VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI

Web Technology Project Based Learning Report On

"Infosec (Cyber Security Awareness Website)"

Submitted in the partial fulfillment for the requirements of Web Technology of 6th semester CSE requirement in the form of the Practical Assessment

BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE AND ENGINEERING

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DEPARTMENT OF COMPUTER SCIENCE AND ENGENEERING

B.M.S. INSTITUTE OF TECHNOLOGY & MANAGEMENT

YELAHANKA, BENGALURU-560064

2021-2022

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI

BMS INSTITUTE OF TECHNOLOGY &MANAGEMENT

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CERTIFICATE

This is to certify that the Project work entitled **"Infosec(Cybersecurity awareness Website)**" is a bonafide work carried out by **Prajodh Pragath(1BY19CS104), Pratham H S (1BY19CS109), Rakshith A (1BY19CS114) and Rohan Joy (1BY19CS122)** in partial fulfillment for Web Technology Project Based Learning during the year 2021-2022. It is hereby certified that this project covers the concepts of Web Technology and its Applications. It is also certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in this report.

Signature of the Guide	**Signature of the HOD**
Mr. Durga Devi G Y	**Dr. Thippeswamy G**
Assistant Professor,	Professor & HOD, Dept.
of CSE, BMSIT&M	Dept. of CSE, BMSIT&M

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INSTITUTE MISSION

Accomplish stimulating learning environment through high quality academic instruction, innovation and industry-institute interface.

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1. Lead a successful career by designing, analyzing and solving various problems in the field of Computer Science & Engineering.
2. Pursue higher studies for enduring edification.
3. Exhibit professional and team building attitude along with effective communication.
4. Identify and provide solutions for sustainable environmental development.

PROGRAM SPECIFIC OUTCOMES

1. Analyze the problem and identify computing requirements appropriate to its solution.
2. Apply design and development principles in the construction of software systems of varying complexity.

ACKNOWLEDGEMENT

Any achievement, be it scholastic or otherwise does not depend solely on the individual efforts but on the guidance, encouragement and cooperation of intellectuals, elders and friends. A number of personalities, in their own capacities have helped us in carrying out this project work. We would like to take this opportunity to thank them all.

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Last, but not the least, we thank our **parents and friends** for their encouragement and support given to us in order to finish this project work.

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ABSTRACT

Cyber security is the practice of defending computers, servers, mobile devices, electronic systems, networks, and data from malicious attacks. It's also known as information technology security or electronic information security.

Cybersecurity is important because it protects all categories of data from theft and damage. This includes sensitive data, personally identifiable information (PII), protected health information (PHI), personal information, intellectual property, data, and governmental and industry information systems.

Without a cybersecurity program, your organization cannot defend itself against data breach campaigns, which makes it an irresistible target for cybercriminals.

This is where our project infosec comes in spreading awareness with hands-on experiences.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

1.1 Brief Introduction

- There is a rise in cyber-attack, malware and harmful files being shared in the web. This is whereour project infosec comes in.
- our project is a simple step towards the right direction making users aware of all the potentialthreats that exist in the internet.
- infosec is a web application which spreads awareness about how vulnerable the users can bewhen going about their mundane online tasks.
- As we all know the threat level increases when the user is exposed to precarious website.
- Infosec tries to integrate the whole awareness spreading process into a well-rounded website.
    - Firstly, we focus on personal level threats to the users themselves which is done using some basic information gathering tasks such as social media hunting using images and gathering information based on user's name, email id, IP address and phone number.
    - Secondly, we shift our focus towards online threats the user can be victim to by scanning how vulnerable they are to online files they download URLs and Ip addresses that they come across and websites they visit which have implemented annoying clickjacking.
    - And lastly, we will implement steganography using AES algorithm allowing users to encrypt their messages and files into images demonstrating safe and cool way to encryptyour data.

1.2 Motivation

We were highly motivated to take this project due to multiple reasons:

- Recent introduction to computer networks and security in our curriculum.
- Watching online ted talks on demand in the field of cybersecurity (Cybersecurity careers are projected to grow 31 percent by 2029, according to the U.S. Bureau of Labor Statistics, as governments and companies seek better ways to protect their information from attacks).
- With a current worldwide estimated population of 7.9 billion, approximately 5.25 billion peoplehave access to and use the internet frequently. That means that 66.2% of the world's populationuses the internet. From the year 2000 to 2022, the usage of the internet increased by 1,355%. 95% of cybersecurity breaches are caused by human error hence our project is a small steptowards spreading awareness about this topic.

1.3 Objectives

System should have the following features:

- It should have a user-friendly interface for user comfort.
- Its main objective should be clear, which is to spread cyber security awareness.
- System should allow the user to enter or upload URLs, Ip addresses and files respectively.
- It should then provide the user a report of how vulnerable they are.
- It should also demonstrate some safe encrypting techniques such as image steganography andfile encryption using AES algorithm.

1.4 Problem Statement

To identify the vulnerabilities of the website for the purpose of improving the security features andcreating a blockchain based website.Website is made for the registration of the passport which contains the personal details of the individual. Attack is performed on the website which is createdof our own using block chain and denied its service.

1.5 Proposed System

There is a rise in cyber attack ,malware and harmful files being shared in the web.This is were our project infosec comes in.

our project is a simple step towards the right direction making users aware of all the potential threatsthat exist in the internet.

infosec is a web application which spreads awareness about how vulnerable the users can be when going about their mundane online tasks. As we all know the threat level increases when the user is exposed to precarious website.infosec trys to integrate the whole awareness spreading process into a well rounded website.

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1.6 Limitations

The following are the features of the existing systems:

- Antivirus apps used to scan threats.
- Websites like Virus Total help us to scan malicious files and URLs.
- osint framework is a website provides facilities of information gathering.
- The existing systems provides a one-dimensional functionality either scanning or informationgathering or encrypting but not all at one platform.
- Most of the cybersecurity apps heavily dependent on terminals hence making it less user friendly.
- No other programs or websites help spread awareness about cyber security with hands onsessions.

CHAPTER 2

LITERATURE SURVEY

2.1 Literature Survey

The paper identified 54 used theories, but four behavioral theories were primarily used: Theory of Planned Behavior (TPB), General Deterrence Theory (GDT), Protection Motivation Theory (PMT)and Technology Acceptance Model (TAM). By synthesizing results of empirically tested research
models, a survey of factors proven to have a significant influence on employees' security behavior ispresented.

Children are now frequent users of the internet and increasingly have their own online devices. Theycan familiarize themselves with electronic devices very quickly. Thus, the popularity of the internet and social networks are increasingly high among this age group. Tsirtsis, Tsapatsoulis, Stamatelatos,Papadamou, and Sirivianos (2016) conducted a literature review concerning the internet activity andmotivation for use by children and identified several risks to which they are exposed.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Functional Requirements

→ It should have a user-friendly interface for user comfort.
→Its main objective should be clear, which is to spread cyber security awareness.
→System should allow the user to enter or upload URLs, Ip addresses and files respectively.
→It should then provide the user a report of how vulnerable they are.
→It should also demonstrate some safe encrypting techniques such as image steganography and file
→encryption using AES algorithm.

3.2 Non-Functional Requirements

→The system is portable as it can used through multiple devices.
→The system should run without any stutters or lag.
→The system should provide complete privacy and security to the data entered by the user.

CHAPTER 4

SYSTEM DESIGN AND ANALYSIS

4.1 Phases of cyber security awareness

CHAPTER 5

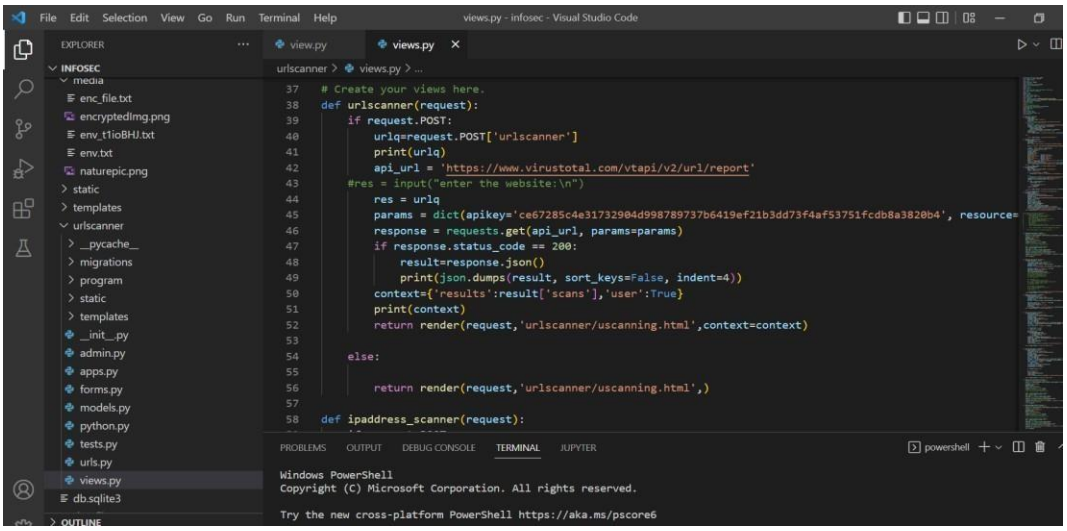
SYSTEM IMPLEMENTATION

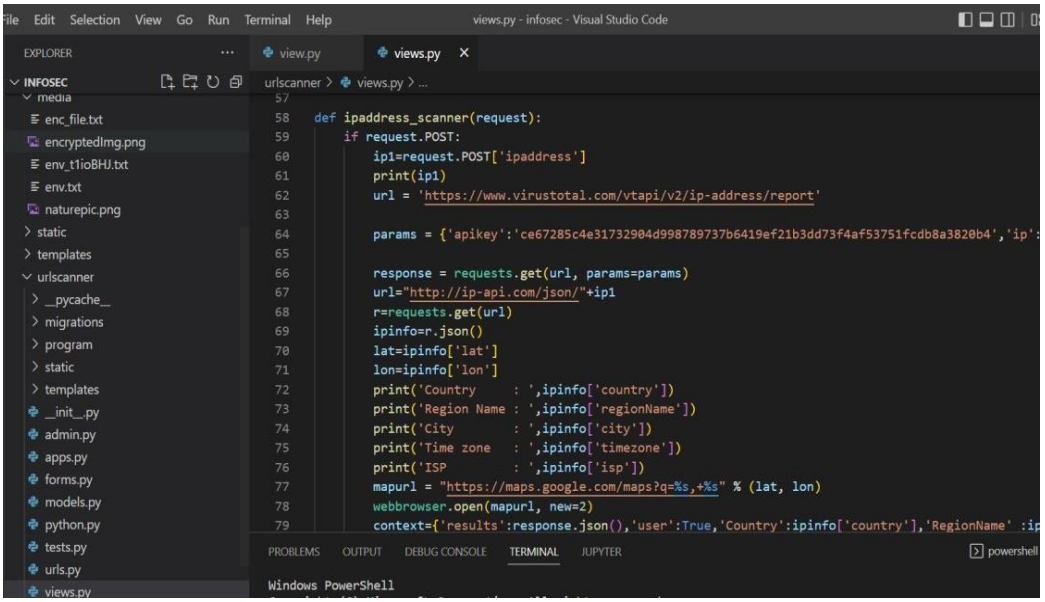
Implementation Specification

→Django framework

→Cybersecurity api`s

→Aes algorithm





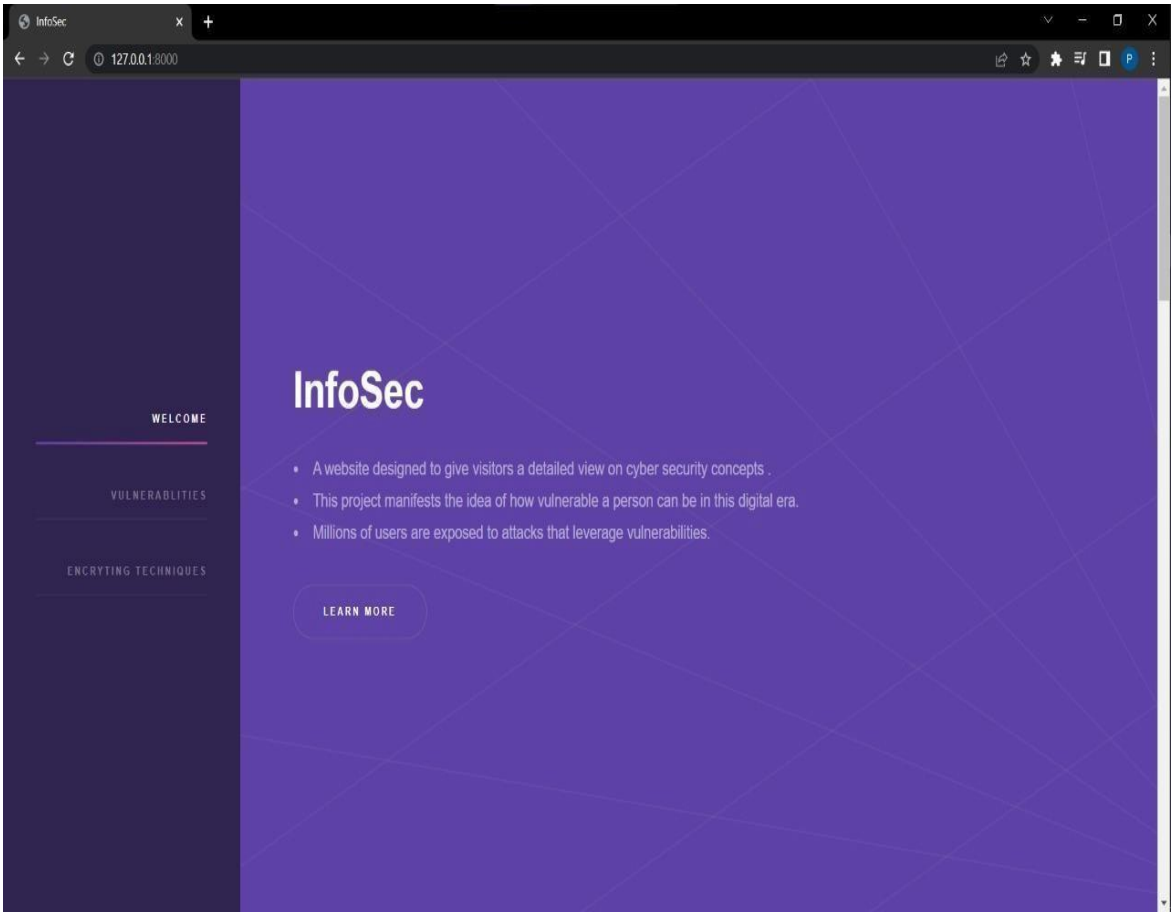
Proposed Methodology:

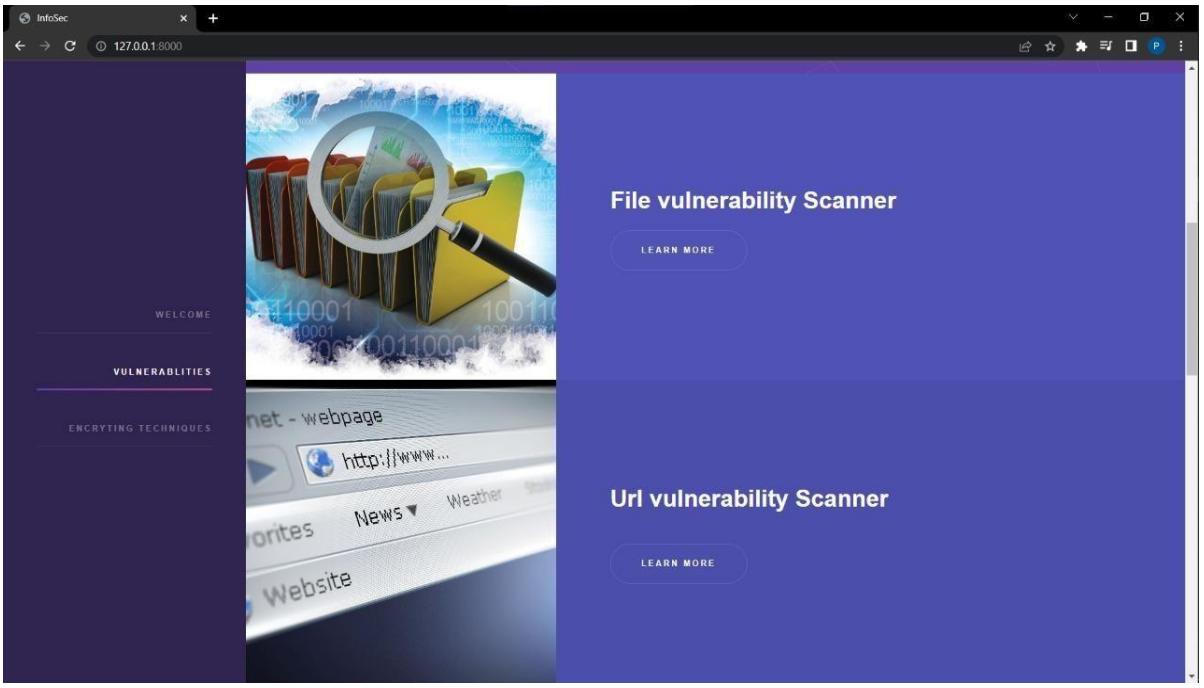
- User is introduced to our aims and objectives when the click on the website.
- Then they can explore the online level threats they might be a victim to the online level threatsare files, URLs, Ip address, clickjacking.
- We allow the user to enter or upload URLs, Ip addresses and files respectively, then using APIssuch as virus total to scan and report the results to the users.
- Next, we introduce them to some safe encrypting techniques such as image steganography andfile encryption using AES algorithm.
- This is done with the help of pycrypto dome module.
- we are using Django for backend and html and CSS for the front-end.

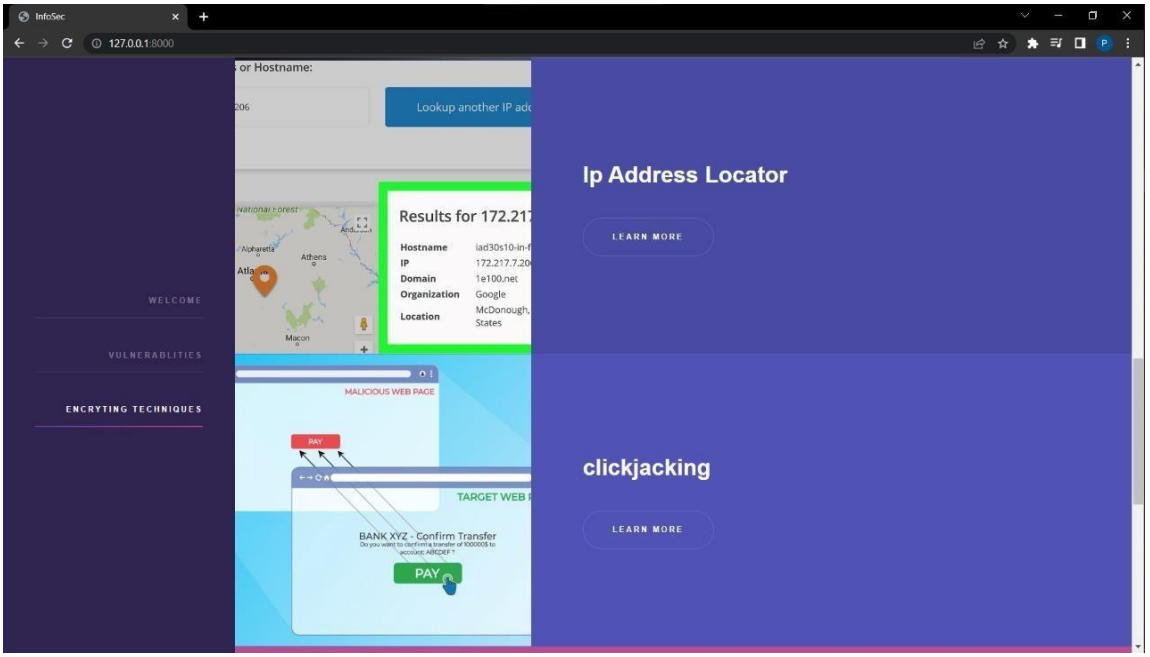
CHAPTER 6

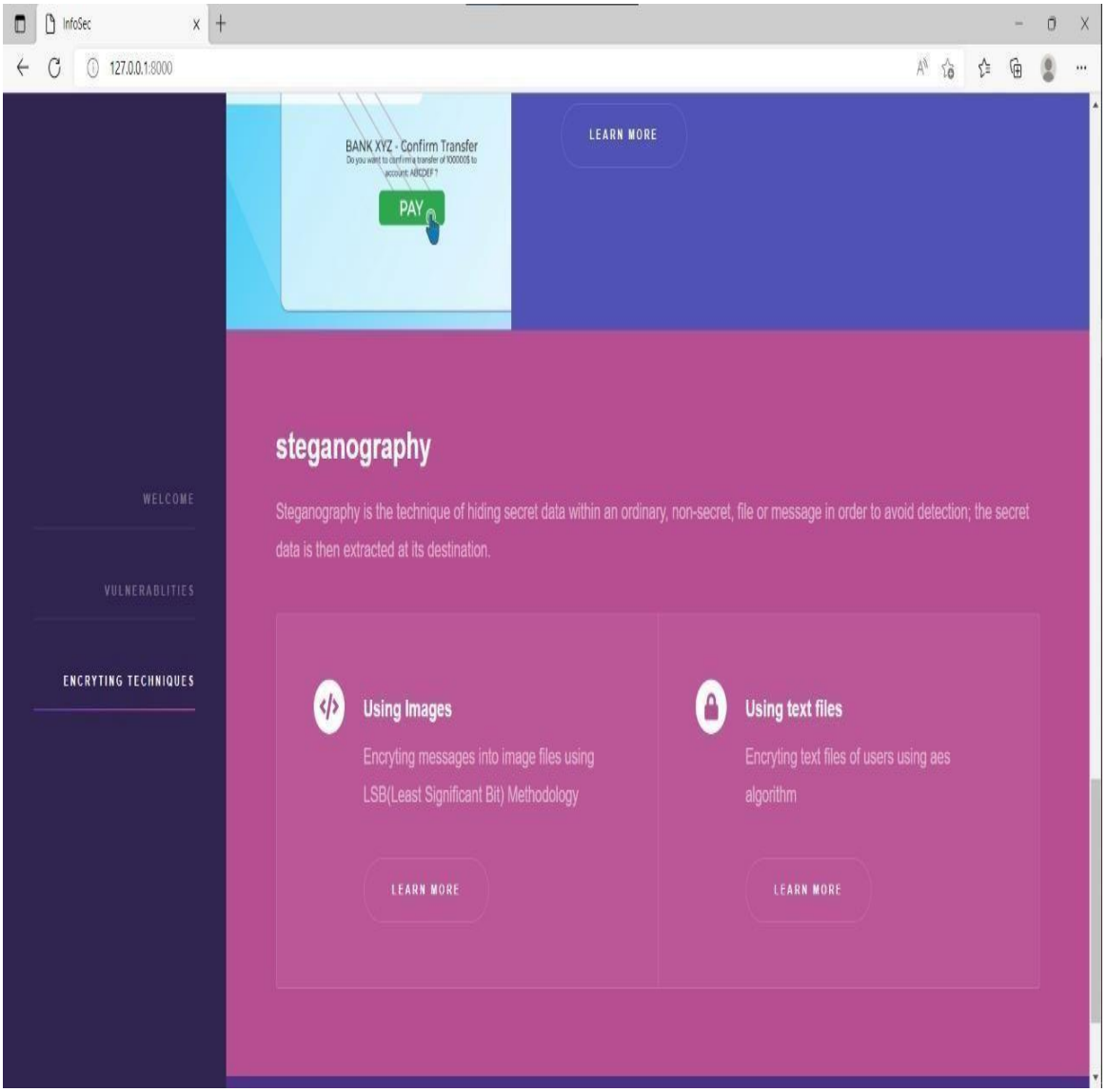
TESTING AND EXPERIMENTAL RESULTS

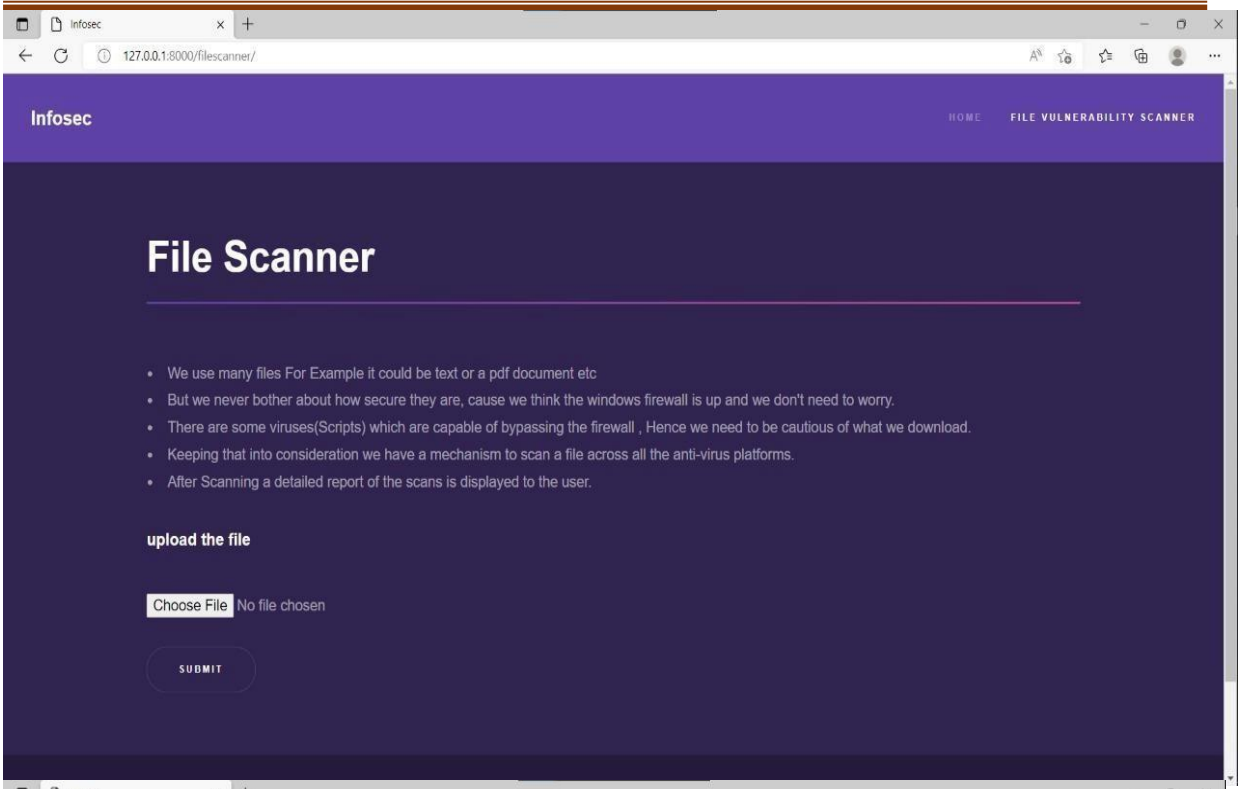
6.1 Results

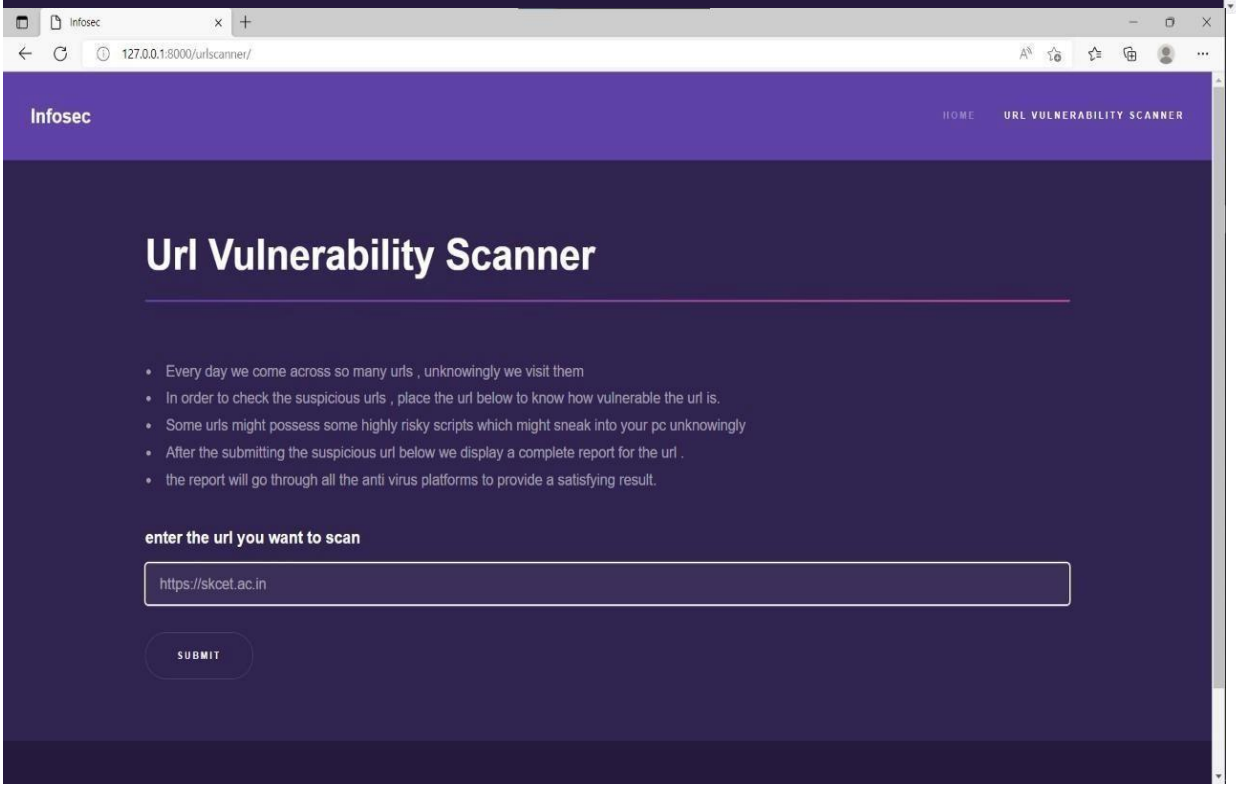


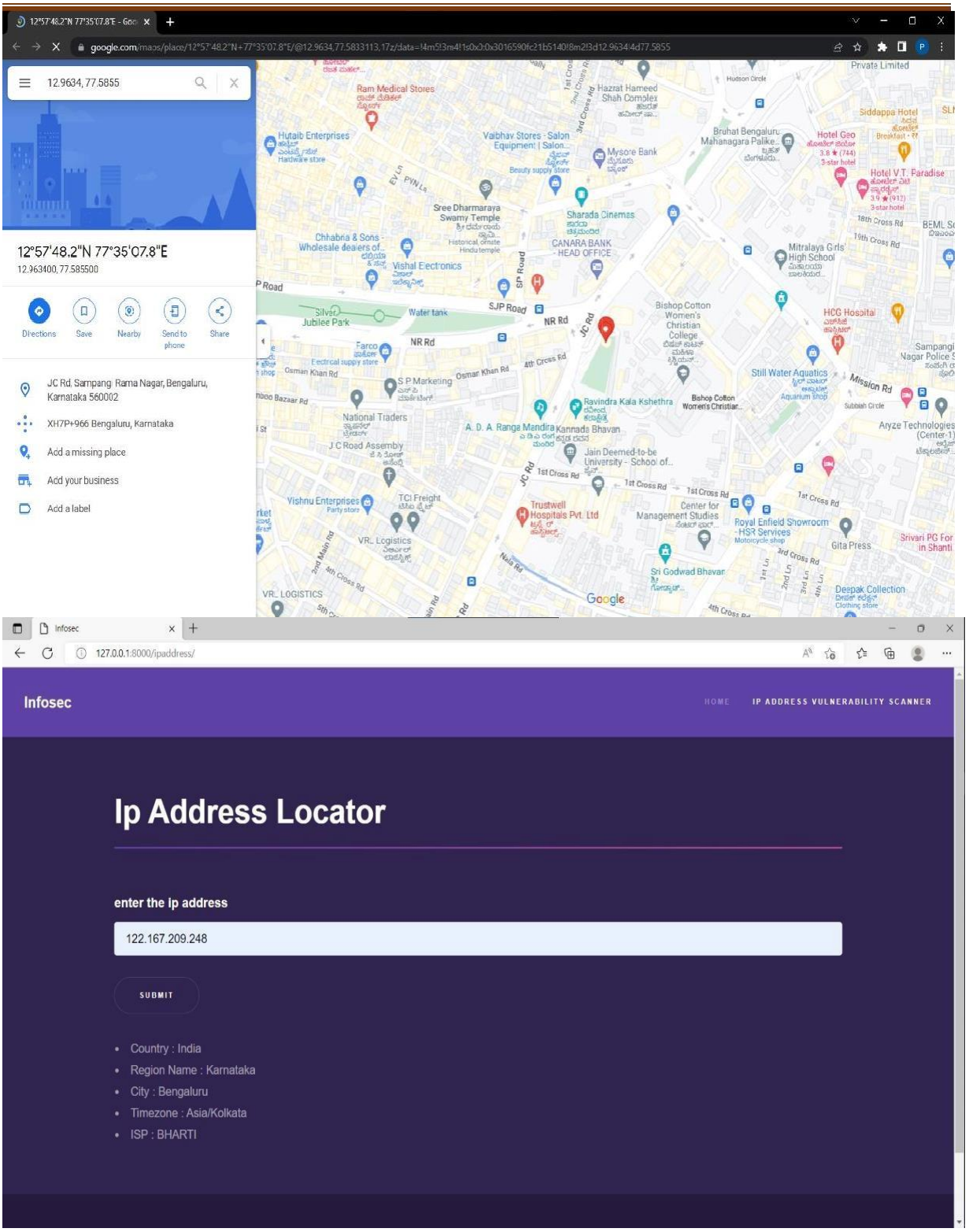

InfoSec
127.0.0.1:8000
WELCOME
VULNERABLITIES
ENCRYTING TECHNIQUES
File vulnerability Scanner
LEARN MORE
net - webpage
http://www...
News
Weather
Website
Url vulnerability Scanner
LEARN MORE

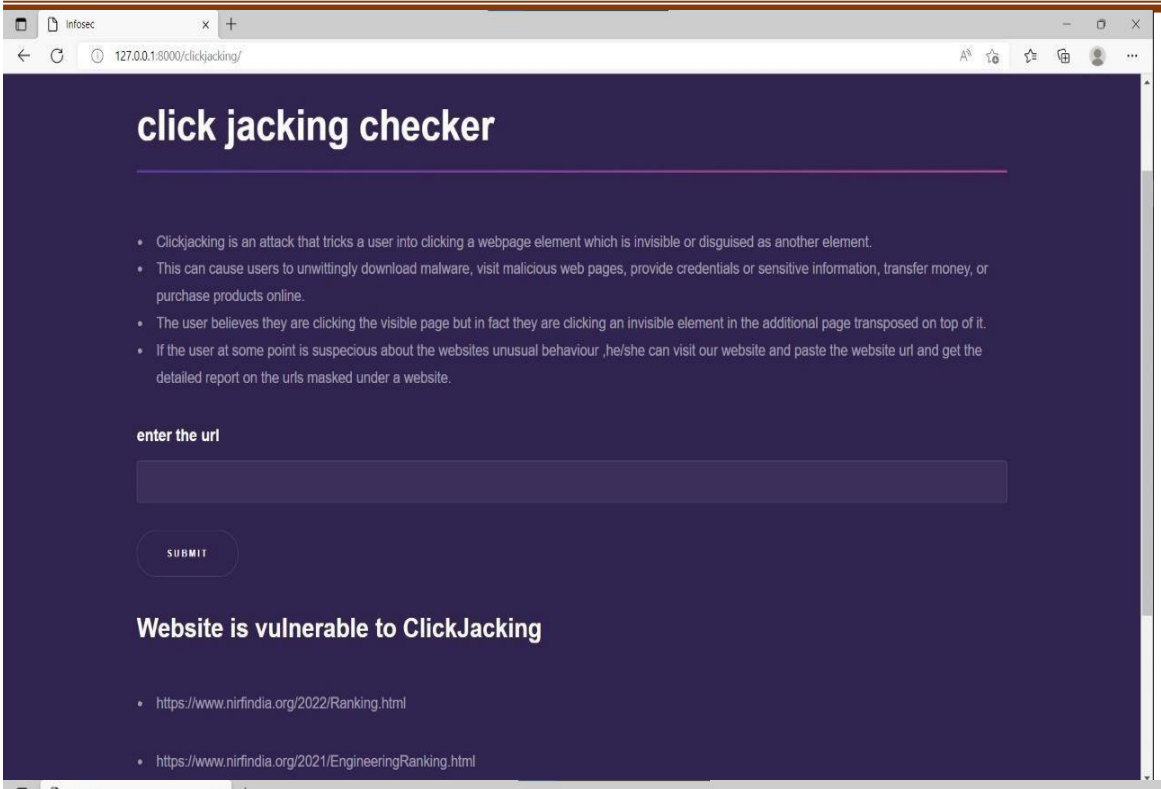

InfoSec
127.0.0.1:8000
or Hostname:
Lookup another IP
WELCOME
VULNERABLITIES
ENCRYTING TECHNIQUES
Results for 172.21
Hostname
IP
Domain
1e100.net
Organization
Google
Location
States
Ip Address Locator
LEARN MORE
MALICIOUS WEB PAGE
PAY
BANK XYZ - Confirm Transfer
PAY
clickjacking
LEARN MORE

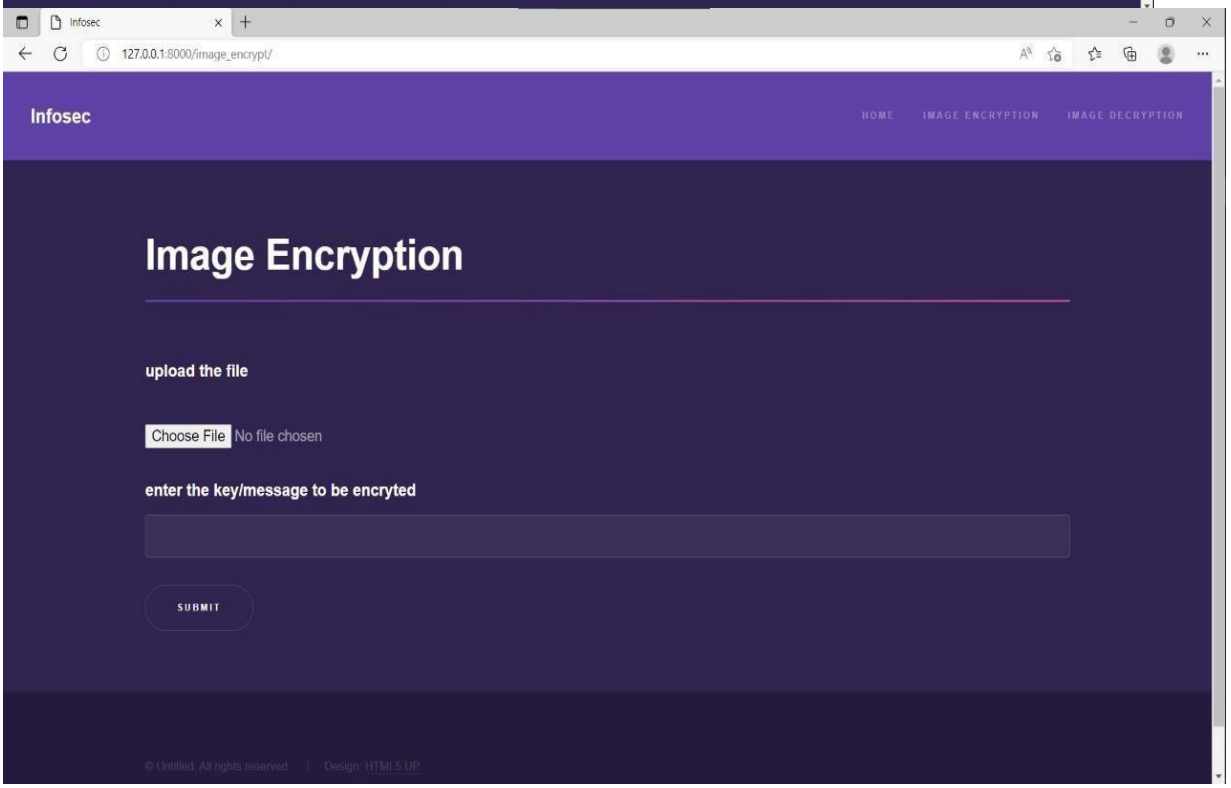

InfoSec
127.0.0.1:8000
BANK XYZ - Confirm Transfer
PAY
LEARN MORE
steganography
Steganography is the technique of hiding secret data within an ordinary, non-secret, file or message in order to avoid detection; the secret data is then extracted at its destination.
WELCOME
VULNERABLITIES
ENCRYTING TECHNIQUES
Using Images
Encryting messages into image files using LSB(Least Significant Bit) Methodology
LEARN MORE
Using text files
Encryting text files of users using aes algorithm
LEARN MORE


Infosec
127.0.0.1:8000/filescanner/
Infosec
HOME
FILE VULNERABILITY SCANNER
File Scanner
We use many files For Example it could be text or a pdf document etc
But we never bother about how secure they are, cause we think the windows firewall is up and we don't need to worry.
There are some viruses(Scripts) which are capable of bypassing the firewall , Hence we need to be cautious of what we download.
Keeping that into consideration we have a mechanism to scan a file across all the anti-virus platforms.
After Scanning a detailed report of the scans is displayed to the user.
upload the file
Choose File
No file chosen
SUBMIT

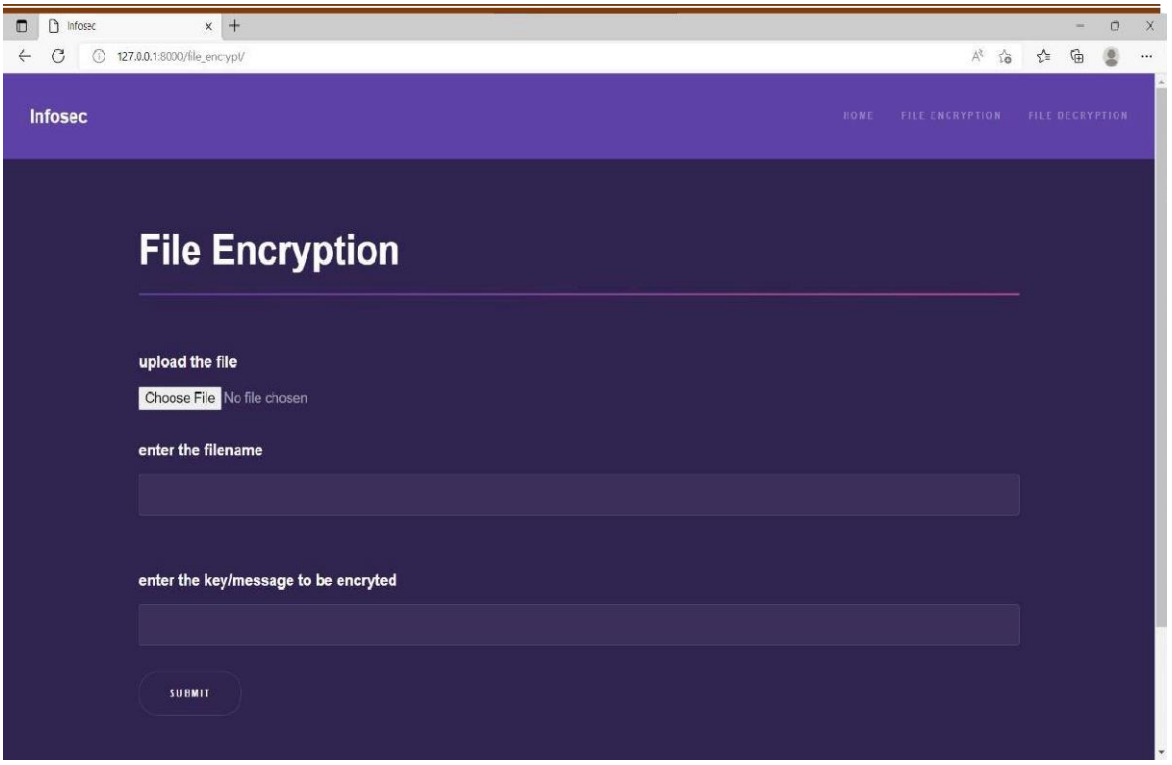

Infosec
127.0.0.1:8000/urlscanner/
Infosec
HOME
URL VULNERABILITY SCANNER
Url Vulnerability Scanner
Every day we come across so many urls , unknowingly we visit them
In order to check the suspicious urls , place the url below to know how vulnerable the url is.
Some urls might possess some highly risky scripts which might sneak into your pc unknowingly
After the submitting the suspicious url below we display a complete report for the url .
the report will go through all the anti virus platforms to provide a satisfying result.
enter the url you want to scan
https://skcet.ac.in
SUBMIT


12°57'48.2"N 77°35'07.8"E
12.963400, 77.585500
Directions
Save
Nearby
Send to phone
Share
JC Rd, Sampang Rama Nagar, Bengaluru, Karnataka 560002
XH7P+966 Bengaluru, Karnataka
Add a missing place
Add your business
Add a label
Google
Infosec
127.0.0.1:8000/ipaddress/
Infosec
HOME
IP ADDRESS VULNERABILITY SCANNER
Ip Address Locator
enter the ip address
122.167.209.248
SUBMIT
Country : India
Region Name : Karnataka
City : Bengaluru
Timezone : Asia/Kolkata
ISP : BHARTI


Infosec
127.0.0.1:8000/clickjacking/
click jacking checker
Clickjacking is an attack that tricks a user into clicking a webpage element which is invisible or disguised as another element.
This can cause users to unwittingly download malware, visit malicious web pages, provide credentials or sensitive information, transfer money, or purchase products online.
The user believes they are clicking the visible page but in fact they are clicking an invisible element in the additional page transposed on top of it.
If the user at some point is suspecious about the websites unusual behaviour ,he/she can visit our website and paste the website url and get the detailed report on the urls masked under a website.
enter the url
SUBMIT
Website is vulnerable to ClickJacking
https://www.nirfindia.org/2022/Ranking.html
https://www.nirfindia.org/2021/EngineeringRanking.html


Infosec
127.0.0.1:8000/image_encrypt/
Infosec
HOME
IMAGE ENCRYPTION
IMAGE DECRYPTION
Image Encryption
upload the file
Choose File
No file chosen
enter the key/message to be encryted
SUBMIT

Infosec(Cybersecurity Awareness Website)



CHAPTER 7

CONCLUSION

7.1 Validation

Computer security attempts to ensure the confidentiality, integrity, and availability of computing systems and their components. Three principal parts of a computing system are subject to attacks: hardware, software, and data. These three, and the communications among them, are susceptible tocomputer security vulnerabilities. In turn, those people and systems interested in compromising a system can devise attacks that exploit the vulnerabilities.
Our project helps introduce the users to the vulnerabilities that they can be a victim to. By usingapis from virus total we also implemented text and image encryption to introduce them to safe encrypting techniques. Therefore in a nutshell our project introduces users to the topic of cybersecurity using hands on techniques.

CHAPTER 8

FUTURE ENHANCEMENTS

8.1 Enhancements Available

- **Multi Algorithm**: Implementing multiple Algorithms for encryption of the files.
- **Performance**: Improving the responsiveness of the apis by upgrading the plan and havingmore structured view in Django.
- **Showing More vulnerabilities**: Implementing information gathering using email id, photos and phone numbers.
- **User friendly**: Try and make the website more user friendly and easy to use.

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