

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 d_1 days.

After that, C leaves, and only A and B continue for another d_2 days.

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

Your task 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 d_1 days by A, B, and C. Calculate the work completed in the next d_2 days by A and B. Determine the remaining work after these $d_1 + d_2$ days.

Input Format

The first line of input contains five space-separated integers: x y z d_1 d_2

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

d_1 represents the Days A, B, and C work together

d_2 represents the Days A and B work together (after C leaves)

Output Format

The first line of output prints "Work done in first d_1 days (A+B+C): " followed by a double value rounded to 2 decimal places.

The second line of output prints "Work done in next d_2 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 d_1 days (A+B+C): 0.37

Work done in next d_2 days (A+B): 0.30

Remaining work: 0.33

Answer

```

import java.util.Scanner;

class WorkDistribution {
    public void calculateWork(int x,int y,int z,int d1,int d2) {
        double wx = 1.0/x;
        double wy = 1.0/y;
        double wz = 1.0/z;
        double wd1 = (wx+wy+wz)*d1;
        double wd2 = (wx+wy)*d2;
        double wd3 = 1 - (wd1+wd2);
        System.out.println("Work done in first d1 days (A+B+C): " +
String.format("%.2f",wd1));
        System.out.println("Work done in next d2 days (A+B): " +
String.format("%.2f",wd2));
        System.out.println("Remaining work: " + String.format("%.2f",wd3));
    }
}

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int x = sc.nextInt();
        int y = sc.nextInt();
        int z = sc.nextInt();
        int d1 = sc.nextInt();
        int d2 = sc.nextInt();
        WorkDistribution wd = new WorkDistribution();
        wd.calculateWork(x,y,z,d1,d2);
    }
}

```

Status : Correct

Marks : 10/10