||श्री||

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ALGORITHM

// Finding SPI from credits and grades
// Name :- SPI (credits, grades)
// I/P :- Credits and grades of all subjects
// O/P :- SPI value

```
sum = 0
for (i from 1 to n)   //n is number of subjects.
sum = sum + credits[i] * grades[i]

return (sum/total_credits);
```

// Finding CPI from given SPIs and credits
// Name :- CPI (SPI, credits)
// I/P :- SPI of each semester and total credits of all 8 semesters (total_credits)
// O/P :- CPI value

```
sum = 0
for (all 8 semesters)
    sum = sum + credits [i] * SPI[i]

return (sum / total_credits);
```

Date __/__/____

Saath

TEST CASES

Positive test cases

1) No. of subjects :- 5
Credits :- 1, 2, 3, 4, 1
Grades :- 10, 9, 10, 10, 10.

SPI = 9.81

SPI for all 8 sems :-
9.81, 9.50, 9.36, 9.99, 9.75, 9.21, 9.45, 9
Credits for all 8 sems
14, 22, 15, 20, 21, 22, 25, 14.

CPI = 9.52

2) No. of subjects :- 4
Credits :- 4, 5, 1, 3
Grades :- 8, 7, 10, 9

SPI = 8

SPI for all 8 sems
8.56, 7.71, 8.91, 9.02, 9.56, 8.21, 7.56, 9.11
Credits for all 8 sems
15, 15, 18, 21, 22, 27, 22, 17

CPI = 8.55

Date __/__/____

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3) No. of subjects : 6
Credits :- 2, 2, 3, 4, 1, 2
Grades :- 5, 7, 10, 8, 8

SPI :- 7.85

SPI for all 8 sems :-
7.51, 6.47, 5.44, 8.11, 7.99, 8.21, 9.02, 7.07

Credits for all 8 sems
15, 22, 22, 25, 16, 18, 20, 21

CPI = 7.40

4) No. of subjects :- 7
Credits :- 1, 1, 2, 2, 3, 3, 4
Grades :- 10, 10, 10, 10, 10, 10, 10

SPI :- 10

SPI for all 8 sems
9.81, 9.76, 9.87, 9.91, 9.75, 9.90, 9.89, 9.79

Credits for all 8 sems :-
15, 16, 22, 25, 22, 27, 22, 22

CPI :- 9.82

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Negative test cases

1) No. of subjects :- 4
Credit :- -1, -2, 3, 4

will give an error in SPI calculation

2) No. of subjects :- 5
Credit :- 1, 2, 3, 4, 5, 6

will give error in SPI calculation

3) No. of SPI for all 8 sems
7.77, 8.56, 7.59

will give error because only 3 SPI values

4) No. of subjects :- -10
Gives error.