

## 468. Validate IP Address

Given a string `queryIP`, return `"IPv4"` if IP is a valid IPv4 address, `"IPv6"` if IP is a valid IPv6 address or `"Neither"` if IP is not a correct IP of any type.

A valid IPv4 address is an IP in the form `"x1.x2.x3.x4"` where  $0 \leq x_i \leq 255$  and  $x_i$  cannot contain leading zeros. For example, `"192.168.1.1"` and `"192.168.1.0"` are valid IPv4 addresses while `"192.168.01.1"`, `"192.168.1.00"`, and `"192.168@1.1"` are invalid IPv4 addresses.

*A valid IPv6 address is an IP in the form `"x1:x2:x3:x4:x5:x6:x7:x8"` where:*

- $1 \leq x_i.length \leq 4$
- $x_i$  is a hexadecimal string which may contain digits, lowercase English letter ('a' to 'f') and upper-case English letters ('A' to 'F').
- Leading zeros are allowed in  $x_i$ .

For example, `"2001:0db8:85a3:0000:0000:8a2e:0370:7334"` and `"2001:db8:85a3:0:0:8A2E:0370:7334"` are valid IPv6 addresses, while `"2001:0db8:85a3::8A2E:037j:7334"` and `"02001:0db8:85a3:0000:0000:8a2e:0370:7334"` are invalid IPv6 addresses.

### Example 1:

- **Input:** `queryIP = "172.16.254.1"`
- **Output:** `"IPv4"`
- **Explanation:** This is a valid IPv4 address, return `"IPv4"`.

### Example 2:

- **Input:** queryIP = "2001:0db8:85a3:0:0:8A2E:0370:7334"
- **Output:** "IPv6"
- **Explanation:** This is a valid IPv6 address, return "IPv6".

### Example 3:

- **Input:** queryIP = "256.256.256.256"
- **Output:** "Neither"
- **Explanation:** This is neither a IPv4 address nor a IPv6 address.

### Constraints:

- queryIP consists only of English letters, digits and the characters '.' and '!'.