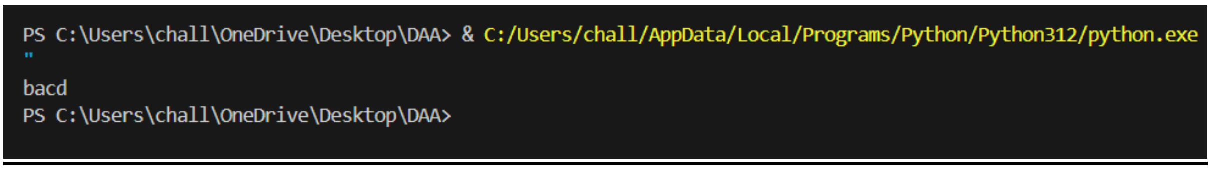
21. You are given a string s, and an array of pairs of indices in the string pairs where pairs[i] = [a, b] indicates 2 indices(0-indexed) of the string. You can swap the characters at any pair of indices in the given pairs any number of times. Return the lexicographically smallest string that s can be changed to after using the swaps.

PROGRAM:

```
import collections
def smallestStringWithSwaps(s, pairs):
  def find(x):
    if parent[x] != x:
      parent[x] = find(parent[x])
    return parent[x]
  def union(x, y):
    root_x, root_y = find(x), find(y)
    if root_x != root_y:
      parent[root_x] = root_y
  parent = {i: i for i in range(len(s))}
  for pair in pairs:
    union(pair[0], pair[1])
  groups = collections.defaultdict(list)
  for i in range(len(s)):
    groups[find(i)].append(s[i])
  for group in groups:
    groups[group].sort(reverse=True)
  result = []
  for i in range(len(s)):
    result.append(groups[find(i)].pop())
  return ''.join(result)
s = "dcab"
pairs = [[0, 3], [1, 2]]
print(smallestStringWithSwaps(s, pairs))
```

OUTPUT:



```
PS C:\Users\chall\OneDrive\Desktop\DAA> & C:/Users/chall/AppData/Local/Programs/Python/Python312/python.exe
"
bacd
PS C:\Users\chall\OneDrive\Desktop\DAA>
```

TIME COMPLEXITY:

Time complexity for the code is O(nlogn)