Discretionary Access Control (DAC) is a security model that grants or restricts access to resources based on the identity of the user and their ownership of the resource. While DAC has been widely used, it comes with several issues that can impact the overall security of a system:

Issues related with DAC are :

1. Difficult to Enforce System-Wide Security Policy:
    - In a DAC system, each user has control over their own objects, making it challenging to enforce a consistent system-wide security policy. This lack of central control can lead to scenarios where a user might intentionally or unintentionally share classified information with an unauthorized user.
2. Coarse-Grained Privileges:
    - DAC typically supports coarse-grained privileges, meaning that access control decisions are made at a broad level. The top-level authorization decision, often referred to as Coarse-Grained Authorization (CGA), is made at the perimeter of a system. This lack of granularity can result in users having more privileges than necessary, potentially leading to unauthorized access.
3. Unbounded Privilege Escalation:
    - DAC systems may suffer from the risk of unbounded privilege escalation. Once a user gains access to an object, they may have the ability to grant access to other users, potentially leading to a situation where privileges are escalated beyond the intended scope.
4. Limited Consideration of Security Relevant Information:
    - DAC systems often rely solely on user identity and ownership, ignoring other security-relevant factors:
        - User’s Role: The specific roles a user plays within an organization may

not be considered in access control decisions.

- Function of the Program: The purpose or function of a program may not be taken into account when determining access, potentially leading to misuse or unauthorized actions.
- Trustworthiness of the Program: Compromised programs can manipulate access to user objects, and if a program is compromised, it may inherit all the permissions granted to the user.
- Sensitivity of the Data: The importance or sensitivity of data is not always considered in access control decisions.
- Integrity of the Data: The integrity of data may not be adequately protected, as DAC focuses primarily on controlling who has access rather than ensuring the integrity of the data.

Related posts:

1. Explain briefly computer security. How you will design the policies for information security within an organization ?
2. Which components of the computer system need to be secure ?
3. Discuss the goals of computer security system.
4. Describe the problems related with computer security.
5. Explain security measure taken to protect the system.
6. How can an organization protect its computer system hardware ?
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8. Write short note on security policy used for computer systems.
9. Discuss different security models in details.
10. What are the advantages and disadvantages of Biba Model ?
11. Discuss the security mechanism used to provide security in computer system.

12. What are the components of security policy ?
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23. How can we prevent integer overflow attack ?
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25. How can we prevent format string vulnerabilities ?
26. How can we control hijacking attack ?
27. Define and explain the term confidentiality policy.
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30. Explain Discretionary Access Control (DAC).
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32. What are the problems related with MAC ?
33. What are the advantage and disadvantages of DAC and MAC ?
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35. Describe confinement principle in brief.
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37. Explain basic permission bits on non-directories and directories files.

38. Define SUID, SGID and sticky bits with basic difference.
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46. How can we prevent rootkits ?
47. What is Intrusion Detection System (IDS) ?
48. Explain the types of intrusion detection system.
49. Discuss the need of intrusion detection system.
50. Explain advantages and disadvantages of different types of IDS.
51. What are the features of intrusion detection system ?
52. What are the components of IDS ?
53. What is an intrusion detection system ? What are the difficulties in anomaly detection ?
54. Why is security hard ?
55. What is Access Control list (ACL) and also define what are the technologies used in access control ?
56. Write short notes on Software Fault Isolation (SFI)i. Goal and solution, ii. SFI approach.
57. Explain briefly the term access control.
58. Describe different models of access control.
59. Discuss implementation of access control ABAC and MAC.
60. Briefly explain the uses of access control system.
61. What are the components of access control system ?
62. Discuss access control principle and security principle used for access control.
63. What are the characteristics and features of Unix ?

64. Differentiate between Unix and Windows.
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66. Describe browser isolation.
67. Explain working of browser isolation.
68. Define browser isolation technology. What are browser isolation vendors ?
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71. Discuss threat modelling methodologies.
72. Explain tools used for threats modelling.
73. How to create a threat model ?
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76. Describe cookies and frame busting.
77. Discuss web server threats in details.
78. Describe cross-site request forgery in details.
79. How can we prevent CSRF attack ?
80. When does CSRF attack takes place ?
81. Write short note on cross-site scripting (XSS).
82. Explain different ways used to prevent XSS.
83. Describe XSS vulnerabilities.
84. What is the principle of public key cryptography ? Discuss the applications for public key cryptography.
85. Difference between symmetric and asymmetric key cryptography.
86. What are the advantages and disadvantages of RSA ?
87. Write a short note on hybrid cryptosystem.
88. Describe briefly the term digital envelope.

89. Explain the digital signatures.
90. Describe the steps used in creating digital signature.
91. Write a short note on Message Digest (MD) hash function.
92. What are the properties and requirements for a digital signature ?
93. Explain the variants of digital signatures.
94. What is hash function ? Discuss SHA-512 with all required steps, round function and block diagram.
95. What are the characteristics of SHA function ?
96. Discuss public key distribution. Describe the various schemes used for public key distribution.
97. Discuss X.509 certificates in detail. What is the role ofX.509 certificates in cryptography ?
98. Discuss X.509 digital certificate format.
99. What do you mean by PGP ? Discuss its application.
100. Discuss the steps that are followed for the transmission and reception of PGP messages.
101. Explain real world protocols.
102. List the basic terminology used in cryptography.
103. Discuss the functionality of S/MIME.
104. What is email security ?
105. What is an email certificate ?
106. What is Transport Layer Security (TLS) ?
107. What are the components of TLS ? Explain the working of TLS.
108. Explain internet protocol security (IPSec) in detail.
109. Write a short note on the applications of IP security.
110. What are the advantages of IPSec ?
111. What are the uses of IP security ?

112. Discuss components of IP Security.
113. Explain the working of IP Security.
114. Describe briefly Domain Name Server (DNS).
115. How DNS security works ?
116. Explain the DNS security threats.
117. Discuss measures against DNS attacks.
118. Explain SSL encryption. What are the steps involved inSSL server authentication ?
119. What is DES ? Why were double and triple DES created and what are they ?
120. Write short note on secret key cryptography. Also list its advantages, disadvantages and examples.
121. Define internet infrastructure. What are different internet infrastructures ?
122. Explain the advantages and disadvantages of in TCP/IP model.
123. Give a short summary of IP protocol functions.
124. Define routing protocols.
125. What are the types of routing protocols ?
126. Discuss the advantages and disadvantages of different routing protocols.
127. What do you mean by DNS ? Explain DNS rebinding attack.
128. How DNS rebinding work ?
129. Discuss the features of DNS rebinding attack.
130. How can we prevent DNS rebinding attack ?
131. Explain key management protocol
132. What are the advantages and disadvantages of key management protocol ?
133. What are the security and operational requirements forkey management protocol ?
134. Write a short note on VPN and tunnel mode.
135. Discuss link layer connection in TCP/IP model.
136. Write short note on firewall.
137. What is packet filtering firewall ? Explain its advantage and disadvantage.

138. Write short note on telnet.
139. Explain briefly fragmentation at network layer.
140. Write short note on proxy firewall.
141. Write short note on intrusion detection.
142. What is packet filtering firewall ? Explain its advantage and disadvantage.
143. What is Cyberethics?