

## Debugging Techniques<sup>by Jack Kelly</sup>with valued contributions from Alyce Watson, John Fisher, AnatolyOctober 2016

It is rare that a programmer writes any significant amount of code that is entirely free of errors. Often the error is very small, perhaps just one incorrect character. Or perhaps a variable that should be global. Or it could be a major error in logic. All are difficult to see and correct when immersed in the writing and reviewing of code.

### **There are two categories of programming errors:**

#### **Syntax errors –**

These are grammatical errors that are detected, highlighted, and reported when the program is compiled. They are the programming equivalent of writing a sentence with incorrect spelling, grammar, or punctuation. For example: `print "Hello World!` or `x`