

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 workA = 1.0 / x;
```

```
        double workB = 1.0 / y;
```

```
        double workC = 1.0 / z;
```

```
        double firstPhase = (workA + workB + workC) * d1;
```

```
        double secondPhase = (workA + workB) * d2;
```

```
        double remaining = 1.0 - (firstPhase + secondPhase);
```

```
        System.out.printf("Work done in first d1 days (A+B+C): %.2f ", firstPhase);
```

```
        System.out.printf("Work done in next d2 days (A+B): %.2f ", secondPhase);
```

```
        System.out.printf("Remaining work: %.2f\n", remaining);
```

```
    }
```

```
}
```

```
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