**Chapter 12 Problems and Exercises Tips**

**1) Do some online research on cybersecurity certifications. Identify several cybersecurity certifications that business organizations value and are not too far out of reach for recent university graduates. Describe how each certification can be earned and identify organizations that provide training and/or preparation for certification exams. Identify topics covered in certification training/prep programs and program costs. Summarize your research results in an 8- to 10-slide PowerPoint presentation or a three- to five-page Word document.**

**Tips for Success**: This exercise enables you to explore and learn more about entry level cybersecurity certifications. Examples of other entry level security certifications are identified via this link: <https://www.indeed.com/career-advice/career-development/cyber-security-certifications-for-beginners>

but others may be found via other sources.

Strive to focus on three or more certifications that are reachable by recent graduates. To identify the information that this exercise requires, it will be necessary to explore details about how the certifications can be earned and certification prep.

Be sure that your document or presentation is professionally formatted and is free of spelling and grammatical errors. It is wise to include a references list for this exercise with references that conform to APA or MLA referencing format.

Your instructor may use a grading rubric like the following to evaluate your work.

|  |  |
| --- | --- |
| **Grading Dimension** | **Points** |
| Submitted on time | 10 |
| Conforms to format and length specifications | 10 |
| Identifies several entry level cybersecurity certifications | 20 |
| Identifies at least one organization that provides certification preparation training/courses for each certification | 20 |
| Identifies topics in certification training/preparation programs for each certification | 20 |
| Identifies training/preparation program costs for each certification | 10 |
| Submitted work is free of spelling errors and syntax and formatting shortcomings | 10 |
| Total | 100 |

**2) Do some online research on ethical hacking. Identify examples of ethical hacking. Should vulnerability scanning/assessment be considered a type of ethical hacking? Why or why not? Summarize the results of your research in a 500- to 750-word Word document.**

**Tips for Success**: This exercise provides an opportunity to gain a better understanding of ethical hacking and its contributions to network security. Strive to find two or more substantive online articles on ethical hacking including one that considers vulnerability assessment/scanning as an ethical hacking tool. Be sure to identify several different examples of ethical hacking in your document. Make sure that your document is at least 500 words in length and is professionally formatted. Ensure that you proofread your document and that it is free of spelling and grammatical errors. Also make sure that your article citations conform to APA or MLA referencing format.

Your instructor may use a grading rubric like the following to evaluate your work.

|  |  |
| --- | --- |
| **Grading Dimension** | **Points** |
| Submitted on time | 10 |
| Conforms to format and length specifications | 10 |
| Identifies examples of ethical hacking | 40 |
| Addresses whether vulnerability scanning/assessment is a type of ethical hacking and explains the rationale behind the decision. | 30 |
| Submitted work is free of spelling errors and syntax and formatting shortcomings | 10 |
| Total | 100 |

**3) A friend has contacted you for recommendations of endpoint, application, and data security mechanisms for her e-commerce start-up. She wants to ensure that there is adequate protection at each DiD layer for her online company but does not want to get bogged down with security defenses that are overly complicated and could delay the launch of the e-commerce website. Assume you are limited to recommending just two defenses at each layer. Identify the security defenses you would recommend for each layer and provide compelling justification for why each defense should be deployed. Summarize your recommendations in a five- to seven-slide PowerPoint presentation or a 500- to 1000-word Word document.**

**Tips for Success**: This exercise enables you to apply what you have learned about the three innermost layers of DiD to a case scenario. Because Chapter 12 identifies several security defenses at each layer, it will be important for you to pick two that are good but not overly complicated and that make sense for a start-up ecommerce site. Be sure that you provide compelling justification for each of the two security controls that you recommend at each layer. Proofread your presentation or document to ensure that it is professionally formatted and is free of spelling and grammatical errors.

Your instructor may use a grading rubric like the following to evaluate your work.

|  |  |
| --- | --- |
| **Grading Dimension** | **Points** |
| Submitted on time | 10 |
| Conforms to format and length specifications | 10 |
| Identifies at least two appropriate defenses for the endpoint, application, and data layers. | 30 |
| Provides compelling justification for using each security defense at that layer | 40 |
| Submitted work is free of spelling errors and syntax and formatting shortcomings | 10 |
| Total | 100 |

**4) Do some research on how to encrypt the hard drive on either a Windows or MacOS laptop. Identify step-by-step instructions, illustrated with screen captures/snips, to describe how users can encrypt the hard drive on their laptop. Summarize the hard drive encryption process in a PowerPoint presentation or Word document.**

**Tips for Success**: This exercise provides the opportunity to explore endpoint encryption concepts (and tools) on a personal basis. Here, you essentially create a step-by-step hard drive encryption tutorial for either a Windows or MacOS laptop.

Examples of step-by-step instructions are findable from online sources. Some are more verbose than others and most include screenshots or snips that you could leverage for your tutorial. Strive for simplicity in your tutorial and strive to make it easy to follow.

Proofread your presentation or document to ensure that it is professionally formatted and free of spelling and grammatical errors. Make sure that your screenshot/snips are appropriately placed to provide needed guidance and assurance. Use MLA or APA reference format for any citations that you include.

Your instructor may use a grading rubric like the following to evaluate your work.

|  |  |
| --- | --- |
| **Grading Dimension** | **Points** |
| Submitted on time | 10 |
| Conforms to format and length specifications | 10 |
| Identifies step-by-step instructions for encrypting the hard drive of a Windows for MacOS computer | 50 |
| Includes screen captures/snips to illustrate several steps in the hard drive encryption process. | 20 |
| Submitted work is free of spelling errors and syntax and formatting shortcomings | 10 |
| Total | 100 |

**5) Do some research on how to encrypt and decrypt individual files on either a Windows or MacOS laptop. Specify the step-by-step instructions that must be followed to encrypt a file, illustrating the steps using a series of screen captures or snips. Also provide step-by-step instructions illustrated with screen shots or snips for decrypting an encrypted file. Summarize the individual file encryption and decryption processes in a PowerPoint presentation or Word file.**

**Tips for Success**: This exercise enables you to get a better understanding of how you can encrypt individual data at rest (DAR) files on a Windows or MacOS computer. Instructions for encrypting and decrypting individual files on Windows and MacOS computers are findable online that include screenshots/snips that you could leverage for the tutorial that this exercise requires you to create. Strive to include simple, easy-to-use instructions in your tutorial and make sure that instructions are provided for both file encryption and file decryption. You are encouraged to test your instructions to ensure that they work and are easy to follow.

Proofread your presentation or document to ensure that it is professionally formatted and free of spelling and grammatical errors.

Your instructor may use a grading rubric like the following to evaluate your work.

|  |  |
| --- | --- |
| **Grading Dimension** | **Points** |
| Submitted on time | 10 |
| Conforms to format and length specifications | 10 |
| Identifies step-by-step instructions for encrypting individual files on a Windows or MasOS computer | 20 |
| Includes screenshots/snips for several steps in the file encryption instructions | 15 |
| Identifies step-by-step instructions for decrypting an encrypted file on a Windows or MacOS laptop | 20 |
| Includes screen captures or snips for several steps in the file decryption instructions | 15 |
| Submitted work is free of spelling errors and syntax and formatting shortcomings | 10 |
| Total | 100 |

**6) Do some research on recent ransomware attacks that have caused significant disruptions to businesses or other organizations. Focus on three recent attacks and identify the victims, suspected perpetrators, suspected causes of the malware infections, and impacts of the attacks on the operations of the victimized organizations. Also identify how the organizations recovered from the attacks and the steps they are taking to avoid/prevent future ransomware attacks. Summarize your results in an 8- to 12-slide PowerPoint presentation.**

**Tips for Success**: This exercise provides an opportunity for you to learn more about several recent newsworthy ransomware attacks and their aftermath. Be sure to focus on three recent ransomware attacks and their impacts on their victims. Make sure that the attack descriptions include all the information required for this exercise (e.g., the victimized organization, the attack’s impacts on the organization’s operations, suspected perpetrators and source of infection, steps taken by organization to mitigate future ransomware attacks).

Be sure to proofread your presentation to ensure that it is professionally formatted and free of spelling and grammatical errors. Use MLA or APA referencing format for your citations.

Your instructor may use a grading rubric like the following to evaluate your work.

|  |  |
| --- | --- |
| **Grading Dimension** | **Points** |
| Submitted on time | 10 |
| Conforms to format and length specifications | 5 |
| Identifies the victims of at least three recent ransomware attacks | 10 |
| Identifies the suspected perpetrator(s) of each ransomware attack | 10 |
| Identifies the suspected causes of each ransomware infection | 10 |
| Identifies the attack’s impacts on each victimized organization | 15 |
| Identifies how each victimized organization recovered from the attack | 10 |
| Identifies steps taken by each victimized organization to avoid future ransomware attacks | 15 |
| Identifies/cites sources of online research information | 5 |
| Submitted work is free of spelling errors and syntax and formatting shortcomings | 10 |
| Total | 100 |