Rajalakshmi Engineering College

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 1_Q10

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Aishu is supervising a construction project that needs to be completed with the help of three workers: A, B, and C.

She knows how many days each of them would take to complete the entire project individually:

A can complete it in x days,B in y days,C in z days.

Initially, all three workers (A, B, and C) work together for d1 days.

After that, C leaves, and only A and B continue for another d2 days.

Then B also leaves, and A works alone to finish the remaining work.

Your tasks is to help aishu to implement this functionality using the class WorkDistribution and Method calculateWork(int x, int y, int z, int d1, int d2)

Calculate the total work completed in the first d1 days by A, B, and C.Calculate the work completed in the next d2 days by A and B.Determine the remaining work after these d1 + d2 days.

Input Format

The first line of input contains five space-separated integers: x y z d1 d2

where:

x represents the Days A takes to complete the work alone

y represents the Days B takes to complete the work alone

z represents the Days C takes to complete the work alone

d1 represents the Days A, B, and C work together

d2 represents the Days A and B work together (after C leaves)

Output Format

The first line of output prints "Work done in first d1 days (A+B+C): " followed by a double value rounded to 2 decimal places.

The second line of output prints "Work done in next d2 days (A+B): " followed by a double value rounded to 2 decimal places.

The third line prints "Remaining work: " followed by a double value rounded to 2 decimal places.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 10 20 30 2 2

Output: Work done in first d1 days (A+B+C): 0.37
Work done in next d2 days (A+B): 0.30
Remaining work: 0.33

Answer

```
import java.util.Scanner;
class WorkDistribution {

    public static void calculateWork(int x, int y, int z, int d1, int d2) {
        double rateA = 1.0 / x;
        double rateB = 1.0 / y;
        double rateC = 1.0 / z;
        double work1 = (rateA + rateB + rateC) * d1;
        double work2 = (rateA + rateB) * d2;
        double totalWorkDone = work1 + work2;
        double remainingWork = 1.0 - totalWorkDone;
        work1 = Math.round(work1 * 100.0) / 100.0;
        work2 = Math.round(work2 * 100.0) / 100.0;
        remainingWork = Math.round(remainingWork * 100.0) / 100.0;
        System.out.printf("Work done in first d1 days (A+B+C): %.2f\n" ,work1);
        System.out.printf("Work done in next d2 days (A+B): %.2f\n" , work2);
        System.out.printf("Remaining work: %.2f\n" , remainingWork);
    }
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        int x = scanner.nextInt();
        int y = scanner.nextInt();
        int z = scanner.nextInt();
        int d1 = scanner.nextInt();
        int d2 = scanner.nextInt();

        calculateWork(x, y, z, d1, d2);
    }
}
```

Status : Correct **Marks : 10/10**