

# EXPERIMENT- 5

## 5.1.2 Student Grade based on Aggregate

### ALGORITHM

Step 1: Start the program.

Step 2: Input marks of four subjects: m1, m2, m3, m4.

Step 3: Calculate the total marks using:

$\text{total} = m1 + m2 + m3 + m4$

Step 4: Calculate the aggregate percentage using:

$\text{aggregate} = (\text{total} / 400) \times 100$

Step 5: Check the aggregate percentage:

If  $\text{aggregate} > 75$ , assign grade = Distinction

Step 6: Else if  $\text{aggregate} \geq 60$  and  $< 75$ , assign grade = First Division

Step 7: Else if  $\text{aggregate} \geq 50$  and  $< 60$ , assign grade = Second Division

Step 8: Else if  $\text{aggregate} \geq 40$  and  $< 50$ , assign grade = Third Division

Step 9: Else, assign grade = Fail

Step 10: Display the total marks.

Step 11: Display the aggregate percentage up to two decimal places.

Step 12: Display the grade of the student.

Step 13: End the program.

### PYTHON CODE

```
m1, m2, m3, m4 = map(int, input().split())
```

```
total = m1 + m2 + m3 + m4
```

```
aggregate = (total / 400) * 100
```

```
if aggregate > 75:
```

```
grade = "Distinction"
```

```
elif aggregate >= 60:
```

```
grade = "First Division"
```

```
elif aggregate >= 50:
```

```
grade = "Second Division"
```

```
elif aggregate >= 40:
```

```
grade = "Third Division"
```

```
else:
```

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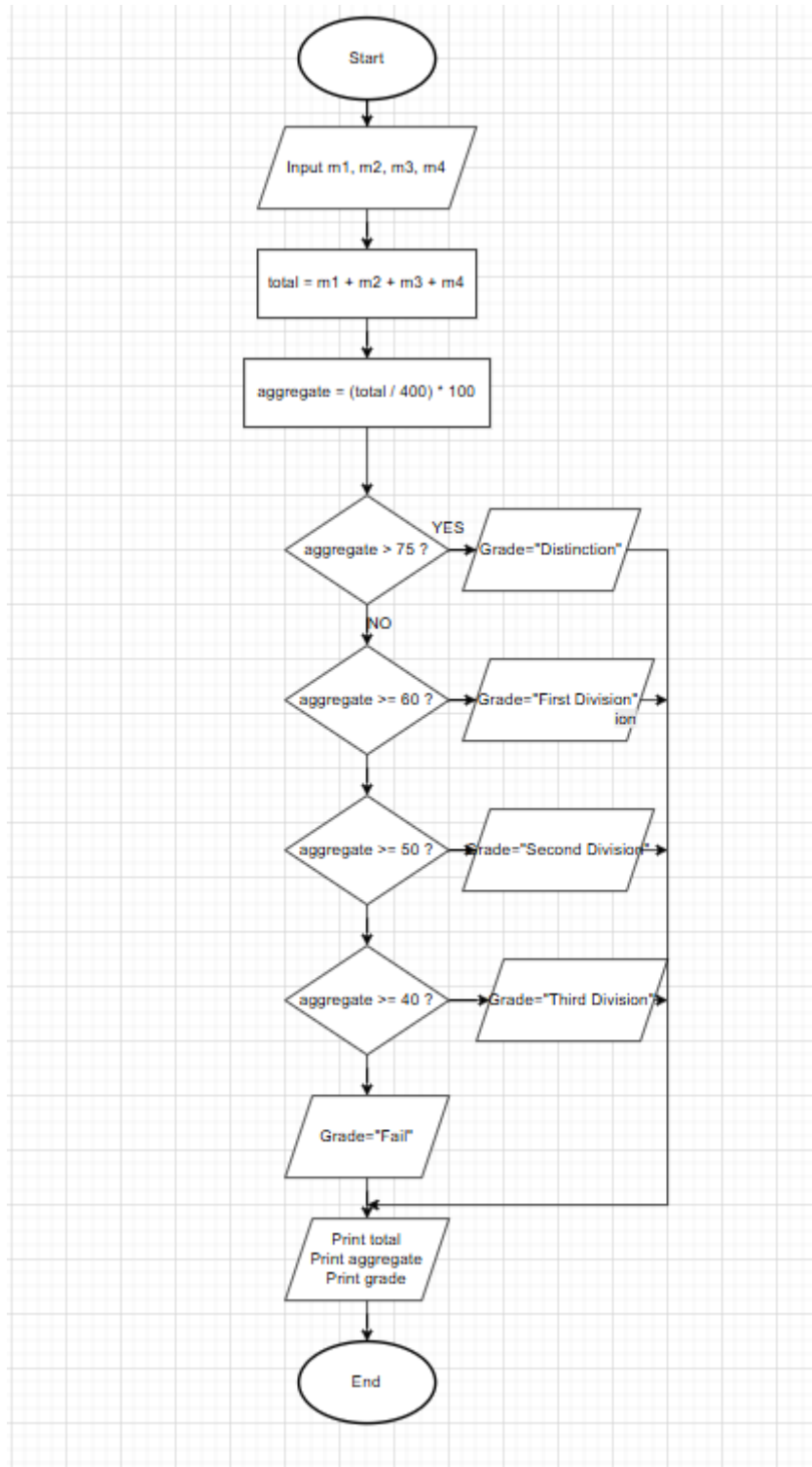
```
grade = "Fail"
```

```
print(total)
```

```
print(f"{aggregate:.2f}")
```

```
print(grade)
```

## FLOWCHART



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## EXCECUTION

The screenshot displays the CODETANTRA online IDE interface. On the left, the problem statement for "8.1.2. Student Grade Based on Aggregate" is shown, including input/output formats and constraints. The main editor contains a Python script that takes four marks as input, calculates the total and aggregate percentage, and determines the student's grade based on a set of conditions. The right sidebar shows the execution results, indicating that 5 out of 5 test cases passed. A detailed view of "Test case 1" shows the expected output (85 98 78 88) and the actual output (85 98 78 88), along with the calculated aggregate (85.25) and grade (Distinction).

**8.1.2. Student Grade Based on Aggregate**

Write a program to calculate the total marks, aggregate percentage, and grade of a student based on marks in four subjects. The grade is determined as follows:

- Aggregate  $> 75\%$ : Distinction
- Aggregate  $\geq 60\%$  and  $< 75\%$ : First Division
- Aggregate  $\geq 50\%$  and  $< 60\%$ : Second Division
- Aggregate  $\geq 40\%$  and  $< 50\%$ : Third Division
- Aggregate  $< 40\%$ : Fail

**Input Format:**

- Four space-separated integers representing the marks in four subjects.

**Output Format:**

- The first line should print the total marks.
- The second line should print the aggregate percentage with two decimal places.
- The third line should print the grade.

**Constraints:**

- $0 \leq \text{marks in each subject} \leq 100$

**Sample Test Cases**

**studentG...**

```
1 marks= list(map(int, input().split()))
2
3
4 total = sum(marks)
5 aggregate= total / 4
6
7 if aggregate > 75:
8     grade = "Distinction"
9 elif aggregate >= 60:
10     grade = "First Division"
11 elif aggregate >= 50:
12     grade = "Second Division"
13 elif aggregate >= 40:
14     grade = "Third Division"
15 else:
16     grade = "Fail"
```

Average time: 0.003 s  
Maximum time: 0.009 s

5 out of 5 shown test case(s) passed  
5 out of 5 hidden test case(s) passed

**Test case 1**

Expected output	Actual output
85 98 78 88	85 98 78 88
341	341
85.25	85.25
Distinction	Distinction

Terminal Test cases

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