

Circular Queue: A queue is called circular when the last element comes just before the first element



Here after n-1 th element, oth element occurs.

Similarly, we take assumption that after last element of apens, the first element will occur, in queue to overcome a pasticular type of problem, we use the corrept of circular queue.

The problem in queue assises when rear is at the last position of array and front is not at the oth position and we cannot add any element in queue because rear is at the n-1 th position.

queme [0] [1] [2] [3] [4] [5] [6]

| 5 10 15 20 25

post = 2 //or = 6

so to overcome this type of situation, we use the circular queue

) quem [6] [1] [7] [3] [4] [5) [6] [30 | 5 | 10 | 15 | 20 | 25

2) grene [0] [1] [1] [5] [4] [5] [6] [30]35 [10]15 [20]25]

gene 1 front = 3.

Add Operation in Circular Quew. First we have to check that rear is at the (n-1)th position. I Tear = N-1 then we set the value of year 16 0 and add the element at the oth position of the array. Thereise element will be added same as in simple queue Here first we are checking for overflow condition 4 (frent == 0 & 2 rear = = MAX -1) 11 (foot == 8 cax +1)) print (" queue is Overflow"). of guene is initially empty then we set the value o to front and man and then add the element in queue otherwise is increase the value of rear only and then element will he added in queue. if (florit = = -1) front = 0; 4 (rean = = MAXSIZE-1) TUN = 0', YUN = YUN + 1 . equeue [rear] = added - item

Delete Operation in Circular queue.

first we have to wheak that front is at the N-1 the position of front = N-1 then delete the element from queue and let the value of front to 0 as -

if (front = = MAXSIZE - 1) front = 0.

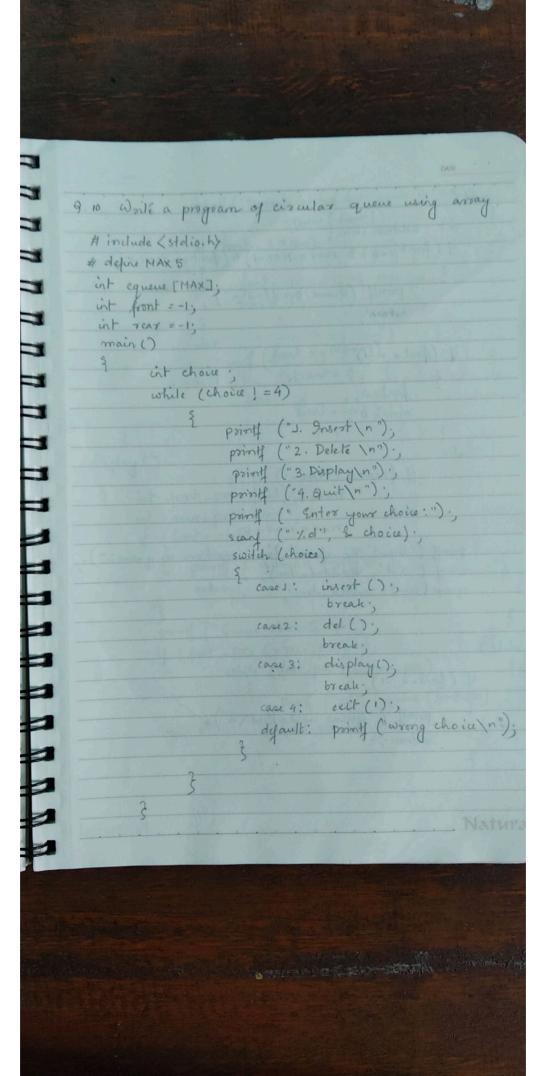
If there is only one element in queue then we delete the element from queue and set the value of front and rear to -1 as

if (front = = rear)

{ front = -1.}

rear = -1.

Natural



```
insert()
      int added . item;
       4 (front == 0 & 2 rear == MAX -1) 11 (front = = rear +1))
               point (queue overflow) ");
               return .
       if (front = = -1)
              front = 0.
               TEATS = 0 .,
              if (rear = = MAX -1)
                         Years = Years + 1 .
       prints (" Supert The element for investions in quane: ").
       stary (" 1.d", & added - item).
       equene [rear] = added_cters;
del()
     4 (front == -1)
           print ("queue underflow (").
            return;
```

