UiO / IFI / PUT
Spring 2025
Questions on Android

1. In Android, there is the notion of **API Level**. Say if you agree with the following definition: "*API Level is an integer value that uniquely identifies the framework API revision offered by a version of the Android platform*". Indicate in what way this affects the portability of the applications developed. Justify your answer.

2. In Android, applications are built around several **components**. Mention two of such most important components (in addition to the component "**service**") and provide their meaning.

3. Consider the Android system. Why is this system needed and existing desktop OSs such as Unix or Windows or MacOS are not adequate? Relate your answer to the programmatic interface provided to app developers.

4. In Android, consider the component **service**. Does this component have an interface to the user? Justify your answer.

5. Consider the **manifest.xml** file attached to each Android application. Does this file specify the hardware and software services required and the external libraries that need to be linked with an application? Relate your answer with the scenario in which some software service is not referred to in that file.

6. Consider the mechanism of broadcast in Android which is represented as an Intent object. Does it specify a particular Activity object that will be triggered? What does the Intent object contains?

7. Can an activity in Android start another activity that exists in another application on the device? Answer "yes" or "no" and justify with an example in any of the cases.

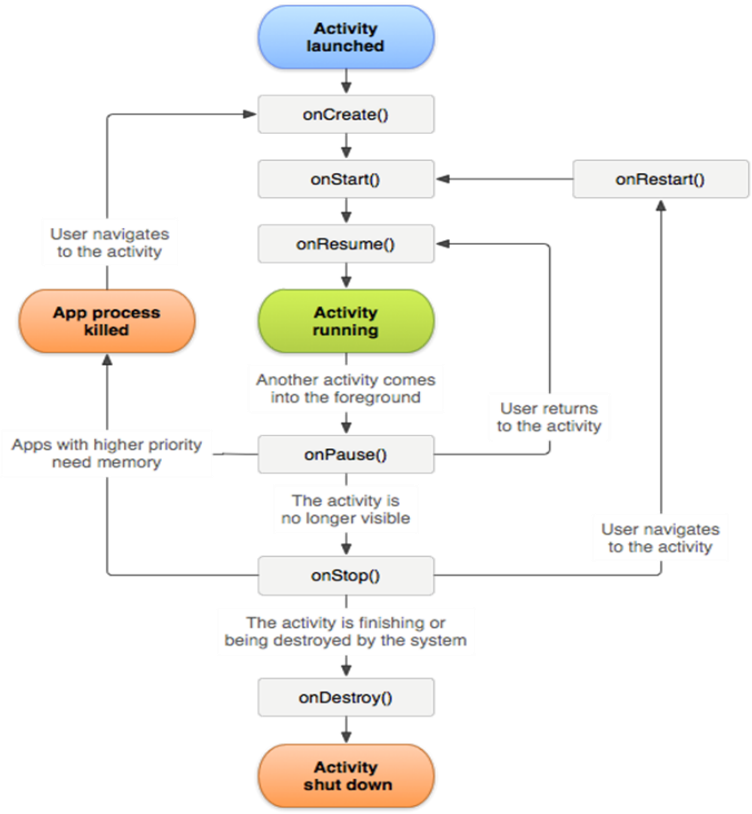
8. Consider Android and the following sentence: "*The activities are arranged in a stack (the back stack), in the order in which each activity is opened with a logic of first-in first-out*". Do you agree? Answer "yes" or "no" and justify.

9. Considering that in Android a task is a cohesive unit, w.r.t. foreground and background Activities, what happens when a user begins a new task or goes to the Home screen, via the Home button?

10. Does Android suggest application resources such as images and strings to be externalized from the code? If so, what is the reason?

11. In Android, what are the three states in which an Activity can exist? Briefly state to what each one corresponds.

12. Consider the figure describing and Activity lifecycle.
    Between which calls (to which functions) is and Activity visible?
    Between which calls (to which functions) is an Activity in the foreground?



13. The Android system supports the mechanism designated AsyncTask (asynchronous task). What is the purpose of this mechanism? In your answer, provide an example of its usage.

14. Consider the Android system. Is the Android UI toolkit thread-safe? Clarify your answer by indicating if you can manipulate the UI from a worker thread.