



NATIONAL MOBILE APPS TRAINER & APPS DEVELOPMENT PROGRAM

Training Objective

The prime objective of this training course is to prepare skilled mobile application developers with theoretical and hands on experience. After completing this course successfully, the trainees will be able to contribute in creating more developers in the country.

The target is to develop 500 trainers in 17 batches; 8 batches in Dhaka, 2 in Chittagong, Rajshahi, Khulna each and 1 in Sylhet, Barishal, and Rangpur each. Initially 35 to 40 trainees will be selected and out of which at least 30 trainees are expected to complete the training successfully. Senior university students who will be in the job market within a year are the most appropriate choice for this course.

Training Schedule

Number of classes: 36

Length of Classes: 3 Hours (2 hours Theory and 1 hour Lab)

Class Hours: 5 PM to 8 PM

Venue: University Campus

Total contact hours: 108 hours

Weekly Schedule: 3 classes in a week (12 weeks) – Dhaka/Chittagong/Rajshahi/Khulna
 4 classes in a week (9 weeks) – Sylhet/Barishal/Rangpur.

SAT-MON-WED or SUN-TUE-THU or SUN-MON-WED-THU

Content and Objectives

Part	Topics	Number of Classes	Objectives
A	Java	8	Fundamentals of Object Oriented Programming (OOP) will be discussed in this part. Review of Object Oriented Programming Java so that trainees become proficient with Java and prepared to start Android.
B	Android Basics	8	Basic Android topics will be introduced in this part of the course to start developing simple Android applications.
C	Assessment I (Basics)	1	An assessment will be done to record the skillset and progress of the trainees on Java and Android and obtained marks will be used in the final evaluation.
D	Project Assignment	3	Android projects will be assigned in groups. Groups will present and submit project idea and development plan and start working on the projects.
E	Advance Android	8	Advance Android topics will be introduced in the course and trainees will get to know and apply them in their projects.
F	Assessment II (Project)	3	Trainee groups will present their projects with reports. Uploaded in the app store.
G	Training Management	3	In this part of the course, Android training objectives, milestones, assessment criteria, certification authority and standards will be discussed.
H	Assessment III (Final)	2	Assessment on advance topics will be done and all assessment results will be combined to ranking.

Course Outline

Java Basic

- Java Programming Language History
- Why java and how it becomes platform independent
- Environment: JRE, JDK, IDE
- Some convenience rule of class name and variable name as well as others
- Looping: for, while, do while
- Data Type , implicit casting and explicit casting
- If else condition, switch statement and methods
- A program with java basic (Example: Finding prime number , Fibonacci Number)

Object Oriented Programming (OOP) Concept

- Why OOP
- Features of OOP
- What is class and how to use it
- What is object and relation with class
- Purpose of Constructor
- Getter and Setter method
- A program that will use class and object basics and will tell a number is prime or not
- Inheritance Concept
- Importance of Keyword this and super
- Interface Concept
- Why Interface
- Abstract Class concept
- Why abstract class
- Difference between Interface and Abstract Class
- A program That will use Inheritance and abstract class concept
- Access Modifier
- Polymorphism Concept
- Overloading
- Overriding
- Encapsulation
- A real time problem solving by using OOP concept

Java Native

- Exception Handling
- Collection API: Arraylist , Hashmap , Set
- Benefits of Nested Class
- Importance of static keyword
- Enumerted types
- Thread deep look inside

Android Basic

Getting Started with Android Programming

- What is android?
- Obtaining the required tools
- Creating your first android application
- Anatomy of an android application

Activities and Intents

- Understanding Activities
- Linking Activities Using Intents
- Calling Built In Application Using Intents
- Explicit Intents
- Implicit Intents
- Native android Actions
- Data Transfer

Getting to know the android User Interface

- Understanding the components of a screen
- Adaption to Display orientation
- Managing Changes to Screen Orientation
- Creating the User Interface Programmatically
- Understanding android Layout
- Components Overview and some example
- WebView
- A simple project with this 3 lesson that will help to assess themselves

Multiple screen support and advanced UI part 1

- UI design with weightsum and layout weight
- Complex UI design
- Custom Component Design
- Creating Nine Patch Image
- ListActivity and ListView
- Animation in android
- A simple project to assess

Multiple screen support and advanced UI part 2

- Custom ListView
- Fragment
- ActionBar and Custom ActionBar
- Dialog and Custom Dialog
- Custom Font
- Navigation drawer

Styles and Themes

- Creating and applying simple style
- Inheriting built in style and user defined style
- Using styles as themes
- Using Support Library

Data Persistence

- Use of Shared Preference, Internal Memory, and External Memory
- SQLite Database
- A project using shared preference and database to asses Data Persistence

Content Providers

- Using a content Provider
- Creating your own content provider

Multimedia

- Playing audio in android
- Life cycle of a music player
- Playing Video

Server Communication

- HTTP Request
- XML Parsing using DOM and XML PULL parser
- Connecting PHP mysql and android Using JSON

Location Based Services

- Displaying Maps
- Getting Current Location
- Monitoring a Location
- Displaying Multiple Marker with different snippet and info window
- Adding Click Listener on marker and info window
- Finding distance
- Getting address from latitude and longitude
- Use of direction API

Android Advance

- Google Cloud Messaging (GCM)
- Admob Integration and Complexity of getting payment
- Google Analytical Integration and necessity

Background Services

- Various Services Overview
- Services's Life Cycle
- Started Service Implementation
- Bounded Service Implementation

Broadcast Receiver

- Registering System Broadcast and Custom Broadcast

- Learning Alarm Manager

Working with Sensor

- Introduction to various sensors
- Checking available sensors in device
- Exploring accelerometer sensor

Cross Platform Application Development

- Exploring Phonegap

Motivation And Discussion

- Code Refactoring and best practices
- Common Mistakes in Android
- What should keep in mind when providing training

Android Training Management