Rajalakshmi Engineering College

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 2_Q4

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Amit wants to evaluate the depreciation of his car over time to understand its current value and categorize it based on that value.

Write a program that helps him determine the current value of his car after a certain number of years of depreciation and classify it into one of three categories:

High: If the current value is greater than 10,000.Medium: If the current value is between 5,000 and 10,000, both inclusive.Low: If the current value is less than 5,000.

The depreciation rate of the car is 15% per year. The program should calculate the current value of the car after applying this depreciation over the given number of years and print the current value along with the category.

Input Format

The first line of input consists of an integer, representing the initial cost of the car.

The second line consists of an integer, representing the number of years the car has been depreciating.

Output Format

The first line of output prints a double value, representing the current value of the car, rounded off to two decimal places "Current Value: <value>".

The second line prints its category "Category: <categories>".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 20000
5
Output: Current Value: 8874.11
Category: Medium

Answer

```
import java.util.Scanner;
class CarDepreciation {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Input: Initial cost and age in years
        int initialCost = scanner.nextInt();
        int age = scanner.nextInt();

        // Depreciation rate is 15%
        double depreciationRate = 0.15;
        double currentValue = initialCost;

        // Apply depreciation over the years
        for (int i = 0; i < age; i++) {
            currentValue = currentValue * (1 - depreciationRate);
```

```
        }

        // Round to 2 decimal places
        currentValue = Math.round(currentValue * 100.0) / 100.0;

        // Determine category
        String category;
        if (currentValue > 10000) {
            category = "High";
        } else if (currentValue >= 5000) {
            category = "Medium";
        } else {
            category = "Low";
        }

        // Output
        System.out.printf("Current Value: %.2f\n", currentValue);
        System.out.println("Category: " + category);

        scanner.close();
    }
}
```

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