

A safari walk-through into JNI within Android™ OS

Exploiting JNI capabilities taking advantage of Android™ NDK

Antonio Troina

Matr. 708267, (antonio.troina@mail.polimi.it)

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Reviser: PhD. Patrick Bellasi (bellasi@elet.polimi.it)

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Abstract

This article aims to briefly describe, in the form of some simple and annotated tutorials, how a developer can take advantage of some JNI capabilities under Android operating system to let the Java and Native environments communicate to each other. This operation has been made quite easy by the Android's native development kit (NDK). Special attention will be given to the callback mechanism, which is by far the most complex, nevertheless the most challenging, under the developer's point of view.

1 Introduction

The coming of Android in the smart-phones' market would suggest that Java is definitely enough to rule this galaxy. Moreover, lately, the little-green-robot's operative system has approached, silently but firmly, to the embedded world which, typically, wasn't famous for being dominated by the Java language, particularly for its performance-oriented needs. This being said, except for the peculiar case of the *JIT-ed* code, who's responsible of connecting the high-level Java application layer to the native world, and the other way around? Yes, this interface is JNI, which was initially released in early 1997. So far, some basics examples are available (mainly on-line) which, however, are often more theoretical than practical, therefore this article is

meant to be a concrete hands-on guide, to discover - some of - the secrets behind this powerful instrument which is JNI.

1.1 Subsection

Subsection body

References

- [1] Liang, S.: The Java Native Interface. Addison-Wesley (1999)
- [2] Gargenta, A.: Jni reference example (Oct. 2012)