I. GDG| DevCamp 2015

The GDG DevCamp is Camp of training, code lab and mentoring organised by GDG Yaounde. the goal is to give participants the prerequisites and tools to master the Android, web and cloud development. These trainings consist of several courses so sessions and practical work, at the end of the course, each learner will present a project as an Android app and/or web app. that it may submit in one of the current challenges.

During the GDG DevCamp, the trainings and code labs will be addressed to the following audiences :

- Engineering students
- Computer Science Students
- Developers
- IT Engineer
- IT Passionates

II. MAIN OBJECTIVE

The main obective of GDG DevCamp is to promote the Native development Android App, web app with Google App Engine and use Google APIs. We identified the following specific objectives:

- Build an Android app step-by-step with Android Studio
- Write code and deploy apps to Google Cloud Platform
- To do the Code Labs of Google I/O 2015
- To prepare participants for the MTN Innovation Challenge
- To prepare participants for ANTIC Innovation Challenge & Orange Challenge
- Coaching & mentoring participants for MTN, Orange & ANTIC Challenges

To achieve these objectives (projects) a number of activities are carried out to better master their advancement processes. These activities are presented in the section below.

III. PRESENTATION OF THE PRINCIPAL ACTIVITIES

The following activities are carried out in GDG DevCamp:

1. Google Cloud Training

Skills Gained

Write code and deploy apps to Google Cloud Platform

Who Can Benefit

Experienced Java or Python developers who want to learn how to build applications on Google Cloud Platform

Prerequisites

Experience writing web applications using Java or Python

Syllabus

1. Google App Engine

- **App Engine Architecture and Optimization** (Thursday 6th August 2015, 17h-19h)
  - Life of a Request
  - App Engine Design Principles
  - Hands-On Lab Exercise
- **Managing Your App** (Saturday 8th August 2015, 8h-10h)
  - Admin Console
  - Billing and Quotas
  - SLA and Premium Account
  - Hands-On Lab Exercise
- **User APIs and Authentication** (Saturday 8th August 2015, 10h-12h)
  - OAuth2
  - Configuring Your App's Authentication
  - Hands-On Lab Exercise
- **Datastore** (Thursday 13th August 2015, 17h-19h)
  - Basic Concepts
  - Datastore internals
  - API
  - Query
  - Index
  - Transaction
  - Hands-On Lab Exercise
- **Memcache Basics** (Saturday 15th August 2015, 8h-9h)

2. Cloud EndPoints (Saturday 15th August 2015, 9h-12h)

- Basic concept
- Add Cloud Backend in Android App
- Create Entity Class and EndPoint Class
- Generation Client API
- Hands-On Lab Exercise

2. Android Training

Skills Gained

Build an Android app step-by-step with Android Studio

Prerequisites

1 year of programming experience in Java

Syllabus

Lesson 1: Create Project with a Simple UI (6h)

Starting by installing Android Studio, you'll create your first project with a simple list-based user interface and built and deploy it to virtual and actual devices. You'll also discover what makes mobile - and Android in particular - a unique environment for app development.

Implementation:

Date of lesson: Tuesday 4th August 2015, 15h -18h

- **Android Studio, Gradle, and debugging tools**
- **Life cycle of activity**

Date of lesson: Wednesday 5th August 2015, 15h -18h

- **User Interface and Layout managers**
- **ListViews and Adapters Array**

Lesson 2: Create New Activities and Navigate Apps with Intents (4h)

Give your app structure and create more complex Activities. You'll learn about Android's Intent framework, and how to use Intents to navigate between Activities, both within your app and as a way to add 3rd party functionality.

Implementation:

Date of lesson: Friday 7th August 2015, 15h -19h

- **App navigation with Explicit Intents**
- **Share Intent and the Android sharing framework**

Lesson 3: SQLite databases (6 h)

Learn how to create databases, use Android's Content Providers to provide an abstraction layer between your data and your UI implementation, and use Loaders to efficiently load stored data.

Implementation:

Date of lesson: Tuesday 11th August 2015, 15h -18h

- **SQLite database**
- **Creating and using a Content Provider as an abstraction layer**

Date of lesson: Wednesday 12th August 2015, 15h -18h

- **Creating Adapters "BaseAdapter" to bind UI 'listView ' components to Content Providers**

Lesson 4: Implement Rich and Responsive Layouts (6 h)

Create rich, responsive user interfaces that work across a variety of different hardware types and screen sizes.

Implementation:

Date of lesson: Friday 14th August 2015, 15h -19h

- **Fundamental Android design principles**
- **Optimizing tablet UIs using Fragments**

Date of lesson: Tuesday 18th August 2015, 15h -18h

- **Custom views**
- **Completion of the project with deployment of the application in Google Play.**

3. Code Labs

the various CodeLabs that we will do, come from the Google I/O 2015. We have selected the following codelabs depending the objectives to reach and depending to tools that we can have. You have the complete list at this link http://io2015codelabs.appspot.com/

Android

Profiling GPU Rendering Codelab

In this codelab you will learn how to turn on Profile GPU Rendering on your mobile device. Profile GPU Rendering gives you a quick visual representation of how much time it takes to render the frames of a UI window relative to the 16-ms-per-frame benchmark.

Unit and UI Testing in Android Studio

In this codelab, you'll learn how to set up your project in Android Studio for testing, write a Unit Test and run it locally on your development machine and also how to do functional UI testing on the device

Building Apps that Sign In with Google

In this codelab, you'll learn how to add a Sign In with Google button to your Android App and use it to allow your users to sign in with the Google ID

Visualizing Debug GPU Overdraw Codelab

In this codelab you will learn how to visualize overdraw on your mobile device by color-coding interface elements based on how often they are drawn underneath.

Android Wear Always-on Application

In this codelab, you'll learn how to turn an Android Wear application into an always-on app.

Google Cloud Platform

Google Compute Engine: Compute the Cosmos

Use a VM instance to process public astronomical data to generate a viewable image.

Building a gRPC service with Node.js

In this codelab, you will learn how to build a Node.js service which exposes an API via gRPC. Then you will write a Node.js command-line client for your gRPC service.

node.js: Build a Web App using Google Cloud Platform

In this codelab, you will learn how to integrate Google Cloud Platform services into a Node.js web application to store data, upload images, and authenticate users.

Geo

Going Places with Android

Check-In apps are so last year. Let's build a simple Check-Out app using the Android Places API and Firebase to find the hottest places people are leaving.

Building GeoFences into your Android App

In this codelab you'll learn how to use geo fences in an Android app.

Wearable Maps

Looking to take your Android Wear app to the next level? Learn how to add a Google Map in this code lab, featuring a blazing fast Lite-mode map that upgrades to a rich, fully interactive map.

Search

Add Voice Interactions to Your App

In this codelab, you'll learn how to add voice interactions to your app with the Voice Interaction API. You'll build a voice-powered camera app that responds to the voice command "take a photo" and prompts you for confirmation before taking the photo.

Get Search Autocomplete from Deep Links

In this codelab, you'll learn how to add deep links from your website to your app.

Enable Deep Linking to your App

In this codelab, you'll learn how to get your Android app indexed by Google Search.

Unity

Play Game Services in Unity

This codelab will teach you how to extend an existing Unity game to support Play Game Services on Android devices.

Cardboard Unity Codelab

This codelab is an introduction to how to take a first person game made in Unity and enhance it to have a Virtual Reality mode using the Google Cardboard plugin.

Web

Building data-rich web apps with Lovefield

In this codelab, developers will learn how to build a web application that uses Lovefield as its data query and access layer.

Web Animations Transitions and Playback Control

In this codelab, you'll learn how to use the Web Animations API to enhance a single-page HTML website with transitions and a scroll effect.

4. Coaching & Mentoring (GSoC)

It is about organizing every Wednesday and Saturday sessions of discussions on the ideas of each project, the design, the choice of technologies to be adopted. Also sessions of presentation of each project followed by an evaluation and recommendations.

For want of space, we cannot present all the individual activities. We present in the program below a summary of the activities that will be carried out during the activity in annex.

5. Speakers

Google Cloud Training: Hinault Romaric.

Hinault is Google Cloud Developer, authors of many articles on www.developpez.com about Android, App Engine, .Net. He is redactor at www.developez.com

Android Training: Daniel Rene Pewo.

Daniel is PhD student in Computer Sciences at University of Yaounde 1. After Android Study Jams Yaoundé in march, Daniel is Certified Android Developer by Udacity.Daniel is Software Engineer, Founder &Team Leader FREELANCERTECH (www.freelancerfech.net).

Coaching & Mentoring: Cyprien TANKEU

Cyprien is Analyst at Personnel Service of Ministry of Arts and Culture; and Assistant Lecturer in Computer Sciences At National Advanced School of Posts and Telecommunications.