

Gone Phishing

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Overview

Phishing emails generally persuade recipients to reveal private or confidential information such as passwords or bank details, placing users at risk of identity theft and significant financial loss. In Britain, users have lost millions of pounds to scams and phishing attacks. Since the beginning of the COVID-19 pandemic, incidences of cybercrime have increased considerably, including a sharp rise in phishing attempts [1]. Much of the existing material designed to educate users about phishing is derived from simple text-based websites or handouts. Whilst these websites contain a wealth of informative content, they are not engaging. The Gone Phishing serious game prototype seeks to raise awareness of how to spot phishing emails and explores the consequences these messages can have.

Research Question

Can serious games be used as a method of promoting phishing awareness?

Game Play



Gone Phishing is an educational-puzzle game developed for web and mobile using Unity. The player takes the role of James Ferguson, an elderly war veteran who must distinguish which emails in his inbox can be trusted and which are phishing attempts. James can explore his environment to find clues that point to the legitimacy of these emails. The goal is to clear the inbox by answering legitimate emails and ignoring phishing

emails, all within a two-minute time frame. Points are awarded for correct responses, and a multiplier is added to the score for every consecutive correct response. A further bonus is awarded for speedily clearing the inbox. Responding to a phishing email eliminates the multiplier, adds an additional email to the inbox and causes pop-ups to appear, slowing James down. Speed and accuracy are crucial to achieving 3/3 stars!

Research Outcomes

- Environment exploration helps players link real-world services to potential phishing attempts.
- The short timeframe, pop-ups, and additional emails increase pressure to emulate the stress people may feel when dealing with phishing emails.
- Clearing the inbox promotes a sense of achievement, thus encouraging players to be aware of phishing.

Significance & Impact

Gone Phishing was demonstrated at the opening of the Abertay cyberQuarter to members of the Scottish Government, UK Government, and other guests (June 2022). It has subsequently been demonstrated to the Interim Director-General Economy (Scottish Government, September 2022) and the Minister for Higher Education and Further Education, Youth Employment and Training (Scottish Government, October 2022). After gaining traction with external visitors, funding was secured from the National Cyber Security Centre (NCSC) to develop the prototype further into two mini-games (August 2022).

References

[1] Lallie, H.S., **Shepherd, L.A.**, Nurse, J.R., Erola, A., Epiphaniou, G., Maple, C. and Bellekens, X., 2021. Cyber security in the age of COVID-19: A timeline and analysis of cyber-crime and cyber-attacks during the pandemic. *Computers & Security*, 105, p.10