

Instructional Scenario



Design a Cybersecurity Training Program

Course/Duty Area: Programming/Using Web Technology

Scenario: You are tasked with designing a cybersecurity training program for a local non-profit organization. The goal is to educate the employees on essential cybersecurity practices, including password security, phishing awareness, data protection, and safe Internet browsing. You must develop training materials and a digital presentation to deliver the course.

To create effective and up-to-date training resources, you will need to conduct research using various sources. You will analyze how to appropriately cite external sources used in your program documentation.

Big Question: What will the structure of the cybersecurity training program look like, and what resources and strategies are necessary to make it accessible, informative, and practical?

Focused Questions:

- What are the essential topics and skills that should be covered in a cybersecurity training program?
- Which online resources (e.g., open-source websites, articles, tutorials) provide reliable and current information about cybersecurity best practices?
- How can one use artificial intelligence (AI) tools (e.g., OpenAI and ChatGPT) to help generate clear, easy-to-understand content for the training program?
- How should one properly cite all sources and external resources in the program documentation?
- What are the benefits and potential drawbacks of using AI-generated content, such as ChatGPT, in cybersecurity education materials?

Student Project or Outcome:

The student-created cybersecurity training program will include the following:

- A well-structured digital presentation (using PowerPoint, Google Slides, or other platforms).
- A detailed guide or manual that includes best practices, examples, and instructions on how to maintain cybersecurity in the workplace.
- A list of recommended cybersecurity tools and resources.
- Proper citations for all external sources used in the creation of the materials.
- A reflection on the use of AI in developing content and how it benefited or hindered the process.

Project-Based Assessment:

- Final digital presentation of the cybersecurity training program.
- Written program documentation with citations.
- An analysis of how AI tools were used in content generation, including a discussion of their advantages and limitations.
- A rubric will be provided for evaluating the quality of content, organization, and presentation skills.

Teacher Resources:

- Access to open-source websites and databases (e.g., [Cyber.org](#), [National Institute of Standards and Technology \[NIST\] publications](#), security blogs).
- Online tutorials on creating presentations and guides.
- Articles discussing the ethical use of AI tools like ChatGPT and OpenAI.
- Sample citations for online sources and journals.
- A collection of cybersecurity tools and resources relevant to non-profit organizations.

Scenario submitted by Yvette Lee, J.R. Tucker High School, Henrico County Public Schools

Instructional Scenario

[Shopping Cart Program]



Course/Duty Area: Mastering Programming Fundamentals (#57 ~ 66)

Scenario: You are tasked with creating a simple program that calculates the total cost of items in a shopping cart, including tax. The program should ask the user to input the price of each item they are purchasing, calculate the subtotal, and then apply a tax rate to compute the total cost. The program should display both the subtotal and the total cost after tax.

Big Question: What will the structure of the program that adds prices together and shows the total cost including tax look like, and what programming concepts and steps are needed to make it functional, clear, and user-friendly?

Focused Questions:

- *How can we use variables to store the price of each item?*
- *What mathematical operations will we need to calculate the total cost, including tax?*
- *How do we format the output to display the total cost in a clear way?*

Student Project or Outcome:

Students will write a program that asks the user for the price of each item in the cart, adds those prices together, and displays the total cost. They will use variables to store the item prices and perform addition to calculate the total.

Project-Based Assessment:

- *The program should prompt the user to input the price of one or more items.*
- *The program should calculate the total price by adding the prices together and multiplying by the tax rate.*
- *The output should display the total cost clearly for the user.*
- *Students should explain how they used variables to store prices and how the addition and multiplication was performed.*

Teacher Resources:

- *A simple example of a program that adds two numbers together.*
- *A simple example of a program that multiplies two numbers together.*
- *A guide to using variables and performing basic mathematical operations in a program.*
- *A tutorial on formatting output to display results in a clear, readable way.*

Scenario submitted by [Yvette, John Randolph Tucker High School, Henrico]