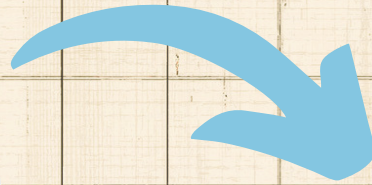


# VIRTUE ETHICS AND SOFTWARE DEVELOPMENT: DEBATES AND PROPOSALS



## STARTING POINT

The classical notion of virtue ethics is useful in contemporary contexts of software development



## MAIN VALUES

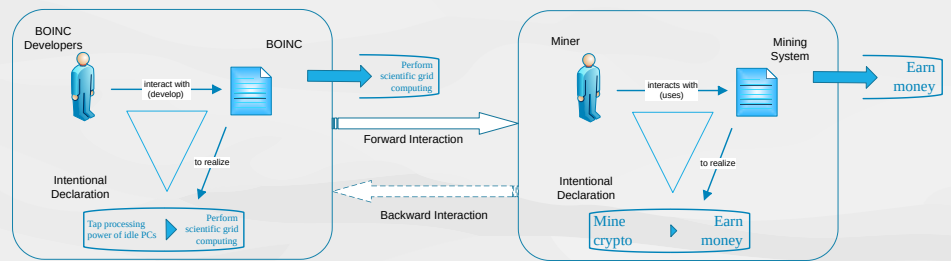
- interaction
- intentionality

## MAIN PROPERTIES

- correctness
- security



## AN EXAMPLE:



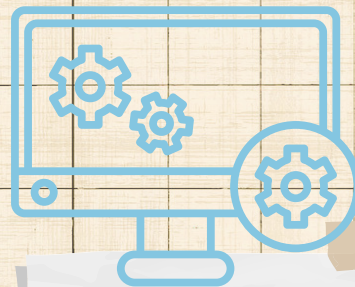
The Berkeley Open Infrastructure for Network Computing (BOINC) is an open source middleware system for volunteer and grid computing. It is released under the terms of the GNU Lesser General Public License (LGPL), and lets you donate your idle computer time to science projects. Suppose a certain user, while complying with the LGPL license, uses BOINC to tap idle computing time for a non-scientific project, e.g. mining cryptocurrencies. The resulting intentional dependency network is shown in the figure. Since the mining system uses BOINC, a forward interaction is established from the BOINC node to the mining system node. Additionally, the intentional declaration of the BOINC node is *contaminated* by the intentional declaration of the mining system node, which has a completely different intended effect. This relationship is represented by the backward interaction arrow. It is important to note the different role of the two nodes in terms of *awareness*. The mining system node is fully aware of the BOINC node (and uses it directly), while the BOINC could not be aware of the existence of the mining system node at all.

## INTENTIONAL DEPENDENCY NETWORK

It refers to the chain of complex interactions in the context of software development. An intentional dependency node has three elements: a **human being** who interacts with a **software artifact** with a **declared intention**.

## OUR PROPOSAL: MORAL VALUES FOR SOFTWARE DEVELOPERS

- 1 Acknowledgement of the moral dimension of software development.
- 2 A general attitude of responsibility and preliminary investigation about implicit and declared intentions before use of any piece of already existing software.
- 3 Intentions should be declared as non-functional requirements for any new software.



## A MULTIDISCIPLINARY TEAM

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