

Java SE 8 Programming Language - Syllabus

1	Topic Name	Java SE 8 Programming Language	
2	Topic Code	JPL	
3	Version	v4.0	
4	Training Audience	Trainees who are software developers (SD) with basic background and skills in programming language	
5	Course Objectives	This topic is to introduce about Java programming language knowledge; adapt trainees with skills, lessons and practices which is specifically used in the Fsoft projects. The topic cover following output standards	
		Name	Code
		Programming Language	H4SD
		OOP and OOAD	K1SD
		Description	
		Có khả năng sử dụng thành thạo và phát triển phần mềm cơ bản (ứng dụng console) sử dụng Java	
		Kiến thức phân tích thiết kế và lập trình hướng đối tượng	
		In details, after completing the course, trainees will:	
		Outcome code	LO Code
		Detail	
		H4SD	JPL-1
		- Able to install the compilation, execution environment and write the first java program.	
		H4SD	JPL-2
		- Run an application based on Java technology from the command line	
		K1SD	JPL-3
		- Able to create and edit static fields and methods	
		K1SD	JPL-4
		- Access the fields and methods of an object	
		K1SD	JPL-5
		- Able to create Java classes, declare methods, use object references and call methods	
		K1SD	JPL-6
		- Define and implement a simple class hierarchy	
		K1SD	JPL-7
		- Demonstrate polymorphism by implementing a Java interface	
		K1SD	JPL-8
		- Encapsulate a class using access modifiers and overloaded constructors	
		K1SD	JPL-9
		- Able to create Java-based applications that take advantage of Java object-oriented features, including encapsulation, inheritance, and polymorphism	
		H4SD	JPL-10
		- Manipulate string data and primitive numeric data using Java operators	
		H4SD	JPL-11
		- Manipulate text data using the methods of the String, StringBuilder and StringBuffer classes	
		H4SD	JPL-12
		- Create applications that use the Java collection structure	
		H4SD	JPL-13
		- Able to use a Predicate Lambda expression as an argument to a method	
		H4SD	JPL-14
		- Search and filter collections using lambda expressions	
		H4SD	JPL-15
		- Manage a verified exception in a Java application	
		H4SD	JPL-16
		- Implement error handling techniques using exception handling	

		H4SD	JPL-17	- Implement input / output (I / O) functionality for reading from / writing to text / data files and understanding advanced I/O streams		
		H4SD	JPL-18	- Understand the importance of concurrency		
		H4SD	JPL-19	- Understand basic concepts multithreading in java		
		H4SD	JPL-20	- Write a high-performance multithreaded program		
		H4SD	JPL-21	- Use the java.time and java.time.format package classes to format and print the local date and time		
		H4SD	JPL-22	- Perform multiple operations on the database tables (create, read, update, and delete) using both JDBC technologies		
6	Topic Outline	Day1 - Unit1: Java Introduction - Unit2: Jar - Java Archive - Runnable Java File - Unit3: Classes and Objects - Unit4: The Object class Day2 - Unit5: Basic OOP - Unit6: Advance OOP Day3 - Unit7: Manipulate and format data in a program (String, StringBuilder, StringBuffer) - Unit8: Generics and Collections (List, Set, Map) Day4 - Unit9: Collections, Streams, and Filters - Unit10: Lambda Expressions and Functional Interfaces Day5 - Unit11: Exceptions and Assertions - Unit12: Java Date/Time API Day 6 - Unit13: Java I/O Fundamentals Day7 - Unit14: Concurrency - Unit15: Internationalization and Localization Day8 - Unit16: Building Database Applications with JDBC - Unit 17: Java Application Debugging Day9 - Topic Revision - FinalTest				
7	Time Allocation	Concept/Lecture	23%	Concepts, theory	9.0 days	
		Assignment/Lab	43%	Assignment, Lab		
		Guides/Review	10%	Assignment review Assignment guides		
		Seminar/Workshop	10%	Seminar, Workshop		
		Class Meeting	5%	Daily class meeting		
		Test/Quiz	2%	Quiz		

		Exam	7%	Topic Revision, Final Test
8	Training Materials & Environments	Text book	Oracle Certified Associate Java SE 7 Programmer Study Guide 2012.pdf	
			Oracle Certified Professional Java SE 8 Programmer Exam 1Z0-809: A Comprehensive OCPJP 8 Certification Guide	
		References	https://beginnersbook.com/	
			https://www.tutorialspoint.com/java/	
			https://www.javatpoint.com/java-tutorial	
		Technical requirements	Trainees' PCs need to have following softwares installed & run without any issues: <ul style="list-style-type: none"> • Java JDK v7 up • Eclipse IDE for Java Developers • CheckStyle v5 • Microsoft SQL Server 2008 Express or up (in which they create & control on their DB) • Microsoft Office 2007 (Visio, Word, Powerpoint) 	
9	Assessment Scheme	Quiz	4	15% (4 quizzes, to do in 15-30 minutes)
		Assignments	2	15% (Average mark of 2/3 assignments; Review and Comment of 3/3 assignments)
		Final Test	1	70% ----- 40% theory (to do in 1.0h) 60% practice (to do in 3.0 h)
		Passing criteria	Total topic GPA >= 6/10 ----- Completed 100% Online video, Quiz, Assignments, Labs, Final Test	
10	Training Delivery Principles	Trainees	Qualified entry test and passed interview of Fresher program Less than or equals 20 students in the class	
		Trainer	- Trainer and mentor has a good knowledge of the Java programming language that has been evaluated by FA	
		Training	- Trainee who actively complete online learning according to MOOC links provided - At the end of the day, students complete Daily Quiz for 15-30 minutes - Trainer/Mentor supports answering questions, guiding exercises 1.5-2.0h/day - Trainer conduct the workshops - Trainees complete 5 Assignments, 12 Labs - Trainees have 1 final test in 4 hours (1 hour theory + 3 hours of practice)	
		Re-Test	Only allow each student to retake the test up to 2 times; Re-exam the same structure as the first Test	
		Marking	- Trainer marks students on Assignments, Final Exam Theory, Final Exam Practice - If the trainees have to retake test, the score will be calculated: + The score >=6, the score will be 6 + The score <6, the score will be that score	
		Waiver Criteria	Students pass the quick test Trainer Audit: rank B or up	

		<i>Others</i>	<p>For JPL lab guides, it is possible to reduce the number of labs students have to complete based on the actual. Require no less than 50%.</p> <p>Trainers can allow students to complete homework and submit the next day.</p>	
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Java SE 8 Programming Language - Training Schedule

Training Unit/Chapter		Day	Lecture	Content	Learning Objectives	Delivery Type	Duration (mins)	Training Format
Unit 1	Java Introduction	Day 1		Course Introduction	K1SD	Class Meeting	60.0	Offline
			Lecture 1	1 Course Introduction	K1SD	Concept/Lecture	2.0	Online
			Lecture 2	2 Java Intro Intro	K1SD	Concept/Lecture	0.3	Online
			Lecture 3	3 Java History	K1SD	Concept/Lecture	1.1	Online
			Lecture 4	4 Java Features	K1SD	Concept/Lecture	1.9	Online
			Lecture 5	5 Installation	K1SD	Concept/Lecture	2.2	Online
			Lecture 6	6 Write HelloWorld	K1SD	Concept/Lecture	1.4	Online
			Lecture 7	7 Compile HelloWorld	K1SD	Concept/Lecture	1.0	Online
			Lecture 8	8 Run HelloWorld	K1SD	Concept/Lecture	1.1	Online
			Lecture 9	9 IDEs	K1SD	Concept/Lecture	1.8	Online
			Lecture 10	10 HelloWorld in Eclipse	K1SD	Concept/Lecture	2.9	Online
			Lecture 11	11 Eclipse WorkingSet	K1SD	Concept/Lecture	2.6	Online
			Lecture 12	12 Eclipse Code Template	K1SD	Concept/Lecture	1.6	Online
			Lecture 13	13 Eclipse Class Header	K1SD	Concept/Lecture	1.9	Online
			Lecture 14	14 The main method	K1SD	Concept/Lecture	1.2	Online
			Lecture 15	15 Comments	K1SD	Concept/Lecture	2.0	Online
			Lecture 16	16 Java Intro Summary	K1SD	Concept/Lecture	0.2	Online
			S-Lab1	JPL.S.L101	K1SD	Assignment/Lab	30.0	Offline
			Review	Self review/Cross review	K1SD	Guides/Review	10.0	Offline
Unit 2	Jar - Java Archive -	Day 1	Lecture 17	17 JAR Intro	K1SD	Concept/Lecture	1.0	Online
			Lecture 18	18 jar command	K1SD	Concept/Lecture	3.0	Online
			Lecture 19	19 Run jar files	K1SD	Concept/Lecture	2.0	Online

Unit 3	Classes and Objects	Day 1	Lecture 20	20 Why do we need jars	K1SD	Concept/Lecture	1.0	Online
			Lecture 21	21 Create jar files using Eclipse	K1SD	Concept/Lecture	2.0	Online
			Lecture 22	22 Java Build Tools	K1SD	Concept/Lecture	2.0	Online
			Lecture 23	23 JAR Summary	K1SD	Concept/Lecture	1.0	Online
			Lecture 24	Section Intro	K1SD	Concept/Lecture	3.0	
			Lecture 25	25 Class Definition	K1SD	Concept/Lecture	2.0	Online
			Lecture 26	26 public class and Java file	K1SD	Concept/Lecture	1.0	Online
			Lecture 27	27 public class and Java file Lab	K1SD	Concept/Lecture	3.0	Online
			Lecture 28	28 Packages	K1SD	Concept/Lecture	2.0	Online
			Lecture 29	29 Access Modifiers	K1SD	Concept/Lecture	2.0	Online
			Lecture 30	30 Class Attributes	K1SD	Concept/Lecture	2.0	Online
			Lecture 31	31 Class Methods	K1SD	Concept/Lecture	2.0	Online
			Lecture 32	32 Class Labs	K1SD	Concept/Lecture	6.0	Online
			Lecture 33	33 Abstract Methods	K1SD	Concept/Lecture	1.0	Online
			Lecture 34	34 Constructors	K1SD	Concept/Lecture	1.0	Online
			Lecture 35	35 Default Constructors	K1SD	Concept/Lecture	1.0	Online
			Lecture 36	36 Constructor Labs	K1SD	Concept/Lecture	4.0	Online
			Lecture 37	37 Getters vs Setters	K1SD	Concept/Lecture	2.0	Online
			Lecture 38	38 Getter vs Setter Lab	K1SD	Concept/Lecture	2.0	Online
			Lecture 39	39 Interface Definition	K1SD	Concept/Lecture	1.0	Online
			Lecture 40	40 Interface Attributes	K1SD	Concept/Lecture	1.0	Online
			Lecture 41	41 Interface Methods	K1SD	Concept/Lecture	1.0	Online
			Lecture 42	42 Interface Labs	K1SD	Concept/Lecture	3.0	Online
			Lecture 43	43 Abstract Class	K1SD	Concept/Lecture	1.0	Online
			Lecture 44	44 Abstract Class Lab	K1SD	Concept/Lecture	2.0	Online
			Lecture 45	Local and Instance Variables	K1SD	Concept/Lecture	1.0	Online
				Local and Instance Variables 2	K1SD	Concept/Lecture	2.0	Online
			Lecture 47	Object & Instance Methods/Invoking a static keyword in Java	K1SD	Concept/Lecture	5.4	Online
					K1SD	Concept/Lecture	11.1	

			Lecture 48	static' keyword Example in Java	K1SD	Concept/Lecture	6.5	Online
			Lecture 51	What is "this" keyword?	K1SD	Concept/Lecture	16.0	Online
			Lecture 53	Instance and static Initialization Block	K1SD	Concept/Lecture	4.0	Online
			Lecture 57	The final Keyword	K1SD	Concept/Lecture	6.3	Online
			S-Lab2	JPL.S.L201 JPL.S.L202	K1SD	Assignment/Lab	90.0	Offline
			Review	Self review/Cross review	K1SD	Guides/Review	20.0	Offline
Unit 4	The Object class	Day 1	Lecture 53	Section Intro/The Object Class	K1SD	Concept/Lecture	8.0	Online
			Lecture 54	Example and Practice	K1SD	Concept/Lecture	4.0	Online
			Lecture 55	equals() và hashCode() methods	K1SD	Concept/Lecture	3.6	Online
			Lecture 61	String Representation of an Object	K1SD	Concept/Lecture	6.6	Online
			Lecture 63	Cloning Objects	K1SD	Concept/Lecture	5.0	Online
			Lecture 64	Example and Practice	K1SD	Concept/Lecture	11.0	Online
			Lecture 67	Immutable Objects	K1SD	Concept/Lecture	14.0	Online
			Lecture 68	Example and Practice	K1SD	Concept/Lecture	16.0	Online
							6.8	Online
Unit 5	Basic OOP	Day 2	Quiz	Quiz1	K1SD	Test/Quiz	20.0	Offline
			Class meeting	Class meeting	K1SD	Class Meeting	20.0	Offline
				Section Intro	K1SD	Concept/Lecture	1.0	Online
				39 Interface Definition	K1SD	Concept/Lecture	1.0	Online
				40 Interface Attributes	K1SD	Concept/Lecture	1.0	Online
				41 Interface Methods	K1SD	Concept/Lecture	1.0	Online
				42 Interface Labs	K1SD	Concept/Lecture	3.0	Online
				43 Abstract Class	K1SD	Concept/Lecture	1.0	Online
				44 Abstract Class Lab	K1SD	Concept/Lecture	2.0	Online
				45 Inheritance	K1SD	Concept/Lecture	2.0	Online
				46 Inheritance Lab	K1SD	Concept/Lecture	4.0	Online

				47 Abstraction	K1SD	Concept/Lecture	2.0	Online
				48 Abstraction Lab	K1SD	Concept/Lecture	4.0	Online
				49 Encapsulation	K1SD	Concept/Lecture	1.0	Online
				50 Encapsulation Lab	K1SD	Concept/Lecture	3.0	Online
				51 Polymorphism	K1SD	Concept/Lecture	2.0	Online
				52 Java OOP Recap	K1SD	Concept/Lecture	2.0	Online
				53 Basic OOP Summary	K1SD	Concept/Lecture	1.0	Online
			M-Lab3	JPL.M.L101	K1SD	Assignment/Lab	60.0	Offline
			S-Assignment1	Yêu cầu hoàn thành 1 trong các options: JPL.S.A10x	K1SD	Assignment/Lab	60.0	Offline
			Review	Self review/Cross review	K1SD	Guides/Review	20.0	Offline
Unit 6	Advance OOP	Day 2		113. Section Intro	K1SD	Concept/Lecture	1.0	Online
				114. Method Declaration	K1SD	Concept/Lecture	2.0	Online
				115. Overload	K1SD	Concept/Lecture	2.0	Online
				116. Overload Lab	K1SD	Concept/Lecture	2.0	Online
				119. Override	K1SD	Concept/Lecture	2.0	Online
				120. Override Lab	K1SD	Concept/Lecture	2.0	Online
				121. Overload vs Override: Similarities	K1SD	Concept/Lecture	2.0	Online
				122. Overload vs Override: Differences	K1SD	Concept/Lecture	2.0	Online
				124. Static keyword	K1SD	Concept/Lecture	4.0	Online
				125. Static Lab	K1SD	Concept/Lecture	2.0	Online
				126. Abstract keyword	K1SD	Concept/Lecture	2.0	Online
				127. Abstract Lab	K1SD	Concept/Lecture	2.0	Online
				128. Final keyword	K1SD	Concept/Lecture	2.0	Online

				129. Final Lab	K1SD	Concept/Lecture	4.0	Online
				130. Java Annotation	K1SD	Concept/Lecture	1.0	Online
				131. Java Annotation Lab	K1SD	Concept/Lecture	2.0	Online
				132. @Override	K1SD	Concept/Lecture	1.0	Online
				133. @Override Lab	K1SD	Concept/Lecture	2.0	Online
				134. Section Summary	K1SD	Concept/Lecture	1.0	Online
			S-Lab4	JPL.S.L301 JPL.S.L302	K1SD	Assignment/Lab	60.0	Offline
			Review	Self review/Cross review	K1SD	Guides/Review	10.0	Offline
							5.32	
Unit 7	Manipulate and format data in a program	Day 3	Class meeting	Class meeting	K1SD	Class Meeting	20.0	Offline
			Workshop 1	Workshop: OOP	K1SD	Seminar/Worksho	120.0	Offline
				144. Immutable Object	H4SD	Concept/Lecture	2.00	Online
				145. String	H4SD	Concept/Lecture	1	Online
				146. String Lab	H4SD	Concept/Lecture	7	Online
				147. String Pool	H4SD	Concept/Lecture	2	Online
				148. String Pool Lab	H4SD	Concept/Lecture	5	Online
				149. StringBuilder vs StringBuffer	H4SD	Concept/Lecture	1	Online
				150.StringBuilder vs StringBuffer Lab	H4SD	Concept/Lecture	3	Online
				151 String Performance	H4SD	Concept/Lecture	5	Online
			M-Lab5	JPL.M.L201	H4SD	Assignment/Lab	60.0	Offline
			Review	Self review/Cross review	H4SD	Guides/Review	10.0	Offline
Unit 8	Generics and Collections	Day 3		153. Collection and Generic Intro	H4SD	Concept/Lecture	1.00	Online
				154. Java Collections	H4SD	Concept/Lecture	1.00	Online
				155. List	H4SD	Concept/Lecture	2.00	Online

				156. List Lab	H4SD	Concept/Lecture	6.00	Online		
				157. Generic Collection	H4SD	Concept/Lecture	1.00	Online		
				158. Generic Collection Lab	H4SD	Concept/Lecture	5.00	Online		
				159. Diamond Operator	H4SD	Concept/Lecture	1.00	Online		
				160. Diamond Operator Lab	H4SD	Concept/Lecture	2.00	Online		
				161. Set	H4SD	Concept/Lecture	1.00	Online		
				162. Set Lab	H4SD	Concept/Lecture	4.00	Online		
				163. Map	H4SD	Concept/Lecture	1.00	Online		
				164. Map Lab	H4SD	Concept/Lecture	6.00	Online		
				165. Collection Sorting	H4SD	Concept/Lecture	1.00	Online		
				166. Collection Sorting Lab	H4SD	Concept/Lecture	6.00	Online		
				167. Comparable and Comparator	H4SD	Concept/Lecture	2.00	Online		
				168. Comparable Lab	H4SD	Concept/Lecture	4.00	Online		
				169. Comparator Lab	H4SD	Concept/Lecture	6.00	Online		
				170. Duplication	H4SD	Concept/Lecture	2.00	Online		
				171. Duplication Lab	H4SD	Concept/Lecture	6.00	Online		
				172. Generic Method	H4SD	Concept/Lecture	1.00	Online		
				173. Generic Method Lab	H4SD	Concept/Lecture	6.00	Online		
				174. Generic Class	H4SD	Concept/Lecture	1.00	Online		
				175. Generic Class Lab	H4SD	Concept/Lecture	6.00	Online		
				176. Collection and Generic Summary	H4SD		1.00	Online		
			S-Lab6	JPL.S.L401 JPL.S.L402	H4SD	Assignment/Lab	60.0	Offline		
				Self review/Cross review	H4SD	Guides/Review	20.0	Offline		
							6.5			
		JPL.S.L403		H4SD		30.0	Offline			
		Day 4								
		Unit 9	Collections, Streams, and ...	Day 4	Class meeting	Class meeting	H4SD	Class Meeting	20.0	Offline
					Quiz	Quiz2	H4SD	Test/Quiz	20.0	Offline
	The Basics				H4SD	Concept/Lecture	17.00	Online		
	Ways of obtaining a Stream				H4SD	Concept/Lecture	10.00	Online		

Unit 10	Lambda Expressions and Functional Interfaces			Filtering and matching operations	H4SD	Concept/Lecture	12.00	Online
				Filter, Collect, Map	H4SD	Concept/Lecture	10.00	Online
				Map & Collect Example	H4SD	Concept/Lecture	10.00	Online
			L-Assignment2	Yêu cầu hoàn thành 1 trong các options: JPL.L.A101	H4SD	Assignment/Lab	180.0	Offline
			S-Lab7	JPL.S.L501	H4SD	Assignment/Lab	30.0	Offline
			Review	Self review/Cross review	H4SD	Guides/Review	20.0	Offline
		Day 4		Lambda Basics 1 - Introduction	H4SD	Concept/Lecture	2.00	Online
				Lambda Basics 2 - Why Lambdas	H4SD	Concept/Lecture	2.00	Online
				Functional vs Object Oriented Programming	H4SD	Concept/Lecture	2.00	Online
				Passing Behavior in OOP	H4SD	Concept/Lecture	6.00	Online
				Introducing Lambda Expressions	H4SD	Concept/Lecture	8.00	Online
				Lambda Expression Examples	H4SD	Concept/Lecture	10.00	Online
				Lambda as interface type	H4SD	Concept/Lecture	10.00	Online
				Lambdas vs Interface Implementations	H4SD	Concept/Lecture	7.00	Online
				Type Inference	H4SD	Concept/Lecture	7.00	Online
				Runnable Using Lambdas	H4SD	Concept/Lecture	7.00	Online
				Functional Interface	H4SD	Concept/Lecture	5.00	
				Lambda Exercise	H4SD	Concept/Lecture	4.00	
				Lambda Exercise Solution	H4SD	Concept/Lecture	18.00	Online
				Using Function Interfaces	H4SD	Concept/Lecture	7.00	Online
				More Functional Interfaces	H4SD	Concept/Lecture	7.00	Online
				Wrap up	H4SD	Concept/Lecture	3.00	Online
							7.73	
		Day 5	Class meeting	Class meeting	H4SD	Class Meeting	20.0	Offline

			Workshop 2	Workshop: Collection, Stream, Lamda	H4SD	Seminar/Workshd	120.0	Offline
			S-Lab8	JPL.S.L601	H4SD	Assignment/Lab	45.0	Offline
			Review	Self review/Cross review	H4SD	Guides/Review	20.0	Offline
Unit 11	Exceptions	Day 5		Section Intro	H4SD	Concept/Lecture	1.0	Online
				Exception in Java	H4SD	Concept/Lecture	1.0	Online
				Exception vs Error	H4SD	Concept/Lecture	2.0	Online
				Runtime Exception	H4SD	Concept/Lecture	2.0	Online
				Checked Exception	H4SD	Concept/Lecture	2.0	Online
				Exception Lab	H4SD	Concept/Lecture	3.0	Online
				Try catch structure	H4SD	Concept/Lecture	2.0	Online
				Try catch Lab	H4SD	Concept/Lecture	3.0	Online
				Multiple-catch	H4SD	Concept/Lecture	2.0	Online
				Multiple-catch Lab	H4SD	Concept/Lecture	3.0	Online
				Finally	H4SD	Concept/Lecture	1.0	Online
				Finally Lab	H4SD	Concept/Lecture	2.0	Online
				Throw vs Throws	H4SD	Concept/Lecture	2.0	Online
				Throw vs Throws Lab	H4SD	Concept/Lecture	3.0	Online
				Exception Customize	H4SD	Concept/Lecture	2.0	Online
				Exception Customnize Lab	H4SD	Concept/Lecture	3.0	Online
				Exception Summary	H4SD	Concept/Lecture	1.0	Online
	Assertions		Assertion	H4SD	Concept/Lecture	6.0	Online	
			Enabling & Disabling Assertions	H4SD	Concept/Lecture	4.0	Online	
			Assertion Syntax	H4SD	Concept/Lecture	3.0	Online	

			S-Lab9	JPL.S.L701	H4SD	Assignment/Lab	45.0	Offline
			Review	Self review/Cross review	H4SD	Guides/Review	20.0	Offline
Unit 12	Java Date/Time API	Day 5		Class meeting	H4SD	Class Meeting	20.0	Offline
				Section Intro	H4SD	Concept/Lecture	1.0	Online
				Date vs Time in Java 5,6,7	H4SD	Concept/Lecture	12.0	Online
				Date Lab	H4SD	Concept/Lecture	2.0	Online
				Date Format Lab	H4SD	Concept/Lecture	4.0	Online
				Date Time in Java 8	H4SD	Concept/Lecture	1.0	Online
				LocalDate, LocalTime, LocalDateTime,	H4SD	Concept/Lecture	6.0	Online
				Period Lab	H4SD	Concept/Lecture	3.0	Online
				Durations Lab	H4SD	Concept/Lecture	2.0	Online
				TimeZone in Java 8	H4SD	Concept/Lecture	3.0	Online
							6.2	
Unit 13	Java I/O Fundamentals	Day 6	Quiz	Quiz 3	H4SD	Test/Quiz	20.0	Offline
			Class meeting	Class meeting	H4SD	Class Meeting	20.0	Offline
				Section Intro	H4SD	Concept/Lecture	1.0	Online
				File and directory	H4SD	Concept/Lecture	1.0	Online
				IOException	H4SD	Concept/Lecture	1.0	Online
				File and directory lab	H4SD	Concept/Lecture	3.0	Online
				Byte Streams	H4SD	Concept/Lecture	1.0	Online
				Byte Streams lab	H4SD	Concept/Lecture	6.0	Online
				ObjectOutputStream	H4SD	Concept/Lecture	6.0	Online
				ObjectInputStream	H4SD	Concept/Lecture	6.0	Online
				Buffered Streams	H4SD	Concept/Lecture	1.0	Online
				Buffered Streams lab	H4SD	Concept/Lecture	4.0	Online

				Section Summary	H4SD	Concept/Lecture		Online
			L-Lab10	JPL.L.L101	H4SD	Assignment/Lab	180.0	Offline
			L-Assignment3	Yêu cầu hoàn thành 1 trong các options: JPL.L.A2xx	H4SD	Assignment/Lab	180.0	Offline
			Review	Self review/Cross review	H4SD	Guides/Review	10.0	Offline
							7.3	
Unit 14	Concurrency	Day 7	Class meeting	Class meeting	H4SD	Class Meeting	20.0	Offline
			Workshop 3	Workshop: Java IO, Exception, Thread	H4SD	Seminar/Workshop	120.0	Offline
				Section Intro	H4SD	Concept/Lecture		Online
				Thread Understanding	H4SD	Concept/Lecture	1.0	Online
				Concurrency Understanding	H4SD	Concept/Lecture	1.0	Online
				Thread class	H4SD	Concept/Lecture	1.0	Online
				Thread lab	H4SD	Concept/Lecture	7.0	Online
				Thread interruption	H4SD	Concept/Lecture	3.0	Online
				Thread priority	H4SD	Concept/Lecture	3.0	Online
				Runnable interface	H4SD	Concept/Lecture	1.0	Online
				Runnable lab	H4SD	Concept/Lecture	4.0	Online
				Thread vs Runnable	H4SD	Concept/Lecture	1.0	Online
				Start and run	H4SD	Concept/Lecture	1.0	Online
				Start and run lab	H4SD	Concept/Lecture	2.0	Online
				Synchronous and asynchronous	H4SD	Concept/Lecture	1.0	Online
				ExecutorService	H4SD	Concept/Lecture	1.0	Online
				ExecutorService lab	H4SD	Concept/Lecture	7.0	Online
				Synchronization	H4SD	Concept/Lecture	1.0	Online
				Synchronization method and object lab	H4SD	Concept/Lecture	7.0	Online
				Static synchronization lab	H4SD	Concept/Lecture	2.0	Online

				Concurrent Collections	H4SD	Concept/Lecture	2.0	Online
				Section Summary	H4SD	Concept/Lecture		Online
			L-Lab11	JPL.L.L201	H4SD	Assignment/Lab	90.0	Offline
			M-Assignment 4	Yêu cầu hoàn thành 1 trong các options: : JPL.M.A1xx	H4SD	Assignment/Lab	120.0	Offline
			Review	Self review/Cross review	H4SD	Guides/Review	20.0	Offline
Unit 15	Internationalization and Localization	Day 7		Locale class	H4SD	Concept/Lecture	8.0	Online
				NumberFormat class	H4SD	Concept/Lecture	10.0	Online
				DateFormat class	H4SD	Concept/Lecture	9.0	Online
							7.4	
Unit 16	Building Database Applications with JDBC	Day 8	Quiz	Quiz4	H4SD	Test/Quiz	20.0	Offline
				Building Database Applications with JDBC	H4SD	Concept/Lecture	90.0	Offline
				Java Application Debugging	H4SD	Concept/Lecture	30.0	Offline
			L-Lab12	JPL.L.L301	H4SD	Assignment/Lab	120.0	Offline
			L-Assignment5	Yêu cầu hoàn thành 1 trong các options: JPL.L.A3xx	H4SD	Assignment/Lab	180.0	Offline
			Review	Self review/Cross review	H4SD	Guides/Review	20.0	Offline
							7.7	
	Topic Revision	Day 9	Topic Revision	Topic Revision	H4SD	Guides/Review	180.0	Offline
Final Test	Final Test	Day 9	Theory	Multichoice	H4SD	Exam	60.0	Offline

			Practice	Practical	H4SD	Exam	180.0	Offline	
							Concept/Lecture	836.7	13.9
							Assignment/Lab	1590.0	26.5
							Guides/Review	380.0	6.3
							Test/Quiz	80.0	1.3
							Seminar/Worksh	360.0	6.0
							Class Meeting	200.0	3.3
							Exam	240.0	4.0
							Total	3686.7	61.4

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Training Materials / Logistics & General Notes (Required, For Reference, etc.)
Trainer giới thiệu về khóa học, hướng dẫn học
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=2&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=3&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=4&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=5&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=6&t=0s
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gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=14&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=15&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=16&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=17&t=0s
- Dạng Lab Guides: là dạng bài tập có hướng dẫn Step by step giúp học viên hiểu hơn về những khái niệm cơ bản trong mỗi unit, mỗi lab guides tương ứng với 1-2 units.
- Mỗi lab có 3 types: S - Short (thời gian hoàn thành <=60 phút, M -
Học viên tự review sản phẩm của mình + trainer review/team cross review
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=18&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=19&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=20&t=0s

gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=21&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=22&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=23&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=24&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=26&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=27&t=0s
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gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=29&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=30&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=31&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=32&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=33&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=34&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=35&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=36&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=37&t=0s
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gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=39&t=0s
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gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=41&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=42&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=43&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=44&t=0s
gPfnsMEiqlj5To30Z7XVDJ0QRxVDNbV&index=45&t=0s
https://www.youtube.com/watch?v=xdNWuotcQrQ
https://www.youtube.com/watch?v=Xbj81TwsbLQ
https://www.youtube.com/watch?v=MCMcmL3Lm54&list=PLLAZ4kZ9dFpP
https://www.youtube.com/watch?v=n4axao9LWWE&list=PLS1QuIWo1RIbf

Udacity

ProgrammingKnowledge

https://www.youtube.com/watch?v=G9octOBgSf4&list=PLS1QuIW01RIbfT	ProgrammingKnowledge
https://www.youtube.com/watch?v=xS3aT_AKpFk	
https://www.youtube.com/watch?v=Ek5haAFLy2E	
https://www.youtube.com/watch?v=aN8znC-ME-	ProgrammingKnowledge
- Dạng Lab Guides: là dạng bài tập có hướng dẫn Step by step giúp học viên hiểu hơn về những khái niệm cơ bản trong mỗi unit, mỗi lab guides tương ứng với 1-2 units.	
- Mỗi lab có 3 types: S - Short (thời gian hoàn thành <=60 phút, M -	
Học viên tự review sản phẩm của mình sử dụng checklist được cung cấp trước hoặc trainer review/team cross review	
https://www.geeksforgeeks.org/object-class-in-java/	
https://www.youtube.com/watch?v=UqWrceT-	
https://www.youtube.com/watch?v=o7wsKnINqOM&list=PLsfLgp1K1xQ51	
https://www.youtube.com/watch?v=k02nM5ukV7w	
https://techmaster.vn/posts/34302/shallow-copy-vs-deep-copy	
https://www.youtube.com/watch?v=XM-XeWXQ5x8	
https://www.youtube.com/watch?v=O-EiKpBezts	
https://www.youtube.com/watch?v=-Tydzii7s4	
10-20 Questions (15-30 minutes)	
Class meeting: trainer/mentor có thể support	
https://www.youtube.com/watch?v=0WkqMqY33qs&list=PL-	
https://www.youtube.com/watch?v=skoJCp8t_f4&list=PL-	
https://www.youtube.com/watch?v=z4I9ozcaeul&list=PL-	
https://www.youtube.com/watch?v=-i8tnwlkz3s&list=PL-	
https://www.youtube.com/watch?v=6oSFuD9za80&list=PL-	
https://www.youtube.com/watch?v=bkaqc9U5UWk&list=PL-	
https://www.youtube.com/watch?v=k1k8UmurEPQ&list=PL-	
https://www.youtube.com/watch?v=6KgLdn9S8eE&list=PL-	

https://www.youtube.com/watch?v=TLjCeIRvgAs&list=PL-
https://www.youtube.com/watch?v=e8ms_trvros&list=PL-
https://www.youtube.com/watch?v=IU622cNEu4Y&list=PL-
https://www.youtube.com/watch?v=vhHE1Jk46BY&list=PL-
https://www.youtube.com/watch?v=ha5N3lqj3Y4&list=PL-
https://www.youtube.com/watch?v=im3R7E4FEeY&list=PL-
https://www.youtube.com/watch?v=2KKR26PIAm8&list=PL-
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- Mỗi lab có 3 types: S - Short (thời gian hoàn thành <=60 phút, M - Medium (thời gian hoàn thành 60-<=180 phút), L - Long (thời gian hoàn
- Dạng bài tập học viên tự giải
- Mỗi assignment có 3 types: S - Short (thời gian hoàn thành <=60 phút, M - Medium (thời gian hoàn thành 60-<=180 phút), L - Long (thời gian hoàn thành >=180 phút)
Học viên tự review sản phẩm của mình sử dụng checklist được cung cấp trước hoặc trainer review/team cross review
https://www.youtube.com/watch?v=roTqPluF7xY&list=PL-
https://www.youtube.com/watch?v=Aj32l2Lq53k&list=PL-
https://www.youtube.com/watch?v=dzpD-KbcA54&list=PL-
https://www.youtube.com/watch?v=wMQoL13CXPM&list=PL-
https://www.youtube.com/watch?v=BI5BUkJXkFY&list=PL-
https://www.youtube.com/watch?v=OE1rCNRL6z4&list=PL-
https://www.youtube.com/watch?v=Dgy5r4_iCds&list=PL-
https://www.youtube.com/watch?v=0xiLcRNfIAM&list=PL-
https://www.youtube.com/watch?v=3fJh1gFHFcy&list=PL-
https://www.youtube.com/watch?v=bumibn88ybQ&list=PL-
https://www.youtube.com/watch?v=a2bLPhH1I54&list=PL-
https://www.youtube.com/watch?v=gfawUQynwTA&list=PL-
https://www.youtube.com/watch?v=VoNC-cvzbvg&list=PL-

https://www.youtube.com/watch?v=b6tuk_OSnrQ&list=PL-
https://www.youtube.com/watch?v=5QBKirczNNc&list=PL-
https://www.youtube.com/watch?v=O6rbQpAmVBk&list=PL-
https://www.youtube.com/watch?v=vD6oJ4Ky6_E&list=PL-
https://www.youtube.com/watch?v=Z9CcBlzoJlM&list=PL-
https://www.youtube.com/watch?v=IWtUAPECQFI&list=PL-
- Dạng Lab Guides: là dạng bài tập có hướng dẫn Step by step giúp học viên hiểu hơn về những khái niệm cơ bản trong mỗi unit, mỗi lab guides tương ứng với 1-2 units.
- Mỗi lab có 3 types: S - Short (thời gian hoàn thành <=60 phút, M - Medium (thời gian hoàn thành 60-<=180 phút), L - Long (thời gian hoàn thành >180 phút)
Học viên tự review sản phẩm của mình sử dụng checklist được cung cấp trước hoặc trainer review/team cross review
Class meeting: trainer/mentor có thể support
Trainer/mentor workshop
gPfnsMEiqnllh5vYtUjdjkW8dBUZtpD&index=44
gPfnsMEiqnllh5vYtUjdjkW8dBUZtpD&index=45
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gPfnsMEiqnllh5vYtUjdjkW8dBUZtpD&index=47
gPfnsMEiqnllh5vYtUjdjkW8dBUZtpD&index=48
gPfnsMEiqnllh5vYtUjdjkW8dBUZtpD&index=49
gPfnsMEiqnllh5vYtUjdjkW8dBUZtpD&index=50
gPfnsMEiqnllh5vYtUjdjkW8dBUZtpD&index=51
- Dạng Lab Guides: là dạng bài tập có hướng dẫn Step by step giúp học viên hiểu hơn về những khái niệm cơ bản trong mỗi unit, mỗi lab guides tương ứng với 1-2 units.
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Học viên tự review sản phẩm của mình sử dụng checklist được cung cấp trước hoặc trainer review/team cross review
gPfnsMEiqnllh5vYtUjdjkW8dBUZtpD&index=53
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gPfnsMEiqnllh5vYtUjdjkW8dBUZtpD&index=55

gPfnsMEiqnllh5vYtUjdjKW8dBUZtpD&index=56
gPfnsMEiqnllh5vYtUjdjKW8dBUZtpD&index=57
gPfnsMEiqnllh5vYtUjdjKW8dBUZtpD&index=58
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gPfnsMEiqnllh5vYtUjdjKW8dBUZtpD&index=69
gPfnsMEiqnllh5vYtUjdjKW8dBUZtpD&index=70
gPfnsMEiqnllh5vYtUjdjKW8dBUZtpD&index=71
gPfnsMEiqnllh5vYtUjdjKW8dBUZtpD&index=72
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gPfnsMEiqnllh5vYtUjdjKW8dBUZtpD&index=75
gPfnsMEiqnllh5vYtUjdjKW8dBUZtpD&index=76
<p>- Dạng Lab Guides: là dạng bài tập có hướng dẫn Step by step giúp học viên hiểu hơn về những khái niệm cơ bản trong mỗi unit, mỗi lab guides tương ứng với 1-2 units.</p> <p>- Mỗi lab có 3 types: S - Short (thời gian hoàn thành <=60 phút, M - Medium (thời gian hoàn thành 60-<=180 phút), L - Long (thời gian hoàn thành >=180 phút)</p>
Class meeting: trainer/mentor có thể support
10-20 Questions (15-30 minutes)
https://www.youtube.com/watch?v=bcrI-GL0vV4
jdHUNmRNeaQWHwLf4c

https://www.youtube.com/watch?v=9x4tYCHMUec
https://www.youtube.com/watch?v=OQ84_OUSPoE
https://www.youtube.com/watch?v=bTTNVP_ORr8
- Dạng bài tập học viên tự giải
- Mỗi assignment có 3 types: S - Short (thời gian hoàn thành <=60 phút, M - Medium (thời gian hoàn thành 60-<=180 phút), L - Long (thời gian hoàn thành >=180 phút)
- Dạng Lab Guides: là dạng bài tập có hướng dẫn Step by step giúp học viên hiểu hơn về những khái niệm cơ bản trong mỗi unit, mỗi lab guides tương ứng với 1-2 units.
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Học viên tự review sản phẩm của mình sử dụng checklist được cung cấp trước hoặc trainer review/team cross review
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=2
https://www.youtube.com/watch?v=J5RICKnbuKI&list=PLqq-
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=5
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=6
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=7
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=8
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=9
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=10
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=11
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=12
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=13
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=14
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=15
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=16
6Pq4ITTa9YGfyhyW2CqdtW9RtY-I3&index=25
Class meeting: trainer/mentor có thể support

Trainer/mentor workshop
- Dạng Lab Guides: là dạng bài tập có hướng dẫn Step by step giúp học viên hiểu hơn về những khái niệm cơ bản trong mỗi unit, mỗi lab guides tương ứng với 1-2 units.
- Mỗi lab có 3 types: S - Short (thời gian hoàn thành <=60 phút, M - Medium (thời gian hoàn thành 60-<=180 phút), L - Long (thời gian hoàn thành >180 phút)
Học viên tự review sản phẩm của mình sử dụng checklist được cung cấp trước hoặc trainer review/team cross review
https://www.youtube.com/watch?v=lcUGur5IBS8&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=j3yvB9te0hs&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=BnsDyDhmGBc&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=xa0Q9vv6M6Y&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=S-MLZpZbog8&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=qdSE2yWuplQ&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=WeHq6kRFSDg&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=0Kwin3QbmRw&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=aw9fidFshKE&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=xip1XYCXwqY&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=5bShdXu5KGE&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=BZJTAuGm1Sg&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=Gamu7ig6Z_w&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=X_715NUiJhw&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=MojGogYRBal&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
https://www.youtube.com/watch?v=F6y_3gfKXb4&list=PL-gPfnSMEiqnllh5vYtUjdjKW8dBUZtpD&index=79
KsFYc_0ekC_3EEAlkiRuElaymmJ&index=29
https://www.youtube.com/watch?v=l2i_XrW2H7A&list=PLOUYE-4vEM_6LQ_05F4U8_5L_161_162_163
https://www.youtube.com/watch?v=RQ0bZRPYDFE&list=PLOUYE-4vEM_6LQ_05F4U8_5L_161_162_163

- Dạng Lab Guides: là dạng bài tập có hướng dẫn Step by step giúp học viên hiểu hơn về những khái niệm cơ bản trong mỗi unit, mỗi lab guides tương ứng với 1-2 units.
- Mỗi lab có 3 types: S - Short (thời gian hoàn thành <=60 phút, M - Medium (thời gian hoàn thành 60 <=180 phút), L - Long (thời gian hoàn thành >180 phút)
Học viên tự review sản phẩm của mình sử dụng checklist được cung cấp trước hoặc trainer review/team cross review
Class meeting: trainer/mentor có thể support
https://www.youtube.com/watch?v=8Lq7Hv6tTSM&list=PLWPirh4EWFpFI
https://www.youtube.com/watch?v=iyd6woN_DMk&list=PLWPirh4EWFpFI
https://www.youtube.com/watch?v=q7uswuYT5T8&list=PL-
https://www.youtube.com/watch?v=CBgwFG6P_F4&list=PL-
https://www.youtube.com/watch?v=pKZSjZRNS1g&list=PL-
https://www.youtube.com/watch?v=3mKxyfeq398&list=PL-
https://www.youtube.com/watch?v=EoVzbAZI0G0&list=PL-
https://www.youtube.com/watch?v=x17rK5JKk5c&list=PL-
https://www.youtube.com/watch?v=9LrcsRKeGs8&list=PL-
10-20 Questions (15-30 minutes)
Class meeting: trainer/mentor có thể support
https://www.youtube.com/watch?v=g3OMzZhd9Kk&list=PL-
https://www.youtube.com/watch?v=wBXG4UqkZv4&list=PL-
https://www.youtube.com/watch?v=dOY_5plxME&list=PL-
https://www.youtube.com/watch?v=gSI1JNNHRNk&list=PL-
https://www.youtube.com/watch?v=nuOAtrVISew&list=PL-
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https://www.youtube.com/watch?v=vY0crA3rrEw&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=7
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Học viên tự review sản phẩm của mình sử dụng checklist được cung cấp trước hoặc trainer review/team cross review
Class meeting: trainer/mentor có thể support
Trainer/mentor workshop
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https://www.youtube.com/watch?v=buDy73XXwEo&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=19
https://www.youtube.com/watch?v=FuwXEbqBsA0&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=20
https://www.youtube.com/watch?v=fL1M3SR0YQM&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=21
https://www.youtube.com/watch?v=FUPelhK0oVk&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=22
https://www.youtube.com/watch?v=FUPelhK0oVk&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=23
https://www.youtube.com/watch?v=yQzqhNeE3ZY&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=24
https://www.youtube.com/watch?v=5l15dFISpxg&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=25
https://www.youtube.com/watch?v=wYdRwxaunjE&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=26
https://www.youtube.com/watch?v=aZuV0mTLm1Q&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=27
https://www.youtube.com/watch?v=bDULmaGGDto&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=28
https://www.youtube.com/watch?v=8jt4bavMrJ4&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=29
https://www.youtube.com/watch?v=VKtVj5434Tw&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=30
https://www.youtube.com/watch?v=Maulb4dIDKk&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=31
gPfnMEiqnA9FArhIW6dyvrz04DE7lo&index=33
https://www.youtube.com/watch?v=zOIPfxeAvf8&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=33
https://www.youtube.com/watch?v=xX_RTP8JxVk&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=34
https://www.youtube.com/watch?v=j4OfjPxx4mU&list=PL-PfnsMEiqnA9FArhIW6dyvrz04DE7lo&index=35

https://www.youtube.com/watch?v=mmaQZmPtrbs&list=PL-
https://www.youtube.com/watch?v=uCux-ijQwdA&list=PL-
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- Mỗi lab có 3 types: S - Short (thời gian hoàn thành <=60 phút, M -
- Dạng bài tập học viên tự giải
- Mỗi assignment có 3 types: S - Short (thời gian hoàn thành <=60 phút, M - Medium (thời gian hoàn thành 60-<=180 phút), L - Long (thời gian hoàn thành >=180 phút)
Học viên tự review sản phẩm của mình sử dụng checklist được cung cấp trước hoặc trainer review/team cross review
https://www.youtube.com/watch?v=hA8EgTr3lN0&list=PLxWzQv_1I_ACfG
https://www.youtube.com/watch?v=t43QXNTA_kU&list=PLxWzQv_1I_ACf
https://www.youtube.com/watch?v=cunFEb1HM0U&list=PLxWzQv_1I_ACf
10-20 Questions (15-30 minutes)
Unit16_Building Database Applications with JDBC
Unit17_Java Application Debugging
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Học viên tự review sản phẩm của mình sử dụng checklist được cung cấp trước hoặc trainer review/team cross review
Học viên ôn tập trước khi test, Trainer chữa bài
40 QUESTIONS

Chọn 1 trong các Options (JPL.Practice.T01, JPL.Practice.T02, ..)

23%
43%
10%
2%
10%
5%
7%
100%

AUTHORSHIP

Role	Name	Account	Unit
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Reviewer	Nguyễn Thị Diệu	DieuNT1	FA
Approver	Nguyễn Văn Vinh	VinhNV	FA

RECORD OF CHANGES

*A - Added M - Modified D - Deleted

Date	Changes	A* M, D	Contents
1-Jun-2019	Create a new syllabus: JPL Syllabus, JPL Schedule	A	Create
15-Apr-2019	Update Course Objectives Assessment Scheme: 15 % Daily Quiz, 15% Assignment, 70% FinalTest	M	Update
20-May-2019	Remove Assignment 3 Update assignment 5 to assignment 3	M	Update
25-Jun-2019	Update	M	Release for review
30-Jun-2019	Update	M	Update review comments
10-Jul-2019	Update	M	Release for approve
18-Jul-2019	Approve	M	Approve

Notes

Version
3.1
3.2
3.3
3.7
3.8
3.9
4.0