

Institute of Computer Technology  
B. Tech Computer Science and Engineering

**Sub: Identity and Access Management (2CSE507)**

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Semester - 5

Class - A

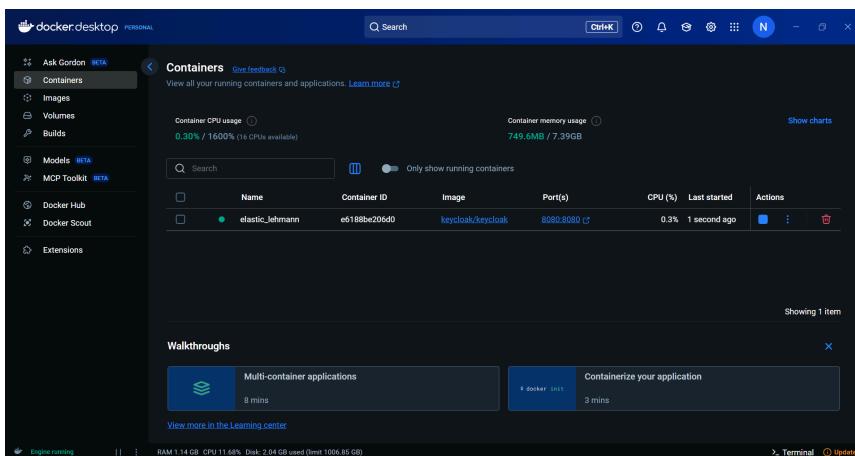
Batch – 52

**PRACTICAL NO:- 5**

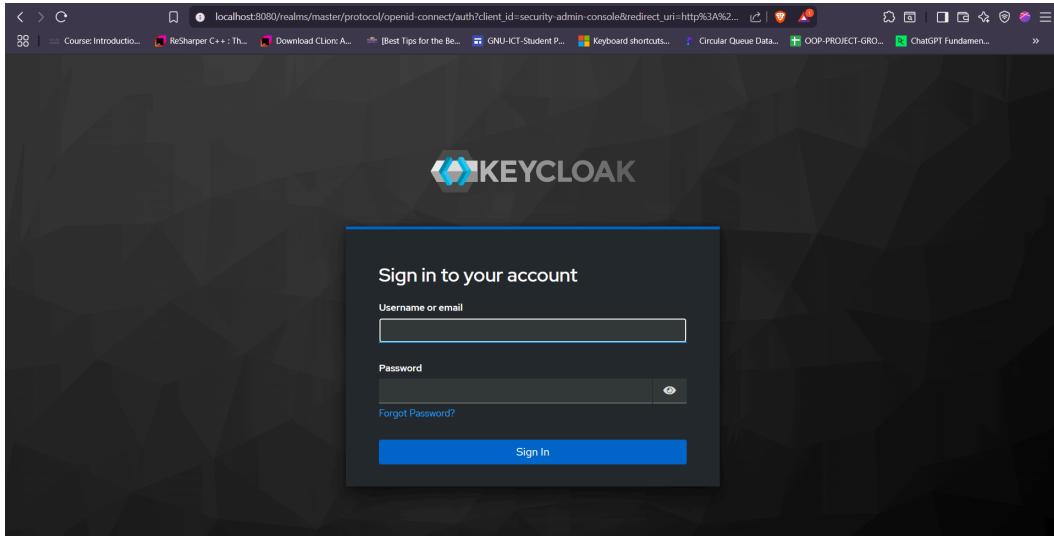
**Aim :** Realm Management and Client Management

**Starting the Container:**

- Open your Docker Desktop.
- In the containers tab, click the start button of the container you want to start.

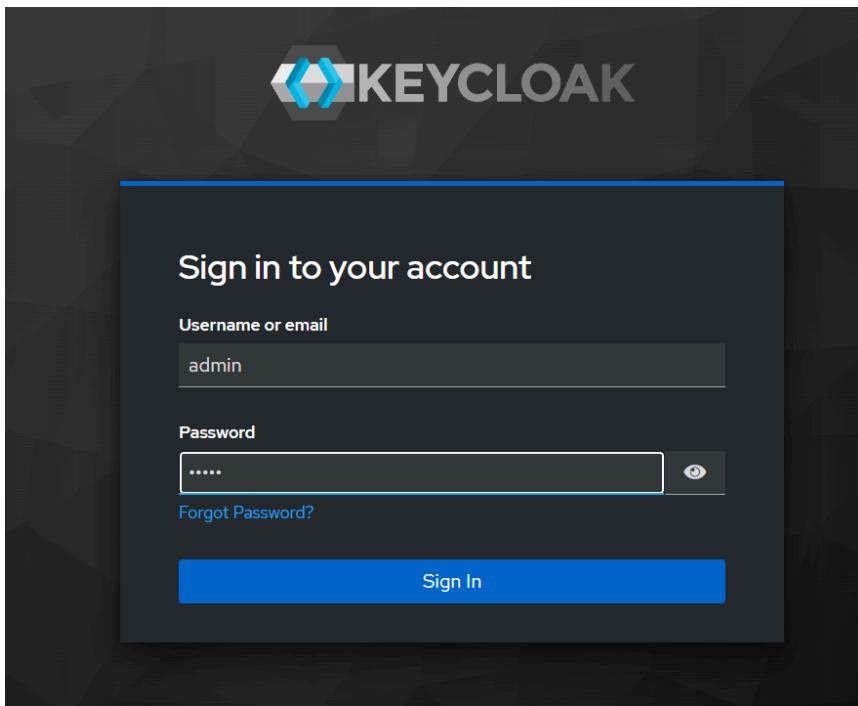


- Now open your browser and go to '<http://localhost:8080/>'.

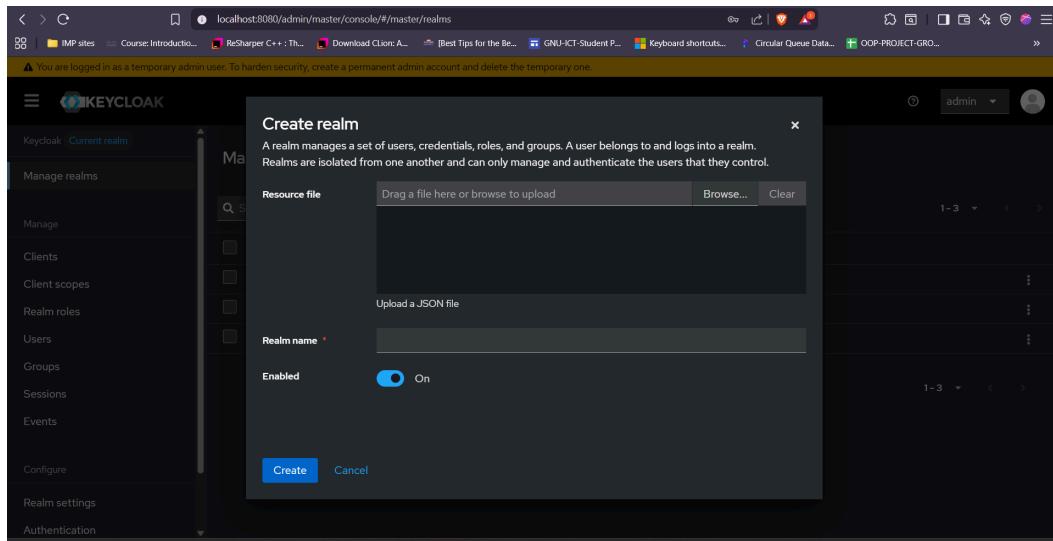


## Creating a new Realm:

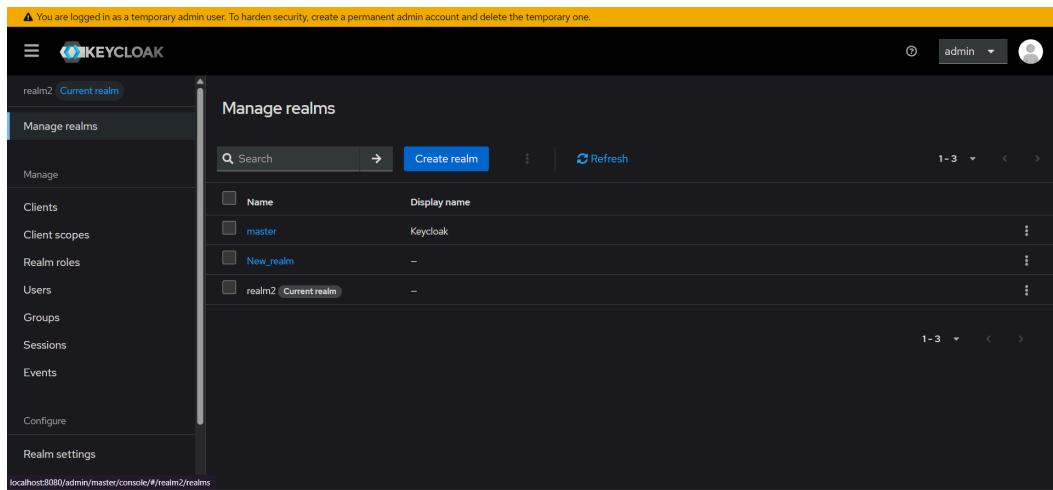
- Login as admin.



- Go to the ‘Manage Realm’ tab and click on ‘Create realm’.
- Enter the realm name and create the realm.



- To change between realms, in ‘Manage Realm’ tab, click on the realm name.



The screenshot shows the Keycloak admin interface for the 'realm2' realm. The left sidebar has a dark theme with white text. It includes links for 'Manage realms', 'Clients', 'Client scopes', 'Realm roles', 'Users', 'Groups', 'Sessions', 'Events', 'Configure', 'Realm settings', and 'Authentication'. The 'realm2 Current realm' link is highlighted. The main content area features a large 'KEYCLOAK' logo at the top right. Below it, a message says 'Welcome to realm2'. A note at the bottom states: 'If you want to leave this page and manage this realm, please click the corresponding menu items in the left navigation bar.' There is also a small user icon in the top right corner.

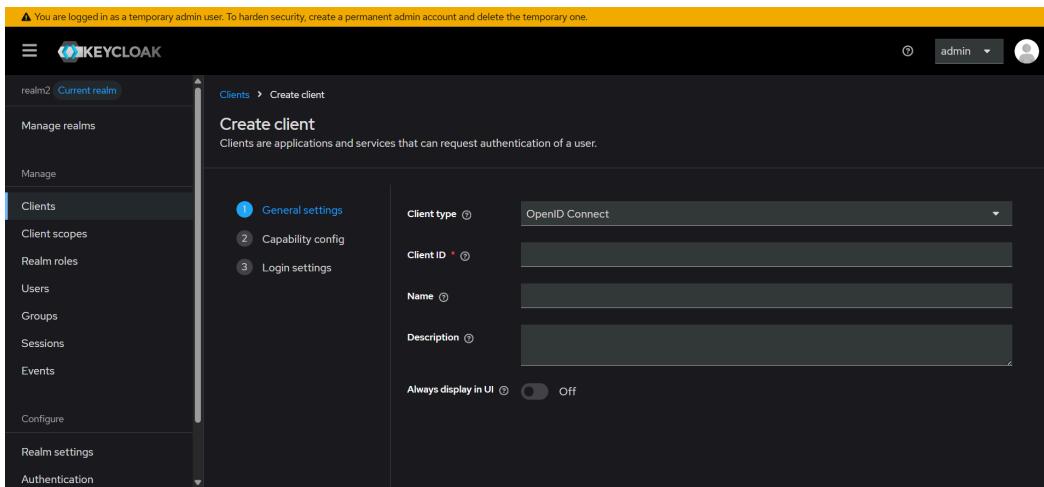
## Creating a Client:

- Go to the ‘Clients’ tab.

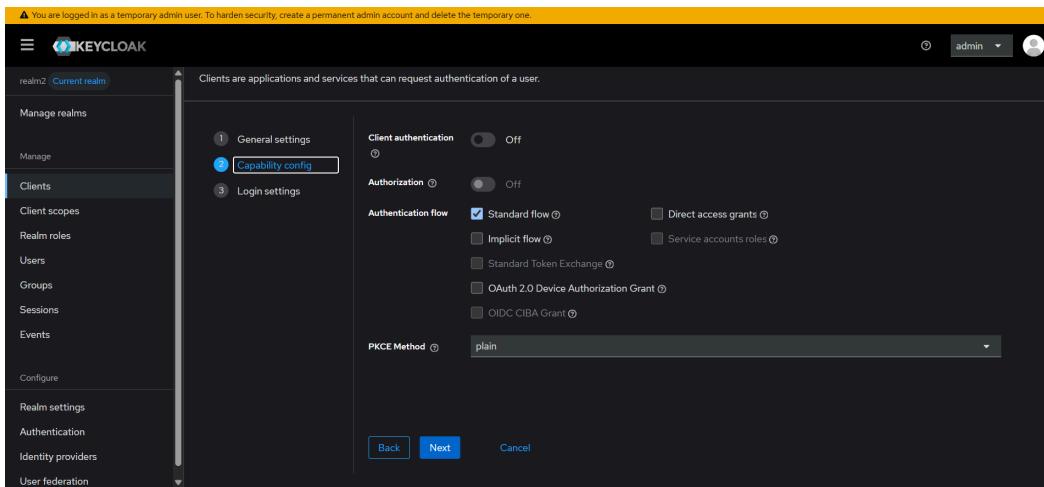
The screenshot shows the 'Clients' list page within the Keycloak admin interface for the 'realm2' realm. The left sidebar is identical to the previous screenshot. The main content area is titled 'Clients' with a sub-instruction: 'Clients are applications and services that can request authentication of a user.' It includes links for 'Clients list', 'Initial access token', and 'Client registration'. Below this is a search bar labeled 'Search for client' and a 'Create client' button. A table lists six clients with the following details:

Client ID	Name	Type	Description	Home URL
account	Account	OpenID Connect	-	<a href="http://localhost:8080/realm2/account/">http://localhost:8080/realm2/account/</a>
account-console	Account Console	OpenID Connect	-	<a href="http://localhost:8080/realm2/account/">http://localhost:8080/realm2/account/</a>
admin-cli	Admin CLI	OpenID Connect	-	-
broker	Broker	OpenID Connect	-	-
realm-management	Realm Management	OpenID Connect	-	-
security-admin-console	Security Admin Console	OpenID Connect	-	<a href="http://localhost:8080/admin/realm2/console/">http://localhost:8080/admin/realm2/console/</a>

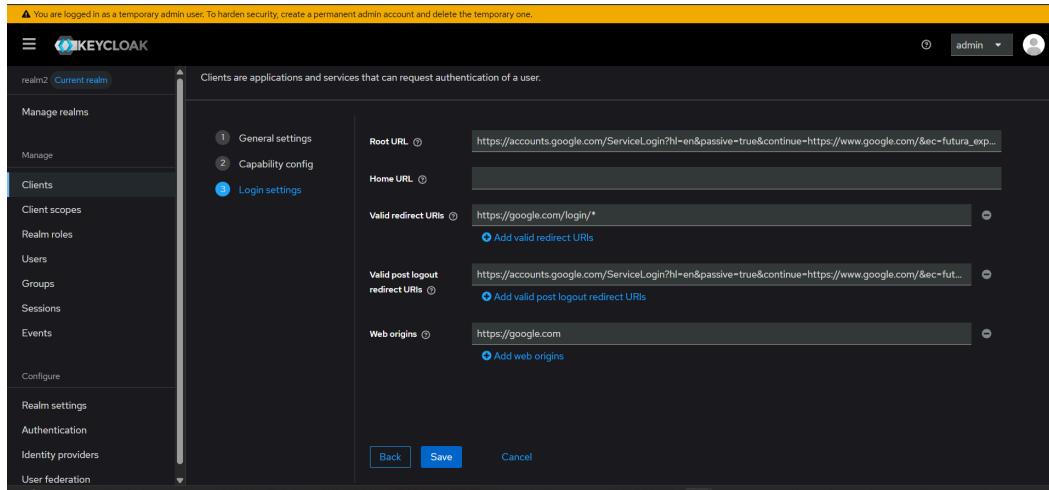
- Click on ‘Create client’



- In Capability config, set-up client authentication, authorization, authentication flow and pkce method and click the next button.



- In Login settings, Enter root url, home url, redirect url, post logout redirect url and web origins and click save button.



Client ID	Name	Type	Description	Home URL
Test client	-	OpenID Connect	-	https://accounts.google.com/ServiceLogin?hl=en&passive=true&continue=https://www.google.com/&ec=futura_exp... [Edit]
account	Account	OpenID Connect	-	http://localhost:8080/realms/realm2/account/ [Edit]
account-	Account Co...	OpenID Connect	-	http://localhost:8080/realms/realm2/account/ [Edit]
admin-cli	Admin CLI	OpenID Connect	-	- [Edit]
broker	Broker	OpenID Connect	-	- [Edit]
realm-ma...	Realm Mana...	OpenID Connect	-	- [Edit]
security-	Security Ad...	OpenID Connect	-	http://localhost:8080/admin/realm2/console/ [Edit]

## Creating a client role:

- Go to the ‘Clients’ tab.

Client ID	Name	Type	Description	Home URL
Test client	—	OpenID Connect	—	https://accounts.google.com/ServiceLogin?hl=en&passive=true&continue=https://www.google.com/&sec=futura_exp.og_so_72776762.e
account	Account	OpenID Connect	—	http://localhost:8080/realm/realm2/account/
account...	Account Co...	OpenID Connect	—	http://localhost:8080/realm/realm2/account/
admin-cli	Admin CLI	OpenID Connect	—	—
broker	Broker	OpenID Connect	—	—
realm-ma...	Realm Mana...	OpenID Connect	—	—
security...	Security Ad...	OpenID Connect	—	http://localhost:8080/admin/realm2/console/

- Click on the client whose settings you wanted to update.

- Go to the Roles tab.

You are logged in as a temporary admin user. To harden security, create a permanent admin account and delete the temporary one.

realm2 Current realm

KEYCLOAK

Clients > Client details

**Test client** OpenID Connect

Clients are applications and services that can request authentication of a user.

Enabled Action

Settings Roles Client scopes Sessions Advanced Events

No roles for this client

You haven't created any roles for this client. Create a role to get started.

Create role

- Click on ‘Create code’ and Enter the role name and description and save it.

You are logged in as a temporary admin user. To harden security, create a permanent admin account and delete the temporary one.

realm2 Current realm

KEYCLOAK

Clients > Client details > Create role

**Create role**

Role name \* Adminnnnnnn

Description I AM ADMIN!!! \*\$NAP\*

Save Cancel

You are logged in as a temporary admin user. To harden security, create a permanent admin account and delete the temporary one.

realm2 Current realm

KEYCLOAK

Clients > Client details

**Test client** OpenID Connect

Clients are applications and services that can request authentication of a user.

Enabled Action

Settings Roles Client scopes Sessions Advanced Events

Role name Composite Description

Adminnnnnnn	False	I AM ADMIN!!! *\$NAP*
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Search role by name Create role Refresh

## Assigning a Client role:

- Go to the ‘role mapping’ tab of the user in the ‘users’ tab and click on ‘Assign Role’.

You are logged in as a temporary admin user. To harden security, create a permanent admin account and delete the temporary one.

realm2 Current realm

admin

Enabled

Action

user1

Details Credentials Role mapping Groups Consents Identity provider links Sessions Events

Search by name Hide inherited roles Assign role Unassign Refresh

Name	Client roles	Description
default-roles-realm2	Realm roles	role_default-roles

- Select the role you want to assign to the user and click on ‘Assign’.

You are logged in as a temporary admin user. To harden security, create a permanent admin account and delete the temporary one.

realm2 Current realm

admin

Enabled

Action

user1

Assign Client roles to user1

realm-management	realm-authorization	realm-clients
query-groups	realm-management	role_query-groups
query-realms	realm-management	role_query-realms
query-users	realm-management	role_query-users
realm-admin	realm-management	role_realm-admin
view-authorization	realm-management	role_view-authorization
view-clients	realm-management	role_view-clients
view-events	realm-management	role_view-events
view-identity-providers	realm-management	role_view-identity-providers
view-realm	realm-management	role_view-realm
view-users	realm-management	role_view-users
<input checked="" type="checkbox"/> Adminnnnnnn	Test client	I AM ADMIN!! *SNAP*

Assign Cancel

The screenshot shows the Keycloak administration interface. The left sidebar is titled 'realm2 Current realm' and includes sections for Manage realms, Clients, Client scopes, Realm roles, Users (which is selected), Groups, Sessions, Events, Configure, Realm settings, Authentication, Identity providers, and User federation. The main content area is titled 'user1' and has tabs for Details, Credentials, Role mapping (selected), Groups, Consents, Identity provider links, Sessions, and Events. A search bar and a checkbox for 'Hide inherited roles' are present. Below is a table with columns Name, Inherited, and Description. Two rows are listed: 'Test client Adminmmmm' (Inherited False, Description 'I AM ADMIN!! \*SNAP\*') and 'default-roles-realm2' (Inherited False, Description 'role\_default-roles'). A success message 'User role mapping successfully updated' is shown in the top right corner.

## Check the list of user assigned with the client role:

- Go to the ‘Clients’ tab.

The screenshot shows the Keycloak administration interface. The left sidebar is identical to the previous one. The main content area is titled 'Clients' and includes tabs for Clients list (selected), Initial access token, and Client registration. A search bar and a 'Create client' button are at the top. Below is a table with columns Client ID, Name, Type, Description, and Home URL. Several clients are listed, each with a three-dot menu icon. The 'Clients list' tab is selected, and the URL 'localhost:8080/admin/master/console/#realm2/clients' is visible at the bottom.

- Go to the Roles tab.

Role name	Composite	Description
Adminnnnnnnn	False	I AM ADMIN!!! *SNAP*

- Click on the role you want to check and go to the ‘User in role’ tab.

Username	Email	Last name	First name
user1	-	-	-
useradmin	-	-	-