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DATE:

SIGNATURE:

Write a C program to implement a queue using an array. Programs should contain functions for inserting elements into the queue, displaying queue elements, and removing an element from the queue

Expected Output:

Initialize a queue!

Insert some elements into the queue:

Queue elements are: 1 2 3

Delete an element from the said queue:

Queue elements are: 2 3

Insert another element into the queue:

Queue elements are: 2 3 4

```
#include <stdio.h>
#include<stdlib.h>
#define MAX 50
void insert();
void delete();
void display();
int queue_array[MAX];
int rear = - 1;
int front = - 1;
int main()
{
int choice;
while (1)
{
printf("1.Insert element to queue \n");
printf("2.Delete element from queue \n");
printf("3.Display all elements of queue \n");
printf("4.Quit \n");
printf("Enter your choice : ");
scanf("%d", &choice);
switch(choice)
{
case 1:
insert();
break;
case 2:
delete();
break;
```

```
case 3:
display();
break;
case 4:
exit(1);
default:
printf("Wrong choice \n");
}
}
}
void insert()
{
int item;
if(rear == MAX - 1)
printf("Queue Overflow \n");
else
{
if(front== - 1)
front = 0;
printf("Inset the element in queue : ");
scanf("%d", &item);
rear = rear + 1;
queue_array[rear] = item;
}
}
void delete()
{
if(front == - 1 || front > rear)
```

```
{
printf("Queue Underflow \n");
return;
}
else
{
printf("Element deleted from queue is : %d\n", queue_array[front]);
front = front + 1;
}
}
void display()
{
int i;
if(front == - 1)
printf("Queue is empty \n");
else
{
printf("Queue is : n");
for(i = front; i <= rear; i++)
printf("%d ", queue_array[i]);
printf("\n");
}
}
```

```
1.Insert element to queue
2.Delete element from queue
3.Display all elements of queue
4.Quit
Enter your choice : 1
Inset the element in queue : 23
1.Insert element to queue
2.Delete element from queue
3.Display all elements of queue
4.Quit
Enter your choice : 1
Inset the element in queue : 45
1.Insert element to queue
2.Delete element from queue
3.Display all elements of queue
4.Quit
Enter your choice : 1
Inset the element in queue : 65
1.Insert element to queue
2.Delete element from queue
3.Display all elements of queue
4.Quit
Enter your choice : 1
Inset the element in queue : 98
```

```
1.Insert element to queue
2.Delete element from queue
3.Display all elements of queue
4.Quit
Enter your choice : 2
Element deleted from queue is : 23
1.Insert element to queue
2.Delete element from queue
3.Display all elements of queue
4.Quit
Enter your choice : 3
Queue is :
45 65 98
```