Wireless sensor networks (WSNs) have become ubiquitous in applications ranging from environmental monitoring and infrastructure management to healthcare, logistics, and more. In this article, we delve into the multifaceted domain of security issues in wireless sensor networks, exploring the challenges, threats, and strategies necessary for safeguarding these networks[1] Attackers may exploit vulnerabilities to eavesdrop on transmissions, inject malicious data, impersonate legitimate nodes, or block .communication