

# Question: Given an integer, check if the given integer is Palindrome or not?

a number is if that number is same from right to left and from left to right.

Ex: 1  $\longrightarrow$  palindrome

12  $\longrightarrow$  Not a palindrome

121  $\longrightarrow$  Palindrome

left to right = 121

right to left = 121

$121 = 121$ , Hence Palindrome

234  $\longrightarrow$  Not a palindrome

left to right = 234

right to left = 432

$234 \neq 432$ , Not a Palindrome

**Solution:** find a way to reverse the given integer and compare the reversed number with original number, if both of them are same then it is a palindrome number.

### How to reverse an integer?

using a loop, at every iteration

① get the last digit of original number

$$\text{last digit} = \text{number} \% 10$$

modulo operator returns last digit of a number

$$2104 \% 10 = 4$$

② construct the integer from right to left using given formula

$$\text{reversed} = \text{reversed} * 10 + \text{last digit}$$

③ update the original number removing its last digit

$$\text{number} = \text{number} // 10$$

// removes last digit of a number

Ex:  $241 // 10 = 24$

$$31208 // 10 = 3120$$

At the end, if  $\text{reversed} == \text{given number}$ , it is a palindrome number.

```
def countDigits (number):
```

```
    reversed=0
```

```
    temp = number
```

```
    while temp > 0:
```

```
        lastDigit = temp % 10
```

```
        reversed = reversed * 10 + lastDigit
```

```
        temp = temp // 10
```

```
    if temp == number:
```

```
        return "palindrome"
```

```
    else:
```

```
        return false
```

number	temp	last digit	reversed	temp	temp > 0
2112	2112	$2112 \% 2 = 2$	$0 * 10 + 2 = 2$	$2112 // 10 = 211$	Yes
2112	211	$211 \% 2 = 1$	$2 * 10 + 1 = 21$	$211 // 10 = 21$	Yes
2112	21	$21 \% 2 = 1$	$21 * 10 + 1 = 211$	$21 // 10 = 2$	Yes
2112	2	$2 \% 2 = 2$	$211 * 10 + 2 = 2110 + 2 = 2112$	$2 // 10 = 0$	NO

```
reversed == number  
"palindrome"
```

Do not  
enter the  
while loop;