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CS 4371 – Gu  
Homework 4

- 1(a) Since the Bell-LaPadula model allows reading downward, if the virus was placed at a system low level the virus would be spread through read and execution. So, the compartment being dominated would infect the other compartments.
- (b) Since the Bell-LaPadula model allows reading downward, if the virus was placed at a system high level then the virus wouldn't be spread. The dominating compartment cannot be read or executed by the other compartments, so the virus is contained to the system high level.

- 2(a) Since the Biba model allows reading upward, if the virus was placed at a system low level the virus wouldn't be spread. Since the compartment being dominated cannot be read or executed by the other compartments the virus is contained in the system low level.
- (b) Since the Biba model allows reading upward, if the virus was placed at a system high then the virus would be spread. The dominating compartment can be read or executed by the other compartments, so the virus is spreadable to the other compartments.

3       <script>  
          document.write(unescape('<html>  
          <title>Encrypted HTML</title>  
          <body>Hello world!</body>  
          </html>'));  
          </script>

- 4(a) "1 or 1=1"
- (b) One security method to prevent injection is checking that inputs match the expected format. For id of type integer only numeric characters should be allowed. Another security method is to restrict access privileges of users. Every user shouldn't have access to another user's information.
- (c) a' or 'a'='a

5. The two options of "ulimit" needed to stop the attack by limiting processes and CPU time are ulimit -u and ulimit -t. ulimit -u limits the number of processes that a user can run. The limit set can either be a hard limit, not adjustable, or a soft limit, modifiable, for groups and individuals. ulimit -t limits the user processes but to where they are unable to use more than the maximum CPU time. If a process exceeds the soft limit it signals the system, but if a process exceeds the hard limit it gets killed.

- 6(a) sha256sum filenamehere
- (b) 53caf9cc0c82c4bd892f99bc22cce1a8d775472f004a2011c0842d175223a6be hw4.txt
- (c) 8f9142eebe39045e2460ba20343a7067f38a83bbe9678c818d06fc31a75c5420 hw4.txt

7

Is it really just a picture? - 50

Forensics - Solved

FLAG{OUTTSYOPHNDERHIN}

8

PHP overwrite - 60

Web - Solved

FLAG{maybe\_i\_shouldn't\_have\_extracted\_everything\_huh}