**Syllabus on**

**Android App Development Course**

**National Academy for Computer Training And Research (NACTAR)**

**Bogra.**

 **Section 1: Introduction to Android Development (2hr)**

1.1 Course Syllabus

1.2 What is Android?

1.3. Why Android?

1.4 The Anatomy of Android App

1.5 Join the Google Group

**Section 2: Installation and Setup for Android Development (4hr)**

2.1 Prerequisites of Building App with Android

2.2 Download Android Studio

2.3 Download Android SDK

2.4 Download JAVA JDK

2.5 Configure Windows PC for Android Development

**Section 3: How to Create Android App from Scratch (I am Rich Project) (4hr)**

3.1 Creating a New Android Project from Scratch

3.2 Android Activity, Life Cycle

3.3 Working with drawable in Android Projects

3.5 How to Add App Icons to Android Projects

**Section 4: Running Your App on a Device (2hr)**

4.1 Deploying Android Apps to a Virtual Device (Emulator)

4.2 How to Deploy Android Apps to Physical Android Devices

**Section 5: I Am Poor - App Challenge (2hr)**

5.1 What are App Challenges?

5.2 Build another app called- I am Poor

**Section 6: BusinessCard - How to Build Beautiful UIs with Android Widgets (4hr)**

6.1 BusinessCard - A Single Screen Personal Business Card App

6.2 Android Layout Challenge

6.3 Working with Layouts in Android

6.4 Working with Widgets in Android

6.5 Android Material Design Concept

6.6 Incorporating Custom Fonts in Your Android App

**Section 7: Weather App - How to Build an Online App with Volley (6hr)**

7.1 Weather App - A single Screen Real Time Weather App

7.2 Android Layout Challenge

7.3 Introduction of Volley

7.4 Volley Plug in, Overview

7.5 Volley Implementation

7.6 Network Communication & Response - JSON Object, JSON Array

7.7 Model View Presenter (MVP) Architecture

7.8 Compete real time Weather App

**Section 8: Android Architecture (4hr)**

8.1 Mastering Android Activity

8.2 Broadcast Receiver

8.3 Services

8.4 Calling Service via BusinessCard App

8.5 Email Service via BusinessCard App

**Section 9: Android Sensors (4hr)**

9.1 Torch App - A single Screen Torch App

9.2 Android Layout Challenge

9.3 Building a Torch App

**Section 10: Working with Camera (6 hr)**

10.1 Camera App - A single Screen Camera App

10.2 Android Layout Challenge

10.3 Understanding of Android Camera Hardware

10.4 Android User Run time Permission

10.5 Android Camera Library

10.6 Understanding Android Third Party Library

10.7 Build a camera app

**Section 11: Third Party Android Library (4hr)**

11.1 QR Code Reader - A Single Page QR Code Reader App

11.2 Android Layout Challenge

11.3 Implement a third party library

11.4 Build QR Code Reader App

**Section 12: App Challenge (2hr)**

12.1 QR Code Generator - A Single Page QR Code Generator App

12.2 QR Code Generator Layout

12.3 QR Code Generator - functionality

12.4 Download Full Project

**Section 13: Build a Google Map App (6hr)**

13.1 Get your Current Location

13.2 View your location in Google map

13.3 Share your location via SMS or Social Media

13.4 Find Nearby Location - Police Station, Hospital, School, Park etc.

**Section 14: Firebase (4hr)**

14.1 What is Firebase?

14.2 Why Firebase?

14.3 Firebase Authentication

14.4 Firebase Cloud Messaging

14.5 Firebase/Google Analytics

14.6 Firebase Crashlytics

14.7 Implementation of Firebase in your Project

**Section 15: Testing Your Android App (4hr)**

15.1 Basic concept of App testing

15.2 Different app testing module

15.3 UI testing on different devices

15.4 Functionality testing for app

**Section 16: Publishing Your App in Playstore (4hr)**

16.1 Store Listing on Playstore

16.2 Release App in Playstore

16.3 Rating and Reviews

16.4 Developer Guide Line

16.5 Publishing Overview

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