

Assignment - PSO 4

Purdue CS426 - Computer Security - Prof. Spafford

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Problem 1

List two methods to detect or prevent off by 1 errors. (10 pts.)

- Write tests which check various valid/invalid inputs (especially inputs at the low/high extremes), and make sure those tests always pass after any change to the program. This will help detect off-by-1 errors early, and allow them to be fixed before release.
- To prevent off-by-1 errors, use enumerations instead of lists/arrays. You can then iterate through all the element of the enumeration without risk of stepping outside boundaries. Only the items in the enumeration will be iterated through.

Problem 2

What are the pros and cons between an access control list vs. access control matrix? (10 pts.)

- Answer

Problem 3

What are the pros and cons between an access control lists vs. capabilities list? (10 pts.)

- Answer

Problem 4

Describe what the confused deputy problem is and provide an example. (20 pts.)

- Answer

Problem 5

Describe Role Based Access Control. What is an advantage it has over other Access Control? What is one disadvantage? (30 pts.)

- Answer

Problem 6

What is the difference between Identification and Authentication? How do they work together in computing? (20 pts.)

- Answer

Problem 7

Why is it easier to use biometrics for authentication vs. identification? (20 pts.)

- Answer

Problem 8

Why is it potentially more damaging when biometric data is compromised than something like a password? How can this risk be mitigated? (20 pts.)

- Answer

Problem 9

You are tasked with designing a server farm for a government agency. Describe how you would design the physical security for the facility. Identify at least 5 physical security measures/design practices you would use in designing the facility and how they would help in keeping the facility secure. (40 pts.)

- Answer