

# Rajalakshmi Engineering College

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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;  
  
interface InterestCalculator  
{  
    double simpleInterest(double p, double r,int t);  
}  
class SimpleInterestCalculator implements InterestCalculator  
{  
    public double simpleInterest(double p,double r,int t)  
    {  
        if(p==0 || r==0 || t==0)  
        {  
            return -1;  
        }  
        return (p*r*t)/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**