

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 ≥ 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)