





# Practice Arena

Practice problems aimed to improve your coding skills.


 PRACTICE-02\_SCAN-PRINT

 PRACTICE-03\_TYPES


 LAB-PRAC-02\_SCAN-PRINT


 Mr C goes on a diet


 Permute Password


 Escapes around Tutors

 Amusing Fractions

 P and C

 Build a Rhombus

 Developing Interest at IITK


 Pick your Choice

 Lego Safe

 Race Car

 Reverse Gear


 Numerical Flowers

 LAB-PRAC-01


 PRACTICE-04\_COND


 BONUS-PRAC-02

 LAB-PRAC-03\_TYPES


 PRACTICE-05\_COND-LOOPS

 LAB-PRAC-04\_COND


 LAB-PRAC-05\_CONDLLOOPS

 PRACTICE-07\_LOOPS-ARR


 LAB-PRAC-06\_LOOPS


 LAB-PRAC-07\_LOOPS-ARR


 LABEXAM-PRAC-01\_MIDSEM


 PRACTICE-09\_PTR-MAT

 LAB-PRAC-08\_ARR-STR


 PRACTICE-10\_MAT-FUN

 LAB-PRAC-09\_PTR-MAT


 LAB-PRAC-10\_MAT-FUN


 PRACTICE-11\_FUN-PTR

 LAB-PRAC-11\_FUN-PTR

 LAB-PRAC-12\_FUN-STRUC

 LABEXAM-PRAC-02\_ENDSEM

 LAB-PRAC-13\_STRUC-NUM

 LAB-PRAC-14\_SORT-MISC

# Developing Interest at IITK

## LAB-PRAC-02\_SCAN-PRINT

**Developing Interest at IITK [20 marks]**

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**Problem Statement**

Your batchmate applied for a loan to pay for their studies at IITK. The bank calculates loans in an interesting manner. For the first two years, it applies simple interest to the loan amount and for the next two years it applies compound interest on the loan amount. Assume that your batchmate does not pay any loan amount in the 4 years they are spending at IITK so the loan only keeps building up. Also, the interest rate stays the same for all four years.

For example, if the principal loan amount is Rs 100 and annual interest rate is 1%, then the interest calculation would take place as follows

1. First year: starting loan amount Rs 100, simple interest Re 1, final loan amount Rs 101
2. Second year: starting loan amount Rs 101, simple interest Re 1 (recall that simple interest is calculated on principal amount i.e. Rs 100, and not current loan amount), final loan amount Rs 102
3. Third year: starting loan amount Rs 102, compound interest Rs 1% of Rs 102 (recall that compound interest is calculated on current loan amount, and not principal loan amount), final loan amount Rs 103.02
4. Fourth year: starting loan amount Rs 103.02, compound interest Rs 1% of 103.02, final loan amount Rs 104.0502

Your job is to output the integer part of the loan amount at the end of the 2nd and 4th year. In the above example, these amounts are 102 and 104 respectively. Please note that these are not rounded up or rounded down values. If the true amount is 114.79, you should output 114. If the true amount is 78.23, you should output 78.

**Caution**

1. Do not use math.h or any header file other than stdio.h
2. Use only integer variables. No floats, doubles etc.
3. Principal and rate of interest will be non-negative integers.
4. Do not use loops or conditional statements.

**HINTS:**

1. Visible test case number 1 is there to confirm if you are giving output in the correct format or not. Be careful about extra spaces and lines.
  2. Visible test case number 2 is there to check if you are performing integer arithmetic operations properly or not.
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**INPUT:**

principal interestrate

**OUTPUT:**

loan amount after 2 years

loan amount after 4 years

**EXAMPLE:**

INPUT

100 1

OUTPUT:

102

104

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**Grading Scheme:**

Total marks: **[20 Points]**

There will be partial grading in this question. In each test case, 50% marks are for giving the correct amount after 2 years and 50% marks will be for giving the correct amount after 4 years i.e. if a test case is worth 2 points, 1 point is for correct amount after 2 years and 1 point for correct amount after 4 years.

Please remember, however, that when you press Submit/Evaluate, you will get a green bar only if all parts of your answer are correct. Thus, if your answer is only partly correct, Prutor will say that you have not passed that test case completely, but when we do autograding afterwards, you will get partial marks.

Each visible test case is worth 2 points and each hidden test case is worth 4 points. There are 2 visible test cases and 4 hidden test cases.

 **Start Solving!** (</editor/practice/5955>)