Circular Arrays

Thumb Rule 1

When traversing a circular Array:

- One variable as Loop Controller (How many times the loop is going to run)
- Different variable for index of Circular Array

Thumb Rule 2

Whenever you increment the index of a circular array, always mod the incremented value with the circular array's length.

> index + 1 % len(arr)

Thumb Rule 3

Watch this video

> Last_index = (start + size - 1) % len(arr)

Thumb Rule 4

Whenever you decrement the index of a circular array, always check, keep a check wheater it became negative. If it does, point it to the end of the array.

Forward Printing a circular Array

```
def printForward(arr, start, size):
    index = start
    i = 0

    while (i < size):
        print(arr[index])
        index = (index + 1) % len(arr)
        i += 1

circular_arr = [40,50,0,0,0,0,0,0,10,20,30]
printForward(circular_arr, 8, 5)
```

Output:

```
10
20
30
40
50
```

Reverse Printing a Circular Array

```
def printReverse(arr,start,size):
    index=(start + size - 1) % len(arr)
    i = 0

    while(i < size):
        print(arr[index])
        index = index - 1

        if(index<0):
            index = len(arr) - 1

        i += 1


circularArray=[40,50,0,0,0,0,0,0,10,20,30]
printReverse(circularArray,8,5)
```

Creating a Circular Array from Linear Arrays

```
def circularize(linear,start,size):

    circular=[0]*len(linear)
```

```
    index=start
    i=0
    while(i<size):
        circular[index]=linear[i]
        index=(index+1)%len(circular)
        i=i+1
    return circular


linear=[10,20,30,40,50,0,0,0,0,0,0]
circ=circularize(linear,8,5)
print(circ)
```