

# Rajalakshmi Engineering College

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Branch: REC

Department: AI & DS - Section 5

Batch: 2028

Degree: B.E - AI & DS

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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:  $\text{Interest} = \text{Principal} \times \text{Rate} \times \text{Time} / 100$

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;

// You are using Java
interface InterestCalculator{
    double simpleInterest(double principal,double rate,int time);
}

class SimpleInterestCalculator implements InterestCalculator{
    public double principal;
    public double rate;
    public int time;

    public double simpleInterest(double principal,double rate,int time){
        double interest=(principal*rate*time)/100;
        return interest;
    }
}

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**