Project Proposal

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* We have discussed with professor Yamakawa before and he allows us to submit only one proposal since we have made final decision.

Team Name: iBelieve

Team Members:

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Introduction:

An integrated development environment (IDE) is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of a source code editor, build automation tools and a debugger. An IDE with strong functions can largely enhance the coding efficiency and help avoid bugs. Some famous IDE includes: Microsoft Visual Studio, Eclipse, Netbeans and Xcode.

Goal:

Our team aim to develop an multi-platform Java IDE software called Superlime. Regardless whether Java JDK is installed, any user will be able to use our software to edit and compile Java programs on any local machine. In addition to supporting local basic Java syntax checking, Superlime is also capable of compiling programs on a remote server and forwarding the results back to the client. Overall, our goal is to achieve a simplified Java development environment by utilizing the programming knowledge we learned from the course, and relevant areas include Fs graphics library, advanced data structures, and networking programming, etc.

Platforms supported:

macOS, Linux, Windows (Win32)

Main Features:

1. Local text editor
    a. Open/save file
    b. Adjust text size
    c. Scroll up and down function
    d. Display space and enter syntax
    e. Dark eye-protected GUI

    f. Search and replace keywords
2. Java syntax checker
    a. Keyword color: Display different color according to keywords such as “import”, “String”, “if...else…”, etc.
    b. Parentheses: Automatically add right parentheses.
    c. Error detected: Detect and report syntax error.
    d. Self-defined elements(class, function, variables, …): Store users-defined elements and auto-complete while second use.
    e. Format: Correct users’ format.
3. Compile on server
    a. Server compiles
    b. Server parse error message
    c. Server generate result
    d. Server pass result back to client

Key Components:

- Fs graphics library: to display graphical user interface
- System I/O, file operations
- Advanced parsing algorithms: detect syntax errors, parse error/warning on server
- Network programming: communication between client and server
- System level call: java compiler
- Advanced data structure such as tree, hashset, linkedlist and so on.