking You

TABLE OF CONTENT

TABLE OF FIGURES

Abstract

File sharing is the practice of distributing or providing access to digital media, such as computer programs, multimedia, documents, or electronic books. Daily there are millions of file transfers happening. So, it becomes a necessity to develop scalable software which can share these files fast and efficiently. File transfer allows the sharing, transfer or exchange of a file or data object between different users and / or computers systems over an internet connection. Node.js is a server-side platform primarily used for real-time use due to its 'event-based architecture' and 'unrestricted I / O'. Node.js is 10 times faster than I/O services.

I Introduction

Project Introduction

Along with the development of new technologies, the world is going digital. Because of this, the user stores large volume of information on computer in the form of text document, images, and videos.

File Transfer Web Application is used to transfer any type of files like pdf, mp3, word, video, etc.) from a database table and can download when it any type of files from the database is received at same time with security.

This web application is developed using Node JS web framework and it's Socket.io Framework to make it secure.

The web application is developed in 2 tier architecture involving user interface and controller. The user interface will be a web page hosted on a server. The web page consists of both static and dynamic content. Controller establish the connection between the sender and receiver accesses the data from the database and provides it to the user through user interface (web page).

Existing System with limitation

Existing File Sharing services are cloud-based services, which allows users to save their data on their computers and then sync it online so that the data could be accessed from anywhere. Some of the services that provide these facilities are Dropbox and Google. Dropbox Server and client code was first written in Python. It uses CoffeScript in browser side codebase. Its desktop client uses Python GUI toolkits as Cocoa. Here is the problem of security which is majorly depended only on the server if server is secure than only one can ensure that their data is secure but only if the server is secure. And also, in today's system there is no such option of getting two persons connected and

share what is needed and eliminating the chance of data cannot be received by the third person.

Proposed system with aim and objective

Aim : To develop a web-based application which can Establish Secure Connection between Two entity Enable File Sharing.

Objective:

The main objective of this project is to deploy such a system for the users that by that there can be a connection only be established between the two entries without evolving of any other person involvement. Which will not only fulfil the requirement of the File sharing but also made it simplify like without any uploading or downloading process and to run this the requirement is also not very much that means any user of the internet will have the access to this we based application and perform their work seamlessly without any thinking of data integrity and they will have the reliable, easily operable system for file sharing.

Preliminary investigation

Project Planning is the set of activities that are required before a project can actually begin. It is done to estimate the work to be done and the time that will be needed to complete the required task

a.) Problem

Definition In organization we use server to save our files but the server is not at all secured as anyone can copy our files, manipulate them causing great loss to us. We can access the files from the organization only not from

anywhere. One method is developing a website which can be used for File sharing by organization staff and student. This website will be useful as student and staff, both can access files from anywhere. Additional features will be provided , like announcement sections ,public and private directory, special privilege, secure file sharing, restrict visibility, groups creation, final analytics. This will increase the security of our files and can be managed properly. There will be more interaction between the users.

b.) Scope Statement

This project aims to design an application that is necessary for organization members when they need to operate online and access files . Project scope from user perspective, limits the range of users to only those who have internet connection and have an account in hand. The system can be adapted to a range of files from small to large. Project scope includes facilities for users to upload files online and can download files ,who don't have account can view the notifications. The aim of this project is to promote a user-friendly, efficient, safe way for users to upload and download files without being physically present at organization.

Feasibility Study

A feasibility study is a practicality assessment for a proposed plan, product, project management tool, or new execution method.

The importance of a feasibility study is to establish whether or not a company, team, or organization will deliver on its promises in a satisfactory manner and a reasonable period of time.

Feasibility assessments don't always green light or kill projects or ideas altogether. In most cases, a feasibility study will provide a clear picture of your

budgetary, scheduling, or logistical strengths, and allow you to adjust the scope of your proposition so that it fits your abilities.

There are certain characteristics that make up a feasibility report, most importantly the core questions of feasibility. These are the five questions most feasibility studies have to answer in order to justify a new project, plan, or method:

1.) Is this plan technically feasible?

Starting off, this question will help you determine whether or not your organization has the technical resources to successfully execute this project.

This includes evaluating all of the hardware, software, and other technical assets you have at your disposal and whether or not they meet the requirements of your new project.

For Web Based Application for File Sharing

This Project is completely Feasible in the technique department as this project can be constructed with the help of knowledge of language to develop the static and dynamic pages such as HTML, CSS and JAVASCRIPT and to establish the secure connection between Receiver and Sender we need the knowledge of Node is to create a server where the both users can interact, and Socket.io Framework to establish connection.

2.) Is this plan legal?

Does your organization meet all of the requirements, laws, and regulations to complete this project?

It’s a complete nonstarter if your project doesn’t meet the legal threshold for completion, which includes anything from data protection laws to building requirements.

Otherwise, you’ll make it halfway through your project before you realize that your team isn’t meeting some overlooked regulation that’ll waste more time and resources to rectify later.

For Web Based Application for File Sharing

This Project is completely Feasible for the legal terms as this is originally designed by us and the idea may be not the new one but the coding and designed idea was orignals.which reserved all the copyrights to the developer of this project.

3.) Is this plan operationally feasible?

Will this proposed project solve the problems you hope it will solve? Is the solution reliable, maintainable, and affordable?

There is no sense in sinking time, money, and energy into a project that isn’t likely to produce quality results for your team or your stakeholders.

For Web Based Application for File Sharing

This Project is completely Feasible operationally as it is not developed first time as there are already many such software but we have added our approach to make it unique and these features are totally operational as they are based on the known development languages. And after development the project is easily operable and reliable.

4.) Is this plan feasible within a reasonable period of time?

This is one of the most important questions: do you have the time to complete this project?

It's important that you establish a realistic project schedule for project completion, otherwise, you'll find yourself dropping the ball on deadlines and quality for your deliverables.

For Web Based Application for File Sharing

This Project is completely Feasible in terms of timing will all phase of the development it requires maximum 1 week of the work for its complete development with testing.

5.) Is this plan economically feasible?

Finally, we reach the most obvious of the feasibility questions.

This is where you will assess whether or not this project will provide the supposed value needed to justify its cost. You can assess this area of feasibility based on several different factors, including:

- Projected profitability
- The total cost of completion
- Estimated investment by outside parties

No matter how incredible a project may seem, if the numbers don't add up, then either you'll have to seek out larger budgets or the plan isn't worth the risk.

For Web Based Application for File Sharing

This Project is completely economical as it requires less equipment to develop it which saves a high cost in the resources of high end and the only cost which is to be applied to is the server miniatous which runs 24x7 for the user access and

web hosting service and purchase a domain to make it accessible to the others over the internet.

Software/Hardware requirements

Software Requirements:-

Component	Specification
Web Technology	Chrome , Firefox , Or any Web Browsing Software
Web Server	localhost:5000
Database	Local Computer
Code Behind	Html, JavaScript, CSS

Hardware Requirements:-

Component	Specification
Intel Pentium	600 MHz or above.
RAM (SD/DDR)	512MB
Hard Disc	30GB or above
System bus	32 bits
RAM	256MB of RAM
Monitor	SVGA COLOURS
Keyboard	108 keys
Mouse	2 mouse button

Software Description

Web page

The webpage serves as user interface to the application. Web page is developed using HTML, Java script and Node.js & Socket.io.

Node.js

With the use of Node.js framework in combination with the JavaScript for the web applications implementation is getting common in practice. A file transferring for a real-world application with Node.js functionality is presented. Node js delivers event-run programs on web servers, allowing for faster development of web servers in JavaScript. It takes the time for servers to spend a lot of time waiting for I / O performance, such as reading a file on a hard drive, accessing an external web service or waiting for a file to finish uploading, as these tasks go much slower in memory operations. As all I/O tasks in Node.js are asynchronous, the server can continue to process incoming requests while the I/O function is performed.

HTML

Hypertext Mark-up Language (HTML) is the main mark-up language for creating web pages and other information that can be displayed in a web browser. HTML is written in the form of HTML elements consisting of tags enclosed in angle brackets (like), within the web page content. HTML tags most commonly come in pairs like and, although some tags, known as empty elements, are unpaired, for example . The first tag in a pair is the start tag, and

the second tag is the end tag (they are also called opening tags and closing tags). In between these tags' web designers can add text, tags, comments and other types of text-based content. The purpose of a web browser is to read HTML documents and compose them into visible or audible web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page. HTML elements form the building blocks of all websites. HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. It can embed scripts written in languages such as JavaScript which affect the behaviour of HTML web pages. Web browsers can also refer to Cascading Style Sheets (CSS) to define the appearance and layout of text and other material. The W3C, maintainer of both the HTML and the CSS standards, encourages the use of CSS over explicit presentational HTML mark-up.

Java Script

The JavaScript programming language, developed by Netscape, Inc., is not part of the Java platform. JavaScript (JS) is an interpreted computer programming language. It was originally implemented as part of web browsers so that client-side scripts could interact with the user, control the browser, communicate asynchronously, and alter the document content that was displayed. JavaScript is a prototype-based scripting language that is dynamic, weakly typed, and has first-class functions. Its syntax was influenced by the language C. JavaScript copies many names and naming conventions from Java, but the two languages are otherwise unrelated and have very different semantics. The key design principles within JavaScript are taken from the Self and Scheme programming languages. It is a multi-paradigm language,

supporting object-oriented, imperative, and functional programming styles. JavaScript's use in applications outside of web pages for example, in PDF documents, site-specific browsers, and desktop widgets is also significant. Newer and faster JavaScript VMs and frameworks built upon them (notably Node.js) have also increased the popularity of JavaScript for server-side web applications. JavaScript was formalized in the ECMAScript language standard and is primarily used as part of a web browser (client-side JavaScript). This enables programmatic access to computational objects within a host environment. JavaScript does not create applets or stand-alone applications. In its most common form today, JavaScript resides inside HTML documents, and can provide levels of interactivity to web pages that are not achievable with simple HTML.

II System Analysis

Functional and non-functional Requirements

Functionals Requirements: Following are the functional requirements that were collected from users :

i. Providing security to shared files

ii. Various access rights to shared files(e.g. Read, Write)

iii. Public and private directories for sharing file Interactive User interface for file sharing

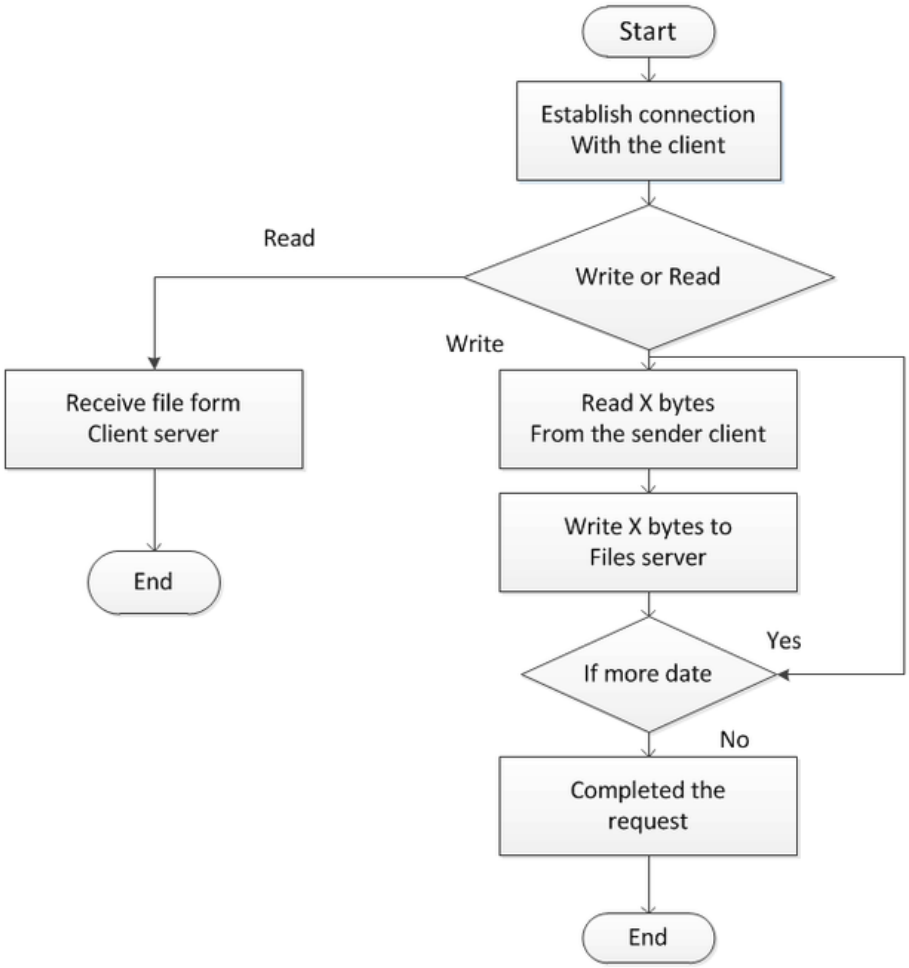
Non-Functional Requirements: Non – Functional requirements for the project are as follows :

i. Language : Hypertext Mark-up Language(HTML), Cascading Style Sheets(CSS), Javascript,Node.js & Socket.io

ii. IDE : Atom IDE

iii. Operating System : Windows, Ubuntu & MacOS

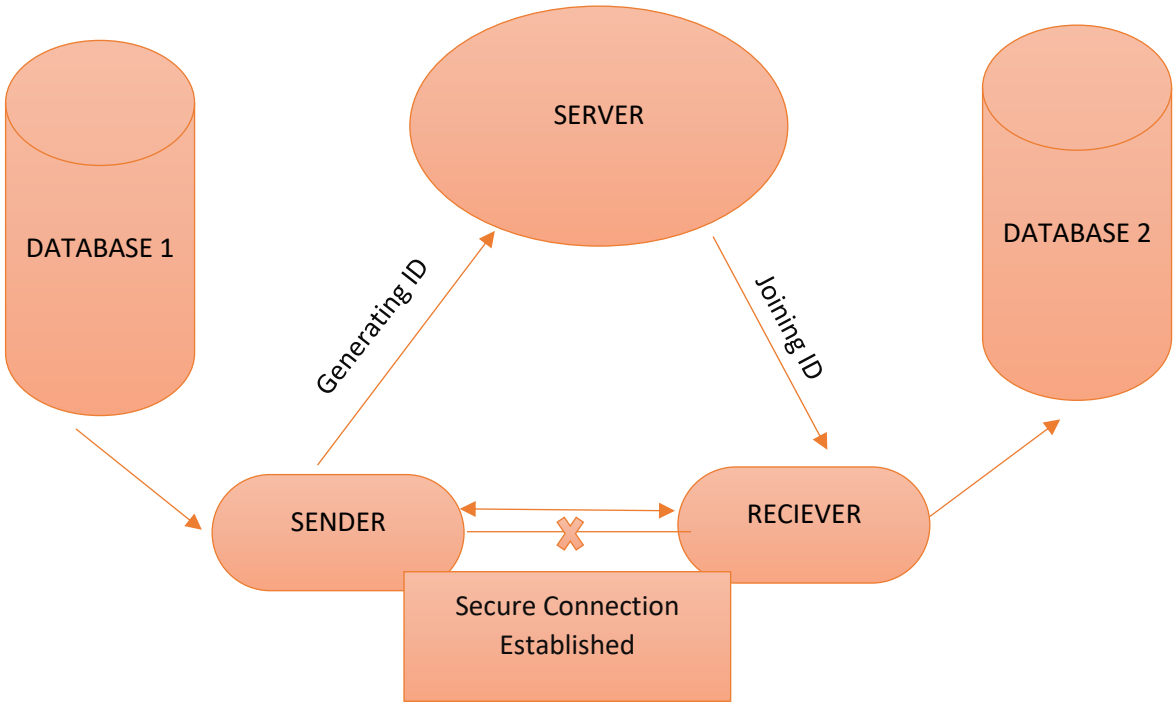
System Flowchart



III System Design

Architectural Design

In this project, we are using a client-server architecture for sharing files. In the system given below, client requests a file(audio, text) from the server. Here the connection between Sender and Receiver is established securely by verifying the senders key as security is the main feature of this Project. And then the sender can send any file from local computer to the receiver computer on the same network.



User Interface Design

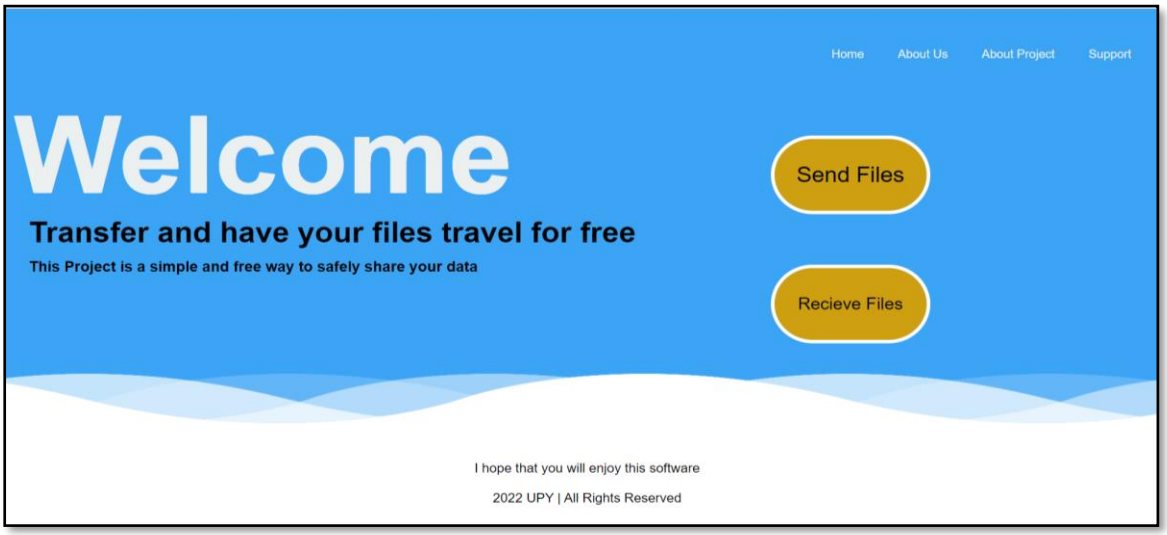


Figure 1 : Main Page

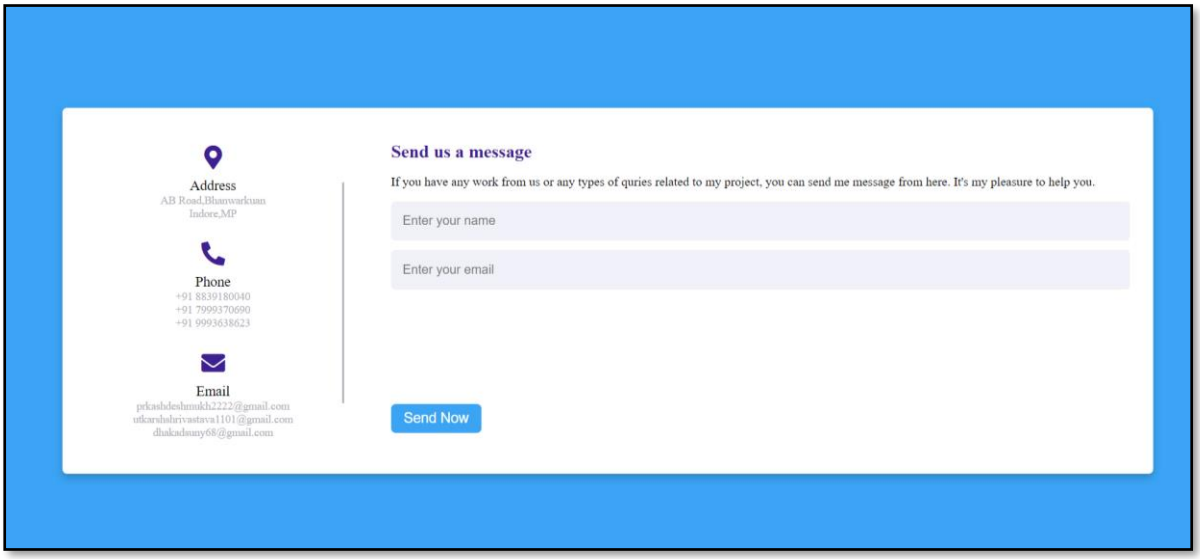


Figure 2: Support Page

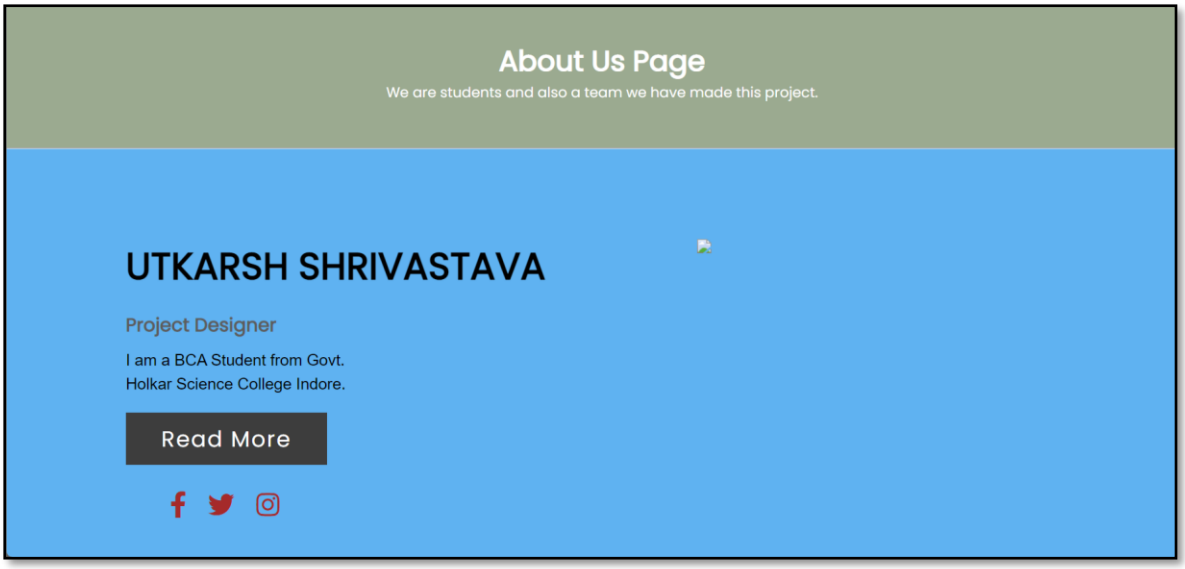


Figure 3: About Us Page

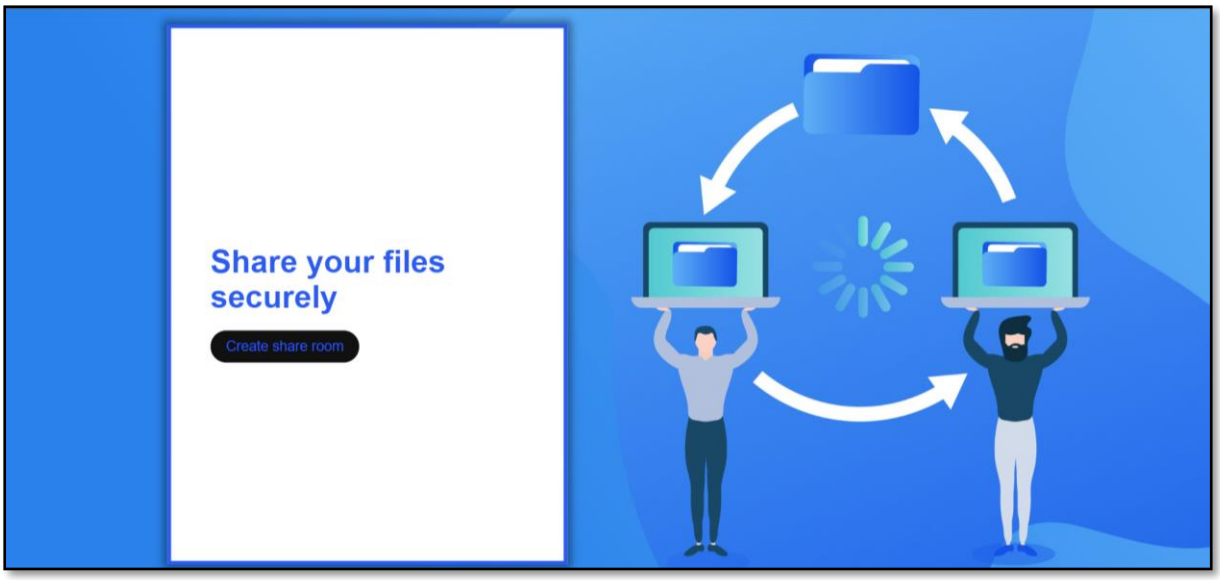


Figure 4 Senders Page

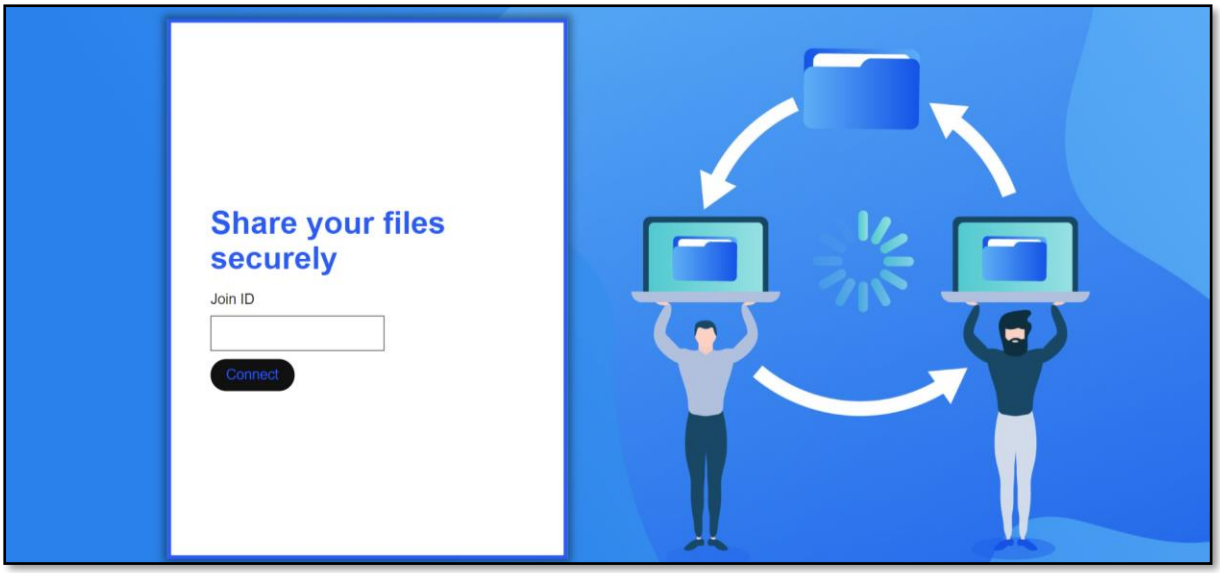


Figure 5: Receiver Page

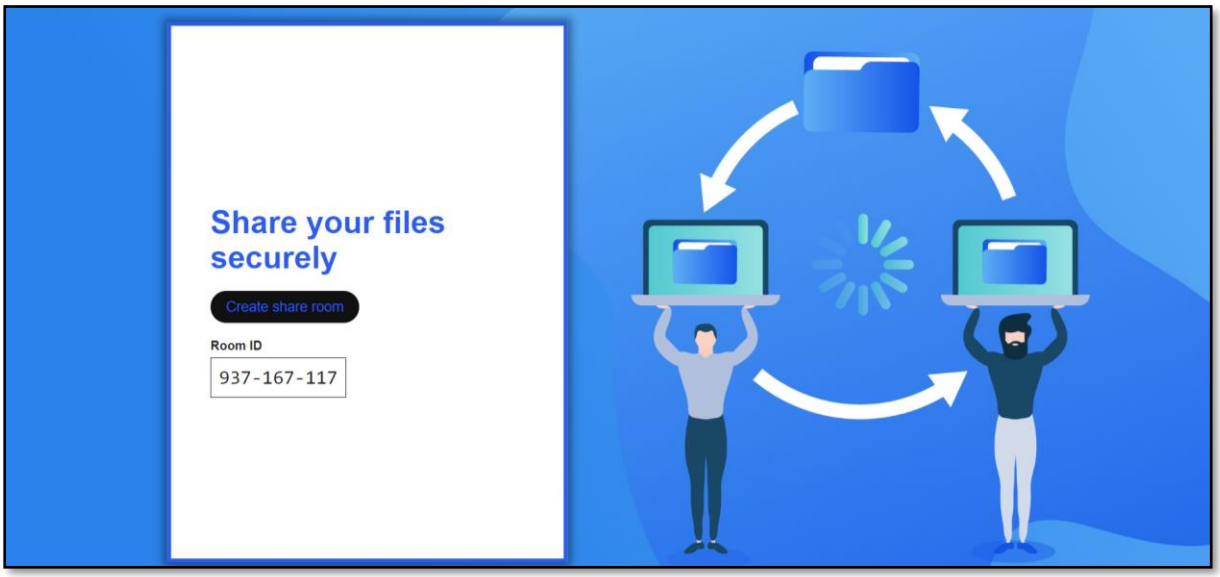


Figure 6: Sender Page with Generated Security Key

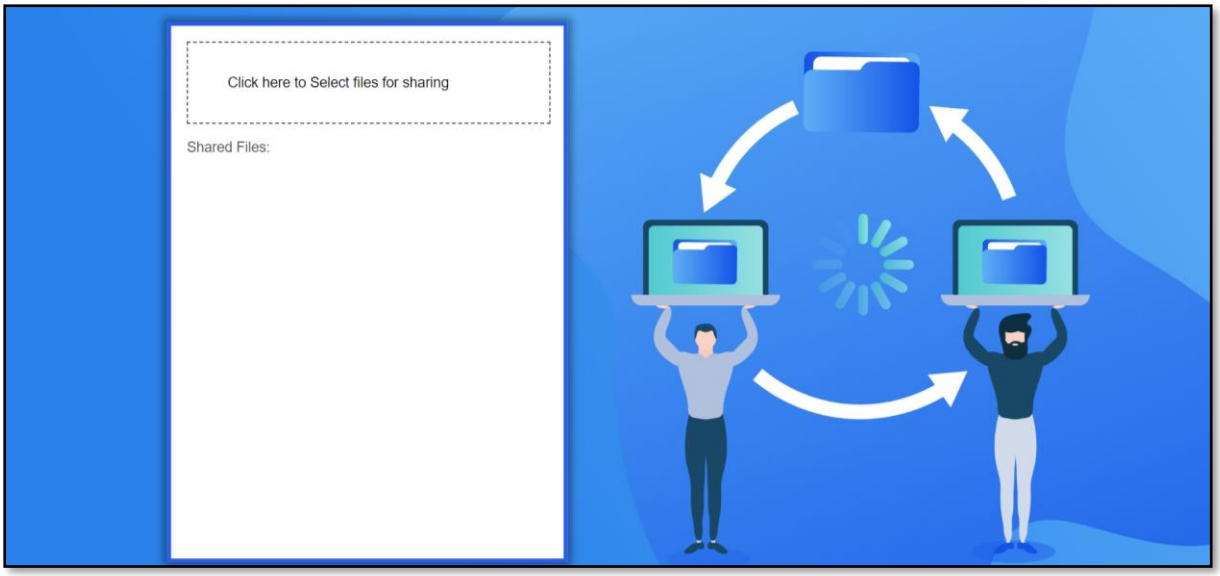


Figure 7 : Sending Page to Select File

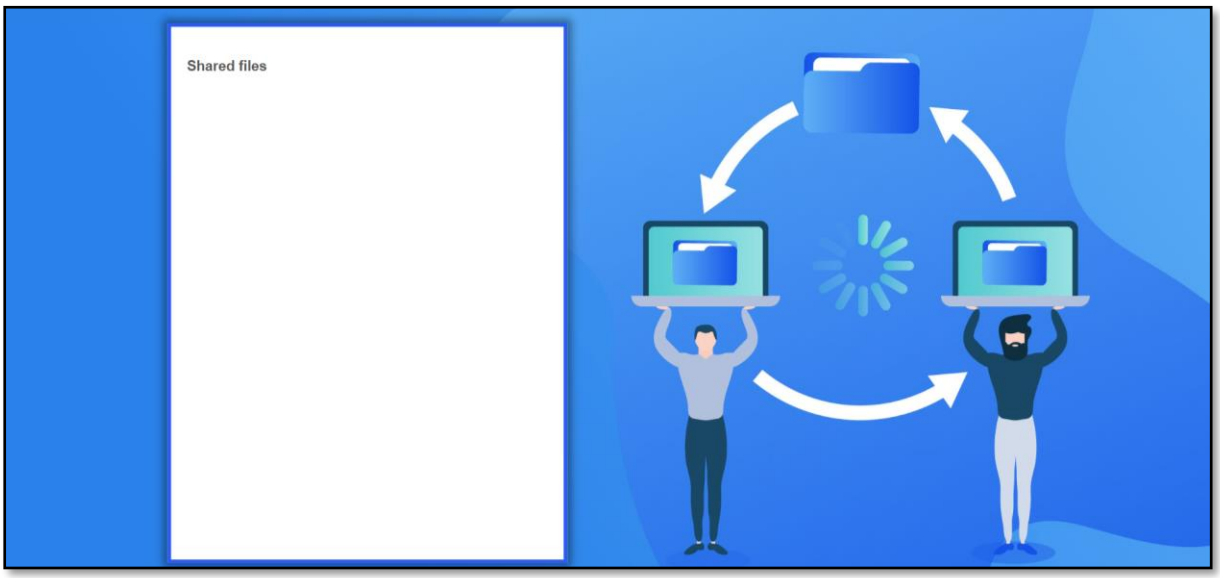


Figure 8 : Receiving Page to Show Received Files

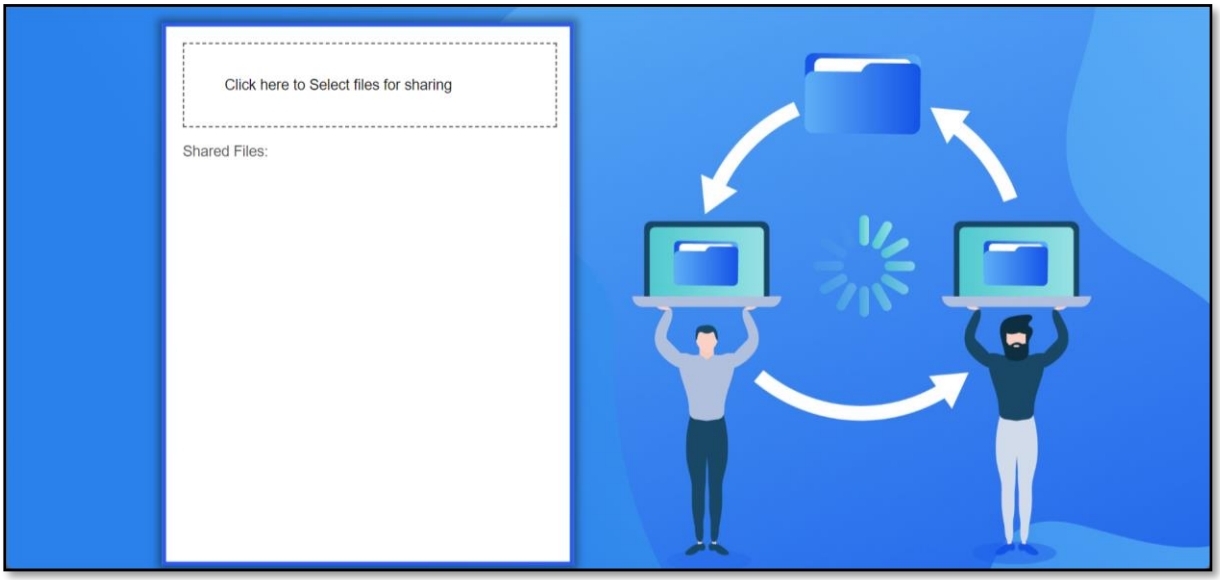


Figure 9 : Senders Page to (Select File)

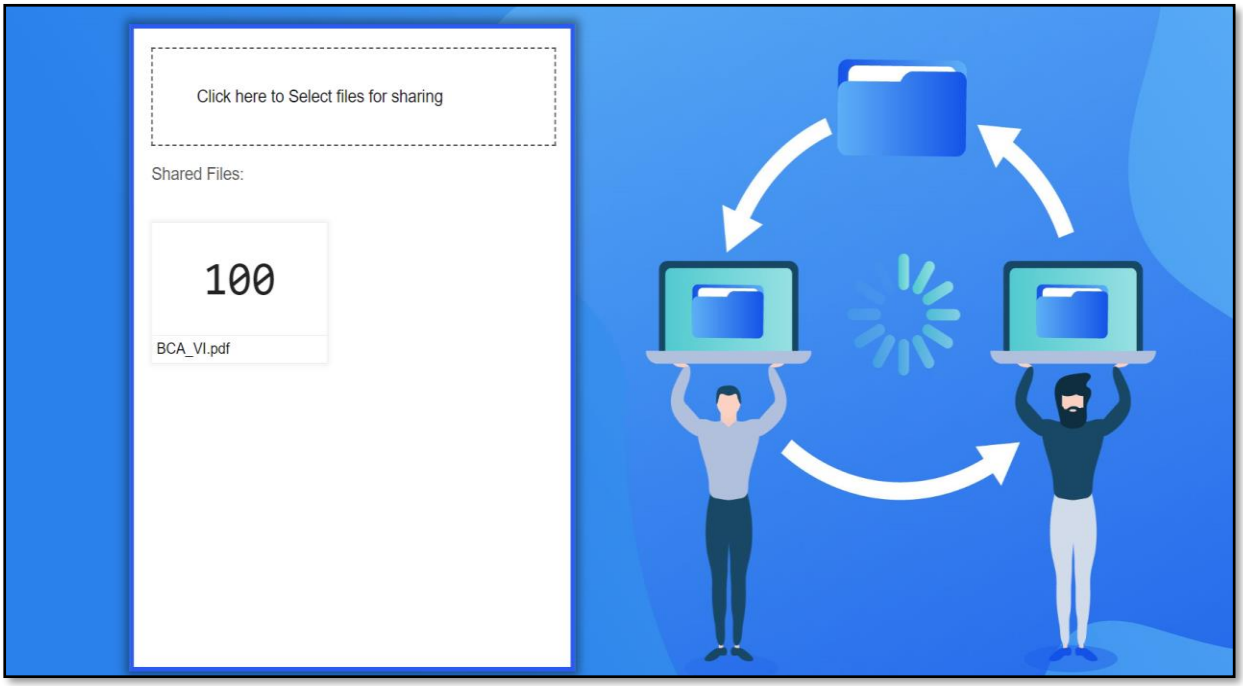


Figure 10 : File Sending Status

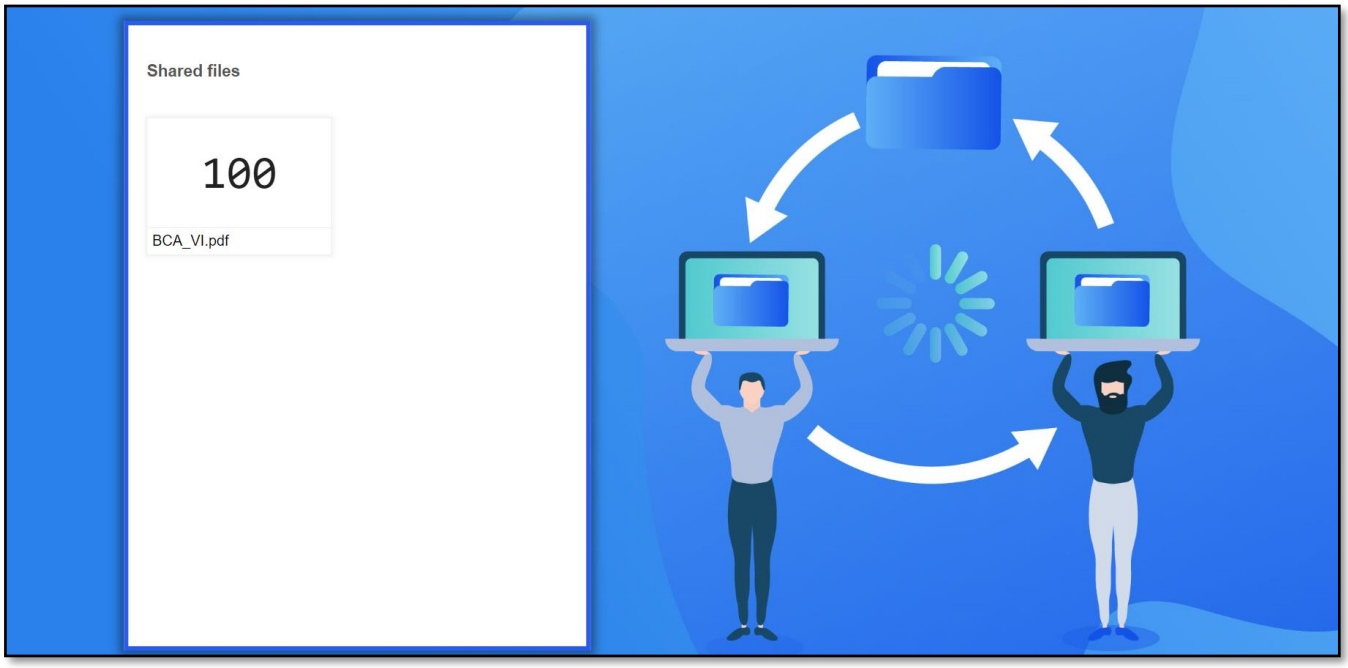


Figure 11: File Recieved Status

IV System Testing

Testing is a process of executing a program with the interest of finding an error. A good test is one that has high probability of finding the yet undiscovered error. Testing should systematically uncover different classes of errors in a minimum amount of time with a minimum amount of efforts.

Two classes of inputs are provided to test the process

1. A software configuration that includes a software requirement specification, a design specification and source code.

2. A software configuration that includes a test plan and procedure, any testing tool and test cases and their expected results.

Testing Approach and Testing Strategy

a.) Unit Testing

Unit test comprises of a set tests performed by an individual program prior to the integration of the unit into large system. A program unit is usually the smallest free functioning part of the whole system. Module unit testing should be as exhaustive as possible to ensure that each representation handled by each module has been tested. All the units that makeup the system must be tested independently to ensure that they work as required. During unit testing some errors were raised and all of them were rectified and handled well. The result was quite satisfactory and it worked well.

b.) Integration Testing-

Integration testing is a system technique for constructing the program structure while at the same time conducting tests to uncover errors associated with interfacing. The objective is to take unit tested modules and build a program structure that has been dictated by design. Bottom-up integration is the

traditional strategy used to integrate the components of a software system into functioning whole. Bottom-up integration consists of unit test followed by testing of the entire system. A sub-system consists of several modules that communicated with other defined interface. The system was done the integration testing. All the modules were tested for their compatibility with other modules .They test was almost successful. All the modules coexisted very well, with almost no bugs. All the modules were encapsulated very well so as to not hamper the execution of other modules.

c.) Validation Testing-

After validation testing, software is completely assembled as a package, interfacing errors that have been uncovered and corrected and the final series of software test; the validation test begins. Steps taken during software design and testing can greatly improve the probability of successful integration in the larger system. System testing is actually a series of different tests whose primary purpose is to fully exercise the compute –based system.

d.) Recovery Testing-

It is a system that forces the software to fail in a variety of ways and verifies that the recovery is properly performed. e. Security Testing. It attempts to verify that protection mechanisms built into a system will in fact protect it from improper penetration. The system's security must of course be tested from in vulnerability form frontal attack.

e.) Stress Testing-

Stress tools are designed to confront programs with abnormal situations. Stress testing executes a system in a manner that demands resources in abnormal quantity and volume.

f.) Black Box-

Testing Black box testing is done to find out the following information as shown in below:

1. Incorrect or missing functions.

2. Interface errors.

3. Errors or database access.

4. Performance error.

5. Termination error.

The mentioned testing is carried out successfully for this application according to the user's requirement specification.

g.) Test Data Output-

After preparing test data, the system under study is tested using the test data. While testing the system using test data, errors are again uncovered and corrected by using above testing and corrections are also noted for future use.

h.) System testing-

System testing of software or hardware is testing conducted on a complete, integrated system to evaluate the system's

compliance with its specified requirements. System testing falls within the scope of black box testing, and as such, should require no knowledge of the inner design of the code or logic System testing is actually a series of different tests whose primary purpose is to fully exercise the computer-based system. Although each test has a different purpose, all work to verify that system elements have been properly integrated and perform allocated functions.

Some of Different types of system testing are as follows:-

1. Recovery testing

2. Security testing

3. graphical user interface testing

4. Compatibility testing

Testing plan is used

A Test Plan is a detailed document that describes the test strategy, objectives, schedule, estimation, deliverables, and resources required to perform testing for a software product. Test Plan helps us determine the effort needed to validate the quality of the application under test. The test plan serves as a blueprint to conduct software testing activities as a defined process, which is minutely monitored and controlled by the test manager.

How to write a Test Plan

You already know that making a **Test Plan** is the most important task of Test Management Process. Follow the seven steps below to create a test plan as per IEEE 829

1. Analyse the product
2. Design the Test Strategy
3. Define the Test Objectives
4. Define Test Criteria
5. Resource Planning
6. Plan Test Environment
7. Schedule & Estimation

8. Determine Test Deliverables

Test Report for Unit Test Case and System Test Case

For Unit Test Case the Application has been Run Successfully in establishing the secure Connection or in transferring the file of any type such as audio, video, text etc. and of any size while in transferring the large file the time taking to send it depends on the internet speed if the speed is high the file is send swiftly but if speed of connection is slow the file is send in little delay. And there is only one problem encounterd while testing that multiple files can be selected at one time but multiple files can be sent on the one connection session , and hoplefully in future we will rectify that error as in now with our knowledge we are not able to rectify it by our whole effort otherwise this application runs fine in all the cases and scenarios.

V Conclusion

In today's digital world, where almost everything is stored digitally, it's important to have a secure and accessible way to share files with others. So, we have designed the application on the html language with JavaScript and socket.io framework which is operable on any web browser in any operating system as it is platform independent. By providing a platform for users to share files securely and easily, web-based file sharing applications can play an important role in the future of communication.

As there are also many files sharing web-based application in the market already but this one proves to be the different from such e.g. Dropbox etc in many terms as Firstly our application is based on the secure connection so to share the file it is wholly dependent on establishing the connection between the two entities sender and receiver without establishing the connection one cannot send the file to the other. And secondly while in other application we need to upload the file firstly to the server and then for the receiver he has to be the link for that server and through that one can download the file from the server so here is the catch that these files uploaded on server are not secure sometimes and also it is accessible to the multiple user while in our system the connection is established only between the two entities and file is directly send through the local system drive to the receiver the system.

Hence, we have designed an application which is user friendly, interactive and efficient to share files in an organization or we can say to the devices connected over the same networks.

VI Bibliography

[1] Chin-Chif, Wen-Xiang Wu. “Distributed File Sharing Using Web Services” , IEEE, ISBN : 978-1-4799-3724 – 0/14/

[2] File Sharing –Wikipedia , the free encyclopaedia[Online]. Available : http://en.wikipedia.org/wiki/File_sharing.

[3] What is File Sharing ? Cory Janssen[Online]. Available : http://www.techopedia.com/definition/16256/file-sharing.

[4] Yoshitaka Shiotsu ”Web Development 101 : Top Web Development Languages in 2014” Available : https://www.odesk.com/blog/2014/03/webdevelopment-101-top-web-development-languages-2014/

[5] Li, "Architecture of Node.js’ Internal Codebase," Available:https://arenli.com/architecture-ofnodejsinternalcodeba se57cd8376b71f#.koh1 66uay.

[6] S.Tilkov, S.Vinoski, “Node.js: Using JavaScript to Build High performance Network Programs”, Internet Computing, IEEE, Page(s): 80-83Volume: 14, Issue: 24 December 2021.

[7] https://www.fool.com/the-ascent/small-business/project-management/articles/feasibility-study/