**Programs**

1. Write a program to implement a stack using two queues.

Ans:

#include<stdio.h>

#include<conio.h>

#define n 20

int queue1[n],queue2[n];

int f1=-1,r1=-1;

int f2=-1,r2=-1;

int count=0;

void enqueue1(int x);

int dequeue1();

void enqueue2(int x);

int dequeue2();

void push(int x);

int pop();

void display();

void main()

{

int ch,num;

clrscr();

while(ch!=4)

{

printf("\n-------------------------Menu--------------------------");

printf("\n1.Push \t2.Pop \t3.Display \t4.Exit");

printf("\n-------------------------------------------------------");

printf("\nEnter your choice:");

scanf("%d",&ch);

switch(ch)

{

case 1:printf("Enter element:");

scanf("%d",&num);

push(num);

break;

case 2:printf("Element deleted is %d",pop());

break;

case 3:display();

break;

case 4:exit(0);

break;

default:printf("Invalid choice..");

}

}

}

void enqueue1(int x)

{

if(r1==n-1)

{

printf("Overflow..");

}

else

{

if(f1==-1)

{

f1=0;

}

r1=r1+1;

queue1[r1]=x;

}

}

int dequeue1()

{

int temp;

if(f1==-1||f1>r1)

{

printf("Underflow..");

}

else

{

temp=queue1[f1];

f1++;

}

return(temp);

}

void enqueue2(int x)

{

if(r2==n-1)

{

printf("Overflow..");

}

else

{

if(f2==-1)

{

f2=0;

}

r2=r2+1;

queue2[r2]=x;

}

}

int dequeue2()

{

int temp;

if(f2==-1||f2>r2)

{

printf("Underflow..");

}

else

{

temp=queue2[f2];

f2++;

}

return(temp);

}

void push(int x)

{

int i;

enqueue1(x);

for(i=0;i<count;i++)

{

enqueue1(dequeue2());

}

count++;

for(i=0;i<count;i++)

{

enqueue2(dequeue1());

}

}

int pop()

{

count--;

return dequeue2();

}

void display()

{

int i;

printf("Elements in stack are:");

for(i=f2;i<=r2;i++)

{

printf("%d\t",queue2[i]);

}

}

Output:

