Stack using Array

```
#include<stdio.h>
#include<conio.h>
#define MAX 5
void push (int a);
void pop ();
void display ();
int stack[MAX], item, ch, element, top, i;

int main()
{

    top = 0;
    do
    {
        printf("\n\t\tStack operations");
        printf("\n\t1. Push");
        printf("\n\t2. Pop");
}
        printf("\n\t3. Display");
        printf("\n\t4. Exit");
        printf("\n\n\tEnter choice   :      ");
        scanf("%d",&ch);
        if (ch == 1)
        {
            printf("Enter insertion data:");
            scanf("%d",&element);
            push(element);
        }
        else if (ch == 2)
            pop();
        else if (ch == 3)
            display();
    }while (ch < 4);
    getch();
    return 0;
}
```

```
void push (int a)
{
    if (top == MAX)
    printf("Overflow");
    else
    {
        top = top + 1;
        stack[top] = a;
  }
}

void pop()
{
    if (top == 0)
    printf("Underflow");
    else
    {
        item = stack[top];
        top = top - 1;
        printf("\n Deleted item is %d", item);
    }
}

void display()
{

    if (top == 0)
        printf("Stack is empty");
    else
    {
        for (i = top; i > 0; i--)
            printf("%d\t",stack[i]);
    }
}
```

Queue using array

```
#include<stdio.h>
#include<conio.h>
#define MAX 3
void enq (int a);
void deq ();
void display ();
int qu[MAX], item, ch, element, rear, front;

int main()
{

        rear = 0;
        front = 0;
        do
        {
                printf("\n\t\tQueue operations");
                printf("\n\t1. Enqueue");
                printf("\n\t2. Dequeue");
                printf("\n\t3. Display");
                printf("\n\t4. Exit");
                printf("\n\n\tEnter choice   :      ");
                scanf("%d",&ch);
                if (ch == 1)
                {
                        printf("Enter insertion data:");
                        scanf("%d",&element);
                        enq(element);
                }
                else if (ch == 2)
                        deq();
                else if (ch == 3)
                        display();
        }while (ch < 4);
        getch();
```

```
    return 0;
}

void enq (int a)
{
    if (rear == MAX)
    printf("Overflow");
    else
    {
        rear = rear + 1;
        qu[rear] = a;
        if (front == 0)
            front = 1;
    }
}

void deq()
{
    if (front == 0)
    printf("Underflow");
    else
    {
        item = qu[front];
        qu[front] = 0;
        if (front == rear)
            front = rear = 0;
        else
            front = front + 1;
        printf("\n Deleted item is %d", item);
    }
}

void display()
{
    int i;
    if (front == 0)
```

```
                printf("Queue is empty");
        else
        {
                for (i = front; i <= rear; i++)
                        printf("%d\t",qu[i]);
        }
}
```