## **Problem statement**

We have a software system managing the following entities:

* User accounts
* Brands (having many Product Lists)
* Product Lists (belonging to one Brand, having many Product Products)

Each of these entities have various attributes (for example: ID, Name).

### **User accounts**

User accounts come in 3 flavors:

* Admin
* Brand Admin (connected to one Brand)
* User (not connected to any Brand)

Let's assume the Admin account already exists. Other accounts are created via registration, and it's Admin assigning the specific roles to newly created accounts.

### **Accesses**

* Admin has access to everything, including:
  + Can create, and manage Brands, Product Lists
  + Can create, and manage (grant permissions) to User Accounts
* Brand admin has admin privileges in the context of their own Brand:
  + Can create, and manage Product Lists
  + Can manage the Brand
* User has read-only permissions on all of the entities

Your task is to design a set of tests that'd minimize unauthorized access to the entities in the software system.

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There are below main categories -

Admin - Full access , user creation and granting roles

Brand Management

Product List Management

Users - Read-only Permissions

High Level Test scenarios-

**1. Admin:**

* Verify Admin can create brand admin account
* Verify Admin can update the existing brand admin account
* Verify Admin can delete/ revoke permissions of existing accounts
* Verify Admin can create only one brand admin account for brand & proper error message is displayed on UI for creating duplicate new brand admin .
* Verify Admin can create a read only user account.
* Verify Admin can update the existing read only account
* Verify Admin can delete/ revoke permissions of existing accounts
* Verify Admin can view all list of users with their roles.
* Non-Admin User cannot create or assign roles to other User accounts

**2. Brand Management:**

* Verify Admin can create , edit & delete Brand.
* Verify Brand Admin can manage their own Brand.
* Verify User cannot create or modify Brands.
* Admin can view a list of all Brands, Product Lists, and Products.
* Brand Admin can view a list of all Product Lists and Products within their associated Brand.
* Brand Admin cannot create, edit, or delete Brands or Products outside their associated Brand.

**3. Product List Management:**

* Verify Admin can create a Product List for any Brand.
* Verify Brand Admin can manage Product Lists of their own Brand.
* Verify User cannot create or modify Product Lists.

**4. User Account Permissions:**

* Verify Admin can grant permissions to User accounts.
* Verify Brand Admin cannot grant permissions to other User accounts.
* Verify User cannot grant permissions to any accounts.
* Verify only authorized user can access the application
* Verify user can view a list of all Brands, Product Lists, and Products (read-only access)
* Verify user cannot create, edit, or delete any entities (Brand, Product List, Product).
* Verify access after deleting a Brand or Product List
* Verify user accounts with multiple roles

Note:- More tests can be added for UI, Integration , system etc. Also non functional test strategy for performance testing & security testing can be added.