**Programs**

1. Write a program to implement circular queue using arrays.

Ans:

#include<stdio.h>

#include<conio.h>

#define max 5

int queue[max];

int front=-1;

int rear=-1;

void enqueue();

void dequeue();

void display();

void main()

{

int ch;

clrscr();

while(ch!=4)

{

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

printf("\n1.Enqueue \t 2.Dequeue \t 3.Display \t 4.Exit");

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

printf("\nEnter your choice:");

scanf("%d",&ch);

switch(ch)

{

case 1:enqueue();

break;

case 2:dequeue();

break;

case 3:display();

break;

case 4:exit(0);

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

}

}

}

void enqueue()

{

int item;

if((rear+1)%max==front)

{

printf("Overflow..");

}

printf("Enter element:");

scanf("%d",&item);

if(front==-1 && rear==-1)

{

front=0;

rear=0;

queue[rear]=item;

printf("Element inserted successfully..");

}

else

{

rear=(rear+1)%max;

queue[rear]=item;

printf("Element inserted successfully..");

}

}

void dequeue()

{

if(front==-1 && rear==-1)

{

printf("Underflow..");

}

else if(front==rear)

{

front=-1;

rear=-1;

printf("Element deleted successfully..");

}

else

{

front=(front+1)%max;

printf("Element deleted successfully..");

}

}

void display()

{

int i=front;

if(front==-1 && rear==-1)

printf("Underflow..");

else

{

printf("Elements in queue are:\n");

while(i<=rear)

{

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

i=(i+1)%max;

}

}

}

Output:

