

Debugging Detective

To fix **program**, I identified several critical issues that prevent it from running, the errors located in the document and how I corrected them.

Solution:-

1. The Infinite Loop (Logic Error)

- **The Error:** In the uncorrected code, the line `i = i + 1` was indented inside the else block. This meant the counter only increased when a student failed. If a student passed, `i` stayed the same, and the loop would run forever.
- **The Solution:** In the corrected code, `i = i + 1` is moved outside the if/elif/else structure (but still inside the while loop). This ensures the counter increases for every single student, regardless of their marks.

2. The Premature Output (Logic Error)

- **The Error:** The print statements were placed inside the else block. This meant the results would only be displayed if a student failed, and it would print the totals multiple times during the loop.

- **The Solution:** The corrected code moves all print statements outside the while loop. Now, the program waits until all students are processed before showing the final summary once.

3. Misaligned Indentation (Syntax Error)

- **The Error:** The line `tottal = distinction + first + second + fail` had extra spaces/indentation that didn't match the rest of the code block. Python requires consistent spacing to run.
- **The Solution:** The corrected code aligns this line properly with the left margin (outside the loop), satisfying Python's syntax rules.

4. Variable Name Mismatch (Typo)

- **The Error:** You defined the variable using two 't's (`tottal`) but tried to check it using one 't' (`if total != students`). This would cause the program to crash.
- **The Solution:** The corrected code uses the consistent spelling `total` for both the calculation and the if statement.