Assignment 2

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Access control is one of the important aspects of information security that controls access to resources and determine the permissions granted to users or processes. Various models are available for access control. Compare the following four access control models by defining each model and the type of organization or system suitable for the model.

1. Discretionary Access Control (DAC)
2. Mandatory Access Control (MAC)
3. Role Based Access Control (RBAC)
4. Attribute Based Access Control (ABAC)

S. No.	Access Control Model	Definition	Used in Type of organizations or system
1.	DAC	controls access based on the identity of the requestor and on access rules (authorizations) stating what requestors are (or are not) allowed to do. That means the permission provided to some user to access some resource is determined by the owner of that resource	UNIX systems uses DAC to control access into files and users' permissions.
2.	MAC	mechanisms assign a security level to all information, assign a security clearance to each user, and ensure that all users only have access to that data for which they have a clearance.	Solaris Trusted Extensions: Enhances the Solaris operating system by adding strong, flexible MAC and role-based access control (RBAC), enabling it to securely handle data of varying sensitivity levels and to provide fine-grained access control.
3.	RBAC	controls access based on the roles that users have within the system and on rules stating what accesses are allowed to users in given roles.	AWS Identity and Access Management (IAM): AWS IAM allows the creation of roles with specific permissions to AWS services and resources. Users or AWS services can assume these roles to carry out tasks with the permissions defined by the role, thereby following the principle of least privilege.
4.	ABAC	Controls access based on attributes of the user, the resource to be accessed, and current environmental conditions.	Oracle Entitlements Server: A component of Oracle Fusion Middleware that provides fine-grained access control through ABAC. It enables organizations to secure their applications and data by defining policies that consider user attributes, roles, and environmental conditions.