

Exchange digits problem.

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- Compute the nearest larger number by interchanging its digits updated. Given 2 numbers a and b find the smallest number greater than b by interchanging the digits of a and if not possible print -1.
- Input Format
 - 2 numbers a and b, separated by space.
- Output Format
 - A single number greater than b.
- If not possible, print -1
- Constraints
 - $1 \leq a, b \leq 10000000$

```
In [88]: a, b = [int(ii) for ii in input('Enter two numbers separated by a space: ').split()]
Enter two numbers separated by a space: 645757 457765
```

```
In [27]: def permute_string(str):
    if len(str) == 0:
        return ['']
    prev_list = permute_string(str[1:len(str)])
    next_list = []
    for i in range(0, len(prev_list)):
        for j in range(0, len(str)):
            new_str = prev_list[i][0:j] + str[0] + prev_list[i][j:len(str)-1]
            if new_str not in next_list:
                next_list.append(new_str)
    return next_list
```

Inserting the value of b into the sorted list.

```
In [89]: permutations = sorted(set([int(ii) for ii in permute_string(str(a))] + [b])) #
```

The value just above of b will be the answer.

```
In [90]: if b == permutations[-1]:  
         print(-1)  
         else:  
             print(permutations[permutations.index(b) + 1])    # permutations[Index of the
```

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Converting the solution to a function:

```
In [92]: def exchange_digits_problem(a,b):  
         permutations = sorted(set([int(ii) for ii in permute_string(str(a)) + [b]]))  
  
         if b == permutations[-1]:  
             print(-1)  
         else:  
             print(permutations[permutations.index(b) + 1])    # permutations[Index of
```

```
In [93]: exchange_digits_problem(459, 960)
```

-1

```
In [94]: exchange_digits_problem(645757, 457765)
```

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The End.