



EVALUATION OF INTERNSHIP REPORT

B.Tech: III Year

Department of Computer Science & Information Technology

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Certificate

Certified that training work entitled “*Cyber Security*” is a bonafied work carried out after sixth semester by “*Palak Jaiswal*” in partial fulfilment for the award of the degree of Bachelor of Technology in Computer Science and Information Technology from “*Prof. Nidhi Nigam (CEH certified)*” Acropolis Institute of Technology and Research during the academic year 2022-23.

Name and Sign of Training Coordinator

Name & Sign of Internship Coordinator

ACROPOLIS INSTITUTE OF TECHNOLOGY & RESEARCH, INDORE

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Introduction to technology Undertaken

(Cyber Security)

Cyber security is currently one of the fastest growing and most in-demand industries in terms of employment opportunities. There are several reasons for this quicker-than-average growth across nearly every type of cyber security career. This includes the fact that cyber attacks are increasing at an unprecedented rate, and the malicious actors behind these infiltrations are continuously coming up with new attack strategies.

Often, all that stands between an organization and a full-scale, damaging data breach are internal cyber security professionals and the tactics they put in place for protection. Beyond just guarding against unauthorized access, these cyber security professionals are also responsible for maintaining continuous uptime of the organization's most crucial IT assets while supporting these platforms' top-notch performance for end users.

The types of cyber security jobs available in today's market are multi-disciplinary and touch every department of the business. Organizations from enterprises and small businesses to government agencies now need highly trained and knowledgeable IT and cyber security personnel to guard against attacks and support the technologies that underpin daily operations.

In today's digital world, cybersecurity has become an essential part of every company's strategy for sustainability, security, and growth. As businesses grow, the demand for cybersecurity talent will only continue to grow in 2023 and beyond.

Cyber security is a growing industry that is still in need of skilled professionals. The global cyber security market is expected to grow from \$170 billion in 2017 to \$202 billion in 2023.

The demand for cyber security jobs has risen significantly over the past few years. More than 1 million cyber security jobs will be available by 2023, but less than 400,000 cybersecurity professionals will be trained by then. Cyber security is an ever-growing industry. It is projected to grow by 11% in 2023 and by 20% in 2025. This is a fast-paced career with a median salary of \$81,000.

Objectives

The objective of Cybersecurity is to protect information from being stolen, compromised or attacked. Cybersecurity can be measured by at least one of three goals-

1. Protect the confidentiality of data.
2. Preserve the integrity of data.
3. Promote the availability of data for authorized users.

These goals form the confidentiality, integrity, availability (CIA) triad, the basis of all security programs. The CIA triad is a security model that is designed to guide policies for information security within the premises of an organization or company. This model is also referred to as the **AIC (Availability, Integrity, and Confidentiality)** triad to avoid the confusion with the Central Intelligence Agency. The elements of the triad are considered the three most crucial components of security.

The CIA criteria are one that most of the organizations and companies use when they have installed a new application, creates a database or when guaranteeing access to some data. For data to be completely secure, all of these security goals must come into effect. These are security policies that all work together, and therefore it can be wrong to overlook one policy.

1. Confidentiality

Confidentiality is roughly equivalent to privacy and avoids the unauthorized disclosure of information. It involves the protection of data, providing access for those who are allowed to see it while disallowing others from learning anything about its content. It prevents essential information from reaching the wrong people while making sure that the right people can get it. Data encryption is a good example to ensure confidentiality.

2. Integrity

Integrity refers to the methods for ensuring that data is real, accurate and safeguarded from unauthorized user modification. It is the property that information has not be altered in an unauthorized way, and that source of the information is genuine.

3. Availability

Availability is the property in which information is accessible and modifiable in a timely fashion by those authorized to do so. It is the guarantee of reliable and constant access to our sensitive data by authorized people.

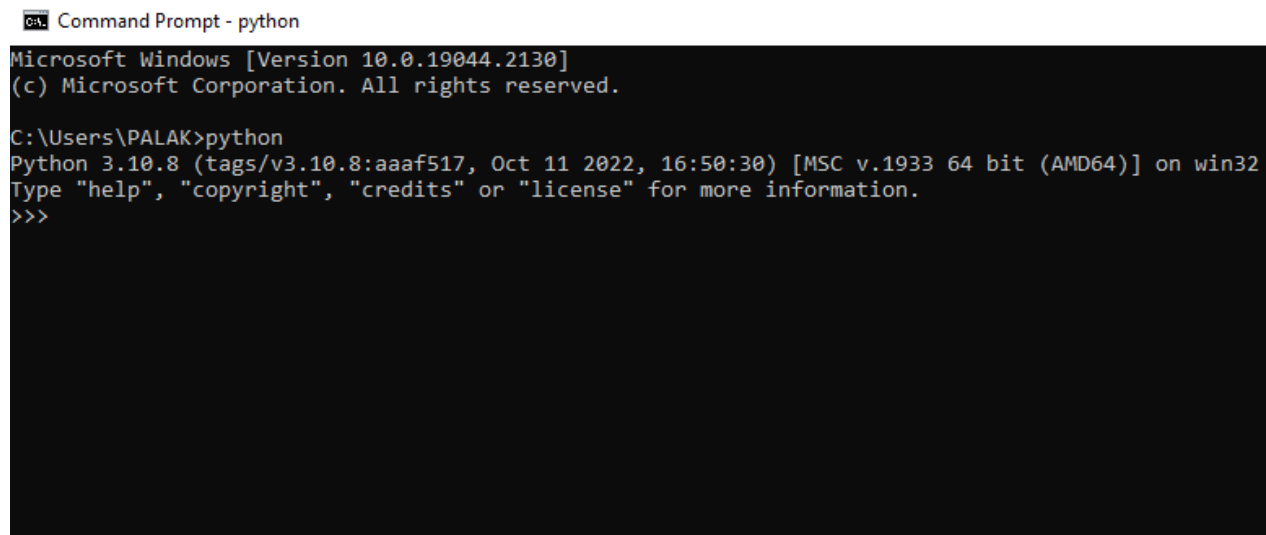
Project undertaken

(Identify suspicious files using virus total)

This project just accepts the file and it looks for any signs of malware. In general, it tells you that whether the file is malicious or not.

This project code is written in python and I'm using virus total.

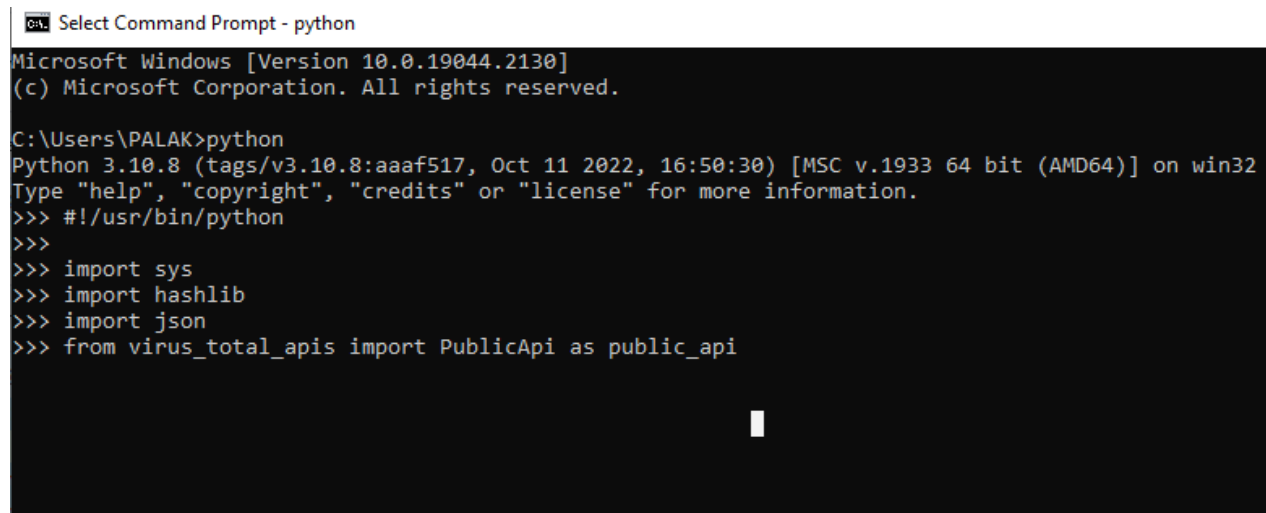
- Step 1: Open CMD > write "python" in the terminal.



```
Command Prompt - python
Microsoft Windows [Version 10.0.19044.2130]
(c) Microsoft Corporation. All rights reserved.

C:\Users\PALAK>python
Python 3.10.8 (tags/v3.10.8:aaaf517, Oct 11 2022, 16:50:30) [MSC v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

- Step 2: Import sys, hashlib, json



```
Select Command Prompt - python
Microsoft Windows [Version 10.0.19044.2130]
(c) Microsoft Corporation. All rights reserved.

C:\Users\PALAK>python
Python 3.10.8 (tags/v3.10.8:aaaf517, Oct 11 2022, 16:50:30) [MSC v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> #!/usr/bin/python
>>>
>>> import sys
>>> import hashlib
>>> import json
>>> from virus_total_api import PublicApi as public_api
█
```

For using Virus_total_apis, you need to first install the library.

It can be installed using “pip install virustotal-api”

- Step 3: Create any file and write any thing in it.

Example: file.txt

Content: hey

- Step 4: Now, call the script using this syntax

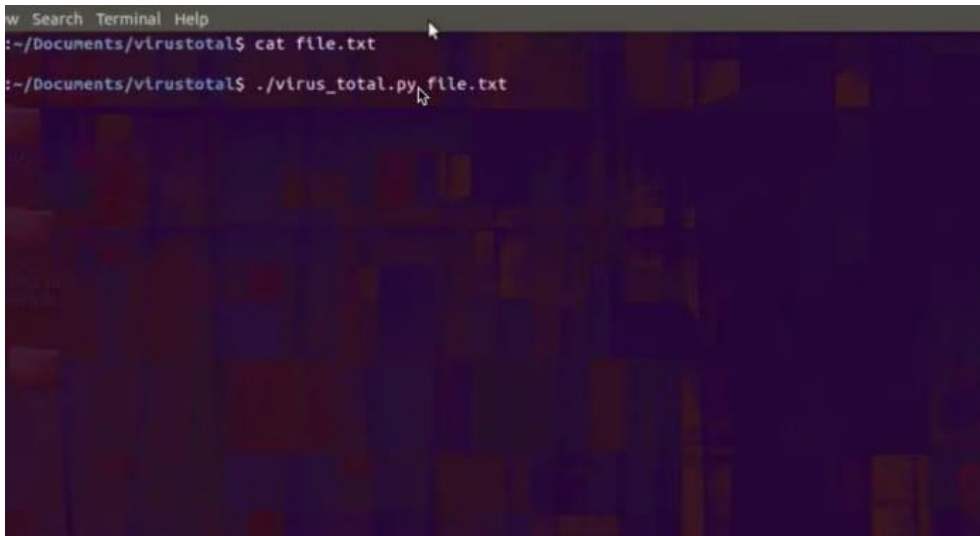
“ -/virus_total.py file.txt “

It will tell your file has malware or not.

All the search engines will show “detected:false”, if there is no sign of malware in the file.
This will include about 26-27 anti-viruses engines.

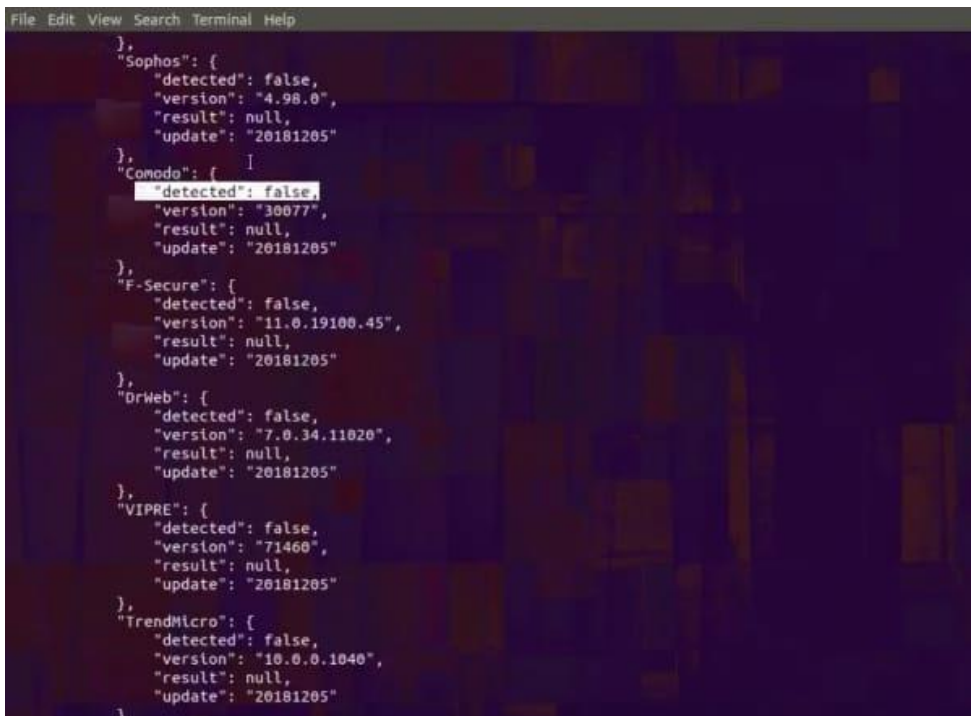
Screenshots of Project and Certificates

- **Project screenshots :**

A terminal window with a dark background and light-colored text. The window title bar shows 'w Search Terminal Help'. The prompt is '~/.Documents/virustotal\$'. The first command entered is 'cat file.txt'. The second command entered is './virus_total.py file.txt'.

```
w Search Terminal Help
~/.Documents/virustotal$ cat file.txt
~/.Documents/virustotal$ ./virus_total.py file.txt
```

All the anti-virus engines are showing nothing detected suspicious.

A terminal window showing the output of the command './virus_total.py file.txt'. The output is a JSON object containing scan results from several anti-virus engines. The engines listed are Sophos, Comodo, F-Secure, DrWeb, VIPRE, and TrendMicro. All engines show 'detected': false, 'result': null, and 'update': '20181205'.

```
File Edit View Search Terminal Help
{
  "Sophos": {
    "detected": false,
    "version": "4.98.0",
    "result": null,
    "update": "20181205"
  },
  "Comodo": {
    "detected": false,
    "version": "30077",
    "result": null,
    "update": "20181205"
  },
  "F-Secure": {
    "detected": false,
    "version": "11.0.19100.45",
    "result": null,
    "update": "20181205"
  },
  "DrWeb": {
    "detected": false,
    "version": "7.0.34.11020",
    "result": null,
    "update": "20181205"
  },
  "VIPRE": {
    "detected": false,
    "version": "71460",
    "result": null,
    "update": "20181205"
  },
  "TrendMicro": {
    "detected": false,
    "version": "10.0.0.1040",
    "result": null,
    "update": "20181205"
  }
}
```

```
File Edit View Search Terminal Help
    "version": "15.0.1.13",
    "result": null,
    "update": "20181205"
  },
  "BitDefender": {
    "detected": false,
    "version": "7.2",
    "result": null,
    "update": "20181205"
  },
  "NANO-Antivirus": {
    "detected": false,
    "version": "1.0.134.24299",
    "result": null,
    "update": "20181205"
  },
  "ViRobot": {
    "detected": false,
    "version": "2014.3.20.0",
    "result": null,
    "update": "20181205"
  },
  "Rising": {
    "detected": false,
    "version": "25.0.0.24",
    "result": null,
    "update": "20181205"
  },
  "Ad-Aware": {
    "detected": false,
    "version": "3.0.5.370",
    "result": null,
    "update": "20181205"
  },
  "Sophos": {
    "detected": false,
    "version": "4.98.0"
```

```
File Edit View Search Terminal Help
    "detected": false,
    "version": "1.1.1.5",
    "result": null,
    "update": "20181205"
  },
  "Malwarebytes": {
    "detected": false,
    "version": "2.1.1.1115",
    "result": null,
    "update": "20181205"
  },
  "Zillya": {
    "detected": false,
    "version": "2.0.0.3706",
    "result": null,
    "update": "20181204"
  },
  "AegisLab": {
    "detected": false,
    "version": "4.2",
    "result": null,
    "update": "20181205"
  },
  "TheHacker": {
    "detected": false,
    "version": "6.8.0.5.3885",
    "result": null,
    "update": "20181202"
  },
  "K7GM": {
    "detected": false,
    "version": "11.15.29260",
    "result": null,
    "update": "20181205"
  },
  "K7AntiVirus": {
    "detected": false,
```

- Screenshot of certificate :-



Github Links (Project/certificate/copy of report)

- **Project** – <https://github.com/palakjaiswal108/EOI-project>
- **certificate-** https://github.com/palakjaiswal108/EOI-project/blob/main/NSE_1_Certification.pdf
- **copy of report-**

Conclusion

As threats and protection measures continue to become more complex and sophisticated, it's important for employers to find candidates with in-depth knowledge into cyber security and other highly relevant areas. In this way, while a bachelor's degree may suffice for some types of cyber security careers, the most attractive candidates are those who hold master's degrees.

Those interested in these or other types of cyber security careers can put themselves on the path to employment by obtaining a high-level degree. The Online Cybersecurity, Master of Science program at the University of Nevada at Reno provides students with the skills, experience and expertise they need to pursue an array of exciting and high-compensating cyber security careers.

References

- <https://www.wikihow.com/Use-Windows-Command-Prompt-to-Run-a-Python-File>
- Informatic Practices, a text book by Prof. Sumita Arora
- <https://www.youtube.com>