

# Assignment1

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## 一、作业题目

### 1、05902:双端队列（1h30min）

```
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')
```

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题目ID, 标题, 描述

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题目 排名 状态 提问

#44298211提交状态

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状态: **Accepted**

源代码

```
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')
```

基本信息

#: 44298211  
题目: 05902  
提交人: 22n2000092113  
内存: 3532kB  
时间: 42ms  
语言: Python3  
提交时间: 2024-03-19 15:36:51

## 2、02694:波兰表达式 (3h)

```
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]))
```

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#44289734提交状态 查看 提交 统计 提问

状态: Accepted

源代码

```
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]))
```

基本信息  
#: 44289734  
题目: 02694  
提交人: 22n2000092113  
内存: 3640kB  
时间: 23ms  
语言: Python3  
提交时间: 2024-03-18 20:25:42

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## 3、24591:中序表达式转后序表达式 (3h40min)

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

```

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))

```



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题目 排名 状态 提问

#44300795提交状态

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状态: Accepted

源代码

```

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

    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]
                postfix.append(stack.pop())
                stack.append(char)
            elif char == '(':
                stack.append(char)
            elif char == ')':
                stack.pop()

```

基本信息

#: 44300795  
 题目: 24591  
 提交人: 22n2000092113  
 内存: 3720kB  
 时间: 27ms  
 语言: Python3  
 提交时间: 2024-03-19 17:29:47

#### 4、22068:合法出栈序列 (2h)

```
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

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状态: Accepted

源代码

```
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
```

基本信息

#: 44305452  
题目: 22068  
提交人: 22n2000092113  
内存: 3628kB  
时间: 27ms  
语言: Python3  
提交时间: 2024-03-19 21:42:01

### 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。