1)B. Program to demonstrate queues using arrays

```
#include<stdio.h>
//#include<conio.h>
#include<stdlib.h>
#define SIZE 10
void enQueue(int);
void deQueue();
void display();
int queue[SIZE], front = -1, rear = -1;
int main()
{
    int value, choice;
    //clrscr();
    while(1){
        printf("\n\n***** MENU *****\n");
        printf("1. Insertion\n2. Deletion\n3. Display\n4. Exit");
        printf("\nEnter your choice: ");
        scanf("%d",&choice);
        switch(choice){
       case 1: printf("Enter the value to be insert: ");
           scanf("%d",&value);
           enQueue(value);
           break;
       case 2: deQueue();
           break;
       case 3: display();
           break;
       case 4: exit(0);
       default: printf("\nWrong selection!!! Try again!!!");
        }
    }
}
void enQueue(int value){
    if(rear == SIZE-1)
        printf("\nQueue is Full!!! Insertion is not possible!!!");
    else{
        if(front == -1)
       front = 0;
        rear++;
        queue[rear] = value;
        printf("\nInsertion success!!!");
    }
}
void deQueue(){
 //if(front == rear)
       if (front == - 1 || front > rear)
          printf("\nQueue is Empty!!! Deletion is not possible!!!");
    else{
        printf("\nDeleted : %d", queue[front]);
        front++;
   // if(front == rear)
     // front = rear = -1;
    }
}
void display(){
//if(rear == -1)
if(rear == -1||front> rear)
               printf("\nQueue is Empty now !!!");
    else{
        int i;
        printf("\nQueue elements are:\n");
        for(i=front; i<=rear; i++)
```

```
            printf("%d\t",queue[i]);
      }
}
```

output:

```
yasar@yasar-Lenovo-G50-80:~/Desktop/DataStructures/lords/lab$ gcc queue.cc -o q1
yasar@yasar-Lenovo-G50-80:~/Desktop/DataStructures/lords/lab$ ./q1

***** MENU *****
1. Insertion
2. Deletion
3. Display
4. Exit
Enter your choice: 1
Enter the value to be insert: 10
Insertion success!!!

***** MENU *****
1. Insertion
2. Deletion
3. Display
4. Exit
Enter your choice: 1
Enter the value to be insert: 20
Insertion success!!!

***** MENU *****
1. Insertion
2. Deletion
3. Display
4. Exit
Enter your choice: 1
Enter the value to be insert: 30
Insertion success!!!

***** MENU *****
1. Insertion
2. Deletion
3. Display
4. Exit
Enter your choice: 3
Queue elements are:
10	20	30

***** MENU *****
1. Insertion
2. Deletion
3. Display
4. Exit
Enter your choice: 2
Deleted : 10

***** MENU *****
```

```
1. Insertion
2. Deletion
3. Display
4. Exit
Enter your choice: 2
Deleted : 20

***** MENU *****
1. Insertion
2. Deletion
3. Display
4. Exit
Enter your choice: 3
Queue elements are:
30

***** MENU *****
1. Insertion
2. Deletion
3. Display
4. Exit
Enter your choice: 2
Deleted : 30

***** MENU *****
1. Insertion
2. Deletion
3. Display
4. Exit
Enter your choice: 3
Queue is Empty now !!!

***** MENU *****
1. Insertion
2. Deletion
3. Display
4. Exit
Enter your choice: 2
Queue is Empty!!! Deletion is not possible!!!

***** MENU *****
1. Insertion
2. Deletion
3. Display
4. Exit
Enter your choice: 4
yasar@yasar-Lenovo-G50-80:~/Desktop/DataStructures/lords/lab$
```