

ALA-1

Code With Mistake Comments

```
print("Countdown Simulator")

start = int(input("Enter start number: "))

total = 0

while start >= 0:

    print("Count:", start)

    total = total + start

    if start % 5 == 0:

        print("Multiple of 5")

    start = start - 1

print("Total sum:", total)

average = total / start # ERROR: start becomes -1 after loop

print("Average:", average # ERROR: Missing closing bracket )

if total < 0:      # Logical error (never negative)

    print("Unexpected negative total")
```

Mistakes Explanation

1. Division After Loop (Wrong Variable Used)

- After the while loop ends, start becomes -1.
- Program calculates:
average = total / start
- This gives incorrect result.
- Average should be calculated using **count of numbers**, not modified loop variable.

2. Missing Closing Bracket

```
print("Average:", average)
```

- Closing) is missing.
- This causes **Syntax Error**.
- Python cannot run program if syntax is wrong.

3. Incorrect Average Formula

- Correct formula:
Average = Total / Count
- Program divides by start.
- start is not total count of numbers.
- So average calculation is logically wrong.

4. Unnecessary Negative Total Check

```
if total < 0:
```

- Countdown starts from positive number to 0.
- All added numbers are positive.
- So total can never be negative.
- This condition is logically unnecessary.

5. No Division Safety Check

- If count becomes 0, division may cause error.
- Always check before division.

Correct Code

```
print("Countdown Simulator")

start = int(input("Enter start number: "))

total = 0

count = 0

current = start

while current >= 0:

    print("Count:", current)

    total = total + current

    count = count + 1

    if current % 5 == 0:

        print("Multiple of 5")

    current = current - 1

print("Total sum:", total)

if count > 0:

    average = total / count

    print("Average:", average)

else:

    print("Cannot calculate average")

print("Finished")
```

OUTPUT:

```
Count: 10
Multiple of 5
Count: 9
Count: 8
Count: 7
Count: 6
Count: 5
Multiple of 5
Count: 4
Count: 3
Count: 2
Count: 1
Count: 0
Multiple of 5
Total sum: 210
Average: 10.0
Finished
PS D:\AMAN> █
```