CSN-261 L1 REPORT

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```
PROBLEM STATEMENT 1:
Objective:
1)Retrieve info from .csv file name StudentData.
2)add data into a circular doubly linked list.
3)Implement different functions like:
         *)ADDNODE //To add node from csv file to linked list.
         *)INSERT  //To create a node with user's input and add it to LL.
         *)DELETE  //To delete a record with given Roll number.
         *)SEARCH  //To search a node from a given roll number
         *)MODIFY  //Modify a node of a certain roll number
         *)SORT    //Sort all the nodes in the lexicographical order of names
Algos Discuss:
1)ADDNODE:Maintained a head and tail in the circular doubly linked list and
always add newly created node b/w head and tail.
2)INSERT:Maintained a head and tail in the circular doubly linked list and
always add newly created node by user in b/w head and tail.
3)DELETE:Search for required node to be deleted according to the roll number
and linked the left of this node with right of this node and freed up memory
of this particular node.
4)SEARCH:First search for the node in the doubly linked list and return the
node to main function, if null means node not found.
5)MODIFY:First search for required node according to the given roll number and
overwrite the value of this node with user given value.
6)SORT:Simple Bubble Sort implementation in doubly linked list.
```

```
real    2m29.516s
user    0m0.000s
sys     0m0.005s
```

```
as1ngh@TELLOWART:~/CSN261$ ./Q1
0:ADDNODE:
1:PRINT
2:INSERTION:
3:DELETION:
4:SEARCH:
5:MODIFY:
6:SORT
-1:EXIT:
0
0:ADDNODE:
1:PRINT
2:INSERTION:
3:DELETION:
4:SEARCH:
5:MODIFY:
6:SORT
-1:EXIT:
1
ROLL NO:101
NAME:Priyanka Chopra
DOB:18-Jul-95
ADDRESS:803, Karan Next to Green Acres, Lokhandwala Complex, Andheri West, Mumbai
PHONE NO:1234567890

0:ADDNODE:
1:PRINT
2:INSERTION:
3:DELETION:
4:SEARCH:
5:MODIFY:
6:SORT
-1:EXIT:
0
0:ADDNODE:
1:PRINT
2:INSERTION:
3:DELETION:
```

```
ADDRESS:Vice Chief of the Air Staff, Air Headquarters, New Delhi
PHONE NO:7896325014

0:ADDNODE:
1:PRINT
2:INSERTION:
3:DELETION:
4:SEARCH:
5:MODIFY:
6:SORT
-1:EXIT:
6
0:ADDNODE:
1:PRINT
2:INSERTION:
3:DELETION:
4:SEARCH:
5:MODIFY:
6:SORT
-1:EXIT:
1
ROLL NO:101
NAME:Priyanka Chopra
DOB:18-Jul-95
ADDRESS:803, Karan Next to Green Acres, Lokhandwala Complex, Andheri West, Mumbai
PHONE NO:1234567890

ROLL NO:103
NAME:Rakesh Kumar Bhadauria
DOB:15-Jun-93
ADDRESS:Vice Chief of the Air Staff, Air Headquarters, New Delhi
PHONE NO:7896325014

ROLL NO:102
NAME:Virat Kohli
DOB:5-Nov-97
ADDRESS:DLF City, Phase-1 (C-Block), Gurgaon
PHONE NO:3214569087
```

PROBLEM STATEMENT 2:
Objective:
1)Input values from user and form a dynamic deque(dynamic in sense it doubles or halves the capacity of deque according to requirement).
2)Implement functions such as:
    *)Insertion
    *)Deletion
    *)Resize of deque Array
Algos Discuss:
1)Insertion: Maintaining a rear and front and add the new element at position front-1 if inserted from back or rear+1 if inserted at front, but if there is no space to add element in the array then resize it to double and then insert the given value
2)Deletion: Maintaining a rear and front and remove the element at position front if deleted from back or rear if deleted at front, but if the no. of elements is halve of max capacity resize array to halve of that size.
3)Resize:Initializing a new array of size double or half of original array copy the values from original and performs various operations.

```
   1
       VALUE :
       1
Enter Choice :
1. ADD ELEMENT :
2. DELETE ELEMENT :
3. PRINT :
-1.EXIT :
1
   1.ADD AT LAST :
   2.ADD AT FRONT :
   1
       VALUE :
       2
Enter Choice :
1. ADD ELEMENT :
2. DELETE ELEMENT :
3. PRINT :
-1.EXIT :
1
   1.ADD AT LAST :
   2.ADD AT FRONT :
   2
       VALUE :
       3
Enter Choice :
1. ADD ELEMENT :
2. DELETE ELEMENT :
3. PRINT :
-1.EXIT :
3
2 1 3
CAPACITY 4Enter Choice :
1. ADD ELEMENT :
2. DELETE ELEMENT :
3. PRINT :
-1.EXIT :
```

```
real    0m22.419s
user    0m0.001s
sys     0m0.004s
```

```
as1ngh@TELLOWART:~$ cd CSN261/
as1ngh@TELLOWART:~/CSN261$ ./Q2
SIZE:2
Enter Choice :
1. ADD ELEMENT :
2. DELETE ELEMENT :
3. PRINT :
-1.EXIT :
1
   1.ADD AT LAST :
   2.ADD AT FRONT :
   1
       VALUE :
       1
Enter Choice :
1. ADD ELEMENT :
2. DELETE ELEMENT :
3. PRINT :
-1.EXIT :
1
   1.ADD AT LAST :
   2.ADD AT FRONT :
   1
       VALUE :
       2
Enter Choice :
1. ADD ELEMENT :
2. DELETE ELEMENT :
3. PRINT :
-1.EXIT :
1
   1.ADD AT LAST :
   2.ADD AT FRONT :
   2
       VALUE :
       3
Enter Choice :
1. ADD ELEMENT :
```

PROBLEM STATEMENT 3:

Objective:

1)Retrieve value of R-value, G-value, B-value of a particular pixel and store it into a 2D integer array.

2)Implement various function:

*)Remove all shades of one colour.

*)Preserve one shade in all pixel.

Algos Discuss:

1)Remove all shades of one colour:For example if we have to remove all the red shades in the picture we put R-value=0 where R-value>B-value & G-value. Similarly with Blue and Green.

2)Preserve one shade in all pixel:For example if we have to preserve Red shade then where ever green or blue shade dominates put G-value & B-value = zero.

```
as1ngh@TELLOWART:~/CSN261$ ./Q3
1:Remove One Color:
2:Preserve One Color:
3:Print:
-1:Exit:
1
        1:Red
        2:Blue
        3:Green 2
1:Remove One Color:
2:Preserve One Color:
3:Print:
-1:Exit:
3
               ENTER X AND Y:
               1 5
RED:0
BLUE:0
GREEN:0
1:Remove One Color:
2:Preserve One Color:
3:Print:
-1:Exit:
```

```
real    0m22.419s
user    0m0.001s
sys     0m0.004s
```

```
1:Remove One Color:
2:Preserve One Color:
3:Print:
-1:Exit:

2
        1:Red
        2:Blue
        3:Green 2
1:Remove One Color:
2:Preserve One Color:
3:Print:
-1:Exit:
3
                ENTER X AND Y:
                1 5
RED:0
BLUE:0
GREEN:0
1:Remove One Color:
2:Preserve One Color:
3:Print:
-1:Exit:
```