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# Tên chương trình Khóa học Lập trình back-end với Java Thời lượng 90 giờ Phiên bản 1.0 Designer Kỳ Lê

# **COURSE Syllabus**

#### Các môn học/chủ đề và thời lượng:

#### 1. SQL Essentials

SQL Essentials				
Thời lượng: 18 giờ				
Lessons	Note			
Session 01: Database Concepts and ER Model				
✓ Database Concepts				
✓ ER Model, Relational Model				
Session 02: Introduction SQL and SQL Server				
✓ SQL Data Types				
✓ Operations				
✓ Introduction to SQL				
✓ DDL Statements				
Session 03: DML Statements				
✓ DML Statements (Insert, Update, Delete)				
Session 04: Day 04: DML Statements (Cont)				
✓ Select statement				
Session 05: SQL Joins				
✓ Introduction to JOIN				
✓ INNER JOIN				
✓ OUTER JOIN				
Session 06: Sub-Queries and Best Practices & Final Test				
✓ Introduction to Subquery				
✓ Type of Sub-Queries				
✓ Common cases use Sub-Queries				
✓ Sub-query rules				
✓ SQL Best Practices				
✓ Final Test				



# 2. Java Programming Essentials

## **Java SE Programming Essentials**

#### Thời lượng: 42 giờ

	Lessons	Note
Se	ssion 01: Java Introduction	
✓	Introduction to Java	
✓	First Java Program	
✓	Basic Java Syntax	
✓	Java Operators	
Se	ssion 02: Control Flow Statements	
✓	If statements	
✓	If/else statements	
✓	Switch case statements	
Se	ssion 03: Control Flow Statements	
✓	For loop	
✓	While loop	
✓	Dowhile loop	
✓	Break/continue statements	
Se	ssion 05: Array	
✓	Array introduction	
✓	Type of arrays	
✓	Array statements	
✓	Array problem solving	
Se	ssion 05: Classes and Object	
✓	Basic concepts (Class, Object, Constructor)	
✓	Methods	
✓	static keyword	
✓	this keyword	
Se	ssion 06: Constructors, Access Specifier and Overloading methods	
✓	More about Constructor methods	
✓	Access modifiers	
✓	Overloading methods	



Encapsulation Inheritance Final keyword Inheritance Introduction 182 Exception Introduction to Java Exception Introduction Inheritance Introduction Inheritance Introduction Inheritance Introduction to JDBC Introduction to Junit Junit05 in Java Introduction to Junit Junit05 in Java Introduction to Junit Esetting Introduction	Session 07: I	ncapsulation & Inheritance
y Inheritance y Final keyword y Inheritance y Object class Session 08: Java Polymorphism and Abstraction  Basic concepts y Method Overloading and Overriding y Abstract class y Static keyword  Session 09: Exception Handling y Introduction to Java Exception y Exception handling y Introduction to Java Exception y Exception handling y Check and uncheck exceptions y Throw and Throws keywords  Session 10: Java Collection Framework y Overview of Set Collection Framework y Introduction to JDBC y Connection class y Statement class y ResultSet clas  Session 12: Database Programming with JDBC y Connection class y Statement class y More about Connection class y More about Statement class y More about Statement class y PreparedStatement y Ogranize project DAO (repository) classes, Service classes  Session 13: Testing with Junit05 in Java y What is Unit Testing? Introduction to JUnit y JUnit Test framework y Junit Assert		
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	✓ What is U ✓ Introducti ✓ Setting u ✓ JUnit Tes ✓ Junit Ass	Init Testing? on to Junit o JUnit t framework ert



Ses	ssion 14: Final Exam	
✓	Practice test: 3.0 hours	

#### 3. Back-end

Back-end Essentials				
Thời lượng: 18 giờ				
Lessons	Note			
Session 01: Introduction				
✓ Introduction to Web Services				
✓ Introduction to Spring Boot				
✓ RESTful Web Serivces				
□ RESTful Web Serivces with Spring Boot				
□ POST method				
☐ GET method				
□ PUT method				
□ DELETE method				
Session 02: Spring Data JPA				
✓ Introduction to JPA				
✓ Overflow contents				
✓ Entiy class				
✓ DAO layer				
Session 03: Spring Data JPA (Cont.)				
✓ Object relational mapping				
✓ OneToOne				
✓ OneToMany				
✓ ManyToMany				



#### Session 04: Spring Security

- ✓ Introduction
- ✓ Integration
- ✓ Development Steps

#### Session 05: Connecting RESTful Web Service to JPA

- ✓ Introduction to RESTful Web Services
- ✓ Initializing a RESTful Web Services Project with Spring Boot
- ✓ RequestBody and ResponseBody

#### Session 06: Connecting RESTful Web Service to JPA (Cont.)

- √ Rest Controller
- ✓ ResponseEntity
- ✓ Build a CRUD RESTful Web Services
- ✓ Introduction to Postman

#### 4. Mock Project/OJT

# Mock Project/OJT and Interview Thời lượng: 12 giờ Session01: GIT/SVN Session 02-03-04: Mock Project ✓ Project Setup ✓ Creating and Editing Java Source Code ✓ Compiling and Running the Application ✓ Testing and Debugging the Application ✓ Building, Running, and Distributing the Application

GIÁM ĐỐC ĐÀO TẠO R2S ACADEMY