

125. Valid Palindrome

A man, a plan, a canal: panama

 It's a palindrome

First lowercase all the string

```
s.lower()
```

a man, a plan, a canal: panama


Then remove non alphanumeric characters iterating through the string and building a new string with just alphanumeric characters. In programming languages like Java it is a good idea to think about using mutable objects like `StringBuilder` to save memory instead of thinking about concatenate strings

```
s"".join(char for char in s if char.isalpha())
```

amanaplanacanalpanama

We'll use the two pointers technique one at the beginning of the string and one at the end.

```
p1 = 0
p2 = len(s) - 1
```

amanaplanacanalpanama


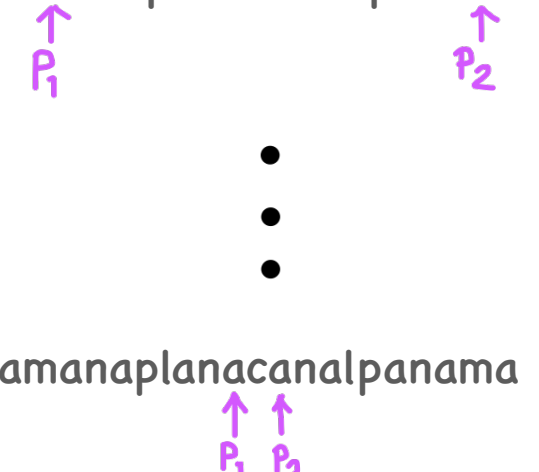
While $p1 < p2$ we'll keep reviewing each letter to check if it is a palindrome in case the letters are not equal return false

```
while p1 < p2:
```

```
    if s[p1] != s[p2]:
        return False
```

```
    p1 += 1
    p2 -= 1
```

```
return True
```

amanaplanacanalpanama


We just iterate the string once and the time complexity of the solution is $O(n)$