Assignment1

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一、 作业题目

1、05902:双端队列（1h30min）

```python
from collections import deque
for _ in range(int(input())):
    n=int(input())
    q=deque([])
    for i in range(n):
        a, b=map(int,input().split())
        if a==1:
            q.append(b)
        else:
            if b==0:
                q.popleft()
            else:
                q.pop()
    if q:
        print(*q)
    else:
        print('NULL')
```

2、02694:波兰表达式（3h）

```python
expression = input().split()
stack = []
while expression:
    a = expression.pop(-1)
    if a in ['+', '-', '*', '/']:
        c = stack.pop(-1)
        d = stack.pop(-1)
        if a == '+':
            stack.append(c + d)
        elif a == '-':
            stack.append(c - d)
        elif a == '*':
            stack.append(c * d)
        else:
            stack.append(c / d)
    else:
        stack.append(float(a))

print("{:.6f}".format(stack[0])
```


3、24591:中序表达式转后序表达式（3h40min）

```python
def infix_to_postfix(expression):
    precedence = {'+':1, '-':1, '*':2, '/':2}
    stack = []
    postfix = []
    number = ''
```

```python
    for char in expression:
        if char.isnumeric() or char == '.':
            number += char
        else:
            if number:
                num = float(number)
                postfix.append(int(num) if num.is_integer() else num)
                number = ''
            if char in '+-*/':
                while stack and stack[-1] in '+-*/' and precedence[char] <= precedence[stack[-1]]:
                    postfix.append(stack.pop())
                stack.append(char)
            elif char == '(':
                stack.append(char)
            elif char == ')':
                while stack and stack[-1] != '(':
                    postfix.append(stack.pop())
                stack.pop()

    if number:
        num = float(number)
        postfix.append(int(num) if num.is_integer() else num)

    while stack:
        postfix.append(stack.pop())

    return ' '.join(str(x) for x in postfix)

n = int(input())
for _ in range(n):
    expression = input()
    print(infix_to_postfix(expression))
```

4、22068:合法出栈序列（2h）

```python
origin = input()
while True:
    try:
        outout = input()
        stack, bank = [], list(origin)
        l = len(origin)
        flag = False
        if len(outout) == l:
            for i in range(l):
                if bank and not stack:
                    stack.append(bank.pop(0))
                while bank and stack[-1] != outout[i]:
                    stack.append(bank.pop(0))
                if stack.pop() != outout[i]:
                    print('NO')
                    flag = True
                    break
            if not flag:
                print('YES')
        else:
            print('NO')
    except EOFError:
        break
```

#44305452提交状态

状态: Accepted

基本信息

源代码

```python
origin = input()
while True:
    try:
        outout = input()
        stack, bank = [], list(origin)
        l = len(origin)
        flag = False
        if len(outout) == l:
            for i in range(l):
                if bank and not stack:
                    stack.append(bank.pop(0))
                while bank and stack[-1] != outout[i]:
                    stack.append(bank.pop(0))
                if stack.pop() != outout[i]:
                    print('NO')
                    flag = True
                    break
            if not flag:
                print('YES')
        else:
            print('NO')
    except EOFError:
        break
```

　　　　#: 44305452
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　　语言: Python3
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学习感受与心得：

这周的作业都不怎么会写，好难，上课听得就已经不太理解，写出来的 run 出来结果都不对，只能看着题解研究作者思路。对栈的题目理解好一些，树的写法还是不太清楚。还需要花点时间再好好研究一下课上的内容。