How to Choose a Language and its Ecosystem

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The chosen language, Java 8; It is available on the mainstream operating systems: Windows, Linux and Mac OS, We can develop the software on one of the platforms and test it on other platforms; With its support of lambda expressions and stream API, we can make good use of some functional programming in our Object Oriented Design and have better handle on collections in the software; It provides API for TCP server and clients connection, which strongly supports the required TCP connectivity in the software; There are all kinds of open source JSON libraries for java, we chose json-simple to handle messages in JSON format; Junit testing helps us debug and improve the code.

The chosen IDE, IntelliJ IDEA. It is an industry standard choice of IDE for Java development. Amongst its many other features, it includes the ability to autocomplete and generate code, significantly lowering the amount of time spent searching Java documentation and writing boilerplate. Furthermore, it allows code refactoring, saving the user from having to find every instance of a variable when choosing to change it. It also contains duplication detection, which is extremely helpful for optimization. Finally, it quickly analyzes code as you type, alerting the user to runtime errors or potential improvements prior to code compilation.