

# 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. Missing Assignment Operators (=)

In many places, the code lists a variable name but forgets to use = to assign a value.

- **The Error:** Lines like students, first, and total are just written as words without an equals sign.
- **The Fix:** I added = so Python knows you are creating or updating a variable (e.g., students = int(input(...))).

## 2. Broken Input Logic

The input for the number of students is split across different lines, making it unreadable to Python.

- **The Error:** The variable students is on line 1560, while the actual input command is on line 1562.
- **The Fix:** I combined them into one line: students = int(input("Enter student count: ")).

### 3. Infinite Loop (Logical Error)

This is the most dangerous error because the program will never stop running once it starts.

- **The Error:** Line 1582 says  $i = i + i$ . Since  $i$  starts at 0, adding  $0 + 0$  always results in 0. Because  $i$  never gets bigger, the condition  $i < \text{students}$  is always true.
- **The Fix:** I changed it to  $i = i + 1$  so the counter increases by one after every student.

### 4. Indentation Errors

Python uses spacing (indentation) to know which code belongs inside a loop or an if statement.

- **The Error:** In the PDF, lines 1569 through 1582 are not indented under the while loop or the if/else blocks .
- **The Fix:** I moved all the logic inside the loop one "tab" to the right and properly indented the code inside the if, elif, and else blocks.

## 5. Syntax Errors

There are small typing mistakes that would stop the code from starting.

- **The Error:** elif marks is on line 1576, but the condition  $\geq 35$ : is on line 1577. This breaks the statement.  
Additionally, the print statement for "Fail" is missing a closing parenthesis )
- **The Fix:** I joined the elif statement into one line and added the missing )