语言选择：

Java

Java is a general-purpose computer programming language that is concurrent, class-based, object-oriented, and specifically designed to have as few implementation dependencies as possible.

<https://en.wikipedia.org/wiki/Java_%28programming_language%29>

Advantages

Java是一种跨平台语言，有利于本软件的跨平台开发和应用，可以方便有效地解决多平台兼容的问题，作为主要用户的学生和教师可以在Windows MacOS Linux等操作系统上运行本程序。同时由于ARM架构对Java的优化，该软件甚至可以运行于配置较低的移动平台（手机/平板/etc）

As a cross-platform language, Java is conducive to cross-platform development and application of the software. It can easily and effectively solve the problem of multi-platform compatibility. As major user, students and teachers can run the program on different operating systems, such as Windows, MacOS and Linux.

With the optimization for Java by ARM architecture, the software can even run on mobile platform, like mobile phone or pad.

Java的设计集中于对象和接口，作为面向对象式的语言，状态变量和方法都被封装于对象中，实现了模块化开发和信息隐藏，有利于开发小组的分工与沟通（只需要提供简单的接口文档），Debug或修改时时也不容易影响其他人开发的部分

Java's design focuses on objects and interfaces. As an object-oriented language, state variables and methods are encapsulated in objects, enabling modular development and information hiding. It’s also convenient for work assignments and communication in the development team. Everyone only need to provide interface document but bot need to understand others’ all code. While debugging or updating, it’s also easy for programmer to change his own part without influencing others’.

Java可以简单地加入新的方法和实例而不影响程序执行，便于本程序的产品迭代与功能添加，例如添加新的算法类型或者参数

In Java program, programmer can simply add new methods or class without affecting other parts. As for facilitating this program and adding features, such as adding a new algorithm type or parameter, it’s also available.

Disadvantages

缺少闭包（closure），无法进行函数式编程，而本程序有大量的函数式处理流程

Lack closure, so cannot use functional programming, while in this program there’s much process in functional style.

Java程序的运行依赖于Java虚拟机，不是直接执行机器码，所以运行速度不是很快

Java program depends on the Java virtual machine, not directly execute the machine code, so the speed is not very fast.

前端

利用前端技术开发应用程序是新盛的一种轻量级开发方式，基于Node.js 技术，可以使用Electron或者NW.js 框架将前端网页及开源浏览器内核（Chromium为主）封装，实现网页程序化

The use of front-end technology to develop applications is a new popular lightweight direction based on Node.js technology. Programmer can use Electron or NW.js framework to package front-end web pages and open source browser kernel, like Chromium, then make a program.

Advantage

支持H5和WebGL 技术，可以简单地实现动态效果

In this way programmer can use H5 and WebGL to achieve awesome dynamic effects easily.

可以调用前端框架（Echarts，jQuery，Angular etc）和vue-cli脚手架等开发工具，显著降低本软件的开发成本

Development tools such as front-end frameworks (like ECharts, jQuery or Angular) and vue-cli scaffolding can be called to significantly reduce development costs of the software.

支持跨平台开发，只要支持浏览器内核的操作系统都可以完成几乎零成本的移植

Support cross-platform development, as long as this operating system support the browser kernel.

Disadvantages

对框架和浏览器内核的编译可能会增加加载时间及软件容量, 协同开发没有Java方便，版本迭代或者功能修改容易产生新的问题.

Compilation of framework and browser kernels may increase load time and software capacity. And it’s not easy like Java for co-work and program updating.

As for .NET and C++ , they are not suitable for cross-platform development, so we do not choose them. Similarly, as the limitation of co-work and ability, python, C#, Haskell and C are not chosen as a considered one.