UTM UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF COMPUTING
UTM Johor Bahru

SECP 1513: Technology Information System

Semester 01, 2024/2025

PROJECT PROPOSAL

SAFE LINK CHECKER (TTGO APP)

Team Name: TECH Titans Go!

Team Members:

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Client Name:

1. Balqis binti Mohd Sarmizi

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1. Introduction

Need (N)	As digital communication continues to play a central role in our lives, the risks tied to harmful links have become more common. Phishing attacks, malware distribution, and data breaches are all threats that often start with a single malicious link. The Safe Link Checker was created to help address these growing concerns. It offers users a simple yet effective tool that automatically detects and analyzes URLs, giving them the peace of mind to know whether a link is safe before they click on it.
Approach (A)	The system will tap into AI to check links in real-time, using a database of known harmful sites to keep you safe. You'll be able to use it as a browser extension or a mobile app, so it's always within reach. It'll scan links for you and send instant alerts if anything's suspicious. Plus, it will work smoothly with your existing antivirus software, giving you that extra peace of mind while you're online.
Benefit (B)	That system is supposed to protect users when surfing the web, reducing the chance of being lured into a cyberattack. It does a link check with just a few clicks, keeping it easy and steady, especially for the less tech-savvy users. It saves a lot of time for the users as well as stress in the minds of the user. Users now more than ever, can avoid malware without investing in expensive spectrum analysis tools or become an expert in cyber forensics.
Competitor (C)	While services like Google Safe Browsing and Norton Safe Web offer similar protection, our system stands out because of its real-time updates,URL history and provides detailed reports to increase efficiency. This combination makes our solution more accurate and easier to use, offering a better overall experience compared to the competition.

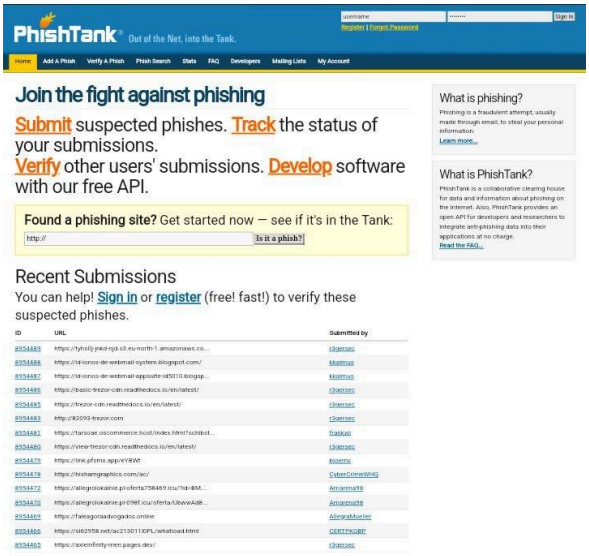
2. Existing Systems

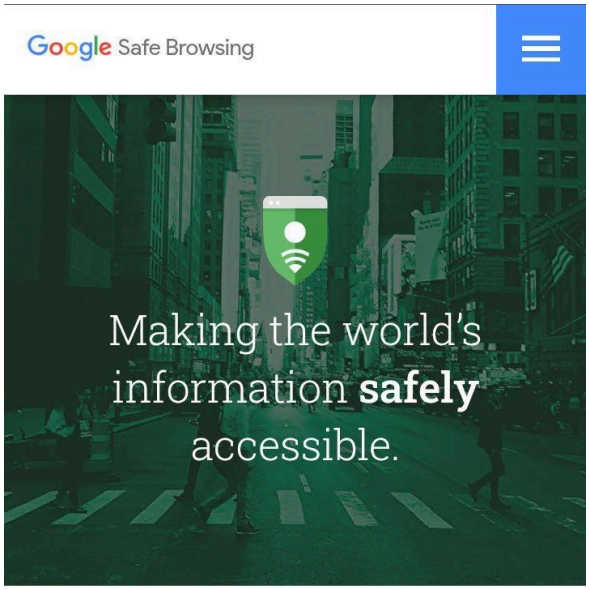
Issues with Existing Systems:
1. Most existing systems don't provide URL history tracking, which is a crucial feature in a safe link checker.
2. Some existing systems don't have a detailed report, which are essential for user awareness and malware detection.

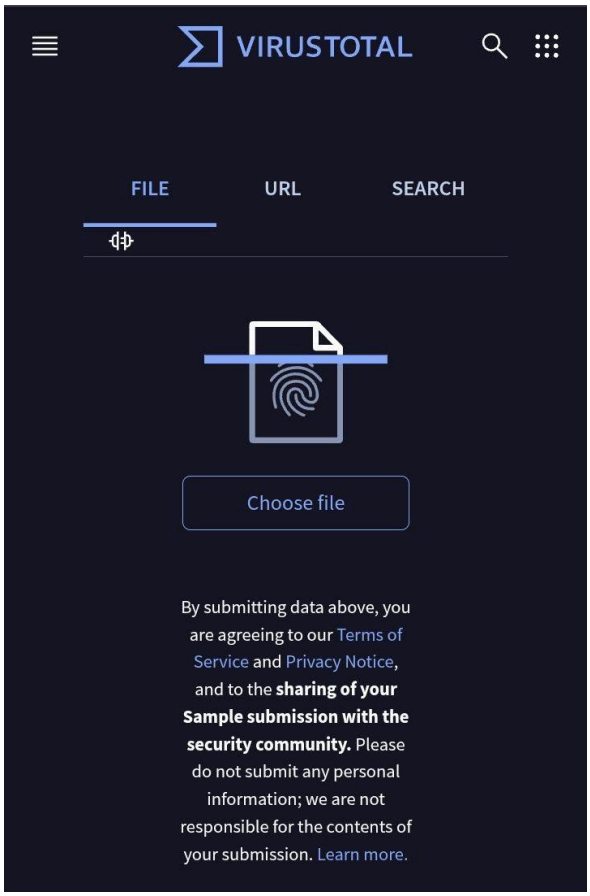
3.Few existing systems offer real-time protection, which is an important feature that helps to detect threats immediately and actively monitor redirects.

Table 1: Comparison of Existing Systems

Features	Google Safe Browsing	VirusTotal	PhishTank
Phishing database	Yes	No	Yes
Malware detection	Yes	Yes	No
Detail Report	No	Yes	No
Safety score	Yes	Yes	Yes
URL history tracking	No	No	Yes
Real-time protection	Yes	No	No


PhishTank
Out of the Net, into the Tank.
Join the fight against phishing
Submit suspected phishes. Track the status of your submissions.
Verify other users' submissions. Develop software with our free API.
Found a phishing site? Get started now — see if it's in the Tank:
Is it a phish?
What is phishing?
What is PhishTank?
Recent Submissions
You can help! Sign in or register (free! fast!) to verify these suspected phishes.


Google Safe Browsing
Making the world's information safely accessible.


VIRUSTOTAL
FILE
URL
SEARCH
Choose file
By submitting data above, you are agreeing to our Terms of Service and Privacy Notice, and to the sharing of your Sample submission with the security community. Please do not submit any personal information; we are not responsible for the contents of your submission. Learn more.

3. Proposed System

The Safety Link Checker is proposed to be an application that uses cloud based databases and AI-powered algorithms. The purpose of this application is to act as a security tool that protects users from any malicious and dangerous website that can lead to cyber threat.

To use the application, users need to upload the URL for instant verifications. The system will check the URL in real time using AI-powered algorithms and a cloud based database of known malicious websites. If the malicious websites were to be detected, users will be notified which allows the users to avoid potential cyberattacks. Furthermore, the system will update the newly identified malicious website's URL in the cloud based database for future reference to ensure consistent protection for all users.

For registered users, Safety Link Checker provides a scanned history feature that can be accessed throughout the registered section. This feature allows users to review previous scanned URLs. Additionally, users can block the malicious URLs which ensure an extra layer of protection.

The Safety Link Checker's intuitive user interface makes it stand out. A cloud-based database and cutting-edge AI technology are combined in the system to guarantee precise and effective identification of dangerous URLs. This provides comfort for internet users to surf the internet especially toward older generations.

In conclusion, the Safety Link Checker is a crucial tool for internet users to navigate online without having any concern or fear of cyberattacks. Users browse the internet confidently thanks to its real-time URL verification and data-based system updates.

PROJECT SCHEDULE

Activity	Start Date	End date	Remarks
Research on existing safe link checker	1 December 2024	14 December 2024	Group members gathered information and find new innovations
Project Design Thinking Proposal	22 December 2024	8 January 2025	-
Meeting with client	10 January 2025	12 January 2025	We discussed project progress, expectations and feedback
Design handwritten prototype	11 January 2025	20 January 2025	- The screen for the phone was handwritten by Adlyn, Alya and Rasyid on an Ipad. - The screens were printed into A4 papers. - The body of the phone was created with the hard work of Rasyid, Harith and Farhan.
Edit a video demo	22 January 2025	24 January 2025	- Video edited by Adlyn Natasya - All group members involved in presenting our project - The video was submitted on Youtube: https://youtu.be/QmHaeTl_V2g?si=sTcxSOwi1GFRQgxH

4. References

Sobolewski, Adrian. “How to Check If a Link Is Safe.” *Tech Advisor*, 4 Nov. 2024, www.techadvisor.com/article/739906/check-if-link-is-safe.html.

F-SECURE 2025. “Online Security and Privacy Products | F-Secure.”*Www.f-Secure.com*, 2025, www.f-secure.com/us-en.

Bitdefender Link Checker - Is this URL safe? (n.d.). https://www.bitdefender.com/en-us/consumer/link-checker.

Google Safe Browsing. (n.d.-a). https://safebrowsing.google.com./.

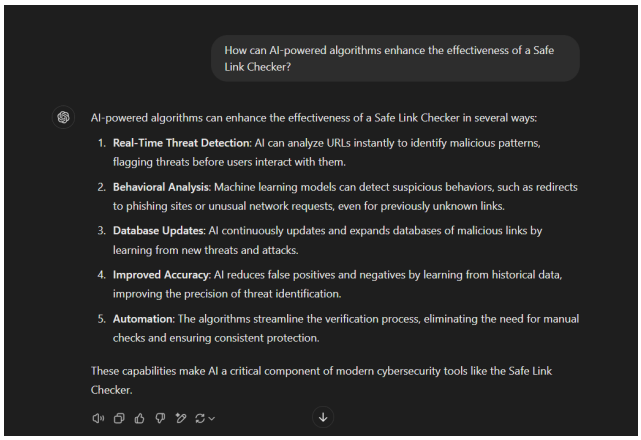
Is this URL safe? (n.d.). T.ly. https://t.ly/tools/link-checker.

PhishTank | Join the fight against phishing. (n.d.). https://phishtank.org/.

VirusTotal. (n.d.). VirusTotal. https://www.virustotal.com/gui/home/upload.

Appendices

Evidence of use of Generative AI (Chat GPT)

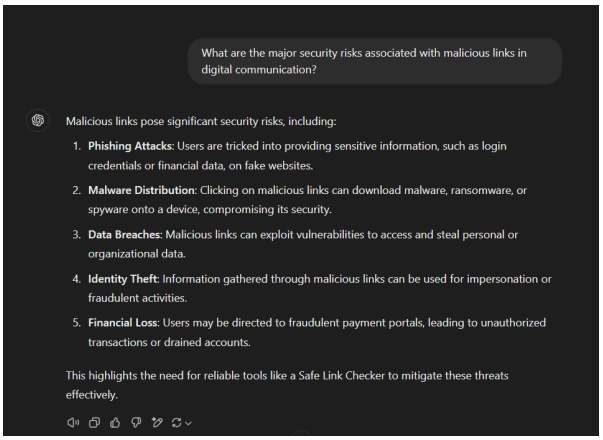


How can AI-powered algorithms enhance the effectiveness of a Safe Link Checker?

AI-powered algorithms can enhance the effectiveness of a Safe Link Checker in several ways:

1. **Real-Time Threat Detection**: AI can analyze URLs instantly to identify malicious patterns, flagging threats before users interact with them.
2. **Behavioral Analysis**: Machine learning models can detect suspicious behaviors, such as redirects to phishing sites or unusual network requests, even for previously unknown links.
3. **Database Updates**: AI continuously updates and expands databases of malicious links by learning from new threats and attacks.
4. **Improved Accuracy**: AI reduces false positives and negatives by learning from historical data, improving the precision of threat identification.
5. **Automation**: The algorithms streamline the verification process, eliminating the need for manual checks and ensuring consistent protection.

These capabilities make AI a critical component of modern cybersecurity tools like the Safe Link Checker.

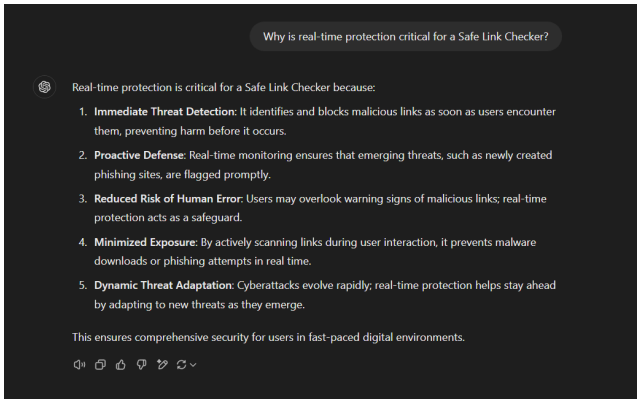


What are the major security risks associated with malicious links in digital communication?

Malicious links pose significant security risks, including:

1. **Phishing Attacks**: Users are tricked into providing sensitive information, such as login credentials or financial data, on fake websites.
2. **Malware Distribution**: Clicking on malicious links can download malware, ransomware, or spyware onto a device, compromising its security.
3. **Data Breaches**: Malicious links can exploit vulnerabilities to access and steal personal or organizational data.
4. **Identity Theft**: Information gathered through malicious links can be used for impersonation or fraudulent activities.
5. **Financial Loss**: Users may be directed to fraudulent payment portals, leading to unauthorized transactions or drained accounts.

This highlights the need for reliable tools like a Safe Link Checker to mitigate these threats effectively.

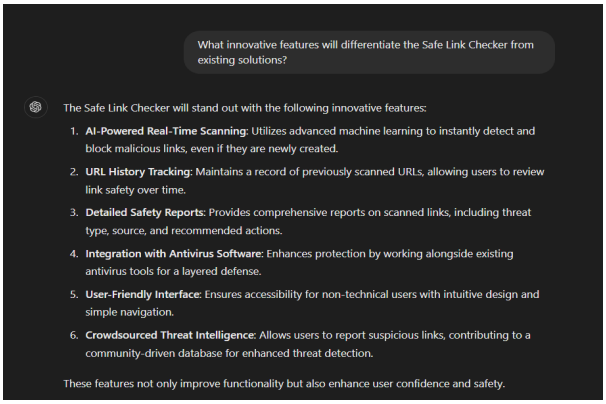


Why is real-time protection critical for a Safe Link Checker?

Real-time protection is critical for a Safe Link Checker because:

1. **Immediate Threat Detection**: It identifies and blocks malicious links as soon as users encounter them, preventing harm before it occurs.
2. **Proactive Defense**: Real-time monitoring ensures that emerging threats, such as newly created phishing sites, are flagged promptly.
3. **Reduced Risk of Human Error**: Users may overlook warning signs of malicious links; real-time protection acts as a safeguard.
4. **Minimized Exposure**: By actively scanning links during user interaction, it prevents malware downloads or phishing attempts in real time.
5. **Dynamic Threat Adaptation**: Cyberattacks evolve rapidly; real-time protection helps stay ahead by adapting to new threats as they emerge.

This ensures comprehensive security for users in fast-paced digital environments.



What innovative features will differentiate the Safe Link Checker from existing solutions?

The Safe Link Checker will stand out with the following innovative features:

1. **AI-Powered Real-Time Scanning**: Utilizes advanced machine learning to instantly detect and block malicious links, even if they are newly created.
2. **URL History Tracking**: Maintains a record of previously scanned URLs, allowing users to review link safety over time.
3. **Detailed Safety Reports**: Provides comprehensive reports on scanned links, including threat type, source, and recommended actions.
4. **Integration with Antivirus Software**: Enhances protection by working alongside existing antivirus tools for a layered defense.
5. **User-Friendly Interface**: Ensures accessibility for non-technical users with intuitive design and simple navigation.
6. **Crowdsourced Threat Intelligence**: Allows users to report suspicious links, contributing to a community-driven database for enhanced threat detection.

These features not only improve functionality but also enhance user confidence and safety.

Marking Criteria	*Marks*
Introduction • *Needs* • *Approach* • *Benefits* • *Competitors*	*12 marks*
Existing Systems	*4 marks*
Issues or problem with existing systems	*4 marks*
Proposed System	*10 marks*
Project Schedule	*5 marks*
References	*2 marks*
Overall report quality	*3 marks*
Report Total marks	*40 marks*