



HEADSTAR TECHNOLOGIES

IBM CE PROJECT - ENTERPRISE MOBILE HYBRID AND NATIVE APPLICATION DEVELOPMENT USING IBM-WORKLIGHT

MOBILE APPLICATION DEVELOPMENT COURSE DESCRIPTION:

Lack of project exposure is one of the biggest challenges faced by IT companies while recruiting new hires like you. To bridge this gap, the IBM Career Education Program provides an opportunity in Experiential Learning to work on projects based on real-world problems, rather than industry simulations. Make the right beginning with a project that requires practical knowledge to back-up the theories you have mastered.

The IBM Career Education – Enterprise Mobile Application Project enables the student to roll out through all the phases of application development from Requirements to Deployment for mobile platforms using IBM Worklight. These projects mainly focus on SDLC process and usage various tools for SDLC phases. Students get an opportunity to apply a chosen application development methodology and understand the workflow in each phase of SDLC.

WHO SHOULD ATTEND:

This course is for students who wish to get up to speed with writing apps for Android devices.

BENEFITS OF ATTENDANCE:

On completion of project students will learn:

Requirements and its types □ Choosing amongst various process models / methodology that suit the requirements. □ Process of mapping requirements to analysis & design, development, testing □ Creating Analysis and design of an application using UML diagrams like Use Case, Class, Sequence, Activity-etc□ Accommodating nonfunctional requirements while analyzing, designing,



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developing an application □ Creating Test cases for an application □ Establishing Traceability from Requirements to Test Cases □ Applying Object Oriented Programming concepts like re-usability, encapsulation, polymorphism, inheritance -etc in the development of an application. □ Concepts of Configuration Management like Version, Build – etc □ Manual Testing of an application. □ Best Practices of mentoring Engineering students on Projects Artifacts from IBM: □ Abstract / Synopsis – giving synopsis of functional, non-functional requirements, tools & technologies to be used, higher level project description □ SRS /Usecase documents – giving scope, assumptions, need and objectives of the application. Higher level requirements of the application in the form of System Context Diagram, system level Use case Diagram, description of use cases. Sample database schema and Test cases are provided which need to be elaborated by students as required for the application under study.

PREREQUISITES:

- Basic problem determination skills
- Software Development Life Cycle and different SDLC process models
- Basic network and operating system security concepts
- UML diagramming techniques like Class diagram, Use Case Diagram, Sequence Diagram, Activity diagram-etc
- Fundamentals of DBMS and database designing
- Basics of testing like types and levels of Testing, writing test cases
- Object Oriented Programming concepts
- Basic web application architecture and deployment
- Hands on experience on Java

LIVE PROJECTS

These projects mainly focus on building the students' skills on appreciating and understanding the methodology to developing effective algorithmic codes and develop interactive user experience, which is the key aspect for a successful project implementation.



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COURSE OUTLINE:

IBM CE- NATIVE APPLICATION DEVELOPMENT ANDROID

THE ANDROID OPERATING SYSTEM

- Mobile Form Factors
- Versions of Android
- Applications and APK Files
- Process Architecture
- The Role of Java
- Hello, Dalvik
- What's In, What's Out
- Services
- User Interface
- Memory and Storage
- Operating-System Services
- Inter-Process Communication

ANDROID DEVELOPMENT

- The Android SDK
- The SDK and AVD Managers
- Configuring the Emulator
- Eclipse/ Android Studio
- Resources
- APK Files
- Build Process
- The R Class



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- The Dalvik Debug Monitor Service
- Command Shells
- The Android Log and LogCat

APPLICATIONS

- Activities
- Activity Lifecycle
- The onCreate Method
- Layouts and Views
- The findViewById Method
- Tasks and the "Back Stack"
- Toast and webkit and custom Toast
- Intents and Results
- startActivity and Related Methods
- Custom Application Classes
- Shared Application State
- Centralized Flow Control

USER INTERFACE DESIGN

- XML Layouts
- Layout Parameters
- Gravity
- layouts

WORKING WITH LISTS

- AdapterView and Subclasses
- Adapter and Subinterfaces



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- SimpleCursorAdapter
- ListView and ListAdapter
- Spinner and SpinnerAdapter

MENUS

- Menus and Views
- The Options Menu
- The Context Menu
- The <Menu>
- The Menu and MenuItem Classes
- The onOptionsItemSelected and onContextItemSelected Methods
- Handling Menu Selections

SERVICES

- The Roles of Services
- Invoking a Service
- Communication with the Application
- Communication with Activities
- Sending Notifications
- Pending Intents
- Playing Sounds
- Haptic Feedback (Vibrating)
- Invoking the Camera
- Gallery and other Image Views
- Text To Speech



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LOCATION SERVICES AND MAPS

- Location Services
- Location Notifications
- The Google Maps API
- License Terms and Maps API Keys
- Map View and Map Activity Classes
- Configuring a Map
- Controlling a Map
- Custom Overlays

USING BLUETOOTH

- Introducing the Bluetooth Service
- Controlling the Local Bluetooth Device
- Discovering and Bonding with Bluetooth Devices
- Managing Bluetooth Connections
- Communication with Bluetooth
- Using a Bluetooth Headset

USING WI-FI

- Managing Network and Wi-Fi Connections
- Monitoring and Managing Your Internet Connectivity
- Managing Active Connections
- Managing Your Wi-Fi

CONTROLLING DEVICE VIBRATION

WORKING WITH ANIMATIONS



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PUBLISHING

- The App Market
- Preparing Your App
- Debug vs. Release Builds
- Signing an APK File
- Publishing Your Application
- Application Metadata
- Updates and Support