

A4 Idiom “Rules”

in no particular order

- 1) Each class is responsible for its internal state.
- 2) Data members are **private**. Data mutations are mediated via public/protected methods.
- 3) All public/protected methods must validate input parameters.
- 4) Each method is Single-Entry, Single-Exit (one return statement – garbage collection).
- 5) Each non-trivial method should return an `Error_Code`, defined as a 64-bit integer (6 bytes for `Module_ID`, 2 byte `Error_Offset`).
- 6) Each module is assigned a distinct, *system-unique* `Module_ID`.
- 7) Each module-specific error condition is assigned a *distinct* `Error_Offset`, defined within a public enumeration.
- 8) All methods/functions returning error values must be tested and translated into an `A4_Error`.
- 9) Catch all exceptions and translate them into an `A4_Error`.
- 10) Never use GOTO, unless writing in assembly or something for the Kernel.
- 11) Resist (with all your might) cyclical dependencies - make a third mediation class if/when possible.
- 12) Never call methods from a Constructor unless they are guaranteed not to throw an exception or generate errors.
- 13) Never leave a CATCH empty – always assign an `Error_Code` or leave a comment indicating why it's empty.
- 14) Always initialize local variables, unless the variable class constructor does this for you.
- 15) Use Doxygen (or something better) and add comments to all parameters / methods / files.
- 16) Underscores are Good just as spaces are good between words in a document. Whowantstoreadabunchofthis?
- 17) “*this*” is Good as it helps add proper grammar to the source-code document.
- 18) Comments are Good, when used in moderation.
- 19) Logging should be enabled, always.
- 20) Create self-documenting code by choosing identifier names that read as proper sentences.
- 21) Never use “proof of concept” or Example code in a Release.
- 22) Use version control for both code and documentation.
- 23) Add an accurate change description when checking into version control.
- 24) Compile with the highest warning level and fix the warnings.
- 25) Don't use Polish Notation for variable names as the data type may change with time.
- 26) Only forward declare classes that are privately implemented.