

Rajalakshmi Engineering College

Name: KEVIN INFANT P A

Email: 241001116@rajalakshmi.edu.in

Roll no: 241001116

Phone: 9384967955

Branch: REC

Department: IT - Section 2

Batch: 2028

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 7_Q3

Attempt : 1

Total Mark : 10

Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

A financial analyst, Alex, needs a program to calculate simple interest for various financial transactions. He requires a straightforward tool that takes in the principal amount, interest rate, and time in years and computes the interest.

The formula to be used is: Interest = Principal × Rate × Time / 100

Implement this functionality using the InterestCalculator interface and the SimpleInterestCalculator class.

Input Format

The first line of input consists of the principal amount P as a double value.

The second line of input consists of the annual interest rate r as a double value.

The third line of input consists of the number of years t as a positive integer, which is an integer value.

Output Format

The output displays the calculated simple interest in the following format:
"Simple Interest: [interest_value]", Here, [interest_value] should be replaced with the actual interest value calculated by the program.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 1000.00

5.00

2

Output: Simple Interest: 100.0

Answer

```
import java.util.Scanner;

interface InterestCalculator{
    double simpleInterest(double principal,double rate,int time);
}

class SimpleInterestCalculator implements InterestCalculator{
    public double simpleInterest(double principal,double rate,int time){
        return principal*rate*time/100;
    }
}

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

        double principal = scanner.nextDouble();

        double rate = scanner.nextDouble();

        int time = scanner.nextInt();
```

```
InterestCalculator calculator = new SimpleInterestCalculator();
double interest = calculator.simpleInterest(principal, rate, time);
System.out.println("Simple Interest: " + interest);

}
```

Status : Correct

Marks : 10/10