Reverse String

Write a function that takes a string as input and returns the string reversed.

Example:
Given s = "hello", return "olleh".

Solution 1

Cheating Method using StringBuilder

```
public class Solution {
    public String reverseString(String s) {
        return  new StringBuilder(s).reverse().toString();
    }
}
```

Classic Method by swapping first and last

```
public class Solution {
    public String reverseString(String s) {
        char[] word = s.toCharArray();
        int i = 0;
        int j = s.length() - 1;
        while (i < j) {
            char temp = word[i];
            word[i] = word[j];
            word[j] = temp;
            i++;
            j--;
        }
        return new String(word);
    }
}
```

Same as previous but using byte instead

```
public class Solution {
    public String reverseString(String s) {
        byte[] bytes = s.getBytes();
        int i = 0;
        int j = s.length() - 1;
        while (i < j) {
            byte temp = bytes[i];
            bytes[i] = bytes[j];
            bytes[j] = temp;
            i++;
            j--;
        }
        return new String(bytes);
    }
}
```

Classic Method by swapping first and last

If you don't like temp variable

```java
public class Solution {
    public String reverseString(String s) {
        byte[] bytes = s.getBytes();
        int i = 0;
        int j = s.length() - 1;
        while (i < j) {
            bytes[i] = (byte)(bytes[i] ^ bytes[j]);
            bytes[j] = (byte)(bytes[i] ^ bytes[j]);
            bytes[i] = (byte)(bytes[i] ^ bytes[j]);
            i++;
            j--;
        }
        return new String(bytes);
    }
}
```

Using recursion

```java
public class Solution {
    public String reverseString(String s) {
        int length = s.length();
        if (length <= 1) return s;
        String leftStr = s.substring(0, length / 2);
        String rightStr = s.substring(length / 2, length);
        return reverseString(rightStr) + reverseString(leftStr);
    }
}
```

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Solution 2

```
class Solution {
public:
    string reverseString(string s) {
        int i = 0, j = s.size() - 1;
        while(i < j){
            swap(s[i++], s[j--]);
        }

        return s;
    }
};
```

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Solution 3

```
class Solution(object):
def reverseString(self, s):
    """
    :type s: str
    :rtype: str
    """
    return s[::-1]
```

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