Android Developer Fundamentals Curriculum

2016

Android Developer Fundamentals Curriculum

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Introduction

What is the Android Developer Fundamentals course?

- An instructor-led training course teaching the fundamentals of Android development

- to be delivered as

  ○ University curriculum

  ○ industry workshop (later)

Built by Google

- Developed by the Google Developer Training team

- Part of Google CEO Sundar Pichai's initiative to train 2 million Mobile developers in India

Why take this course?

This course teaches students the skills needed to:

- Create Android apps
- Apply for a position as a junior Android developer
- Take Google's Associate Android Developer certification

🔥 **Internship Opportunity for Mobile App Developer**

Cogent Data Solutions LLC

💼 0-0 yrs   📍 Hyderabad

Keyskills: **Android**, IOS

Job Description: Cogent Data Solutions is looking for mobile **developer** interns for six months interested in developing ...

👑 **Junior Android Developer** - Startup

Mutterfly

💼 1-3 yrs   📍 Mumbai

Keyskills: Mobile Development, Startups, **Android** Studio, Java, **Android**

Job Description: Were looking for **Junior developer** to help build a social App to connect neighbourhoods using something ...

Who are the students?

- senior computer science students

- programming professionals

who already know:

- object-oriented programming

- how to program in Java language

- or have sufficient experience in another language to learn Java

programming for themselves

Who is the teacher?

We expect that the course teachers will:

- know how to develop Android apps

- know how to debug apps and find troubleshooting information

- be willing to keep up to date with changes in Android Studio and the Android SDK

Google Certification Program

- Curated competencies and rubrics

- Well-lit path to mastery

- Performance based exams
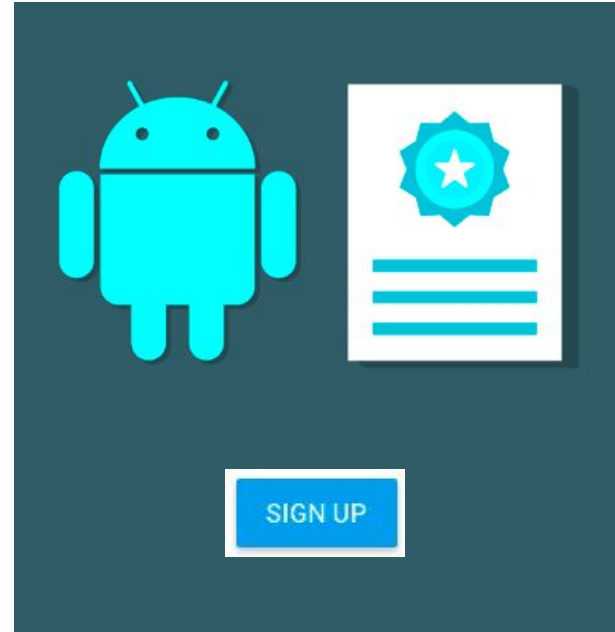
- Persistent storage of credentials

Google Developer Certification - Google I/O 2016

developers.google.com/training/certification

Associate Android Developer Certification

- To get certified, take a performance-based exam

- This course teaches the skills tested by the exam

- Certification is NOT granted on completion of the course

developers.google.com/training/certification

Teaching Principles

Different kinds of learners

Learning style		Resources
learn the rules	*"explain the rules to me"*	● lectures ● textbook
learn by doing	*"let me get on and do it"*	● practicals
learn by example	*"let me look at the code"*	● solution code

Learn by practicing

Master a skill and build on it

Build multiple apps to train "muscle memory"

How do I...

create a project?

add an activity?

change the layout?

Remove the training wheels
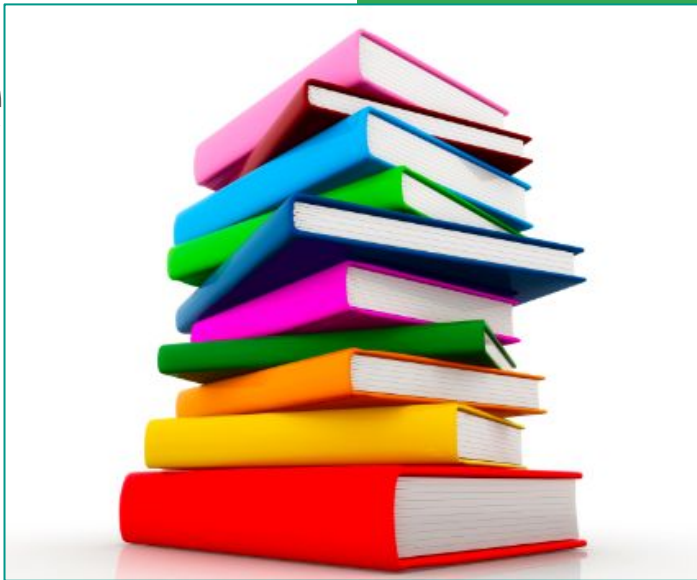
Reduce instruction details as practicals progress:

Full instructions the first time

Fewer instructions the next time

Just do it from then on

Course and Lesson Structure

Goals of the course

Teach core, fundamental skills

Teach students to build basic apps

following best practices

Expose advanced topics,

but do not provide

instruction for them

Lesson structure

Lecture

Practicals

Solution code

Homework assignments

Google

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Lectures

What's in a lecture?
 concepts
 implementation guidance
 best practice guidance

Google will provide:
 written concepts
 reference set of slides for lectures
    to come later -- *are these wanted?*

Practicals

What's in a practical?
 written instructions guiding
      students to build apps

Google will provide:
 step-by-step instructions
 solution code for the apps

1.1 Create the TwoActivities project

1. Start Android Studio and create a new Android Studio project.

Call your application "Two Activities" and change the company domain to "android.example.com." Choose the same Minimum SDK that you did in the previous projects.

1. Choose **Empty Activity** for the project template.
2. Accept the default activity name (MainActivity). Make sure the **Generate Layout file** box is checked. Click **Finish**.

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Practical challenges

Practical challenges are for ambitious students who want to stretch themselves

 optional challenges to build or
    extend apps
 no step-by-step instructions
solution code **is** provided

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Homework assignments

Homework assignments are:

high-level description of homework for students to turn in for grading

no step-by-step instructions

no solution code

Q: Will the professors want Google to provide homework assignments or will they want to create their own homework assignments?

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Where is everything?

All materials from Google Developer Training
will be open-source

- Practicals -- GitBook

- Concepts -- GitBook

- Solution code -- GitHub

- Reference slides
  -- if needed -- Google Sheets

GitBook   MY BOOKS   + NEW

🔒 Android Developer
Course

Curriculum for instructor-lead training course for teaching core
Android Development — android-developer-training

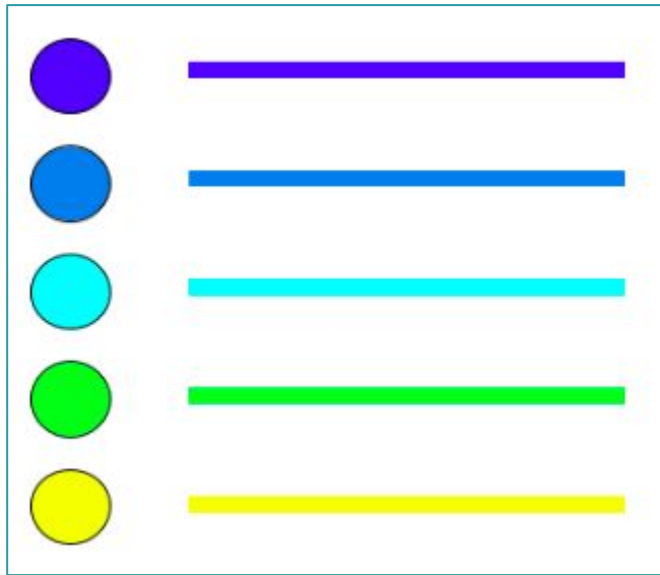Google

Curriculum
Overview

Curriculum outline

5 units comprising 14 lessons

Unit 1 - Getting started

Unit 2 - User experience

Unit 3 - Data

Unit 4 - Background tasks

Unit 5 - Polish and publish

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Unit 1. Getting started

Covers installing Android Studio, understanding project structure, building your first app, creating activities.

Exposes students to concepts that they will learn in more detail later.
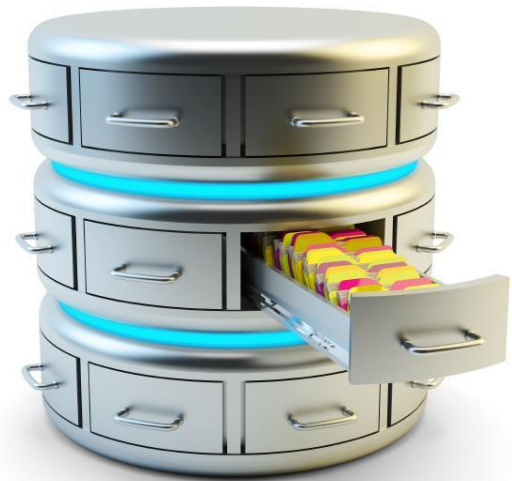
Button

Unit 2. User experience

Covers how to implement navigation strategies, get input from the user, use themes and styles, create a delightful user experience using material design principles.
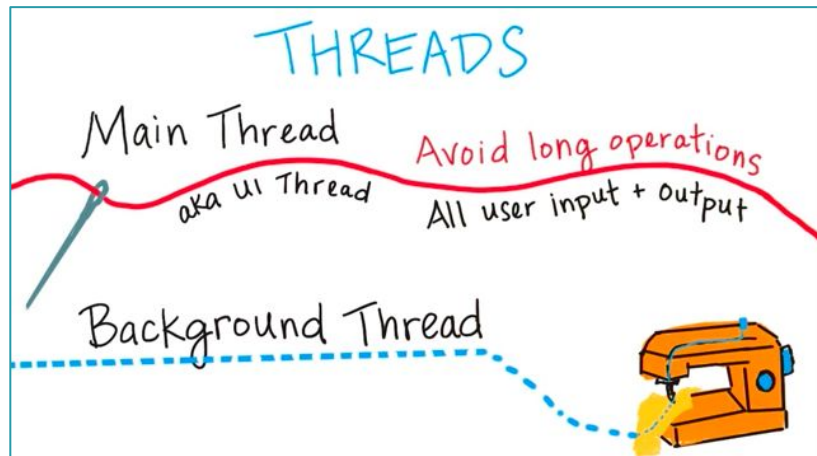
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Unit 3. Data

All about data -- how to store it, update it, query it, load it, make it available outside your app.

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Unit 4. Background tasks

How to do work in the background. Priorities for apps and services. IntentService, JobScheduler, Alarms.
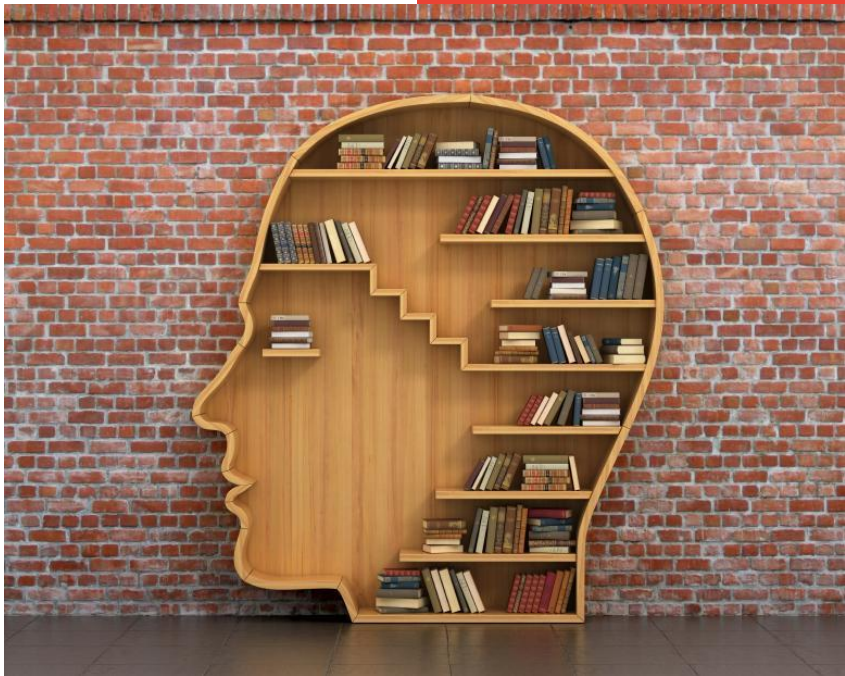
Unit 5. Polish and publish

This unit is more lecture than practical. It exposes students to ways to extend their apps, using Google Services, Firebase, and more.

Covers creating a beta version for Google Play, and discusses publishing to Google Play.
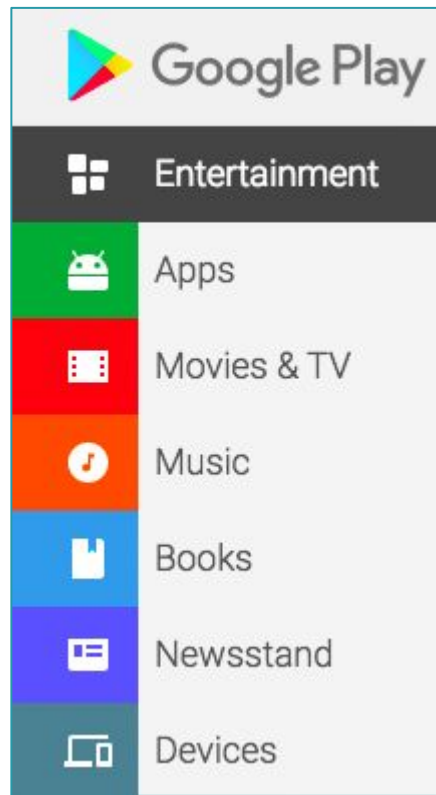
Resources

Resources from Google Developer Team

Online Udacity courses
    udacity.com/google

Google developer training website
    developers.google.com/training

Developer documentation
    developer.android.com

Android Developers Blog
    android-developers.blogspot.com

Android Developers YouTube channel

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Questions?

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