Master's Thesis

Towards Dealing with API Incompatibility in Android Ecosystem

Motivation:
In recent years, software companies rely on third-party developments, provided by external developers more than ever. The emergence and popularity of open platforms like the Android and iOS operating systems reflect this trend. Currently, one of the challenges hindering suitable integration of the third-party development with the platforms is compatibility issues, which emerge once new versions of the software platforms are released. Prominent examples of such compatibility issues are deprecated, inconsistent, and removed data in Application Program Interfaces (APIs). This problem is especially critical in the Android ecosystem as different versions of the Android operating system have already been adopted by different mobile device providers. This additionally contributes to the problem of API incompatibility.

Task:
In this master thesis, the following tasks should be carried out:
- Providing an overview to state of the art of the compatibility issues and the methods that help to detect API incompatibility in the Android ecosystem
- Development of an approach to detect incompatibilities that occur due to versioning of APIs and platform update
- Assisting developers in identifying the incompatibilities and provide correction suggestions
- Automatizing the correction of compatibility issues
- Evaluating the approach by means of a group of developers

Literature:

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