Spring Security

**Spring Security Overview**

* Introduction to Spring Security
* spring-boot-starter-security - Auto-configuration and Customization
* Authentication and authorization
  + In-memory authentication
  + JDBC Authnetion
  + UserDetails Service
  + Token based authorization with JWT

**Federated Security and Identity Access Management**

* Introduction to Federated Security
* Federation protocols and how they work
  + OAuth
  + OpenID
  + SAML

**OAuth 2.0**

* What is OAuth 2.0?
* OAuth 2.0 roles
  + Authorization server
  + Resource server
  + Client
  + Resource Owner
* Client Types
  + Public clients
  + Credential clients
* Tokens
  + JWT
  + ID token
  + Refresh token
* OAuth 2.0 grant types and authorization flows
  + Authorization code
  + Client credentials
  + Password grant
  + PKCE-enhanced authorization code

**Authorization Server - Keycloak**

* Introduction to keycloak
* Setting up keycloak server
* Performing user authentication and authorization with OAuth2
* Protecting your Spring microservices using OAuth2
* Resource server – scoped based access control
* Role vs Authority
* Role based access control
* Method level security
  + @Secured
  + @PreAuthorize
  + @PostAuthorize
* Implementing security at API gateway

**Single Sign On (SSO)**

* What is SSO?
* Implementing SSO using
  + GitHub
  + Google
  + Facebook