

COMPETENCIES	STT	SUB-COMPETENCIES
[WEB-GROUP-A] ANGULAR	1	CSS3 Attributes and Properties
	2	Using Components and Data Binding
	3	Using Directives
	4	Using Forms
	5	Coding with TypeScript
[WEB-GROUP-A] REACT	6	HTML5 Syntax and Semantics
	7	HTML5 Document Types and Structure
	8	Coding with TypeScript
	9	Using JavaScript
	10	Arrays
	11	Document Objects
	12	Handling Events
	13	Handling Functions
	14	JavaScript Flow Control
	15	Operators and Expressions
	16	Variables and Syntax
	17	React.js: Components
	18	React.js: Lifecycle Methods
	19	React.js: Props
	20	React.js: State
[WEB-GROUP-B] ANGULAR	21	CSS3 Styling
	22	HTML5 APIs
	23	HTML5 Local Storage
	24	HTML5 DOM
	25	Asynchronous Programming
	26	Defining Custom Objects
	27	Classes
	28	Keyed Collections
	29	Arrow Functions
	30	Using Templates, Expressions and Pipes
	31	Project Structure, Setup, Debugging and Building for Release
	32	Routing and Authentication
	33	Angular 5 and 6 Version-Specific Knowledge

COMPETENCIES	STT	SUB-COMPETENCIES
	35	Asynchronous Programming
	36	Defining Custom Objects
[WEB-GROUP-B] REACT	37	Sub-Topic 8
	41	React.js: Events, Refs and Router
	42	React.js: Configuration and Setup
	43	React.js: JSX
	44	Redux and React.js
ANDROID GROUP A V2.0	45	Android Architecture
	46	Android UI Framework
	47	Android Local App Data Storage Management
	48	Android Networking
	49	Android Activity Life Cycle
	50	Android UI App Navigatio
	51	Android In-App Communication
	52	Android-Contextual Kotlin
ANDROID GROUP B V2.0	53	Android Application Structural Format
	54	Android Multimedia Components
	55	Android Security and Permissions
	56	Android UI Agnostic Device Programming
	57	Android Version Compatibility
	58	Android Performance Optimization
	59	Android User Notifications
	60	Android Resource Optimization
GOLANG GROUP A V1.3	61	Language Types
	62	Composite Literals
	63	Go Language Fundamentals
	64	Flow Control
	65	Functions and Methods
	66	Exceptions and Error Handling
	67	Packages and Composition
	68	Understanding Web APIs
	69	Web API and Microservice Data Formats

COMPETENCIES	STT	SUB-COMPETENCIES
	70	Developing RESTful Applications
	71	MySQL Query Development
	72	Using SQL in Databases
GOLANG GROUP B V1.3	73	Concurrency and Channels
	74	System and I/O
	75	Standard Library
	76	Web and Networking
	77	Build, Ship and Share
	78	Documenting and Testing
	79	Conventions and Common Mistakes
	80	Securing Web APIs
	81	Testing Web APIs
	82	Docker
	83	ACID and BASE
IOS GROUP A (V2.0)	84	Cocoa Touch Foundations
	85	View Controllers and Gesture Handling
	86	Using Interface Builder
	87	UIView Subclasses
	88	Data Access and Persistence
	89	Swift Fundamentals
	90	Syntax and Operators
	91	Literals and Data Types
	92	Standard Object Types
	93	Functions and Methods
	94	Classes and Structures
	95	Control Flow and Iteration
	96	Object-Oriented Programming
IOS GROUP B (V2.0)	97	Local and Remote Notifications
	98	Core Location and Core Motion
	99	Debugging and Performance Optimization
	100	Standard Library
	101	Object-Oriented Programming

COMPETENCIES	STT	SUB-COMPETENCIES
	102	Foundation Library
	103	Error Handling
	104	Concurrent Programming
	105	Memory Management
JAVA GROUP A (V2.2)	106	Declarations
	107	Java Program Construction
	108	Object Orientation in Java
	109	Flow Control
	110	Access Modifiers
	111	Strings, Formatting and Parsing
	112	Exception Handling
	113	Git
	114	Classes and Objects
	115	Class Structures
	116	Developing RESTful Applications
	117	MySQL Query Development
	118	REST Web Services
JAVA GROUP B (V2.0)	119	Java I/O
	120	Compilation and Deployment
	121	Assignment
	122	Interfaces
	123	Internationalization
	124	Java Streams
	125	Spring MVC Framework
	126	Hibernate: Annotation-Based Configuration
	127	Docker
	128	Encapsulation
	129	Associations
	130	ACID and BASE
	131	Database Model Concepts

COMPETENCIES	STT	SUB-COMPETENCIES	Tê
[WEB-GROUP-A] ANGULAR	1	CSS3 Attributes and Properties	Build Responsive Real Wo
	2	Using Components and Data Binding	Lightning Web Component
	3	Using Directives	Java Web Services
	4	Using Forms	The Complete Web Develop
	5	Coding with TypeScript	Understanding TypeScript
[WEB-GROUP-A] REACT	6	HTML5 Syntax and Semantics	Modern HTML & CSS Fron
	7	HTML5 Document Types and Structure	Build Responsive Real Wo
	8	Coding with TypeScript	HTML5 Specialist: Compre
	9	Using JavaScript	Accelerated ES6 JavaScript
	10	Arrays	Ultimate Web Designer & D
	11	Document Objects	The Complete Web Develop
	12	Handling Events	Node with React: Fullstack
	13	Handling Functions	The Complete Web Develop
	14	JavaScript Flow Control	Advanced Javascript
	15	Operators and Expressions	Java Web Services
	16	Variables and Syntax	The Complete Web Develop
	17	React.js: Components	React JS, Angular & Vue J
	18	React.js: Lifecycle Methods	Modern React with Redux p
	19	React.js: Props	React - The Complete Guid
	20	React.js: State	React JS - Mastering Redu
[WEB-GROUP-B] ANGULAR	21	CSS3 Styling	Build Responsive Real Wo
	22	HTML5 APIs	20 Web Projects With Vani
	23	HTML5 Local Storage	Complete Web Application
	24	HTML5 DOM	HTML5 Essentials for Begi
	25	Asynchronous Programming	The Result-Oriented Web D
	26	Defining Custom Objects	The Complete ASP.NET M
	27	Classes	Dynamic JavaScript Master
	28	Keyed Collections	The Complete Web Develop
	29	Arrow Functions	The Complete JavaScript C
	30	Using Templates, Expressions and Pipes	The Complete Web Develop
	31	Project Structure, Setup, Debugging and Building for Release	Build Responsive Real Wo
	32	Routing and Authentication	Ionic 5 - Build iOS, Androi
	33	Angular 5 and 6 Version-Specific Knowledge	Angular - The Complete Gu

COMPETENCIES	STT	SUB-COMPETENCIES	
	35	Asynchronous Programming	The Complete 2020 Web D
	36	Defining Custom Objects	The Complete 2020 Web D
[WEB-GROUP-B] REACT	37	Sub-Topic 8	The Complete Web Develop
	41	React.js: Events, Refs and Router	React - The Complete Guid
	42	React.js: Configuration and Setup	Modern React with Redux
	43	React.js: JSX	React - The Complete Guid
	44	Redux and React.js	React JS - Mastering Redu
ANDROID GROUP A V2.0	45	Android Architecture	Android Architecture Maste
	46	Android UI Framework	The Complete Android & J
	47	Android Local App Data Storage Management	The Complete Android Ore
	48	Android Networking	How to make a Social Netw
	49	Android Activity Life Cycle	The Comprehensive 2020 A
	50	Android UI App Navigatio	Android Java Masterclass -
	51	Android In-App Communication	The Complete Android Ore
	52	Android-Contextual Kotlin	Android App Development
ANDROID GROUP B V2.0	53	Android Application Structural Format	Ionic 5 - Build iOS, Androi
	54	Android Multimedia Components	The Complete Android N D
	55	Android Security and Permissions	Mobile Penetration Testing
	56	Android UI Agnostic Device Programming	The Complete Android & J
	57	Android Version Compatibility	Android O & Java - The Co
	58	Android Performance Optimization	Android Java Masterclass -
	59	Android User Notifications	Android Jetpack masterclas
	60	Android Resource Optimization	The Complete Android N D
GOLANG GROUP A V1.3	61	Language Types	Go: The Complete Develop
	62	Composite Literals	Learn How To Code: Goog
	63	Go Language Fundamentals	Go: The Complete Develop
	64	Flow Control	Go (Golang): The Complet
	65	Functions and Methods	Master Go (Golang) Progra
	66	Exceptions and Error Handling	gRPC [Golang] Master Cla
	67	Packages and Composition	Mastering Hyperledger Cha
	68	Understanding Web APIs	Go: The Complete Develop
	69	Web API and Microservice Data Formats	Golang: Intro to REST API

COMPETENCIES	STT	SUB-COMPETENCIES	
	70	Developing RESTful Applications	Mastering Hyperledger Cha
GOLANG GROUP B V1.3	71	MySQL Query Development	The Ultimate MySQL Bootc Expert
	72	Using SQL in Databases	SQL for Beginners: Learn S Design
	73	Concurrency and Channels	Go (Golang): The Comple
	74	System and I/O	Web Development w/ Goog Language
	75	Standard Library	Go: The Complete Develop
	76	Web and Networking	Web Development w/ Goog Language
	77	Build, Ship and Share	gRPC [Golang] Master Cla Microservices
	78	Documenting and Testing	Go: The Complete Develop
	79	Conventions and Common Mistakes	Master Go (Golang) Progra Bootcamp 2020
	80	Securing Web APIs	API and Web Service Intro
	81	Testing Web APIs	WebServices/Rest API Tes Projects
IOS GROUP A (V2.0)	82	Docker	Go: The Complete Develop
	83	ACID and BASE	Go: The Complete Develop
	84	Cocoa Touch Foundations	Reactive Programming in i
	85	View Controllers and Gesture Handling	iOS 13 - How to Make Ama Swift 5
	86	Using Interface Builder	iOS 13 - How to Make Ama Swift 5
	87	UIView Subclasses	iOS 13 - How to Make Ama Swift 5
	88	Data Access and Persistence	Core Data and Realm - Ma
	89	Swift Fundamentals	iOS & Swift: Become An Ap
	90	Syntax and Operators	The Complete Xamarin Dev
	91	Literals and Data Types	Core Data and Realm - Ma
	92	Standard Object Types	The Complete ARKit Cours Apps
	93	Functions and Methods	The Complete 2020 Flutter
	94	Classes and Structures	iOS & Swift: Become An Ap
	95	Control Flow and Iteration	React Native - The Practica
IOS GROUP B (V2.0)	96	Object-Oriented Programming	The Complete MacOS Dev Desktop!
	97	Local and Remote Notifications	Flutter & Dart - The Comple
	98	Core Location and Core Motion	The Complete iOS 12 & Sw Apps
	99	Debugging and Performance Optimization	React Native - The Practica
	100	Standard Library	The Complete iOS 12 & Sw Apps
	101	Object-Oriented Programming	iOS 13 - How to Make Ama Swift 5

COMPETENCIES	STT	SUB-COMPETENCIES	
	102	Foundation Library	The Complete iOS 12 & Swift Apps
	103	Error Handling	iOS 13 - How to Make Amazing Swift 5
	104	Concurrent Programming	Reactive Programming in iOS
	105	Memory Management	Java Memory Management
JAVA GROUP A (V2.2)	106	Declarations	Java Programming Masterclass
	107	Java Program Construction	Java Swing (GUI) Programming
	108	Object Orientation in Java	Absolute Introduction to Object Oriented Java
	109	Flow Control	The Complete Java Certification
	110	Access Modifiers	Java Masterclass - Beginner to Advanced
	111	Strings, Formatting and Parsing	Spring & Hibernate for Beginners
	112	Exception Handling	Automation Architect - Selenium
	113	Git	Git Going Fast: One Hour Crash Course
	114	Classes and Objects	Java Certification SE 1Z0-888
	115	Class Structures	Practical Data Structures & Algorithms
	116	Developing RESTful Applications	Master Java Web Services
	117	MySQL Query Development	Java Database Connection
	118	REST Web Services	Java Web Services
JAVA GROUP B (V2.0)	119	Java I/O	Java Masterclass - Beginner to Advanced
	120	Compilation and Deployment	Learn AWS - Deploy Java Applications
	121	Assignment	Java for complete beginners
	122	Interfaces	Java Programming for Complete Beginners
	123	Internationalization	Spring Framework 5: Beginner to Advanced
	124	Java Streams	Java Streams API Development
	125	Spring MVC Framework	Spring Framework 5: Beginner to Advanced
	126	Hibernate: Annotation-Based Configuration	Spring & Hibernate for Beginners
	127	Docker	Docker for Java Developers
	128	Encapsulation	Java Programming Masterclass
	129	Associations	Java In-Depth: Become a Certified Java Developer
	130	ACID and BASE	Java Programming Masterclass
	131	Database Model Concepts	The Complete Database Developer's Guide

COMPETENCIES	STT	SUB-COMPETENCIES	Link Udemy
[WEB-GROUP-A] ANGULAR	1	CSS3 Attributes and Properties	Link
	2	Using Components and Data Binding	Link
	3	Using Directives	Link
	4	Using Forms	Link
	5	Coding with TypeScript	Link
[WEB-GROUP-A] REACT	6	HTML5 Syntax and Semantics	Link
	7	HTML5 Document Types and Structure	Link
	8	Coding with TypeScript	Link
	9	Using JavaScript	Link
	10	Arrays	Link
	11	Document Objects	Link
	12	Handling Events	Link
	13	Handling Functions	Link
	14	JavaScript Flow Control	Link
	15	Operators and Expressions	Link
	16	Variables and Syntax	Link
	17	React.js: Components	Link
	18	React.js: Lifecycle Methods	Link
	19	React.js: Props	Link
	20	React.js: State	Link
[WEB-GROUP-B] ANGULAR	21	CSS3 Styling	Link
	22	HTML5 APIs	Link
	23	HTML5 Local Storage	Link
	24	HTML5 DOM	Link
	25	Asynchronous Programming	Link
	26	Defining Custom Objects	Link
	27	Classes	Link
	28	Keyed Collections	Link
	29	Arrow Functions	Link
	30	Using Templates, Expressions and Pipes	Link
	31	Project Structure, Setup, Debugging and Building for Release	Link
	32	Routing and Authentication	Link
	33	Angular 5 and 6 Version-Specific Knowledge	Link

COMPETENCIES	STT	SUB-COMPETENCIES	
	35	Asynchronous Programming	Link
	36	Defining Custom Objects	Link
[WEB-GROUP-B] REACT	37	Sub-Topic 8	Link
	41	React.js: Events, Refs and Router	Link
	42	React.js: Configuration and Setup	Link
	43	React.js: JSX	Link
	44	Redux and React.js	Link
ANDROID GROUP A V2.0	45	Android Architecture	Link
	46	Android UI Framework	Link
	47	Android Local App Data Storage Management	Link
	48	Android Networking	Link
	49	Android Activity Life Cycle	Link
	50	Android UI App Navigatio	Link
	51	Android In-App Communication	Link
	52	Android-Contextual Kotlin	Link
ANDROID GROUP B V2.0	53	Android Application Structural Format	Link
	54	Android Multimedia Components	Link
	55	Android Security and Permissions	Link
	56	Android UI Agnostic Device Programming	Link
	57	Android Version Compatibility	Link
	58	Android Performance Optimization	Link
	59	Android User Notifications	Link
	60	Android Resource Optimization	Link
GOLANG GROUP A V1.3	61	Language Types	Link
	62	Composite Literals	Link
	63	Go Language Fundamentals	Link
	64	Flow Control	Link
	65	Functions and Methods	Link
	66	Exceptions and Error Handling	Link
	67	Packages and Composition	Link
	68	Understanding Web APIs	Link
	69	Web API and Microservice Data Formats	Link

COMPETENCIES	STT	SUB-COMPETENCIES	
	70	Developing RESTful Applications	Link
	71	MySQL Query Development	Link
	72	Using SQL in Databases	Link
GOLANG GROUP B V1.3	73	Concurrency and Channels	Link
	74	System and I/O	Link
	75	Standard Library	Link
	76	Web and Networking	Link
	77	Build, Ship and Share	Link
	78	Documenting and Testing	Link
	79	Conventions and Common Mistakes	Link
	80	Securing Web APIs	Link
	81	Testing Web APIs	Link
	82	Docker	Link
	83	ACID and BASE	Link
IOS GROUP A (V2.0)	84	Cocoa Touch Foundations	Link
	85	View Controllers and Gesture Handling	Link
	86	Using Interface Builder	Link
	87	UIView Subclasses	Link
	88	Data Access and Persistence	Link
	89	Swift Fundamentals	Link
	90	Syntax and Operators	Link
	91	Literals and Data Types	Link
	92	Standard Object Types	Link
	93	Functions and Methods	Link
	94	Classes and Structures	Link
	95	Control Flow and Iteration	Link
	96	Object-Oriented Programming	Link
IOS GROUP B (V2.0)	97	Local and Remote Notifications	Link
	98	Core Location and Core Motion	Link
	99	Debugging and Performance Optimization	Link
	100	Standard Library	Link
	101	Object-Oriented Programming	Link

COMPETENCIES	STT	SUB-COMPETENCIES	
	102	Foundation Library	Link
	103	Error Handling	Link
	104	Concurrent Programming	Link
	105	Memory Management	Link
JAVA GROUP A (V2.2)	106	Declarations	Link
	107	Java Program Construction	Link
	108	Object Orientation in Java	Link
	109	Flow Control	Link
	110	Access Modifiers	Link
	111	Strings, Formatting and Parsing	Link
	112	Exception Handling	Link
	113	Git	Link
	114	Classes and Objects	Link
	115	Class Structures	Link
	116	Developing RESTful Applications	Link
	117	MySQL Query Development	Link
	118	REST Web Services	Link
JAVA GROUP B (V2.0)	119	Java I/O	Link
	120	Compilation and Deployment	Link
	121	Assignment	Link
	122	Interfaces	Link
	123	Internationalization	Link
	124	Java Streams	Link
	125	Spring MVC Framework	Link
	126	Hibernate: Annotation-Based Configuration	Link
	127	Docker	Link
	128	Encapsulation	Link
	129	Associations	Link
	130	ACID and BASE	Link
	131	Database Model Concepts	Link

COMPETENCIES	STT	SUB-COMPETENCIES	
[WEB-GROUP-A] ANGULAR	1	CSS3 Attributes and Properties	Introduction to CSS3
	2	Using Components and Data Binding	
	3	Using Directives	
	4	Using Forms	
	5	Coding with TypeScript	
[WEB-GROUP-A] REACT	6	HTML5 Syntax and Semantics	Introduction to HTML5
	7	HTML5 Document Types and Structure	HTML, CSS, and Javascript
	8	Coding with TypeScript	HTML, CSS, and Javascript
	9	Using JavaScript	HTML, CSS, and Javascript
	10	Arrays	
	11	Document Objects	
	12	Handling Events	
	13	Handling Functions	
	14	JavaScript Flow Control	Interactivity with JavaScript
	15	Operators and Expressions	Full-Stack Web Development
	16	Variables and Syntax	Full-Stack Web Development
	17	React.js: Components	Front-End Web Development
	18	React.js: Lifecycle Methods	Front-End Web Development
	19	React.js: Props	Front-End Web Development
	20	React.js: State	Front-End Web Development
[WEB-GROUP-B] ANGULAR	21	CSS3 Styling	Introduction to CSS3
	22	HTML5 APIs	
	23	HTML5 Local Storage	
	24	HTML5 DOM	
	25	Asynchronous Programming	Front-End JavaScript Fram
	26	Defining Custom Objects	
	27	Classes	Full-Stack Web Development
	28	Keyed Collections	
	29	Arrow Functions	
	30	Using Templates, Expressions and Pipes	Full-Stack Web Development
	31	Project Structure, Setup, Debugging and Building for Release	Front-End JavaScript Fram
	32	Routing and Authentication	Full-Stack Web Development
	33	Angular 5 and 6 Version-Specific Knowledge	

COMPETENCIES	STT	SUB-COMPETENCIES	
	35	Asynchronous Programming	Single Page Web Application
	36	Defining Custom Objects	Introduction to CSS3
[WEB-GROUP-B] REACT	37	Sub-Topic 8	Full-Stack Web Development
	41	React.js: Events, Refs and Router	Full-Stack Web Development
	42	React.js: Configuration and Setup	Full-Stack Web Development
	43	React.js: JSX	Full-Stack Web Development
	44	Redux and React.js	Full-Stack Web Development
ANDROID GROUP A V2.0	45	Android Architecture	
	46	Android UI Framework	Responsive Website Development
	47	Android Local App Data Storage Management	Android App Components -
	48	Android Networking	Android App Components -
	49	Android Activity Life Cycle	Android App Components -
	50	Android UI App Navigation	Android App Components -
	51	Android In-App Communication	Android App Components -
	52	Android-Contextual Kotlin	Android App Components -
ANDROID GROUP B V2.0	53	Android Application Structural Format	
	54	Android Multimedia Components	
	55	Android Security and Permissions	
	56	Android UI Agnostic Device Programming	
	57	Android Version Compatibility	
	58	Android Performance Optimization	
	59	Android User Notifications	
	60	Android Resource Optimization	
GOLANG GROUP A V1.3	61	Language Types	Getting Started with Go
	62	Composite Literals	
	63	Go Language Fundamentals	
	64	Flow Control	Getting Started with Go
	65	Functions and Methods	Concurrency in Go
	66	Exceptions and Error Handling	Functions, Methods, and In
	67	Packages and Composition	
	68	Understanding Web APIs	Programming with Google
	69	Web API and Microservice Data Formats	

COMPETENCIES	STT	SUB-COMPETENCIES	
	70	Developing RESTful Applications	
	71	MySQL Query Development	
	72	Using SQL in Databases	
GOLANG GROUP B V1.3	73	Concurrency and Channels	
	74	System and I/O	Programming with Google
	75	Standard Library	Concurrency in Go
	76	Web and Networking	
	77	Build, Ship and Share	Functions, Methods, and In
	78	Documenting and Testing	Programming with Google
	79	Conventions and Common Mistakes	Getting Started with Go
	80	Securing Web APIs	
	81	Testing Web APIs	
	82	Docker	
	83	ACID and BASE	Getting Started with Go
IOS GROUP A (V2.0)	84	Cocoa Touch Foundations	
	85	View Controllers and Gesture Handling	iOS Development for Creat
	86	Using Interface Builder	Introduction to iOS App De
	87	UIView Subclasses	UI / UX Design Specializat
	88	Data Access and Persistence	Introduction to Programmin
	89	Swift Fundamentals	
	90	Syntax and Operators	
	91	Literals and Data Types	
	92	Standard Object Types	Swift 5 iOS Application Dev
	93	Functions and Methods	
	94	Classes and Structures	Introduction to Programmin
	95	Control Flow and Iteration	iOS App Development with
	96	Object-Oriented Programming	
IOS GROUP B (V2.0)	97	Local and Remote Notifications	Swift 5 iOS Application Dev
	98	Core Location and Core Motion	Introduction to iOS App De
	99	Debugging and Performance Optimization	
	100	Standard Library	Swift 5 iOS Application Dev
	101	Object-Oriented Programming	

COMPETENCIES	STT	SUB-COMPETENCIES	
	102	Foundation Library	Swift 5 iOS Application Dev
	103	Error Handling	iOS Development for Creat
	104	Concurrent Programming	
	105	Memory Management	iOS App Development with
JAVA GROUP A (V2.2)	106	Declarations	Parallel, Concurrent, and D
	107	Java Program Construction	Java Programming: Solving
	108	Object Orientation in Java	Object Oriented Programm
	109	Flow Control	
	110	Access Modifiers	
	111	Strings, Formatting and Parsing	Building Scalable Java Mic
	112	Exception Handling	
	113	Git	Version Control with Git
	114	Classes and Objects	Parallel Programming in Ja
	115	Class Structures	
	116	Developing RESTful Applications	
	117	MySQL Query Development	
	118	REST Web Services	Java Programming: Solving
JAVA GROUP B (V2.0)	119	Java I/O	
	120	Compilation and Deployment	
	121	Assignment	Java Programming and So
	122	Interfaces	Parallel, Concurrent, and D
	123	Internationalization	Learn to Teach Java Speci
	124	Java Streams	Parallel Programming in Ja
	125	Spring MVC Framework	Building Cloud Services wi
	126	Hibernate: Annotation-Based Configuration	Parallel, Concurrent, and D
	127	Docker	
	128	Encapsulation	Java Programming: Solving
	129	Associations	Java Programming and So
	130	ACID and BASE	Cloud Computing Applicati
	131	Database Model Concepts	Web Applications for Every

COMPETENCIES	STT	SUB-COMPETENCIES	Link COUSERA
[WEB-GROUP-A] ANGULAR	1	CSS3 Attributes and Properties	Link
	2	Using Components and Data Binding	Link
	3	Using Directives	Link
	4	Using Forms	Link
	5	Coding with TypeScript	Link
[WEB-GROUP-A] REACT	6	HTML5 Syntax and Semantics	Link
	7	HTML5 Document Types and Structure	Link
	8	Coding with TypeScript	Link
	9	Using JavaScript	Link
	10	Arrays	Link
	11	Document Objects	Link
	12	Handling Events	Link
	13	Handling Functions	Link
	14	JavaScript Flow Control	Link
	15	Operators and Expressions	Link
	16	Variables and Syntax	Link
	17	React.js: Components	Link
	18	React.js: Lifecycle Methods	Link
	19	React.js: Props	Link
	20	React.js: State	Link
[WEB-GROUP-B] ANGULAR	21	CSS3 Styling	Link
	22	HTML5 APIs	Link
	23	HTML5 Local Storage	Link
	24	HTML5 DOM	Link
	25	Asynchronous Programming	Link
	26	Defining Custom Objects	Link
	27	Classes	Link
	28	Keyed Collections	Link
	29	Arrow Functions	Link
	30	Using Templates, Expressions and Pipes	Link
	31	Project Structure, Setup, Debugging and Building for Release	Link
	32	Routing and Authentication	Link
	33	Angular 5 and 6 Version-Specific Knowledge	Link

COMPETENCIES	STT	SUB-COMPETENCIES	
	35	Asynchronous Programming	Link
	36	Defining Custom Objects	Link
[WEB-GROUP-B] REACT	37	Sub-Topic 8	Link
	41	React.js: Events, Refs and Router	Link
	42	React.js: Configuration and Setup	Link
	43	React.js: JSX	Link
	44	Redux and React.js	Link
ANDROID GROUP A V2.0	45	Android Architecture	Link
	46	Android UI Framework	Link
	47	Android Local App Data Storage Management	Link
	48	Android Networking	Link
	49	Android Activity Life Cycle	Link
	50	Android UI App Navigatio	Link
	51	Android In-App Communication	Link
	52	Android-Contextual Kotlin	Link
ANDROID GROUP B V2.0	53	Android Application Structural Format	Link
	54	Android Multimedia Components	Link
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	56	Android UI Agnostic Device Programming	Link
	57	Android Version Compatibility	Link
	58	Android Performance Optimization	Link
	59	Android User Notifications	Link
	60	Android Resource Optimization	Link
GOLANG GROUP A V1.3	61	Language Types	Link
	62	Composite Literals	Link
	63	Go Language Fundamentals	Link
	64	Flow Control	Link
	65	Functions and Methods	Link
	66	Exceptions and Error Handling	Link
	67	Packages and Composition	Link
	68	Understanding Web APIs	Link
	69	Web API and Microservice Data Formats	Link

COMPETENCIES	STT	SUB-COMPETENCIES	
	70	Developing RESTful Applications	Link
	71	MySQL Query Development	Link
	72	Using SQL in Databases	Link
GOLANG GROUP B V1.3	73	Concurrency and Channels	Link
	74	System and I/O	Link
	75	Standard Library	Link
	76	Web and Networking	Link
	77	Build, Ship and Share	Link
	78	Documenting and Testing	Link
	79	Conventions and Common Mistakes	Link
	80	Securing Web APIs	Link
	81	Testing Web APIs	Link
	82	Docker	Link
	83	ACID and BASE	Link
IOS GROUP A (V2.0)	84	Cocoa Touch Foundations	Link
	85	View Controllers and Gesture Handling	Link
	86	Using Interface Builder	Link
	87	UIView Subclasses	Link
	88	Data Access and Persistence	Link
	89	Swift Fundamentals	Link
	90	Syntax and Operators	Link
	91	Literals and Data Types	Link
	92	Standard Object Types	Link
	93	Functions and Methods	Link
	94	Classes and Structures	Link
	95	Control Flow and Iteration	Link
	96	Object-Oriented Programming	Link
IOS GROUP B (V2.0)	97	Local and Remote Notifications	Link
	98	Core Location and Core Motion	Link
	99	Debugging and Performance Optimization	Link
	100	Standard Library	Link
	101	Object-Oriented Programming	Link

COMPETENCIES	STT	SUB-COMPETENCIES	
	102	Foundation Library	Link
	103	Error Handling	Link
	104	Concurrent Programming	Link
	105	Memory Management	Link
JAVA GROUP A (V2.2)	106	Declarations	Link
	107	Java Program Construction	Link
	108	Object Orientation in Java	Link
	109	Flow Control	Link
	110	Access Modifiers	Link
	111	Strings, Formatting and Parsing	Link
	112	Exception Handling	Link
	113	Git	Link
	114	Classes and Objects	Link
	115	Class Structures	Link
	116	Developing RESTful Applications	Link
	117	MySQL Query Development	Link
	118	REST Web Services	Link
JAVA GROUP B (V2.0)	119	Java I/O	Link
	120	Compilation and Deployment	Link
	121	Assignment	Link
	122	Interfaces	Link
	123	Internationalization	Link
	124	Java Streams	Link
	125	Spring MVC Framework	Link
	126	Hibernate: Annotation-Based Configuration	Link
	127	Docker	Link
	128	Encapsulation	Link
	129	Associations	Link
	130	ACID and BASE	Link
	131	Database Model Concepts	Link

COMPETENCIES	STT	SUB-COMPETENCIES	Tên
[WEB-GROUP-A] ANGULAR	1	CSS3 Attributes and Properties	CSS3 Properties
	2	Using Components and Data Binding	Web Components in Action
	3	Using Directives	Mastering AngularJS Directives
	4	Using Forms	Programming Microsoft® Visual Studio®
	5	Coding with TypeScript	Programming TypeScript
[WEB-GROUP-A] REACT	6	HTML5 Syntax and Semantics	HTML5 Cookbook
	7	HTML5 Document Types and Structure	Great HTML: Level 1
	8	Coding with TypeScript	Mastering HTML5 Forms
	9	Using JavaScript	Learn to Build Progressive Web Apps
	10	Arrays	Mastering JavaScript Array Methods
	11	Document Objects	DOM Scripting: Web Design with HTML and CSS
	12	Handling Events	Hands-On RxJS for Web Developers
	13	Handling Functions	A Beginner's Guide to Web Development
	14	JavaScript Flow Control	JavaScript: Best Practice
	15	Operators and Expressions	The Full Stack Web Developer
	16	Variables and Syntax	Java Quick Syntax Reference
	17	React.js: Components	Getting Started with Web Components
	18	React.js: Lifecycle Methods	A Comprehensive Guide to React.js and Cost Control: Methods and Project Lifecycle
	19	React.js: Props	JavaScript Series: Mastering the Fundamentals
	20	React.js: State	JavaScript React (React.js) Cookbook
[WEB-GROUP-B] ANGULAR	21	CSS3 Styling	CSS: The Definitive Guide, 4th Edition
	22	HTML5 APIs	Pro HTML5 Programming: Internet Application Development
	23	HTML5 Local Storage	A JavaScript Local Storage Cookbook
	24	HTML5 DOM	Head First HTML5 Programming
	25	Asynchronous Programming	Asynchronous Programming with JavaScript
	26	Defining Custom Objects	Java™ How To Program (Early Release)
	27	Classes	Learn Practical Web Components
	28	Keyed Collections	Modern Java Collections
	29	Arrow Functions	React - The Complete Guide
	30	Using Templates, Expressions and Pipes	Learning Regular Expressions
	31	Project Structure, Setup, Debugging and Building for Release	Building Scalable Web Sites
	32	Routing and Authentication	CCNP Routing and Switching
	33	Angular 5 and 6 Version-Specific Knowledge	Pro Angular 6

COMPETENCIES	STT	SUB-COMPETENCIES	
	35	Asynchronous Programming	Asynchronous Android Pro
	36	Defining Custom Objects	Java™ How To Program (E
[WEB-GROUP-B] REACT	37	Sub-Topic 8	Oracle Certified Profession Exam 1Z0-809: A Comprehe Guide
	41	React.js: Events, Refs and Router	Building Web Apps with Sp
	42	React.js: Configuration and Setup	System Center 2012 Opera Second Edition
	43	React.js: JSX	JavaScript React (React.js
	44	Redux and React.js	Learning React.js with Flux
ANDROID GROUP A V2.0	45	Android Architecture	Android Application Archite
	46	Android UI Framework	UI Testing with the UIAutom
	47	Android Local App Data Storage Management	Android Apps with App Inve to Build Android Apps
	48	Android Networking	Networking Fundamentals
	49	Android Activity Life Cycle	Rapid Android Developmen
	50	Android UI App Navigatio	Android App UI Design with Material Design
	51	Android In-App Communication	Android™ Tips and Tricks: 6 devices, Second Edition
	52	Android-Contextual Kotlin	Android Programming with
ANDROID GROUP B V2.0	53	Android Application Structural Format	Professional Android, 4th E
	54	Android Multimedia Components	Beginning Android 3
	55	Android Security and Permissions	Android Security Cookbook
	56	Android UI Agnostic Device Programming	Smashing Android UI
	57	Android Version Compatibility	Android App Compatibility:
	58	Android Performance Optimization	Pro Android Apps Performa
	59	Android User Notifications	Developing Android User In Training)
	60	Android Resource Optimization	Android System Programm
GOLANG GROUP A V1.3	61	Language Types	The Go Programming Lang
	62	Composite Literals	Ultimate Go Programming,
	63	Go Language Fundamentals	Getting started with Go Pro
	64	Flow Control	Go: Design Patterns for Re
	65	Functions and Methods	Ultimate Go Programming,
	66	Exceptions and Error Handling	Mastering Go
	67	Packages and Composition	Go in Action
	68	Understanding Web APIs	Craft GraphQL APIs in Elix
	69	Web API and Microservice Data Formats	Hands-On Software Engine

COMPETENCIES	STT	SUB-COMPETENCIES	
	70	Developing RESTful Applications	Go Web Development Cookbook
	71	MySQL Query Development	MySQL 8 Cookbook
	72	Using SQL in Databases	Mark Bates on Go Databases
GOLANG GROUP B V1.3	73	Concurrency and Channels	Hands-on Concurrency with Go
	74	System and I/O	Go Standard Library Solutions
	75	Standard Library	Go Standard Library Cookbook
	76	Web and Networking	Network Programming with Go and Securing Networks
	77	Build, Ship and Share	Black Hat Go
	78	Documenting and Testing	Go in Practice
	79	Conventions and Common Mistakes	Go in 24 Hours, Sams Teachings
	80	Securing Web APIs	Systems Programming with Go
	81	Testing Web APIs	Building RESTful APIs with Go
	82	Docker	Building RESTful Web services with Go
	83	ACID and BASE	Setting up your Go development environment
IOS GROUP A (V2.0)	84	Cocoa Touch Foundations	Cloud Native Go: Building VLS Microservices for the Cloud
	85	View Controllers and Gesture Handling	Learn Cocoa Touch for iOS
	86	Using Interface Builder	iOS Developer's Guide to Views
	87	UIView Subclasses	Designing Interfaces, 3rd Edition
	88	Data Access and Persistence	iOS SDK Programming A Beginner's Guide
	89	Swift Fundamentals	Pro Core Data for iOS: Data Modeling Engine for iPhone, iPad, and Mac
	90	Syntax and Operators	Building iOS 10 Applications
	91	Literals and Data Types	iOS 13 Programming for Beginners
	92	Standard Object Types	iOS 10 Programming for Beginners
	93	Functions and Methods	C++ Standard Template Library
	94	Classes and Structures	iOS Programming in 7 Days
	95	Control Flow and Iteration	Complete iOS 12 Development
	96	Object-Oriented Programming	iOS 8 Programming Fundamentals
IOS GROUP B (V2.0)	97	Local and Remote Notifications	An Introduction to Object-C and Objective-C 2.0
	98	Core Location and Core Motion	Complete iOS 12 Development
	99	Debugging and Performance Optimization	Mastering iOS Development
	100	Standard Library	High Performance iOS Applications
	101	Object-Oriented Programming	iOS Programming: The Big Picture

COMPETENCIES	STT	SUB-COMPETENCIES	
	102	Foundation Library	Mastering the C++17 STL
	103	Error Handling	iOS Programming: The Big
	104	Concurrent Programming	Concurrent Programming in
	105	Memory Management	Pro Multithreading and Memory OS X
JAVA GROUP A (V2.2)	106	Declarations	Java 8 Fundamentals: Modules, Lambdas, Streams, and Interface the Java Platform Module S
	107	Java Program Construction	Program Development in Java and Object-Oriented Design
	108	Object Orientation in Java	OCA Java SE 8 Programm 808)
	109	Flow Control	Securing Systems
	110	Access Modifiers	From 0 to 1: Learn Java Pro To Code
	111	Strings, Formatting and Parsing	Learning Java, 4th Edition
	112	Exception Handling	Core Java 11 Fundamentals
	113	Git	Git Essentials - Second Ed
	114	Classes and Objects	Beginning Java 9 Fundame Modules, JShell, and Regu
	115	Class Structures	Object-Oriented Data Struc
	116	Developing RESTful Applications	Restlet in Action: Developin
	117	MySQL Query Development	MySQL Cookbook, 3rd Edit
	118	REST Web Services	Master Java Web Services Boot
JAVA GROUP B (V2.0)	119	Java I/O	Java I/O, 2nd Edition
	120	Compilation and Deployment	Java Cookbook, 4th Edition
	121	Assignment	OCA Java SE 8 Programm
	122	Interfaces	Functional Interfaces in Java Examples
	123	Internationalization	Full Stack Development with
	124	Java Streams	Programming with Java La
	125	Spring MVC Framework	Spring MVC for Java Devel
	126	Hibernate: Annotation-Based Configuration	Java Hibernate Cookbook
	127	Docker	Docker for Java Developer
	128	Encapsulation	OCA / OCP Java SE 8 Pro
	129	Associations	A Programmer's Guide to J Associate (OCA)
	130	ACID and BASE	Basic Data Analysis with Ja
	131	Database Model Concepts	Java 8 Fundamentals: Modules, Lambdas, Streams, and Interface the Java Platform Module S

COMPETENCIES	STT	SUB-COMPETENCIES	Link O'REILLY
[WEB-GROUP-A] ANGULAR	1	CSS3 Attributes and Properties	Link
	2	Using Components and Data Binding	Link
	3	Using Directives	Link
	4	Using Forms	Link
	5	Coding with TypeScript	Link
[WEB-GROUP-A] REACT	6	HTML5 Syntax and Semantics	Link
	7	HTML5 Document Types and Structure	Link
	8	Coding with TypeScript	Link
	9	Using JavaScript	Link
	10	Arrays	Link
	11	Document Objects	Link
	12	Handling Events	Link
	13	Handling Functions	Link
	14	JavaScript Flow Control	Link
	15	Operators and Expressions	Link
	16	Variables and Syntax	Link
	17	React.js: Components	Link
	18	React.js: Lifecycle Methods	Link
	19	React.js: Props	Link
	20	React.js: State	Link
[WEB-GROUP-B] ANGULAR	21	CSS3 Styling	Link
	22	HTML5 APIs	Link
	23	HTML5 Local Storage	Link
	24	HTML5 DOM	Link
	25	Asynchronous Programming	Link
	26	Defining Custom Objects	Link
	27	Classes	Link
	28	Keyed Collections	Link
	29	Arrow Functions	Link
	30	Using Templates, Expressions and Pipes	Link
	31	Project Structure, Setup, Debugging and Building for Release	Link
	32	Routing and Authentication	Link
	33	Angular 5 and 6 Version-Specific Knowledge	Link

COMPETENCIES	STT	SUB-COMPETENCIES	
	35	Asynchronous Programming	Link
	36	Defining Custom Objects	Link
[WEB-GROUP-B] REACT	37	Sub-Topic 8	Link
	41	React.js: Events, Refs and Router	Link
	42	React.js: Configuration and Setup	Link
	43	React.js: JSX	Link
	44	Redux and React.js	Link
ANDROID GROUP A V2.0	45	Android Architecture	Link
	46	Android UI Framework	Link
	47	Android Local App Data Storage Management	Link
	48	Android Networking	Link
	49	Android Activity Life Cycle	Link
	50	Android UI App Navigatio	Link
	51	Android In-App Communication	Link
	52	Android-Contextual Kotlin	Link
ANDROID GROUP B V2.0	53	Android Application Structural Format	Link
	54	Android Multimedia Components	Link
	55	Android Security and Permissions	Link
	56	Android UI Agnostic Device Programming	Link
	57	Android Version Compatibility	Link
	58	Android Performance Optimization	Link
	59	Android User Notifications	Link
	60	Android Resource Optimization	Link
GOLANG GROUP A V1.3	61	Language Types	Link
	62	Composite Literals	Link
	63	Go Language Fundamentals	Link
	64	Flow Control	Link
	65	Functions and Methods	Link
	66	Exceptions and Error Handling	Link
	67	Packages and Composition	Link
	68	Understanding Web APIs	Link
	69	Web API and Microservice Data Formats	Link

COMPETENCIES	STT	SUB-COMPETENCIES	
	70	Developing RESTful Applications	Link
	71	MySQL Query Development	Link
	72	Using SQL in Databases	Link
GOLANG GROUP B V1.3	73	Concurrency and Channels	Link
	74	System and I/O	Link
	75	Standard Library	Link
	76	Web and Networking	Link
	77	Build, Ship and Share	Link
	78	Documenting and Testing	Link
	79	Conventions and Common Mistakes	Link
	80	Securing Web APIs	Link
	81	Testing Web APIs	Link
	82	Docker	Link
	83	ACID and BASE	Link
IOS GROUP A (V2.0)	84	Cocoa Touch Foundations	Link
	85	View Controllers and Gesture Handling	Link
	86	Using Interface Builder	Link
	87	UIView Subclasses	Link
	88	Data Access and Persistence	Link
	89	Swift Fundamentals	Link
	90	Syntax and Operators	Link
	91	Literals and Data Types	Link
	92	Standard Object Types	Link
	93	Functions and Methods	Link
	94	Classes and Structures	Link
	95	Control Flow and Iteration	Link
	96	Object-Oriented Programming	Link
IOS GROUP B (V2.0)	97	Local and Remote Notifications	Link
	98	Core Location and Core Motion	Link
	99	Debugging and Performance Optimization	Link
	100	Standard Library	Link
	101	Object-Oriented Programming	Link

COMPETENCIES	STT	SUB-COMPETENCIES	
	102	Foundation Library	Link
	103	Error Handling	Link
	104	Concurrent Programming	Link
	105	Memory Management	Link
JAVA GROUP A (V2.2)	106	Declarations	Link
	107	Java Program Construction	Link
	108	Object Orientation in Java	Link
	109	Flow Control	Link
	110	Access Modifiers	Link
	111	Strings, Formatting and Parsing	Link
	112	Exception Handling	Link
	113	Git	Link
	114	Classes and Objects	Link
	115	Class Structures	Link
	116	Developing RESTful Applications	Link
	117	MySQL Query Development	Link
	118	REST Web Services	Link
JAVA GROUP B (V2.0)	119	Java I/O	Link
	120	Compilation and Deployment	Link
	121	Assignment	Link
	122	Interfaces	Link
	123	Internationalization	Link
	124	Java Streams	Link
	125	Spring MVC Framework	Link
	126	Hibernate: Annotation-Based Configuration	Link
	127	Docker	Link
	128	Encapsulation	Link
	129	Associations	Link
	130	ACID and BASE	Link
	131	Database Model Concepts	Link