

Problem

Submissions

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Discussions

Editorial

HackerRank

Prepare > Java > Introduction > Java Datatypes

Java has 8 primitive data types; char, boolean, byte, short, int, long, float, and double. For this exercise, we'll work with the primitives used to hold integer values (byte, short, int, and long):

- A byte is an 8-bit signed integer.
- A short is a 16-bit signed integer.
- An int is a 32-bit signed integer.
- A long is a 64-bit signed integer.

Given an input integer, you must determine which primitive data types are capable of properly storing that input. To get you started, a portion of the solution is provided for you in the editor.

Reference: <https://docs.oracle.com/javase/tutorial/java/nutsandbolts/datatypes.html>

Input Format

The first line contains an integer, T , denoting the number of test cases.

Each test case, T , is comprised of a single line with an integer, n , which can be arbitrarily large or small.

Output Format

For each input variable n and appropriate primitive *dataType*, you must determine if the given primitives are capable of storing it. If yes, then print:

```
n can be fitted in:
* dataType
```

If there is more than one appropriate data type, print each one on its own line and order them by size (i.e.: *byte < short < int < long*).

If the number cannot be stored in one of the four aforementioned primitives, print the line:

```
n can't be fitted anywhere.
```

Sample Input

```
5
-150
```

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```
1 import java.util.*;
2 import java.io.*;
3
4 class Solution{
5     public static void main(String []argh)
6     {
7
8         Scanner sc = new Scanner(System.in);
9         int t=sc.nextInt();
10
11         for(int i=0;i<t;i++)
12         {
13
14             try
15             {
16                 long x=sc.nextLong();
17                 System.out.println(x+" can be fitted in:");
18                 if(x>=-128 && x<=127)System.out.println(" byte");
19                 //Complete the code
20                 if(x >= -Math.pow(2, 15) && x <= Math.pow(2, 15) - 1)
21                     System.out.println(" short");
22                 if(x >= -Math.pow(2, 31) && x <= Math.pow(2, 31) - 1)
23                     System.out.println(" int");
24                 if(x >= -Math.pow(2, 63) && x <= Math.pow(2, 63) - 1)
25                     System.out.println(" long");
26             }
27             catch(Exception e)
28             {
29                 System.out.println(sc.next()+" can't be fitted anywhere.");
30             }
31
32         }
33     }
34 }
```

Line: 36 Col: 1

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Test against custom input

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5
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