Circulate the values of n variables, Swapping two variables

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AP-IT

SNSCE

Circulate the values of n variables - Program 1

```
def cyclicSwap(a,b,c):
    temp = b;
    b = a;
    a = c;
    c = temp;
    print(a);
    print(b);
    print(c);
a=int(input("enter a number"));
b=int(input("enter a number"));
c=int(input("enter a number"));
print cyclicSwap(a,b,c)
```

Output

enter a number1

enter a number2

enter a number3

3

1

2

CIRCULATE N VARIABLES -**Program 2**

```
num = []
n=int(input("enter the range"))
print("enter the elements")
for i in range(n):
    ni=int(input())
    num.append(ni)
def rotate(lst,x):
    copy = list(lst)
    for i in range(len(lst)):
        if x<0:
            lst[i+x] = copy[i]
        else:
            lst[i] = copy[i-x]
rotate(num, 1)
print("number",num)
```

Output:

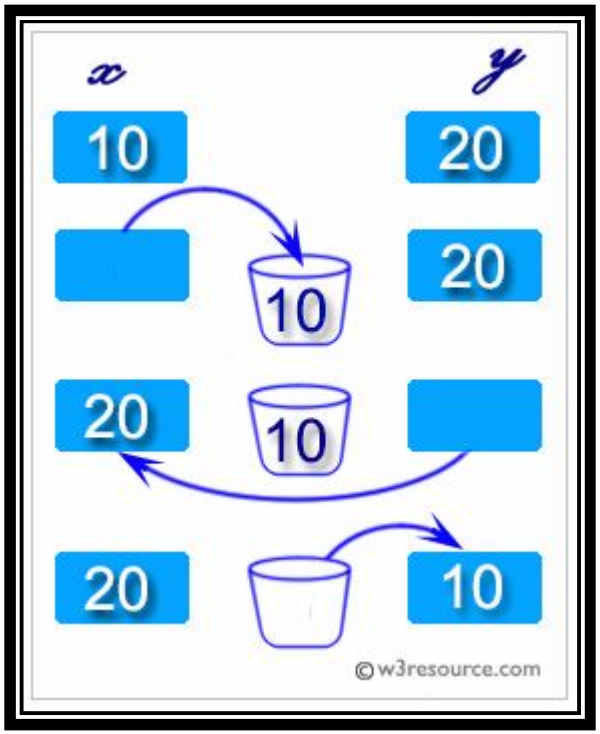
```
enter the range6
enter the elements
1
2
3
4
5
6
number [6, 1, 2, 3, 4, 5]
```

Modify the above program to circulate like the given below

enter the range6
enter the elements
1
2
3
4
5
6
number [5, 6, 1, 2, 3, 4]

rotate(num, 1)

Swapping two variables



Swapping two variables

- Swapping two variables refers to mutually exchanging the values of the variables. Generally, this is done with the data in memory.
- The simplest method to swap two variables is to use a third temporary variable :

```
define swap(a, b):
    temp := a
    a := b
    b := temp
```

Program 1

```
a = 30
b = 20
print("\nBefore swap a = %d and b = %d" %(a, b))
a, b = b, a
print("\nAfter swaping a = %d and b = %d" %(a, b))
```

- **Output:**

Before swap a = 30 and b = 20
After swaping a = 20 and b = 30

Program 2

```
x = 5
y = 10
print("\nThe value of x before swapping: {}".format(x));
print("\nThe value of y before swapping: {}".format(y));
# create a temporary variable and swap the values
temp = x
x = y
y = temp
print('The value of x after swapping: {}'.format(x))
print('The value of y after swapping: {}'.format(y))
```

- **Output:**

```
The value of x before swapping: 5
The value of y before swapping: 10
The value of x after swapping: 10
The value of y after swapping: 5
```

Another Concepts: TRY THIS CODE

- **Multiplication and Division**

```
x = x * y
y = x / y
x = x / y
```

- **Addition and Subtraction**

```
x = x + y
y = x - y
x = x - y
```

- **XOR swap**

This algorithm works for integers only

```
x = x ^ y
y = x ^ y
x = x ^ y
```