

Course Name: **Android Apps Development with Java SE**  
Course Duration: **60 hours**

Session	Title
Day 01	<b>Introduction to Java Basics</b>
	Define the scope of variables, Define the structure of a Java class
	Create executable Java applications with a main method
	Import other Java packages to make them accessible in your code
	Working With Java Data Types
Day 02	Declare and initialize variables, Differentiate between object reference variables and primitive variables
	Read or write to object fields
	Explain an Object's Lifecycle (creation, "dereference" and garbage collection)
	Call methods on objects
	Manipulate data using the StringBuilder class and its methods
Day 03	Creating and manipulating Strings
	<b>Using Operators and Decision Constructs</b>
	Use Java operators
	Use parenthesis to override operator precedence
	Test equality between Strings and other objects using == and equals ()
Day 04	Create if and if/else constructs
	Use a switch statement
	<b>Creating and Using Arrays</b>
	Declare, instantiate, initialize and use a one-dimensional array
Day 05	Declare, instantiate, initialize and use multi-dimensional array
	Declare and use an ArrayList
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Day 06	Create and use while loops, Create and use for loops including the enhanced for loop
	Create and use do/while loops, Compare loop constructs, Use break and continue
	<b>Working with Methods and Encapsulation</b>
	Create methods with arguments and return values
	Apply the static keyword to methods and fields
	Create an overloaded method
	Differentiate between default and user defined constructors
	Create and overload constructors
	Apply access modifiers
	Apply encapsulation principles to a class
Determine the effect upon object references and primitive values when they are passed into methods that change the values	

Day 07	<b>Working with Inheritance</b>
	Implement inheritance
	Develop code that demonstrates the use of polymorphism
	Differentiate between the type of a reference and the type of an object
	Determine when casting is necessary
	Use super and this to access objects and constructors
Day 08	<b>Handling Exceptions</b>
	Differentiate among checked exceptions, RuntimeExceptions and Errors
	Create a try-catch block and determine how exceptions alter normal program flow
	Describe what Exceptions are used for in Java, Invoke a method that throws an exception
Day 09	<b>Java Class Design</b>
	Use access modifiers: private, protected, and public
	Override methods, Overload constructors and methods, Use the instanceof operator and casting
	Use virtual method invocation, Use package and import statements
Day 10	<b>Advanced Class Design</b>
	Identify when and how to apply abstract classes, Construct abstract Java classes and subclasses
	Use the static and final keywords, Create top-level and nested classes,
Day 11	<b>Generics and Collections</b>
	Create a generic class
	Use the diamond for type inference, Analyze the interoperability of collections that use raw types and generic types
	Use wrapper classes, autoboxing and unboxing, Create and use List, Set and Deque implementations
	Create and use Map implementations, Use java.util.Comparator and java.lang.Comparable
Day 12	<b>String Processing</b>
	Search, parse and build strings (including Scanner, StringTokenizer, StringBuilder, String and Formatter)
	Search, parse, and replace strings by using regular expressions, using expression patterns for matching limited to: . (dot), * (star), + (plus), ?, \d, \D, \s, \S, \w, \W, \b, \B, [], ().
Day 13	<b>Exceptions and Assertions</b>
	Use throw and throws statements, Develop code that handles multiple Exception types in a single catch block
	Develop code that uses try-with-resources statements (including using classes that implement the AutoCloseable interface)
Day 14	<b>Threads</b>
	Create and use the Thread class and the Runnable interface
	Manage and control thread lifecycle, Synchronize thread access to shared data

	Identify code that may not execute correctly in a multi-threaded environment.
Day 15	<b>Getting Started with Android Programming</b>
	What is Android?, Obtaining the Required Tools, Creating Your First Android Application
	Anatomy of an Android Application,
Day 16	Activities, Fragments, and Intents
	Understanding Activities, Linking Activities Using Intents, Fragments
	Calling Built-In Applications Using Intents, Displaying Notifications
Day 17	<b>Getting to Know the Android User Interface</b>
	Understanding the Components of a Screen, Adapting to Display Orientation
	Managing Changes to Screen Orientation, Utilizing the Action Bar, Creating the User Interface Programmatically, Listening for UI Notifications
Day 18	<b>Designing Your User Interface with Views</b>
	Using Basic Views, Using Picker Views, Using List Views to Display Long Lists
	Understanding Specialized Fragments
Day 19	<b>Displaying Pictures and Menus with Views</b>
	Using Image Views to Display Pictures, Using Menus with Views, Some Additional Views
Day 20	<b>Data Persistence</b>
	Saving and Loading User Preferences, Persisting Data to Files
	Creating and Using Database
Day 21	<b>Content Providers</b>
	Sharing Data in Android, Using a Content Provider, Creating Your Own Content Providers
Day 22	Messaging
	SMS Messaging, Sending E-mail
Day 23	Location-Based Services, Displaying Maps, Getting Location Data, Monitoring a Location
	Project – Building a Location Tracker
Day 24	<b>Networking</b>
	Consuming Web Services Using HTTP, Consuming JSON Services, Sockets Programming
Day 25	<b>Developing Android Services</b>
	Creating Your Own Services
	Establishing Communication between a Service and an Activity
Day 26	Binding Activities to Services, Understanding Threading
	Publishing Android Applications
	Preparing for Publishing
	Deploying APK Files