ASSIGNMENT 4

1. Odd String Difference

CODE : from collections import defaultdict
from typing import List, Tuple

```
def pairwise(iterable):
    # pairwise('ABCDEFG') --> AB BC CD DE EF
    FG a, b = iter(iterable), iter(iterable)
    next(b, None)
    return zip(a, b)

class Solution:
    def oddString(self, words: List[str]) -> str:
        d = defaultdict(list) for s in words: t =
        tuple(ord(b) - ord(a) for a, b in pairwise(s))
            d[t].append(s)
        return next(ss[0] for ss in d.values() if len(ss) == 1)

# Example usage:
solution = Solution() words
= ["abc", "def", "abd"]
print(solution.oddString(words)) # Output will be "abc" or "def" or "abd" depending on
```

the tuples generated OUTPUT :

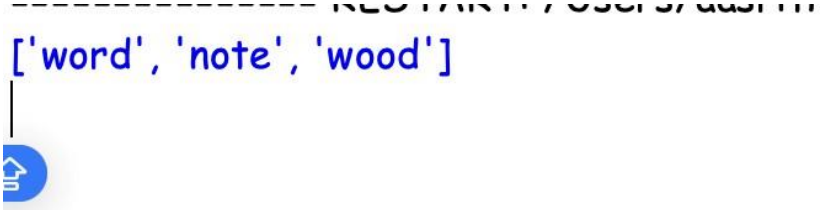
2 . Words Within Two Edits of Dictionary

CODE : from typing import List

```
class Solution:
    def twoEditWords(self, queries: List[str], dictionary: List[str]) ->
        List[str]: c = 0
        final = []
        final1 = []

        for qw in queries:
```

```
        for dw in dictionary: c =
            0 for k in
            range(len(qw)):
                if qw[k] != dw[k]:
                    c += 1
            if c < 3 and qw not in final1:
                final1.append(qw)

        final += final1

    final1 = [] return

    final

# Example usage:
solution = Solution()
queries = ["word", "note", "ants", "wood"] dictionary = ["wood", "joke", "moat"]
print(solution.twoEditWords(queries, dictionary)) # Expected output: ["word", "note",
"wood"]
```

OUTPUT :



3 . Next Greater Element IV

CODE :

```
def printNGE(arr):

    for i in range(0, len(arr), 1):

        next = -1 for j in
        range(i+1, len(arr), 1): if
        arr[i] < arr[j]:
                next = arr[j]
                break

        print(str(arr[i]) + " -- " + str(next))
# Driver program to test above function
arr = [11, 13, 21, 3]
printNGE(arr)
```

OUTPUT :

```
11 -- 13
13 -- 21
21 -- -1
3 -- -1
```

4 . Minimum Addition to Make Integer Beautiful

CODE : class
Solution:

```
    def makeIntegerBeautiful(self, n: int, target: int) -> int:
        def f(x: int) ->
            int: y = 0
            while x:
                y += x % 10
                x //= 10
            return y

            x          = 0
            while f(n + x)
            > target: y = n
            + x p = 10
            while y % 10
            == 0:
            y          //= 10
            p *= 10
            x = (y // 10 + 1) * p - n
        return x

# Example usage:
solution = Solution()
n = 123
target = 6
print(solution.makeIntegerBeautiful(n, target)) # Output will be the smallest x such that sum
of digits of (n + x) <= target
```

OUTPUT :

0

5 . Sort Array by Moving Items to Empty Space

CODE :

```
# Python3 program to find the only
# repeating element in an array where
# elements are from 1 to N-1.


def findRepeating(arr, N):
        for i in range(N):
                for j in range(i + 1, N):
                        if (arr[i] ==
                        arr[j]):
                                return arr[i]


# Driver's Code if
__name__ == "__main__":
arr = [9, 8, 2, 6, 1, 8, 5, 3, 4,
7] N = len(arr)

# Function call
print(findRepeating(arr, N))
```

OUTPUT :

8