

# 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.