Course code: ANDROID2

The course is intended for all developers who want to learn advanced methods of developing applications on the Android platform, such as working in the background and communicating with remote web services. You will also try working with sensors, device location and Google Maps. To work with Google Maps, it is advisable to use your own Android device (it is not a requirement).

What we will teach you

- Work with background data and UI
- Network communication in android
- Integration with web services and applications (Google maps, Push notifications, Firebase Console)
- Advanced work with hardware in the device (sensors, modern location services FusedLocationAPI)
- Services, AIDL
- Broadcasts, Alarms, Widgets

Required entry skills

- The course assumes knowledge and experience with programming in Kotlin at the level of the course [KOTLIN1]
- The course assumes knowledge and experience with programming on the Android platform at the level of the course [ANDROID1]

Teaching methods

- Expert interpretation with practical examples, exercises on computers. The course is led by a lecturer with developer experience

Studying materials

- Presentation of the material discussed in printed or online form

Syllabus:

Working with background data and UI
- Main Thread, Handler and Looper
- Threads and AsyncTask,TimerTask

Working with the network
- TCP/IP, HTTP
- Web services - Google Cloud Messaging and push notifications
- XML and JSON parsing and creation

Google Maps
- SDK settings
- API registration, use

Locations and sensors
- Device location via GPS and network
- Fused location API versus LocationManager
- Reading data from sensors and law

WebView component
- Using, calling methods on Java objects via JavaScript

Services
- started and bounded services
- IntentService and its usage
- Binding services and AIDL

Broadcast receivers

GOPAS

- Creation of a broadcast receiver and its use

Alarms
- Use of alarm
- Reset the alarm when the device starts
- setting the exact repeat alarm in the new SDKs

Notification
- Pending Intent
- Creating a notification in the system bar

Optional topics
- Desktop widgets
- Publication of applications, Google Play
- Audio and video

Something extra
- Parcelable vs. Serializable
- 9-patch, image caching
- Sparce array