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Scan to verify results

2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 1_Q9

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Phill is a quality control manager at a manufacturing plant. He needs to verify if a sensor reading at a midpoint station (S2) falls exactly halfway between the readings of the previous station (S1) and the next station (S3). Help him by developing a program that checks if the second sensor reading is the average (midpoint) of the first and third sensor readings.

Use the relational operator to solve the program.

Input Format

The first line of input consists of an integer S1, representing the sensor reading of the first station.

The second line consists of an integer S2, representing the sensor reading of the midpoint station.

The third line consists of an integer S3, representing the sensor reading of the next station.

Output Format

The first line of output displays a boolean value representing whether the sensor reading at the midpoint station is halfway between the readings of the first and the next stations.

The second line displays one of the following:

1. If the result is true, print "The second integer is halfway between the first and third integers."
2. Otherwise, print "The second integer is not halfway between the first and third integers."

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 1
7
10
Output: false
The second integer is not halfway between the first and third integers.

Answer

```
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        // Read inputs
        int S1 = sc.nextInt();
        int S2 = sc.nextInt();
        int S3 = sc.nextInt();

        // Calculate expected midpoint (integer division handled)
        int expectedMid = (S1 + S3) / 2;
```

```
        // Check if S2 is exactly the midpoint using relational operator
        boolean isMidpoint = (S2 == expectedMid);

        // Print boolean result
        System.out.println(isMidpoint);

        // Print corresponding message
        System.out.println(isMidpoint
                ? "The second integer is halfway between the first and third integers."
                : "The second integer is not halfway between the first and third
integers.");
    }
}
```

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