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**1B21CS248**

**Q: Circular queue**

**Code:-**

#include <stdio.h>

int queue[20],front=-1,rear=-1,size=4,x;

void insert(){

if((rear==(size-1)&&(front==0))||(front==rear+1)){

printf("queue is full\n");

return;

}

else{

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

front++;

rear++;

printf("enter the value to insert\n");

scanf("%d",&x);

queue[rear]=x;

return;

}

else{

rear=(rear+1)%size;

printf("enter the value to insert\n");

scanf("%d",&x);

queue[rear]=x;

return;

}

}

}

void delete(){

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

printf("empty queue\n");

return;

}

else{

x=queue[front];

front=(front+1)%size;

printf("deleted: %d\n",x);

return;

}

}

void display(){

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

printf("empty queue\n");

return;

}

else{

printf("printing queue elements\n");

if(front<rear){

for(int i=front;i<=rear;i++){

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

}

}

else{

for(int i=0;i<=rear;i++){

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

}

for(int i=front;i<size;i++){

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

}

}

}

}

int main(){

printf("circular queue implementation\n");

printf("1.insert\n2.delete\n3.display\n4.exit\n");

int choice;

do{

printf("enter choice\n");

scanf("%d",&choice);

switch(choice){

case(1):

insert();

break;

case(2):

delete();

break;

case(3):

display();

break;

case(4):

printf("exited");

exit(0);

default:

printf("enter correct choice\n");

break;

}

}while(choice!=4);

return 0;

}

**Output:-**

