

28. You are given an array `nums` consisting of integers. You are also given a 2D array `queries`, where `queries[i] = [posi, xi]`. For query `i`, we first set `nums[posi]` equal to `xi`, then we calculate the answer to query `i` which is the maximum sum of a subsequence of `nums` where no two adjacent elements are selected. Return the sum of the answers to all queries. Since the final answer may be very large, return it modulo $10^9 + 7$. A subsequence is an array that can be derived from another array by deleting some or no elements without changing the order of the remaining elements.

Program:

```
def smallest_string_with_swaps(s, pairs):
    parent = list(range(len(s)))

    def find(x):
        if parent[x] != x:
            parent[x] = find(parent[x])
        return parent[x]

    for a, b in pairs:
        parent[find(a)] = find(b)

    groups = {}
    for i, char in enumerate(s):
        root = find(i)
        groups.setdefault(root, []).append(char)

    for group in groups.values():
        group.sort(reverse=True)

    return ''.join(groups[find(i)].pop() for i in range(len(s)))

s = "dcab"
pairs = [[0, 3], [1, 2], [0, 2]]
print(smallest_string_with_swaps(s, pairs))
```

Output:

The screenshot shows the Visual Studio Code interface. The editor displays a Python file named `tut1457.py` with the following code:

```
def find(a, b):
    if a == b:
        return a
    parent[find(a)] = find(b)
    return a
```

The `Run` and `Console` panels at the bottom show the execution output:

```
*C:\Program Files\Python311\python.exe* C:\Users\shuka\PycharmProjects\pythonProject2\tut1457.py
atcd
Process finished with exit code 0
```