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PHOENIX TS

Unit Testing with Android Studio

BONUS! Cyber Phoenix Subscription Included: All Phoenix TS students receive complimentary ninety (90) day access to the Cyber Phoenix learning platform, which hosts hundreds of expert asynchronous training courses in Cybersecurity, IT, Soft Skills, and Management and more!

Course Overview

Android Studio is an Integrated Development Environment (IDE) designed for developing Android apps. This course introduces the software, then moves straight into UI development using the sophisticated, WYSIWYG layout editor and XML code to design and test complex interfaces for a wide variety of screen configurations. In addition, the course covers application logic development, exploring the latest APIs provided by the SDK. One of Android Studio's greatest features is the large number of third-party plugins available for it, and this course explores the most useful of these, along with samples and libraries that can be found on GitHub. Finally, the course deals with the final stages of development: building and distribution.

At the conclusion of this course, participants will be able to do the following:

- Create styles, themes, and material designs
- Set up, configure, and run virtual devices using the AVD manager
- Improve the design of your application using support libraries
- Use GitHub libraries
- Use emulators to design layouts for a wide variety of devices, including wearables.
- Improve application performance in terms of memory, speed, and power usage

Schedule

Currently, there are no public classes scheduled. Please contact a Phoenix TS Training Consultant to discuss hosting a private class at 301-258-8200.

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Course Outline

Module 1: Workspace Structure

- How Android Studio differs
- Workspace Structure

- Editor windows
- Tool windows
- The Android SDK
- Virtual devices
- Instant Run

- Importing projects into Android Studio

Module 2: UI Design

- The Layout Editor
- Linear and relative layout classes
- The constraint layout

- Creating a Constraint Layout
- Applying constraints
- Graphic Properties tool
- Baseline alignment
- Controlling position with bias

- The constraints toolbar
- Multiple screen previewing
- Hardware profiles
- Virtual storage

Module 3: UI Development

- Material design
- Android styles
- Material themes
- The Theme Editor
- XML fonts

- The design library
- The coordinator layout
- Snackbars and Floating Action Buttons
- Collapsing app bars
- Raw text resources

- The percent library

Module 4: Device Development

- Screen orientation
- Virtual devices
- Layout and image qualification

- Scale and platform
- Alternative emulators
- Android Wear
- Connecting to a wearable AVD
- Wearable layouts

- The WatchViewStub class
- Shape-aware layouts
- Accessing sensors
- Sensor emulation
- Device monitoring

- Project templates
- Monitoring and profiling

Module 5: Assets and Resources

- Asset Studio
- Image Asset Studio

- Layered icons
- Launcher icon tools
- Vector Asset Studio
- Vector drawables
- Animated icons

- Other animations
- General drawables
- The palette library

Module 6: Templates and Plugins

- Project templates

- The Navigation Drawer template
- The Structure Explorer
- Class inspection plugins
- The Master/Detail Flow template
- Custom templates

- Third-party templates
- Project samples
- Third-party templates

- Project samples
- ADB Wi-Fi Codota

Module 7: Language Support

- Kotlin support
- The advantages of Kotlin Extending Kotlin
- C/C++ support
- The NDK

- Android Things
- Development kits
- Creating a Things project

Module 8: Testing and Profiling

- Logcat filters

- Junit testing
- Local unit tests
- Testing a UI
- Testing views
- Testing lists and data

- Recording tests
- Remote testing
- Stress testing
- Performance monitoring
- CPU profiling

- Memory profiler
- Network profiler

Module 9: Packaging and Distribution

- Gradle build configurations
- Command-line options

- Product flavors
- An APK analysis
- Publishing applications
- Generating a signed APK
- Managing keystores

- Google Play app signing
- Automatic signing

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