Cybersecurity: A Review of Tactics, Trends, and Prevention Strategies

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Abstract*: The digital revolution has fostered an interconnected world, with internet users exceeding 4.66 billion in 2021. This hyper-connectivity has revolutionized communication and information exchange, but it has also created a fertile ground for cybercrime. As the volume of sensitive data traversing the internet explodes, robust cybersecurity measures are no longer a luxury, but a necessity. This paper argues that "Cybersecurity Awareness" is a cornerstone in fortifying our digital infrastructure. However, achieving effective cybersecurity requires a multifaceted approach. This paper delves into the critical relationship between cyber security recognition, the development of essential skills, and the consistent application of those skills in proactive defence. Research suggests a concerning disconnect: while individuals may possess basic cyber awareness, they often fail to translate this knowledge into concrete actions, particularly those perceived as inconvenient. This highlights the need to bridge the gap between theoretical understanding and practical implementation. The paper establishes a direct correlation between cyber awareness and cyber knowledge, emphasizing that cultivating deeper knowledge fosters greater awareness and empowers users to make informed security decisions.*

To equip users with the necessary tools, the paper explores various cyberattack methodologies employed by malicious actors. By understanding these methods, users can identify vulnerabilities within their own digital ecosystems. Additionally, the paper examines vulnerability detection techniques, empowering individuals to proactively mitigate potential threats. Finally, the paper outlines promising avenues for future research in cybersecurity awareness programs, paving the way for the development of more engaging, targeted, and effective educational initiatives.

Keywords: Cyber Security, Threats, Security Models and Feasible solutions