CS 5323: PRINCIPLES OF CYBER SECURITY

Assignment - 2

5 – Points

Assigned: 16th Sep 2024

Deadline: 25th Sep 2024

Assignment 2

Instructions

- Assignments must be uploaded to Canvas by the due date to receive credit.
- Kindly do not email the assignment; graders can only access your assignment on Canvas.
- Late work will be penalized with a point deduction. The only exception will be documented, extenuating circumstances, which must be communicated prior to the due date or submission of the work.
- Note: Canvas uses 11:59:00 p.m. as the cutoff time, and not 11:59:59 p.m.
- Recommendation: Don't submit work so close to the deadline that you have to worry about bandwidth issues, Canvas issues, or discrepancies in your system clock and the Canvas clock. These will not be considered extenuating circumstances
- Use clear headings for the assignment.
- Plagiarism above 15% will be penalized by a deduction of 1 point.

Government Accountability Office (GAO)

Introduction

- The U.S. Government Accountability Office is an independent, nonpartisan government agency within the legislative branch that provides auditing, evaluative, and investigative services for the United States Congress. It is the supreme audit institution of the federal government of the United States.
- On Jan 31, 2023 GAO released a report (GAO-23-106428), the second in a series of four.
- GAO covered the 3 actions related to Securing Federal Systems and Information:
 - 1. Improve implementation of government-wide cybersecurity initiatives
 - 2. Address weaknesses in federal agency information security programs
 - 3. Enhance the federal response to cyber incidents to better protect federal systems and information

Overview

- Federal agencies and our nation's critical infrastructures i.e. energy, transportation systems, communications, and financial services are dependent on technology systems to carry out fundamental operations and to process, maintain, and report vital information.
- The security of these systems and data is also vital to safeguarding individual privacy and protecting the nation's security, prosperity, and well-being.
- However, risks to these essential technology systems are increasing in particular, malicious actors are becoming more willing and capable of carrying out cyberattacks.
- Such attacks could result in serious harm to human safety, national security, the environment, and the economy.
- Agencies and critical infrastructure owners and operators must protect the confidentiality, integrity, and availability of their systems and effectively respond to cyberattacks.

Assignment

- In the report (GAO-23-106428) GAO highlighted the following:
 - 1. What actions should be taken to improve the implementation of government-wide cybersecurity initiatives?
 - 2. What actions can be taken to address weaknesses in federal agency information security programs?
 - 3. What actions can be taken to enhance the federal response to cyber incidents targeting federal systems?
- As an assignment the students needs to study the report and write a summary of 3 recommendations by GAO (for the separate summary for the 3 mentioned questions).
- Some recommendations are not in GAO-23-106428 report i.e. they are referred to previous or other reports. In such case you can lookup the referred report.
- In summary students must add at least 3 recommendations for each mentioned question.
- Examples:
 - Summary of what Q1 is about and why it is important for federal organizations to take action on it.
 - 3 recommendations by GAO
 - Summary of what Q2 is about and why it is important for federal organizations to take action on it.
 - 3 recommendations by GAO
 - Summary of what Q3 is about and why it is important for federal organizations to take action on it.
 - 3 recommendations by GAO

Resources

- Cybersecurity High-Risk Series: Challenges in Securing Federal Systems and Information (PDF Report <u>Link</u>)
- Cybersecurity High-Risk Series: Challenges in Establishing a Comprehensive Cybersecurity Strategy and Performing Effective Oversight (PDF Report <u>Link</u>)
- Cybersecurity and Infrastructure Security Agency: Actions Needed to Ensure Organizational Changes Result in More Effective Cybersecurity for Our Nation (Report <u>Link</u>)
- Cybersecurity: OMB Should Update Inspector General Reporting Guidance to Increase Rating Consistency and Precision (Report <u>Link</u>)
- Cybersecurity: NIH Needs to Take Further Actions to Resolve Control Deficiencies and Improve Its Program (Report <u>Link</u>)
- Cybersecurity: Federal Response to SolarWinds and Microsoft Exchange Incidents (Report <u>Link</u>)
- DOD Cybersecurity: Enhanced Attention Needed to Ensure Cyber Incidents Are Appropriately Reported and Shared (Report Link)