9. Palindrome Number

Attempted

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Given an integer `x`, return `true` *if* `x` *is a palindrome, and* `false` *otherwise.*

Example 1:

```
Input: x = 121
Output: true
Explanation: 121 reads as 121 from left to right and from right to left.
```

Example 2:

```
Input: x = -121
Output: false
Explanation: From left to right, it reads -121. From right to left, it becomes 121-. Therefore it is not a palindrome.
```

Example 3:

```
Input: x = 10
Output: false
Explanation: Reads 01 from right to left. Therefore it is not a palindrome.
```

Constraints:

- `-2^31 <= x <= 2^31 - 1`

Follow up: Could you solve it without converting the integer to a string?

Seen this question in a real interview before? 1/5

Yes No

Accepted 6,756,806/11.4M Acceptance Rate 59.5%

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Hint 1

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princejacob
Oct 10, 2021

Folks, like many of you (maybe?) I stumbled on this question. It's categorized as Easy. Sure...easy if you know the answer. The challenge is, you can't (shouldn't) convert the integer to a string. Why? Because the question is about **math**.

They're not looking for substring manipulation, they're looking for integer manipulation.

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rellik
Sep 05, 2014

I am wondering how the other people got their code ACed, the testing result of **"-2147447412"** seems a little odd to me. Should it be a palindromic number or not?

Note: I believe the range of int is [-2147483648, 2147483647] and **"-2147447412"** is not overflowed, plus I handled the overflow cases already (test case "-2147483648" in particular).

11499 / 11502 test cases passed.

Status: Wrong Answer

Input: -2147447412

Output: true

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Sudheer Mishra
Dec 10, 2022

what the hell output is whats wrong with my code
int rev=0;
if(x<0){
return false;
}
while(x!=0){
rev= rev*10 + x%10;
x=x/10;
}
if(y==rev){

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Jian Li
Feb 28, 2015

If it says O(1) space I can understand how to do that, but what does no "extra space" mean? If I use another integer to save the reversed number does it mean I'm still using extra space? Or when I simply am using an integer i for loop does it mean I have extra space?

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ABHINAV ANAND
Apr 02, 2023

A small hint for negative numbers, return false.

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camoverride
Nov 20, 2020

Reversing the number and checking whether it equals the un-reversed version is a test of your coding ability, and might appear in a basic coding interview. The "don't convert to a string" variation will NEVER appear in an interview and is a bullshit question. Here's why:

1. You solved the problem by stringifying it. Why overthink things and use complicated and hard-to-debug math?
2. The "algorithmic" component of this is NOT part of a broader problem-solving paradigm in comptuer science (think of dynamic programming, graph algorithms, etc). Rather, it's a one-off math trick.

33 Reply

cherishlc
Sep 10, 2015

If a number is a palindrome,, its reverse equals itself.
Which means its reverse is NOT overflow!!!
So that ' reversed integer might overflow' doesn't matter at all, since a overlowed number isn't a palindrome.

Now the question becomes whether a NONE palindrome == its reverse if we do NOT deal with overflow.

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CandyRobbery
Dec 13, 2015

- Impossible to solve without extra space. Always need space for constants, variables or whatever. Recursion calls will take space for call stack.
- If you are talking about constant space, then even declaring a string / stack will take constant space. (In fact at most (log(10, INT_MAX) * sizeof char), which is no worse than declaring an integer or more). Actually, even recursion will take constant space.

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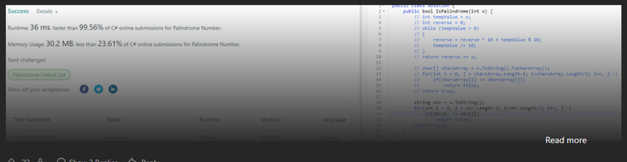
MR_BIT
Nov 14, 2021



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zyrastory
Jun 16, 2022

Which have included C#, Java, Python3 solution
(6/4 updated JavaScript version)
⭐https://zyrastory.com/en/coding-en/leetcode-en/leetcode-9-palindrome-number-solution-and-explanation-en/⭐

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