

Python Debugging Checklist

One page to work through before you change a line

From **Python the TPRM Way** by John I. Jerkovic

PRACTICAL TECH MADE SIMPLE

BEFORE YOU RUN

- ☐ The file is saved, and the name ends in `.py` rather than `.py.txt`.
- ☐ Every quotation mark has its partner, and every bracket is closed.
- ☐ Every `if`, `elif`, `else`, `for`, `while`, `def`, `class`, `try`, and `except` line ends in a colon.
- ☐ Indentation is spaces throughout, at a consistent width, with no stray tabs.
- ☐ No file of yours carries the name of a module you import, such as `random.py`.

READ THE ERROR BEFORE YOU TOUCH THE CODE

- ☐ Read the whole message, from the first line of the traceback to the last.
- ☐ Note the error type. It tells you which kind of problem you are looking at.
- ☐ Note the line number, then read the line above it as well.
- ☐ State out loud what you expected that line to do.
- ☐ Look up the error type in Common Python Errors rather than guessing at a fix.

WHEN THE PROGRAM RUNS AND THE ANSWER IS WRONG

- ☐ Reproduce the wrong result reliably, with the same input every time.
- ☐ Find the first line where reality stops matching your expectation.
- ☐ Print the values involved just before that line, and print their `type()` too.
- ☐ Change one thing, rerun the same test, and undo it if it did not help.

NUMBERS, TEXT, AND CONVERSIONS

- ☐ Anything that came from `input()` is a string until you convert it.
- ☐ The right operator is in use: `/` for a `float` result, `//` for whole groups, `%` for the remainder.
- ☐ Money is formatted with `:.2f` wherever it is displayed.
- ☐ A calculated `float` is not being compared for exact equality.

LOOPS AND COLLECTIONS

- ☐ The counter or accumulator starts at the right value, outside the loop.
- ☐ Something inside a `while` loop changes what its condition depends on.
- ☐ The `range()` call accounts for the stop value being excluded.
- ☐ Every index is between 0 and `len(items) - 1`.
- ☐ No list is being modified while a loop is iterating over it.
- ☐ Any average, minimum, or maximum is guarded against an empty collection.

FUNCTIONS AND OBJECTS

- ☐ The function returns its result rather than only printing it.
- ☐ The call supplies an argument for every parameter without a default.
- ☐ Every method in a class takes `self` as its first parameter.
- ☐ Attribute names read back exactly as they were spelled in `__init__`.

FILES AND USER INPUT

- ☐ Files are opened with `with`, so they close even when something fails.
- ☐ Write mode is not being used where append mode was meant.
- ☐ The program handles the file being missing on its very first run.
- ☐ Invalid input is caught by a specific `except` clause, never a bare `except`.

BEFORE YOU CALL IT FINISHED

- ☐ A normal case, a boundary case, an empty case, and an awkward case have all been run.
- ☐ Any temporary `print()` lines added while debugging have been removed.
- ☐ A test exists that would catch this defect if it came back.

Print this page and tick the boxes as you go. Most defects are found by reading, not by guessing.