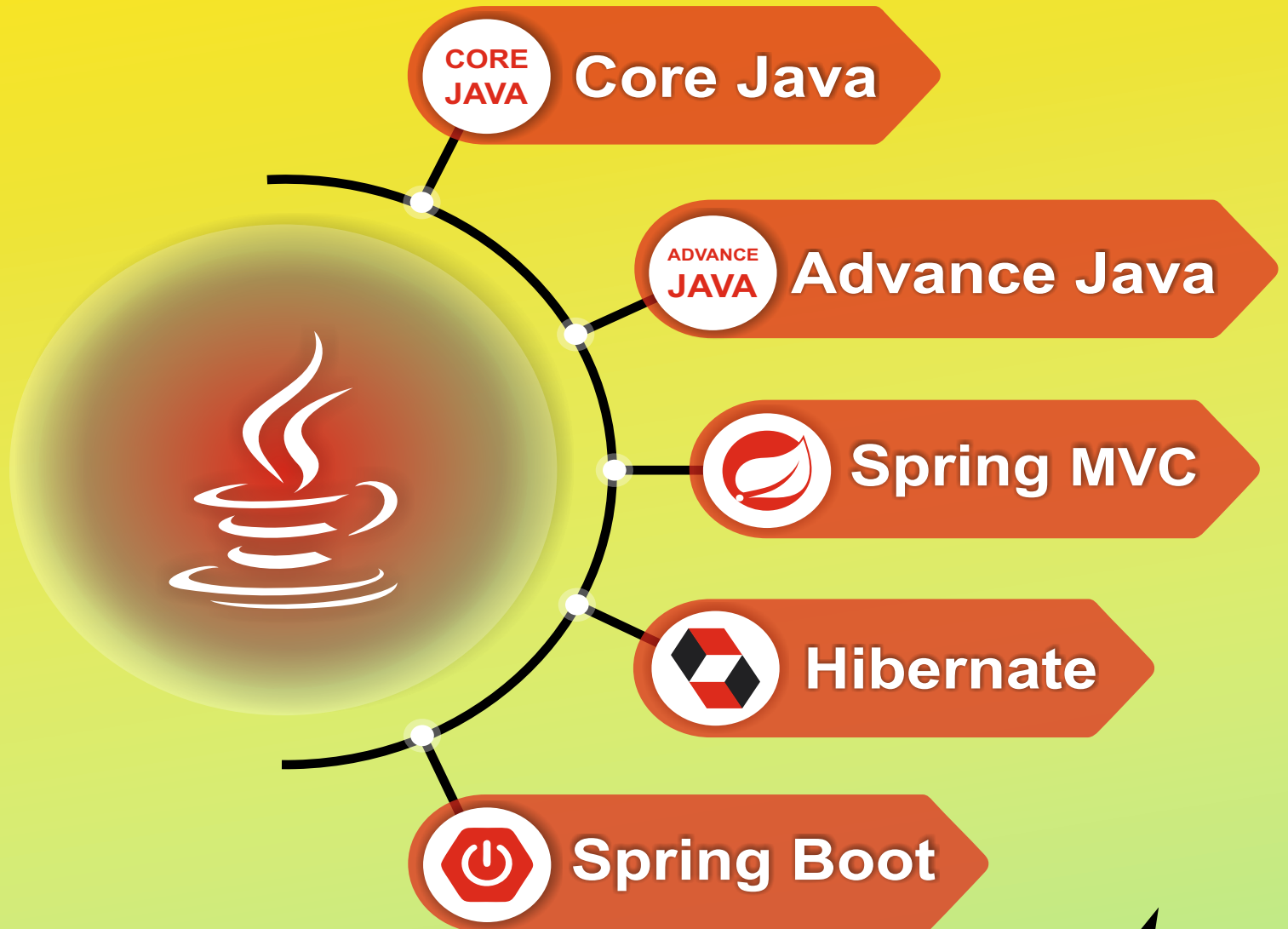




STELLAR
TECH PRO



JAVA



Sessions: 20

Level: Basic | Intermediate | Advanced

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Introduction to Java Programming

- The Java Virtual Machine
- Variables and data types
- Conditional and looping constructs
- Arrays

Object-Oriented Programming With Java Classes and Objects

- Fields and Methods
- Constructors
- Overloading methods
- Garbage collection
- Nested classes

Inheritance

- Overriding methods
- Polymorphism
- Making methods and classes final
- Abstract classes and methods
- Interfaces

Exception Handling With Try-throw-catch-finally Constructs

- The Exception class

The Object Class

- Cloning objects
- The JDK Linked List class
- Strings
- String conversions

Working With Types: Wrapper Classes

- Enumeration interface

Packages

- Package access
- Documentation comments

Applets

- Configuring applets
- Applet capabilities and restrictions

Basics of AWT and Swing

- Layout Managers
- Event Handling
- The Action Listener interface
- Panels
- Classes for various controls, such as label, choice, list,
- Checkbox, etc.
- Dialogs and frames
- Using menus
- Using the adapter classes
- Graphics

Threads

- Synchronization

The I/O Package

- InputStream and OutputStream classes
- Reader and Writer classes

Basic Concepts Of Networking

- Working with URLs
- Concepts of URLs
- Sockets

Database Connectivity With JDBC

- Java security



ADVANCE
JAVA

(Web-Server & Support Technologies) Java Database Connectivity

- JDBC Product
- Types of Drivers
- Two-Tier Client/Server Model
- Three-Tier Client/Server Model
- Basic Steps of JDBC
- Creating and Executing SQL Statement
- The Result Set Object
- Working with Database Meta Data Interface

Servlets

- Servlet Interaction & Advanced Servlets
- Life cycle of Servlet
- Java Servlet Development Kit
- Javax.servlet package
- Reading Servlet Parameters
- Reading Initialization Parameters
- The javax.servlet.http Package
- Handling HTTP

Java Server Pages

- JSP Technologies
- Understanding the Client Server Model
- Understanding Web server software
- Configuring the JSP Server
- Handling JSP Errors
- JSP Translation Time Errors
- JSP Request Time Errors
- Creating a JSP Error Page

RMI

- RMI Architecture
- Designing RMI application
- Executing RMI application

EJB

- Types of Enterprise Java Beans
- Session Bean & Entity Bean
- Features of Session Bean
- Life-cycle of Stateful Session Bean
- Features of Entity Bean
- Life-cycle of Entity Bean
- Container-managed Transactions
- Bean-managed Transactions
- Implementing a Container-managed Entity Bean

XML

- What is XML?
- XML Syntax Rules

Framework



Overview of Spring Technology

- Shortcomings of Java EE, Spring Architecture

Spring Introduction

- Managing Beans, The Spring Container, IoC, DI
- Configuration Metadata – XML, @Component, Auto-Detecting Beans

Dependencies and Dependency Injection (DI)

- Dependency Inversion, Dependency Injection (DI) in Spring, DI Configuration – XML, @Resource

Working with Bean Properties

- Configuring Value Properties, Property Conversions, Setter / Constructor Injection

Spring Expression Language for Configuration

Collection Valued Properties

- Configuring and using lists, sets, etc.

Additional Capabilities

- Factory Methods, Bean Aliases, Definition Inheritance (Parent Beans)

The Spring Container and API

- ApplicationContext
- ClassPathXmlApplicationContext, FileSystemXmlApplicationContext, Constructors, Usage
- Resource Access – Overview, Resource Implementations
- Validation
- Overview, JSR-303
- Declarative Validation, @NotNull, @Size, @Min, etc
- Configuration, Injection
- Bean Scope and Lifecycle
- Bean Scope Defined, Configuring, Inner Beans, Bean Creation Lifecycle, Lifecycle Callbacks, BeanPostProcessor, Event Handling
- MessageSources
- Defining and Using Resource Bundles, Localization/I18N
- Annotation Driven Configuration
- Stereotypes: @Component, @Service, @Controller, @Repository
- Java EE 5 Annotation Support
- Defining Custom Annotations
- Autowiring
- Java Based Bean Metadata (JavaConfig)
- Overview – code-centric Configuration
- @Configuration, @Bean, and @Value
- Importing and @Import
- Autowiring in Configuration Classes
- Mixing XML Configuration and @Configuration
- XML vs Annotation Based Configuration
- Other Capabilities
- SpEL – Spring Expression Language
- Validation

Overview of Spring Security

- Overview – Capabilities, Architecture
- Introduction to Spring Security
- HTTP Security
- Method Security
- Annotation-Based Security
- Expression-Based Access Control
- Authentication Providers

Database Access with Spring

- Issues with JDBC / Typical JDBC Flow
- Introduction to Spring DAO Support
- Spring Database API, (Simple)JdbcTemplate, (Simple)JdbcDaoSupport, DataSources,
- Working With and Configuring, <list>, <set>, With Bean Refs, <map>, <props>
- Queries and Inserts
- RowMapper, ParameterizedRowMapper, Passing Arguments, queryForObject, query, update
- Additional API Capabilities
- Additional query methods, Passing Type Arguments, queryForList, FetchSize, MaxRows
- Using Spring with Hibernate
- Overview of Template Approach, SessionFactory configuration
- Using Contextual Sessions
- Using Spring with JPA
- LocalEntityManagerFactoryBean, LocalContainerEntityManagerFactoryBean, JNDI, PersistenceUnitManager
- DAO Support – @PersistenceUnit, @PersistenceContext

Aspect Oriented Programming (AOP)

- Overview of AOP
- AOP Basics, Aspect, Joinpoint, Advice, Pointcut
- Introduction to Spring AOP
- Capabilities, Configuration (Annotation Based and XML), Weaving, Joinpoints
- Using Aspects
- Defining Advice, Configuring Pointcuts, Targets and Proxies
- XML Configuration with <aop:>
- AspectJ Pointcuts, Autoproxies
- Using @AspectJ Annotations

Spring Transaction (TX) Management

- Intro to Spring Transaction Management
- Overview, Component TX Model, TX Propagation, Declarative Transactions, TransactionManagers
- Using Spring Transactions
- Annotation Configured Transactions
- @Transactional and its settings
- XML Configured Transactions
- new <tx:*> elements, Configuring tx:advice, and tx:attributes
- Defining the TX advisor

Introduction to Spring Web Integration and Spring MVC

- Integrating Spring with Java EE Web Apps, ContextLoaderListener, WebApplicationContext
- Spring Web MVC Overview, Capabilities, Architecture
- Spring MVC Basics
- DispatcherServlet, Configuration, mvc Namespace
- Controllers, @Controller, Handler Methods
- @RequestParam and Parameter Binding
- View Resolvers
- Writing Controllers, @Controller, @RequestMapping, @RequestParam, @PathVariable
- Forms and Binding, Spring Form Tags, @ModelAttribute
- Ses



Hibernate Introduction

- O/R Mapping Fundamentals
- Object Persistence
- Object Relational Mapping (ORM) Fundamentals
- Java ORM/Persistent Frameworks
- Object/Relational Paradigms
- O/R Mapping tools
- POJO
- DAO pattern and Service Pattern

Hibernate Basics

- Setting up Hibernate in Eclipse
- Hibernate Libraries
- Hibernate Native API
- XML Metadata
- Basic Hibernate Example
- Hibernate Session
- Session Factory
- Hibernate configuration properties
- Programmatic Configuration
- Metadata using Annotation
- Java Persistence API
- Entity Manager
- Identifiers
- Primary Key Generators
- Composite Primary Key mapping

Hibernate Architecture

- Hibernate Object Life Cycle
- Persistent
- Transient
- Detached states
- Object State Transition
- Hibernate Native API usage
- save,update,delete,merge,get,load,eject,lock
- 2 tier and 3 tier environment

Hibernate Associations

- Unidirectional and Bidirectional
- Different strategies for mapping
- Lazy loading
- Eager loading
- Fetching Strategies
- Collection types – Bag, list, Set, Map and Array
- Sorting the elements
- Fetching Strategies
- Join Fetching / Subselect Fetching
- Get vs. load
- Update vs. merge

Inheritance Mapping

- Table per concrete class
- Table per sub class
- Table per hierarchy
- Polymorphism
- Choosing an Inheritance strategy

Hibernate Tool

- Installing JBOSS tools plug-in
- Hibernate Meta Model and Exporters
- Reverse Engineering
- Wizards and Ant task
- Mapping Editor and Console

Hibernate Caching

- Hibernate Default Caching (L1 cache)
- Hibernate Secondary Caching libraries(L2)
- Using Hibernate Secondary Caching libraries - c3po
- Cache Regions, eviction

Hibernate Query Language (HQL)

- Hibernate Object Fetching Options
- Hibernate Query
- HQL Parameters
- Named query
- Named parameters
- Aggregate functions
- Native SQL
- Join Queries

Criteria

- Restrictions
- Projections
- Scrolling
- Pagination
- Joins
- Aggregate functions

Others

- Hibernate Native SQL usage
- Hibernate Transaction API
- Using Hibernate in Web ApplicationEL



Spring Boot

Spring MVC Primer

- Integrating Spring with Java EE Web Apps - ContextLoaderListener and WebApplicationContext
- Spring Web MVC Overview, Capabilities, Architecture (Front Controller, MVC Pattern)
- Spring MVC Basics the DispatcherServlet, Configuration using @EnableWebMvc
- Controllers, using @Controller, @RequestMapping (Handler Methods)
- Controller Details using @RequestMapping, @RequestParam and @PathVariable
- Model Data, @ModelAttribute, Model/ModelAndView Classes

Getting Started With Spring Boot

- Spring Boot starters, CLI, Gradle plugin
- Application class
- @SpringBootApplication
- Build as a Runnable jar
- Dependency injection, component scans, Configuration
- Externalize your configuration using application.properties or YAML files
- Context Root and Management ports
- Logging

Building Web Applications In Spring Boot

- Spring MVC Controllers
- Using ModelAttributes
- @RequestMapping and @RequestParam
- Using a ModelAndView
- Usi or views
- Using an Embedded database with JdbcTemplate
- Executing Sql scripts
- Using a production database
- JPA D

Restful Web Services

- REST Overview (Characteristics/Capabilities, URI Templates, REST vs SOAP)
- REST and Spring MVC
- Spring support for RES
- @RequestMapping/@PathVariable, @RequestBody, @ResponseBody, HTTP Method conversion
- URI Templates and @PathVariable
- Writing RESTful Controllers / @RestController
- JSON Representations for Resources
- Message Converters
- Generating XML
- JAXB and Jackson Message Converters for XML
- JAXB / @XmlRootElement
- Content Negotiation
- Client Requirements and Spring's RestTemplate

Securing An Application With Spring Boot And Spring Security

- Spring Security Overview using the DelegatingFilterChainProxy and FilterChainProxy
- Using Spring Web Authentication
- The key Classes of HttpSecurity, AuthenticationProvider, UserDetailsService, UserDetails, AuthenticationManager, Authentication and GrantedAuthorities
- Using your own AuthenticationProvider and UserDetailsService with hashed passwords and token
- Spring Security Authorization overview with The AccessDecisionManager and AccessDecisionVoters
- Authorization using @EnableGlobalMethodSecurity, JSR250 and Spring Security Annotations
- Using a @ControllerAdvice for ExceptionHandling
- Creating your own custom Authorization Voter and AccessControlManager
- Using HTTPS
- Securing a Restful service via a customized UsernamePasswordAuthenticationFilter

Java

MVC

HTML

CORE JAVA

ADVANCE JAVA

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