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1BM19ESO14

Q3) WAP to simulate the working of circular queue of integers using an array.
a) Insert
b) Delete
c) Display

```c
#include <stdio.h>
#include <stdlib.h>
#define QUE_SIZE 3
int item, front=0, rear=-1, q[QUE_SIZE], count=0;

void insertrear()
{ if (count == QUE_SIZE)
{ printf("queue overflow \n");
return; }
rear = (rear +1) % QUE_SIZE;
q[rear] = item;
count ++; }
int delete_front(){
if (count==0)
return -1;
item = q[front];
front = (front +1) % QUE_SIZE;
count = count -1;
return item;
}
void display()
{ int i, j;
if(count==0)
{ printf("queue is empty \n");
return;
}
```

```c
j = front;
printf ("Contents of queue \n");
for (i = 1; i <= count; i++)
{ printf ("%d \n", q[j]);
    j = (j + 1) % que_size;
}
}

void main ()
{ int choice;
    for (;;)
    { printf ("\n 1.Insert rear \n 2.Delete front \n 3. display
                \n 4. Exit ");
        printf (" Enter the choice ");
        switch (choice)
        { case 1: { printf (" Enter the item to be inserted \n");
                    scanf ("%d", & item);
                    insert rear ();
                    break; }
        case 2 : item = delete front ();
                if (item == -1)
                printf (" item deleted = %d \n", item);
                break; }
        case 3 : { display q ();
                    break; }
        default : { exit (0); }
        }
    }
}
```