

# Identify and Review Code R1-R3

Weiliang Zhao

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## 1 Reliability

The simulation software is not sufficiently reliable, as the program's simulation may fail under certain extreme/boundary conditions during sensitive testing. This is in line with my expectations, as these special conditions were not considered during the code-writing process. Additionally, when simulating with a high number of iterations, the program will consume a large amount of resources on the device, which occasionally causes the device to crash.

## 2 Usability

The program lacks sufficient usability, as users are required to access and modify the configuration file in order to use different maps or parameters for simulating a fire. This process consumes a significant amount of time and effort. Additionally, when users want to change the number of elements within the simulation, they are required to spend a significant amount of time testing if the selected value is valid. This lack of flexibility and ease of use can lead to decreased productivity and increased user frustration.

## 3 Maintainability

The software has an average level of maintainability, as most of the functions used in the simulation software have a relatively simple structure and are therefore relatively easy to maintain and upgrade. However, for some functions that are based on mathematical models, changing the mathematical model often requires the entire function to be re-modified.

## 4 Scalability

The software has a high degree of Scalability, as the core functions and mathematical models of the program are relatively simple in structure, and the parameters are easily called and accessed. This allows for new features to be easily integrated into the program during development and future updates. Additionally, the modular design of the program allows for easy modification and replacement of individual components without affecting the overall functionality of the software.

## 5 Readability

The readability of the software can be considered average. The naming conventions for variables and functions are consistent and easy to understand, but the program's logic and flow can be complex and difficult to follow. Additionally, the use of mathematical models and complex algorithms can make it challenging for those without a strong technical background to fully understand the program's inner workings. To improve the readability of the software, implementing clear and detailed documentation, as well as breaking down complex logic into smaller, more manageable chunks could be beneficial.