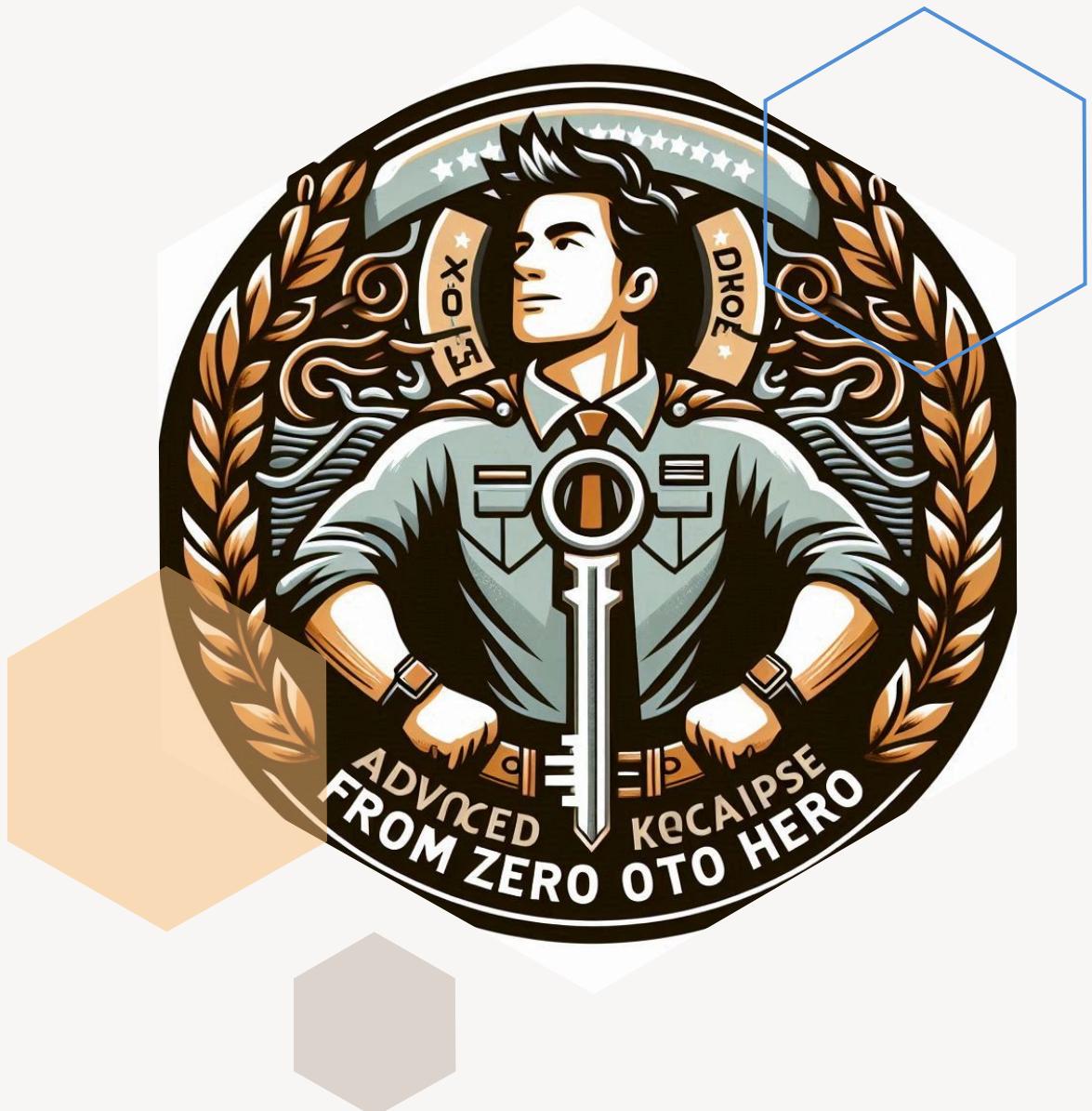


KEYCLOAK

Advance Keycloak:
SSO Course from Zero to
Hero

Course By
Arnab Das



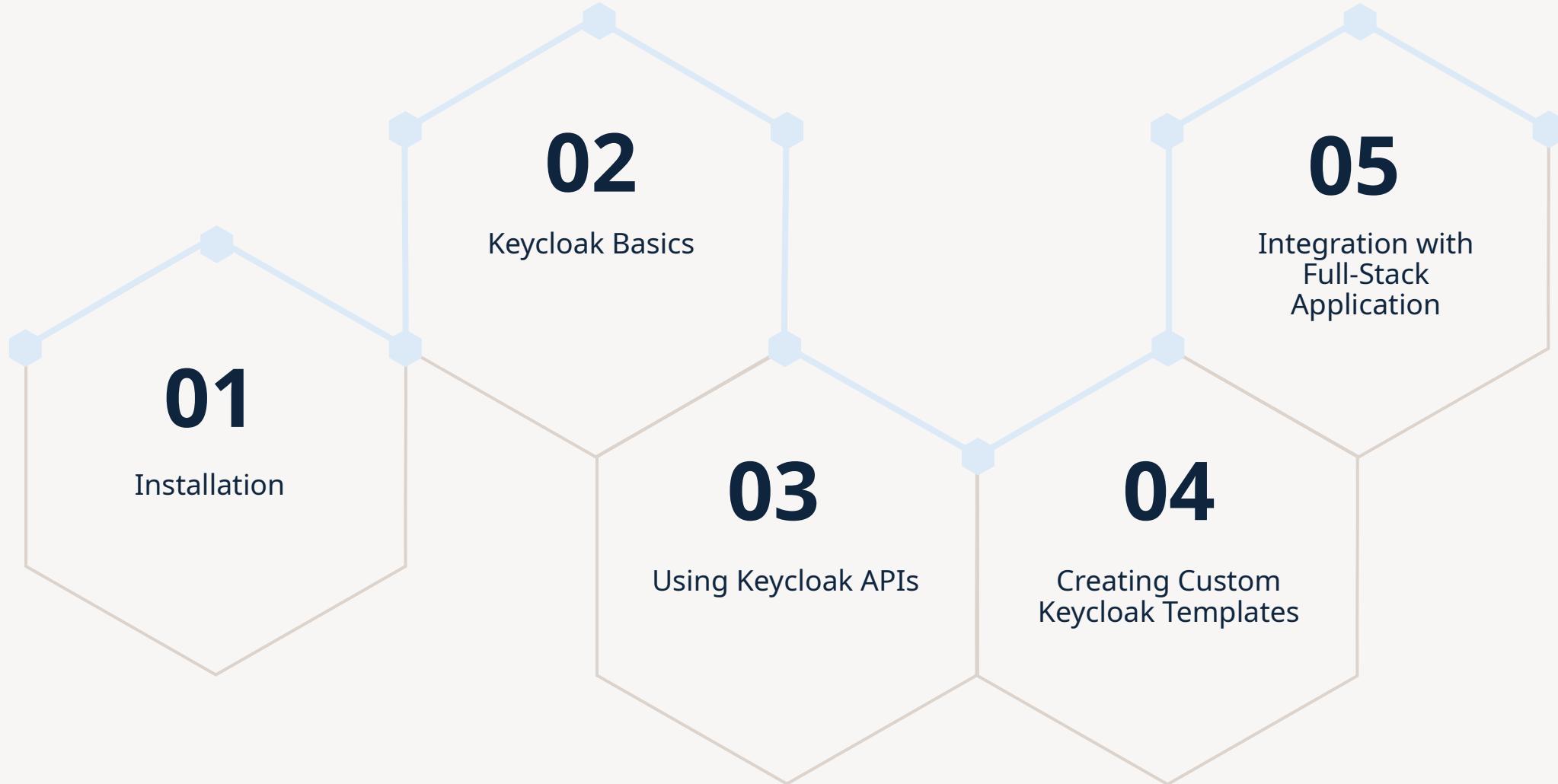
What is Keycloak ?

Keycloak is an open source software product that allows single sign-on with identity and access management aimed at modern applications and services.

It supports multiple protocols such as OpenID Connect, OAuth 2.0, and SAML 2.0. It also provides features such as user federation, social login, multifactor authentication, and authorization services.



Course Timeline



About Me

Arnab Das

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19+ Hackathons Winner || Backend || ML/AI || Blockchain ||
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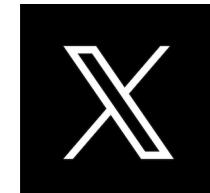
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Why Learn Keycloak ?



01

User registration and Login

02

Developer can focus on core technology

03

Uses best practices

04

Centralized user Management

05

SSO, Social Identity Providers, and Federation

Chapter 01

Installing Keycloak



Lesson Outline

1	2	3	4	5
Install Java JDK dependency	Install Keycloak Server	Install PostgreSQL Database	Install pgAdmin	Connect Keycloak with the database

Chapter 02

Configure Keycloak



Keycloak Admin Console

It's the control center for managing all aspects of your Keycloak server. Whether you're an administrator or a realm manager, this console is your gateway to configuring, securing, and orchestrating the entire Keycloak ecosystem.

- ✓ Realm Management
- ✓ User Management
- ✓ Application Management
- ✓ Security Configurations
- ✓ Fine-Grained Authorization
- ✓ Themes and Customization



Configure Keycloak Lesson Outline

1	2	3	4
Realm Settings	Authentication	Identity Providers	User federation

Manage Keycloak Lesson Outline

1	2	3	4	5	6	7
Clients	Clients scopes	Realm roles	Users	Groups	Sessions	Events

Keycloak Clients

1. What is a client in Keycloak?

Clients are entities that can request authentication of a user.

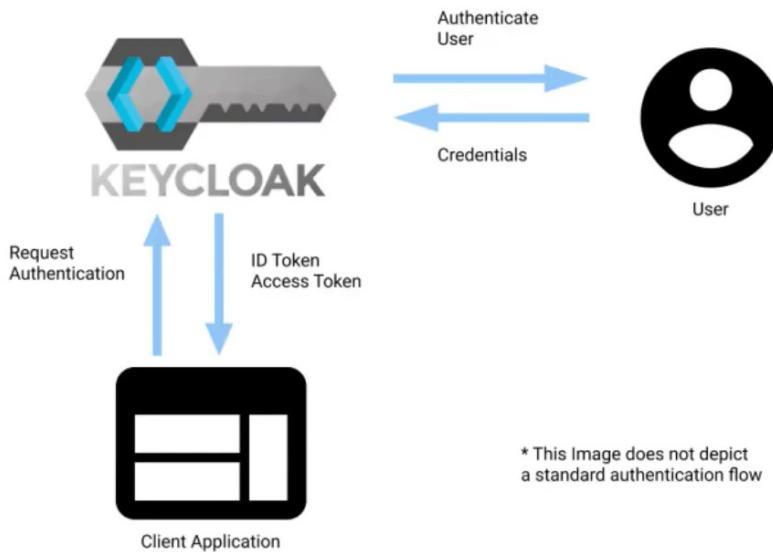
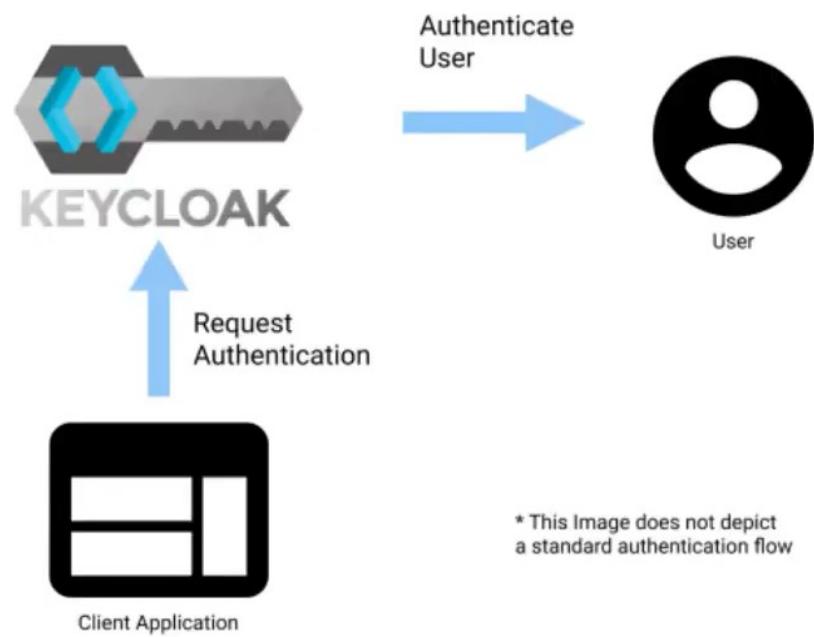
2. Types of clients ?

- **Type 1:** An application that wants to participate in single-sign-on
- **Type 2:** An application that requests an access token to invoke other services on behalf of the authenticated user.

3. Client communication protocols (OpenID Connect, SAML)

- Keycloak supports both OpenID Connect (OIDC) and SAML protocols for communicating with clients.
- OIDC is preferred since it was designed to be web-friendly and work well with HTML5 & JavaScript applications.
- SAML is a mature protocol but it tends to be a bit more verbose than OIDC
- But with Keycloak, developers have the freedom to choose any of the above protocols based on their requirements.

Keycloak Clients



Chapter 03

Using Keycloak RestAPIs



Chapter 04

Creating Keycloak Custom Templates

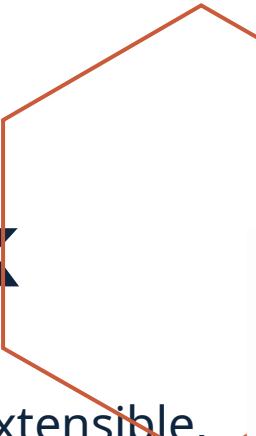


Customize and extend Keycloak

Keycloak is highly configurable and extensible, allowing you to customize its look and feel, add new features, and integrate with other systems.

You can use themes, templates, and internationalization to change the appearance of Keycloak's user interface.

You can also use extensions, such as SPIs, event listeners, and user storage providers, to add new functionality and logic to Keycloak. You can also use REST APIs and an admin console to manage Keycloak programmatically.



Chapter 05

Integration with Full Stack Application



Secure microservices and APIs

Keycloak can be used to secure microservices and APIs by providing authentication and access control based on standard protocols like OpenID Connect and OAuth 2.0.

This ensures that only authorized users and applications can access your services, helping to maintain the security and integrity of your infrastructure.



Integrate with external identity providers

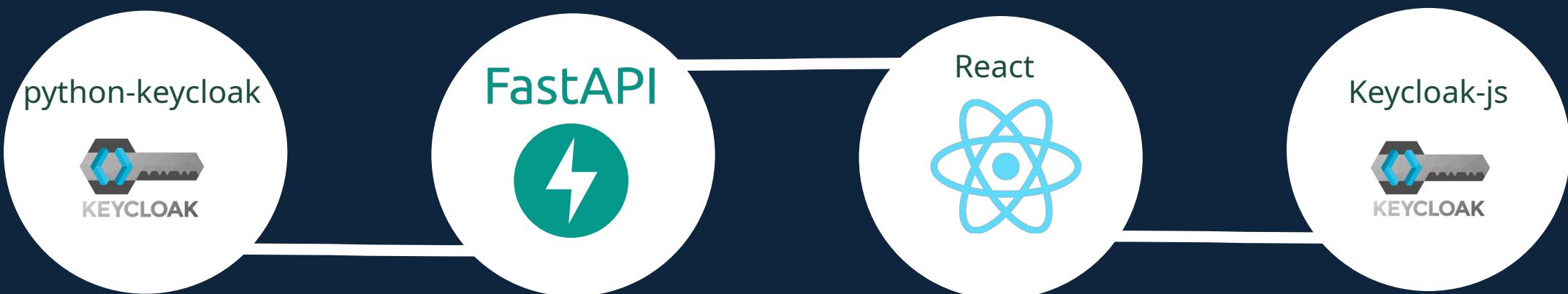
Keycloak can act as an identity broker that allows users to authenticate with external identity providers, such as Google, Facebook, or LDAP.

This simplifies the user experience and reduces the need to manage multiple user accounts and passwords.

Keycloak can also synchronize user data and attributes from external sources, and map them to roles and groups within Keycloak.



Full Stack Architecture



Thank you

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