4.0. Introduction and Objectives :

Vulnerability : A flaw or weakness in system design,implementation,operation and management that could be exploited to compromise system security objectives.

Threat : A malicious external attacker, A internal user and A system instability that harm assests owned by application.

—How the google search works :

1) Crawling : Google downloads text, images, and videos from pages it found on the internet with automated programs called crawlers.
2) Indexing : Google analyze the text,images and video files and stores the information in google index, which is a large database.
3) Serving search results : Google return the information relevant to user query.

—Search Engines :

1) Baidu : china most popular engine
2) Bing
3) Binsearch.info
4) DuckDuckGo
5) Google
6) Shodan
7) Internet Archive Wayback Machine : A comprehensive tool for viewing historical snapshots of web pages.

   Link : https://web.archive.org

—Search Operators : Is a type of keyword or syntax that extends regular search queries.

1) Site 2) intitle 3) index ......

—Web Server Fingerprinting : Is the task of identifying type and version of web server that a target is running on.

Techniques used for web server fingerprinting include banner grabbing where Banner grabbing is a technique by sending http request to the server and examing the response header.

This can be accomplished using a variety of tools, including `telnet` for HTTP requests, or `openssl` for requests over TLS/SSL.

—Different web server has different ordering of header fields :

1) Apache :

- Date
- Server
- Last-Modified
- ETag
- Accept-Ranges
- Content-Length
- Connection
- Content-Type

2) Nginx :

- Server
- Date
- Content-Type

—Automated scanning tools :

These tools include the web server fingerprinting functionality :

1) Netcraft 2) nikto 3) nmap