

Common Programming Errors

- “Off by one” errors: loop executes one time too many or one time too few
 - Initial and final conditions to control loop must be carefully constructed
- Inadvertent use of assignment operator, =, in place of the equality operator, ==
 - This error is not detected by the compiler

Common Programming Errors (cont'd.)

- Using the equality operator when testing double-precision operands
 - Do not test expression `(fnum == 0.01)`
 - Replace by a test requiring absolute value of `(fnum - 0.01) < epsilon` for very small epsilon
- Placing a semicolon at end of the `for` statement parentheses:

```
for (count = 0; count < 10; count ++);  
    total = total + num;
```

 - Creates a loop that executes 10 times and does nothing but increment count

Common Programming Errors (cont'd.)

- Using commas instead of semicolons to separate items in a `for` statement:

```
for (count = 1, count < 10, count ++)
```

- Commas should be used to separate items within the separating and initializing lists
- Changing the value of the control variable used in the tested condition both inside the body of a `for` loop and in its altering list
- Omitting the final semicolon from the `do-while` statement