



## Domain Separation

Good fences make good neighbors. When trying to secure a home or computer, separating the areas where resources are and people work prevents accidents and loss of data or private information. We are preventing the information worlds from colliding.



## Process Isolation

A process is when a program is run. By keeping processes separated, it prevents the failure of one process from causing another to fail.



## Resource Encapsulation

A resource can be hardware such as memory, disk drives, or a display screen. It can also be system objects such as semaphores, a linked list, or shared memory. Processes (or programs) need resources to run. Resources have to be separated and used in the way they were intended.



## Layering

Cyber security uses multiple layers of defenses for protecting information. If one layer is defeated then the next one should catch it.



## Modularization

The concept of modularity is like building blocks. Each block (or module) can be put in or taken out from a bigger project. Each module has its own separate function that is interchangeable with other modules.



## Least Privilege

One of the ways to protect information is by limiting what people can do with your information and resources. Like a private letter, you may allow a friend to read it, but not edit it. Your friend may make a mistake. You might let a teacher edit it because she will correct it.



## Information Hiding

Information hiding is any attempt to prevent people from being able to see information. It can be hiding the content of a letter, or it can be applied to hiding how the letter is delivered. Both ways can prevent people from being able to see the information.



## Abstraction

Abstraction is a fancy word for summarizing or explaining in a way that we can easily understand. A map is an abstraction of the Earth. The speedometer on a car as an abstraction for how fast the car is going.





## Simplicity

The less complicated something is,  
the less likely it is to have problems.  
It is also easier to troubleshoot and fix.  
Keep It Simple!



## Minimization

Minimization refers to having the least functionality of a program or device. The goal of minimization is to simplify and decrease the number of ways the software can be exploited. This can include turning off the ports that are not needed, reduce the amount of code running, and turn off unneeded features.