Lecture	Topics	Tentative Speakers	Institute
	Summer FDP on "Android Programming & Applications" from 18 – 23 July, 2022 **Jointly organized by: Electronics & ICT Academies at- IIT Guwahati, NIT Patna, MNIT Jaipur, and IIITDM Jabalpur**		

Lecture	Topics	Tentative Speakers	Institute
	MOBILE APP DEVELOPMENT INTRODUCTION		
Lecture 1	**JAVA Concepts** • OOPs Concepts • Inheritance in detail • Exception handling • Packages & interfaces • JVM & .jar file extension • Multi-threading (Thread class & Runnable Interface)	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 2	SQL • DML & DDL Queries in brief	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 3	**Introduction to Android** • Setting up development environment • Dalvik Virtual Machine & .apk file extension • Fundamentals -Basic Building blocks- Activities, Services, Broadcast Receivers & Content providers • UI Components - Views & notifications • Components for communication -Intents & Intent Filters • Android API levels (versions & version names)	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
	ANDROID SOFTWARE DEVELOPMENT KIT (SDK)		
Lecture 4	**Application Structure** • AndroidManifest.xml • Uses-permission & uses-sdk • Resources & R.java • Assets • Layouts & Drawable Resources • Activities and Activity lifecycle • First sample Application Course	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 5	**Emulator-Android Virtual Device** • Launching emulator • Debugging in Android Application • Logcat usage • Introduction to DDMS • Hello World App • Creating your first project, The manifest file Layout resource, Running your app on Emulator • Second App - (switching between activities) • Develop an app for demonstrating the communication between Intents	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
	INTERFACE USABILITY		
Lecture 6	**Basic UI design** • Form widgets • Text Fields • Layouts • [dip, dp, sip, sp] versus px	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 7	Preferences • Shared Preferences	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 8	**Menu** • Option menu • Context menu • Sub menu • menu from xml • menu via code	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 9	**Intents** • Explicit Intents • Implicit intents	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**

Lecture 10	**UI design** • Time and Date • Images and media • Composite • Alert Dialogs & Toast • Popup	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
	ANDROID APPLICATION DEVELOPMENT		
Lecture 11	**Styles & Themes** • styles.xml • drawable resources for shapes, gradients (selectors) • Style attribute in layout file • Applying themes via code and manifest file	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 12	**Linkify** • Web URLs, Email address, text, map address, phone, Open Web Browser	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 13	**Adapters and Widgtes** • Adapters - • a. ArrayAdapters • b. BaseAdapters • Recycler View • Gallery using adapters	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 14	**Content Providers** • SQLite Programming • SQLiteOpenHelper • SQLiteDatabse - Getting Data from Database	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 15	**Toast**	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 16	**Camera** • Taking pictures • Media Recorder • Rendering previews	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 17	**Threads** • Threads running on UI thread (runOnUiThread) • Worker thread • Handlers & Runnable • AsynTask (in detail)	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 18	Services • Overview of services in Android • Implementing a Service • Service lifecycle	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 19	**Multimedia in Android** • Simple video playback	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 20	**Location Based Services and Google Maps** • Using Location Based Services • Finding current location and listening for changes in location • Working with Google Maps • Showing google map in an Activity	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 21	**Sensors** • How Sensors work • Using Orientation and Accelerometer sensors • Best practices for performance	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 22	**Telephony Services** • Making calls • Sending messages	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
	ANDROID APPLICATION DEPLOYMENT		
Lecture 23	Android Application Deployment in Android Market	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 24	Json Parsing in Application	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**
Lecture 25	Monetisation of Android App - Adding Advertisement (Admob)	Ms. Himadri Parikh	**Ritvij Bharat Private Limited**

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Detailed Schedule of the Programme

*Note: Inauguration on 18th July, 2022 at 09.30 am to 10:00 am.
    Closing Ceremony on 23rd July, 2022 at 04.30 pm to 05:00 pm
*Break Timing:- Lunch Break: 01:00 pm to 01:30 pm

*Note: 1) Theory Lectures = 21 hrs
2) Hands – on /Quiz Test = 19 hrs

Date/Time	10:00 am to 11:00 am		11:00 am to 12:00 noon	12:00 noon to 01:00 pm	01:30 pm to 02:30 pm	02:30 pm to 03:30 pm	03:30 pm to 04:30 pm	04:30 pm to 05:00 pm
	09:30 am to 10:00 am	10:00 am to 11:00 am						
18-07-2022 Monday	Inauguration	Lecture 1			Lecture 2		Lecture 2	
19-07-2022 Tuesday	Lecture 3				Lecture 4			
20-07-2022 Wednesday	Lecture 5		Lecture 6	Lecture 7	Lecture 8	Lecture 9	Quiz 1	
21-07-2022 Thursday	Lecture 10	Lecture 11	Lecture 11	Lecture 12	Lecture 13	Lecture 14		
22-07-2022 Friday	Lecture 15	Lecture 16	Lecture 17	Lecture 18	Lecture 19	Lecture 20	Quiz 2	
23-07-2022 Saturday	Lecture 21		Lecture 22	Lecture 23	Lecture 24	Lecture 25	Closing Ceremony	

List of Practical's for "Android Programming & Applications" Course

Sr. No.	Tentative List of Experiments	Hands –on Sessions
1)	Calculator	Integrated Hands-On Session
2)	Music Player	Integrated Hands-On Session
3)	Database Management	Integrated Hands-On Session
4)	Park the car on Google Maps	Integrated Hands-On Session

Note: 1) Labs will follow the theory:
   a) Complete session is 90% coding based hands-on. Practical sessions are subjected to the topics undertaken in the respective hours.
   b) List of lab experiments subjected to modifications w.r.t flow of the course and participant's interests.

2) Software requirements for the course:
   a) https://developer.android.com/studio - Participants need to download official Android IDE and developer tools to build Android Mobile Apps.
   b) https://www.infoworld.com/article/3095406/android-studio-for-beginners-part-1-installation-and-setup.html   - Android Studio for beginners – Installation and Setup
   c) Basic Knowledge of the Internet Services
   d) Basic Knowledge of Java Programming
   e) 2 Mbps of uninterrupted broadband connectivity
   f) Workstation/Desktop/Laptop with minimum 4 GB RAM

Speaker Details:

Name	Ms Himadri Parikh
Educational Qualification	Masters of Engineering - (CDAC - GTU) Wireless & Mobile Computing
Industry Experience Details	Corporate Trainer

Past Professional Training Experience

Sr. No.	Company	Role
1	NSDL e Governance	Flutter and Android Trainer
2	Tata Consultancy Services	Flutter Trainer
3	Noble Prog - South Africa	Flutter Trainer
4	LIC India	Android Trainer
5	L&T Technology and Services	Python Trainer

Major Institutions where Training Programs Delivered by the Trainer

NSDL e Governance, TCS, L&T, LIC India, Nuclear Power Corporation India Ltd., Noble Prog, Siemens, Ultratech Cement, Insolutions Global, MSEDCL - Maharashtra Electricity board, Maharaja Sayajirao University, Ganpat University, Mandsaur University, etc.

Major Professional Skill Sets

Sr. No.	Skill Details
1	Flutter with Dart
2	Android with Java and Kotlin
3	Python Programming
4	Java SE

Major Projects Undertaken

Sr. No.	Project Title
1	MS Paper & Engineering Works - Mobile Application for Internal Use