

I. INTRODUCTION TO ANDROID (CREDITS:4)

Section-A

Unit I: Introduction to Android: Android as a popular mobile platform, History of Android, Evolution of Android, Features of Android, Comparison of mobile Operating systems, Devices that run Android as the Operating System, Categories of Android applications

Android Architecture: Introduction, Android Architecture, Android Architecture, Types of mobile applications, Application Fundamentals

Unit II: Activity lifecycle: Introduction, What is an Activity in Android?, Android Application Fundamentals, What are the Android process states?

Android Development Environment: Introduction, Reasons for Android Development, Android Development Platforms, Features and Tools, Configuring Android Development Environment, Setting Up Android Development Environment, Install Android for Windows 10

Unit III: Android application fundamentals: Introduction, Basic App Components, Android Development, Additional Components, Resources, Android Manifest, File conventions, Android Development: Introduction, Creating Your First Program, Building and running the application

Device Compatibility: Introduction, Application availability to devices, Device Features, Platform Version, Screen Configuration, Device Compatibility

Unit IV: User Interface Design: Introduction, UI Overview, User Interface Layout, Creating GUI for Android Application, Input Controls, Fundamentals of designing user interfaces using XML, Design a UI with Layout Editor, Managing Touch Events in a ViewGroup, Best Practices for User Interface

Testing and Debugging: What is Testing? Types of Testing, How to test Android application?, , How to test Android Application?, Test Suite, What is Debugging? What is Logcat?

Section-B

Unit V: Integrating Multimedia: Introduction to Multimedia, Audio and video integration into Android Application Development, Multimedia for Android Interactive Application Development, Camera functions in Android Application Development, Supported Media Formats, Saving Data on Android Devices: Android Storage Options, Shared Preferences, Internal Storage, External Storage, Saving data in SQLite databases

Unit VI: Locating and Sensing: Introduction to Sensors, Android Sensor Framework, Identifying Sensors and Sensor Capabilities, Monitoring Sensor Events, Sensor Coordinate System, Best Practices for Accessing and Using Sensors, Commonly Used Sensors, Making Your App

Location Aware, Getting the Last Known Location, Changing Location Settings, Receiving Location Updates, Adding Google Maps to Your App

Unit VII: Connectivity and the cloud: Connecting devices wirelessly, Performing network operations, Considerations when transferring data, Syncing to the cloud with information delivery models, Push Notification, Publish to Android Market: How can you obtain an Android Application? App Stores, Revenue Models, Google Play, Process of Publishing an Android Application

Unit VIII: Performance Profiling, Android Monitor Overview, Android Monitor Basics, Profiling a Running App in Android Monitor, How Android Manages Memory, Battery Analysis, Optimizing Battery Analysis, Security: Security Concerns of an Android Application, Security Provided by the OS, Information Leakage, Device Management Policies