EECS 293: Pictures: Error Handling

Daniel Grigsby

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Pictures is a project that given an properly formatted set of single pictures and a merged form, can determine the order in which these pictures were layered

1 Error Handling Choices

1.1 Propagation

Error propagation is accomplished through all errors being sent to a central error handling class, ErrorManager, and logged to a text file. Instead of error codes, specific text descriptions of the errors are recorded with a timestamp for verbose detail.

1.2 Barricade

The project has three packages, Dirty, Clean and Test. Dirty and Clean never interact with each other directly, only through a singleton called InputVerification, which verifies that user input and packaged/calculated data is well formed. This barricade only can be passed in one way, from Dirty to Clean. This allows for the use of asserts safely in Clean.

1.3 Robustness vs Correctness

Given that the design spec requires all errors return ”error” and do not emit erroneous output, correctness has been favored over robustness. All errors in user input result in the termination of the program.

1.4 Exception Alternatives

Alternatives to exceptions were considered. In general, the Error Manager system replaces the use of exceptions in the code, although this is not complete. The standard approach to errors in the code is to call the Error Manager’s reportError method, which will log the specific class and method that caused the error, and potentially more detail.

1.5 Security

To prevent security breaches in constructor/destructor crashes, all parts of the system follow the singleton pattern.