

# 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***

```
// You are using Java
import java.util.Scanner;
class WorkDistribution {
    public 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 workD1 = (rateA + rateB + rateC) * d1;
        double workD2 = (rateA + rateB) * d2;
        double totalWorkDone = workD1 + workD2;
        double remainingWork = 1.0 - totalWorkDone;
        System.out.printf("Work done in first d1 days (A+B+C): %.2f\n", workD1);
        System.out.printf("Work done in next d2 days (A+B): %.2f\n", workD2);
        System.out.printf("Remaining work: %.2f\n", remainingWork);
    }
}

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