



Complete Android Course Content

Course Objectives:

Consider the entire range of Google Cloud Platform technologies in their plans Learn methods to develop, implement, and deploy solutions Distinguish between features of similar or related products and technologies Recognize a wide variety of solution domains, use cases, and applications Develop essential skills for managing and administering solutions Develop knowledge of solution patterns methods, technologies, and designs that are used to implement security, scalability, high availability, and other desired qualities

Audience:

Individuals using Google Cloud Platform to create new solutions or to integrate existing systems, application environments, and infrastructure with a focus on Google Compute Engine.

Course Outline

The course includes presentations, demonstrations, and hands-on labs.

Section 1: Getting Started with Basics of Java

- ❖ Java - What, Where and Why?
- ❖ History and Features of Java
- ❖ Internals of Java Program
- ❖ Difference between JDK, JRE and JVM
- ❖ Internal Details of JVM
- ❖ Variable and Data Type
- ❖ Unicode System
- ❖ Naming Convention
- ❖ The Structure of Java Code
- ❖ How to Run your Java Programs

- ❖ Printing to the Output Window

Section 2: OOPS Concepts

- ❖ Advantage of OOPs
- ❖ Object and Class
- ❖ Method Overloading
- ❖ Constructor
- ❖ Static variable, method and block
- ❖ this keyword
- ❖ Inheritance (IS-A)
- ❖ Aggregation and Composition(HAS-A)
- ❖ Method Overriding
- ❖ Covariant Return Type
- ❖ super keyword
- ❖ Instance Initializer block
- ❖ final keyword
- ❖ Runtime Polymorphism
- ❖ static and Dynamic binding
- ❖ Abstract class and Interface
- ❖ Downcasting with instanceof operator
- ❖ Package and Access Modifiers
- ❖ Encapsulation
- ❖ Object Cloning
- ❖ Java Array
- ❖ Call By Value and Call By Reference
- ❖ Strictfp keyword
- ❖ Creating API Document

Section 3: String Handling

- ❖ String: What and Why?
- ❖ Immutable String
- ❖ String Comparison
- ❖ String Concatenation
- ❖ Substring
- ❖ Methods of String class
- ❖ StringBuffer class
- ❖ StringBuilder class
- ❖ Creating Immutable class
- ❖ toString method
- ❖ StringTokenizer class
- ❖ Upper and LowerCase
- ❖ The compare Method
- ❖ The equals Method

- ❖ The replace Method
- ❖ Printing Formatted Strings

Section 4 : Exception Handling

- ❖ Exception Handling: What and Why?
- ❖ try and catch block
- ❖ Multiple catch block
- ❖ Nested try
- ❖ finally block
- ❖ throw keyword
- ❖ Exception Propagation
- ❖ throws keyword
- ❖ Exception Handling with Method Overriding
- ❖ Custom Exception

Section 5 : Multithreading

- ❖ Multithreading : What and Why?
- ❖ Life Cycle of a Thread ∅ Creating Thread
- ❖ Thread Scheduler
- ❖ Sleeping a thread
- ❖ Joining a thread
- ❖ Thread Priority
- ❖ Daemon Thread
- ❖ Thread Pooling
- ❖ Thread Group
- ❖ ShutdownHook
- ❖ Performing multiple task by multiple thread
- ❖ Garbage Collection
- ❖ Runnable class

Section 6 : Control Flow

- ❖ If Statements in Java
- ❖ If Else Statements
- ❖ Boolean Values
- ❖ Switch Statements
- ❖ Java for Loops
- ❖ Java While Loops

Section 7 : Arrays in Java

- ❖ Java Arrays
- ❖ Arrays and Loops
- ❖ Sorting Arrays
- ❖ Arrays and Strings

- ❖ Multi -Dimensional Arrays
- ❖ Array Lists

Section 8: Java Methods

- ❖ Java Methods
- ❖ Calling your Java Methods
- ❖ Passing Values to Methods
- ❖ Multiple Method Parameters

Section 9: Synchronization

- ❖ Synchronization : What and Why?
- ❖ Synchronized method
- ❖ Synchronized block
- ❖ Static synchronization
- ❖ Deadlock
- ❖ Inter-thread Communication
- ❖ Interrupting Thread

Section 10: Java Form Controls

- ❖ Java Forms
- ❖ The Different Form Views in NetBeans/Eclipse
- ❖ Add a Text Box to a Java Form
- ❖ Add a Button to the Form
- ❖ Button Properties
- ❖ Java Form Events
- ❖ Java and Combo Boxes
- ❖ Java Check Boxes
- ❖ Radio Buttons
- ❖ Adding Menus to a Java Form
- ❖ Open File Dialogue Boxes
- ❖ Opening Files
- ❖ Save File Dialogue Boxes

Section 11: Java and Databases

- ❖ Java and Databases
- ❖ Creating a Database with Java
- ❖ Adding Records to Table
- ❖ SQL Commands
- ❖ Connect to a Database with Java code
- ❖ Connecting to the Table

Section 12: Databases and Java Forms

- ❖ Databases and Java Forms

- ❖ Database Scrolling Buttons
- ❖ Move Back Through the Database
- ❖ Move to the First and Last Records
- ❖ Update a Record
- ❖ Add a New Record
- ❖ Save a New Record
- ❖ Delete a Record from a Database

Section 13: A Java Calculator Project (This is Done By Student Himself)

SQL Server/MySql/SQL

Work with Store Procedure & Data Base

- ❖ Learn Database Models
- ❖ Overview of SQL Server Management Studio
- ❖ Creating the Data Base
- ❖ Creating the table
- ❖ Select,Insert,Delete,Update in Data Base
- ❖ Writing simple and complex queries that retrieve data from the Database
- ❖ Creating the Store Procedure
- ❖ Types of Store Procedure (Input,Output)
- ❖ Types of Joins
- ❖ Sub-Queries
- ❖ Create and Managing View
- ❖ Create Function and Use with Procedure

Basic Android Studio

Section 1 : Basics of Android

- ❖ What is Android
- ❖ History and Version
- ❖ Installing Softwares
- ❖ Setup Android Studio
- ❖ Hello Android example
- ❖ Internal Details
- ❖ Dalvik VM
- ❖ Software Stack
- ❖ Android Core Building Blocks
- ❖ Android Emulator
- ❖ AndroidManifest.xml
- ❖ R.java file
- ❖ Hide Title Bar
- ❖ Screen Orientation

Section 2 : UI Widgets

- ❖ Working with Button
- ❖ Toast
- ❖ Custom Toast
- ❖ Button
- ❖ Toggle Button
- ❖ Switch Button
- ❖ Image Button
- ❖ CheckBox
- ❖ AlertDialog
- ❖ Spinner
- ❖ AutoCompleteTextView
- ❖ RatingBar
- ❖ DatePicker
- ❖ TimePicker
- ❖ ProgressBar
- ❖ Quick Contact Budge
- ❖ Analog Clock and Digital Clock
- ❖ Working with hardware Button
- ❖ File Download

Section 3 : Activity, Intent & Fragment

- ❖ Activity Lifecycle
- ❖ Activity Example
- ❖ Implicit Intent
- ❖ Explicit Intent
- ❖ Fragment Lifecycle
- ❖ Fragment Example
- ❖ Dynamic Fragment

Section 4 : Android Menu

- ❖ Option Menu
- ❖ Context Menu
- ❖ Popup Menu

Section 5 : Layout Manager

- ❖ Relative Layout
- ❖ Linear Layout
- ❖ Table Layout
- ❖ Grid Layout

Section 6 : Adaptor

- ❖ Array Adaptor

- ❖ ArrayList Adaptor
- ❖ Base Adaptor

Section 7 : View

- ❖ GridView
- ❖ WebView
- ❖ ScrollView
- ❖ SearchView
- ❖ TabHost
- ❖ DynamicListView
- ❖ ExpandedListView

Advanced Android Syllabus

Section 1 : Android Service

- ❖ Android Service
- ❖ Android Service API
- ❖ Android Started Service
- ❖ Android Bound Service
- ❖ Android Service Life Cycle
- ❖ Android Service Example

Section 2 : Data Storage

- ❖ Shared Preferences
- ❖ Internal Storage
- ❖ External Storage

Section 3 : SQLite

- ❖ SQLite API
- ❖ SQLite Spinner
- ❖ SQLite ListView

Section 4 : XML & JSON

- ❖ XML Parsing SAX
- ❖ XML Parsing DOM
- ❖ XML Pull Parser
- ❖ JSON Parsing

Section 5 : Content Provider

- ❖ Content Provider Fundamental
- ❖ Contact Content Provider
- ❖ Other Built-in Content Providers

- ❖ Creating Custom Content Provider
- ❖ Understanding Content URI
- ❖ ContentResolver
- ❖ Sharing Information from custom content provider

Section 6 : Android Notification

- ❖ Notification API
- ❖ Creating Notification Builder
- ❖ Setting Notification Properties
- ❖ Attaching Actions
- ❖ Issuing Notification
- ❖ NotificationCompat.Builder class
- ❖ Android Notification Examples

Section 7 : Multimedia

- ❖ Wallpapers
- ❖ Live Wallpaper
- ❖ Multimedia API
- ❖ Playing Audio
- ❖ Creating Audio Player
- ❖ Playing Video
- ❖ Alarm Manager
- ❖ Gallery

Section 8 : Speech API

- ❖ TextToSpeech API
- ❖ TextToSpeech Example
- ❖ Managing speed and pitch
- ❖ Speech To Text

Section 9 : Telephony API

- ❖ Telephony Manager
- ❖ Get Call State
- ❖ Call State BroadcastReceiver
- ❖ Simple Caller Talker
- ❖ Making Phone Call
- ❖ Send SMS
- ❖ Send Email

Section 10 : Location API

- ❖ Location API Fundamental
- ❖ Example of Android Location API
- ❖ Working with Google Maps

Section 11 : Animation

- ❖ Android Animation API
- ❖ Android Drawable class
- ❖ Android Animation Example
- ❖ Android Rotate Animation
- ❖ Android Fade Animation
- ❖ Android Zoom Animation

Section 12 : Device Connectivity

- ❖ Bluetooth Tutorial
- ❖ List Paired Devices
- ❖ Working with WiFi
- ❖ Working with Camera

Section 13 : Sensor

- ❖ Sensor API
- ❖ Motion Sensor
- ❖ Position Sensor
- ❖ Environmental Sensor
- ❖ Sensor Values
- ❖ SensorManager class
- ❖ Sensor Class
- ❖ SensorEvent class
- ❖ SensorEventListener interface
- ❖ Compass Accelerometer and Orientation Sensors
- ❖ Sensor Examples

Section 14 : Android Graphics

- ❖ Graphics API
- ❖ 2D Graphics
- ❖ android.graphics.Canvas
- ❖ android.graphics.Paint class

Section 15 : Android P2P Communication

- ❖ Introducing Instant Messaging
- ❖ Using the GTalk Service
- ❖ Monitoring the Roste for Changes
- ❖ Sending and Receiving Data Messages
- ❖ Transmitting Data Messages
- ❖ Receiving Data Messages

Section 16 : Android Web Services

- ❖ What is web service

- ❖ Soap Vs Restful web service
- ❖ Android Restful web service example with java servlet
- ❖ Storing data into external oracle database
- ❖ Verifying data in android with external oracle database

Section 17 : Android Google Map

- ❖ Android Map V2 API
- ❖ Adding Map
- ❖ Customizing Map
- ❖ GoogleMap class
- ❖ Android Google Map Application



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