classmate
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Page

LAB-3

1. Write a program to simulate the working of the queue of integer using an array. Provide the following operations Insert, delete, display. The program should print appropriate message for underflow and overflow condition.

=>

```
#include <stdio.h>

#define SIZE 5

int front = -1;
int rear = -1;
int queue[SIZE];

void Insert(){
    if(rear == SIZE-1)
        printf("The queue is in overflow
         condition");

    else{
        if(front == -1)
            front = 0;
        int add;
        printf("Insert a value to add:");
        scanf("%d", &add);
        rear = rear+1;
```

```
        queue[rear] = add;
    }
}

void delete(){
    if(front == rear || front > rear)
        printf("The queue is in underflow
        condition");

    else{
        printf("The deleted item is %d
        queue[front]);
        front = front + 1;
    }
}

void display(){
    if(front == -1)
        printf("The queue is empty!");
    int i;
    else{
        printf("The queue is :\n");
        for(i = front; i <= rear; i++)
            printf("%d\n", queue[i]);
    }
}
```

```
void main (){
    int choice;
    while(1).
    {
        printf("1. Insert\n 2. Delete\n
            3. Display\n 4. Quit");
        printf ("Enter a choice for user
            operation : ");
        scanf ("%d", &choice);
        switch (choice)
        {
            case 1:
                insert();
                break;

            case 2:
                delete()
                break;

            case 3:
                display()
                break

            case 4:
                exit(1)

        }
    }
}
```

```
1.Insert
2.Delete
3.Display
Enter a choice for user Operation : 1
Enter a Value to input : 21
1.Insert
2.Delete
3.Display
Enter a choice for user Operation : 1
Enter a Value to input : 34
1.Insert
2.Delete
3.Display
Enter a choice for user Operation : 1
Enter a Value to input : 56
1.Insert
2.Delete
3.Display
Enter a choice for user Operation : 3
The Queue is :
21
34
56
```

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```
1.Insert
2.Delete
3.Display
Enter a choice for user Operation : 2
The deleted item will be 21
1.Insert
2.Delete
3.Display
Enter a choice for user Operation : 3
The Queue is :
34
56
1.Insert
2.Delete
3.Display
Enter a choice for user Operation :
```

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