

LAB PROGRAM-3)

Write a Program to simulate the working of queue of integer using an array. Provide the following operations.

- 1) Insert Rear
- 2) Delete Front
- 3) Display the contents of queue.

The program should print the appropriate message for queue empty and queue full condition.

```
CODE #include <stdio.h>
#include <stdlib.h>
#define QUEUE_SIZE 5
int item, front = 0, rear = -1, q[10];
void insertRear()
{
    if (rear == QUEUE_SIZE - 1)
    {
        printf("Queue overflow\n");
        return;
    }
    rear = rear + 1;
    q[rear] = item;
}
int deleteFront()
{
    if (front > rear)
    {
        front = 0;
        rear = -1;
    }
}
```

```

    return -1;
}
return q[front++];
}
void display Q()
{
    int i;
    if (front > rear)
    {
        printf("queue is empty\n");
        return;
    }
    printf("Contents of queue\n");
    for (i = front; i <= rear; i++)
    {
        printf("%d\n", q[i]);
    }
}

```

```

void main()

```

```

{
    int choice;
    for (;;)
    {
        printf("\n 1: insert rear\n 2: delete rear\n 3: display\n 4: exit\n");
        printf("Enter the choice\n");
        scanf("%d", &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("queue is empty\n");  
    }  
    else  
    {  
        printf("item deleted = %d\n", item);  
    }  
    break;  
case 3: display Q();  
    break;  
default: exit(0);  
}  
}  
}
```